JABATAN PERDANA MENTERI

PEMANDU
PERFORMANCE MANAGEMENT AND DELIVERY UNIT

ECONOMIC TRANSFORMATION PROGRAMME

EXECUTIVE SUMMARY

ECONOMIC TRANSFORMATION PROGRAMME

A ROADMAP FOR MALAYSIA

1 Malaysia

131 Entry Point Projects

92% Private Sector Investment

60 Business Opportunities

RM48,000 (US$15,000) GNI per capita

3.3 Million Jobs

JABATAN PERDANA MENTERI

PEMANDU

PERFORMANCE MANAGEMENT AND DELIVERY UNIT

Foreword

Malaysia is at a crossroad. Whilst much has been achieved, the challenges ahead are significant. Since Merdeka, we have built a robust and resilient economy, which has sustained strong economic growth. We have almost eradicated hardcore poverty, and at the same time, have been able to provide the rakyat near universal access to basic health, education, communications and other public services. As a result, the quality of life for the vast majority of Malaysians has improved. However, achieving our bold aspirations of Vision 2020, by the year 2020, will be challenging. Malaysia needs to economically transform to join the select group of high income nations.

This is where Malaysia stands today. If we do not correct our course, we will be unable to continue improvements in education, health and quality of life. However, if we redouble our efforts to attract investment, drive productivity improvements and innovate, we can compete successfully in the global economy and achieve high-income status.

This government is committed to pursuing a strategy to achieve high-income status. We have embarked on an Economic Transformation Programme (ETP) to propel our economy to 2020. The ETP builds upon the policy directions, strategies and programmes of the 10th Malaysia Plan. It is aligned with previous efforts such as the Government Transformation Programme (GTP) and 1Malaysia People First Performance Now as well as the groundwork of the New Economic Model.

We will shift our nation’s focus into areas where Malaysia has inherent competitive advantages. This means prioritising investments of public funds and policy support in a limited number of key growth engines, the 12 National Key Economic Areas (NKEAs) we announced in the 10th Malaysia Plan. This also means changing our approach to economic growth from an active player to a supporter and facilitator of private sector-led growth.

This ETP Roadmap contains concrete targets, which were developed through labs and a series of forums where the best minds in government and private sector were brought together to develop ideas into actions that will grow each of the NKEAs. The projects to drive growth in the economic areas have been chosen based on rigorous financial and economic analysis, to ensure that the people of Malaysia get the best value from the funds that government invests. Some of these cannot be achieved without specific policy and regulatory reforms that we are committed to make. As was the case with the GTP, a unit will be formed within PEMANDU to orchestrate the delivery and monitoring of this programme.

In implementing the ETP, tough decisions will need to be made. I seek the input and support of the private sector, civil society and the rakyat as we start implementing the projects and reforms to take our economy forward. As we embark on this journey together for the future of our children and the future of our country, I urge all Malaysians to join me in seizing the new opportunities arising from our chosen course. The journey will be long and arduous but we must persevere. God willing, we will succeed.

Dato' Sri Mohd Najib bin Tun Haji Abdul Razak
Prime Minister Malaysia

26 October 2010

Executive Summary

PROPELLING MALAYSIA TOWARDS BECOMING A HIGH-INCOME, DEVELOPED NATION

6% growth

The Economic Transformation Programme (ETP) is a comprehensive effort that will transform Malaysia into a high-income nation by 2020. It will lift Malaysia's gross national income (GNI) per capita from USD6,700 or RM23,700 in 2009 to more than USD15,000 or RM48,000 in 2020, propelling the nation to the level of other high-income nations. This GNI growth of 6 percent per annum will allow us to achieve the targets set under Vision 2020.

Successful implementation of the ETP will see Malaysia's economy undergo significant changes to resemble other developed nations. We will continue our shift towards a service-based economy, with the services sector contribution growing from 58 percent to 65 percent in the same period. More than 3.3 million new jobs will be created by 2020, spread across the country in urban and rural areas. The nature of these new jobs will result in a shift towards middle and high-income salary brackets. Greater Kuala Lumpur/Klang Valley will be transformed into a world-class city. Finally, growth will be achieved in a sustainable manner, without cost to future generations, through initiatives such as building alternative energy generation capacity and conserving our environment to promote eco-tourism.

The ETP is Different from Past Attempts to Grow the Economy

A bold new approach has been taken to develop the ETP. It is the first time that any effort of this kind has been undertaken in the history of Malaysia, or of any other developed nation. The programme provides strong focus on a few key growth engines: the 12 National Key Economic Areas (NKEAs). These NKEAs are expected to make substantial contributions to Malaysia's economic performance, and they will receive prioritised public investment and policy support. The ETP will be led by the private sector; the Government will primarily play the role of a facilitator. Most of the funding will come from the private sector (92 percent) with public sector investment being used as a catalyst to spark private sector participation.

The effectiveness of any transformation programme often lies in the details. The ETP presents a departure from norms because it is focused on actions—not on theoretical principles and ideas. We have identified 131 entry point projects (EPPs) that concretely outline actions required to grow the economy. The EPPs and other business opportunities identified under each NKEA are anchored to how much they contribute to GNI; they were selected based on rigorous economic and financial analysis. Any public spending will be allocated on the basis of maximising GNI per ringgit of public expenditure. Finally, the ETP was designed to be rigorous and transparent, with a new ETP Unit under PEMANDU (Performance Management and Delivery Unit within the Prime Minister's Department) being tasked to monitor and report progress to Government leaders, the business community and the *rakyat*.

Co-created by the Private and Public Sectors

From its inception, the private sector and the business community have been involved in the ETP. In May 2010, a Thousand Person Workshop was run to help identify the 12 NKEAs. The private sector continued to play a large role, when the labs began in June, with 500 of the best minds from the private sector (350 persons from 200 different companies) and the Government (150 persons from 60 different public institutions, ministries and agencies) coming together to develop plans for the 12 NKEAs.

The lab ideas and the plans that were developed were syndicated extensively throughout the eight-week lab period, with more than 600 syndication meetings with ministries, agencies, multi-national corporations, local corporations and non-governmental organisations. Important stakeholders such as the Prime Minister, Ministers and business leaders, were brought in early to visit the labs and provide feedback to the participants.

Subsequent to the labs, Open Days were conducted in Kuala Lumpur, Sabah and Sarawak, where 5,500 visitors (business community, multinational corporations, rakyat and media) visited NKEA booths and provided further input. The result of this process is a clear roadmap for Malaysia to become a high-income nation. In launching the ETP, we affirm that the EPPs listed in this roadmap are just the start, and through their execution we will learn and adapt the programme to ensure that we reach our aspirations.

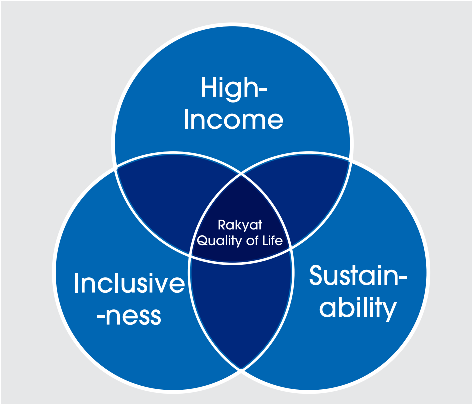
BUILDING ON STRENGTHS OF THE PAST

Malaysia has achieved significant economic and social progress over the past several decades. Sustained rapid economic growth has raised Malaysia from a low-income agricultural and commodity-based economy to become a successful middle-income economy. Our story of moving from low- to middle-income status is one of the world's success stories of the past few decades. This strong economic performance has helped improve the quality of life for Malaysians and supported widespread advances in education, health, infrastructure, housing and public amenities.

However, the world is changing and Malaysia needs a fundamentally new economic model in order to become a high-income nation. Our historical growth engines are slowing down, we face the risk of being stuck in a middle-income trap, our fiscal position is arguable unsustainable and global competition for markets, capital and talent is becoming increasingly intense. In response, the ETP represents a marked change in approach that builds on the Tenth Malaysia Plan and incorporates input from the National Economic Advisory Council.

BECOMING HIGH-INCOME ADVANCED THAT IS BOTH INCLUSIVE AND SUSTAINABLE

The Government is aiming for Malaysia to become a high-income nation that is both inclusive and sustainable by 2020. These goals will be reached jointly. The Government will not seek short-term progress on one goal at the expense of delaying progress on the others.



Achieving High-income Status by 2020

The Government defines the high-income threshold at a per capita income of about RM48,000 or USD15,000 in 2020, based on World Bank's current definition of high-income. Therefore, achieving high-income status by 2020 will require an annual real growth rate of about 6 percent in the next 10 years *(Exhibit 1)*.

USD15,000

GNI per capita 2020

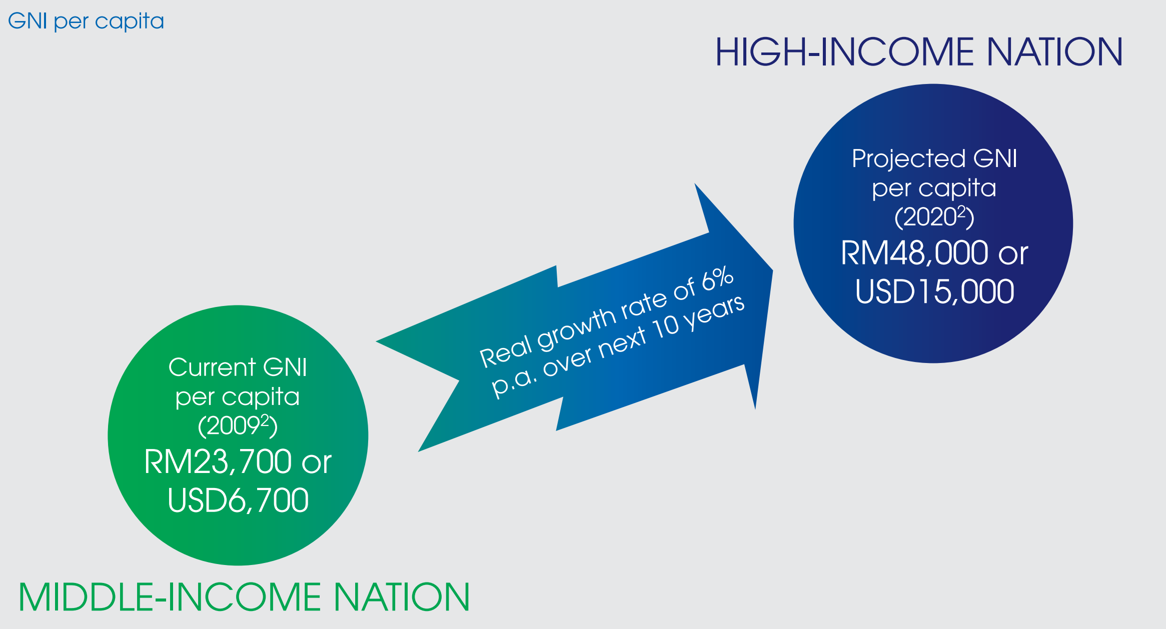
The Government's high-income objective is not just a quantitative target. It is also about Malaysia becoming an advanced, developed nation with an economy possessing the characteristics of a high-income economy, such as a thriving services sector, a balance between private consumption and investment as well as productivity levels that are similar to those of regional leaders.

Encouraging Inclusive Economic Development

The way in which Malaysia grows to achieve this high-income target will be inclusive in nature, enabling all Malaysians to share in the benefits. The Government will encourage employment-rich growth that creates 3.3 million new jobs, of which half will require diploma or vocational qualifications. The investments made in education and training will ensure that more Malaysians are able to participate in these new opportunities. In addition, specific attention will be paid to lifting the incomes of the bottom 40 percent of households, with a target of increasing the monthly mean income of this group from RM1,440 in 2009 to RM2,300 in 2015, as stated in the Tenth Malaysia Plan.

Exhibit 1

To achieve high-income status by 2020, Malaysia must grow by 6% per year to reach GNI per capita of RM48,000 or USD15,000



1 At 2020 prices, consistent with EPU assumptions for inflation=2.8% and population growth=1%
2 2009 population 27.9 million, 2020 projected population 31.6 million (EPU projection)

SOURCE: World Bank, Economic Planning Unit, Department of Statistics

Ensuring Growth is Achieved Sustainably

The measures to achieve high-income status must be sustainable in both economic and environmental terms, meeting present needs without compromising those of future generations. We will achieve growth without running down Malaysia's natural resources. Additionally, we will reduce our dependence in oil and gas as the primary economic contributor. Our fiscal position will be made sustainable, with a stronger focus on private sector-led investment to avoid reliance on public funding. In environmental terms, the Government is committed to the stewardship and preservation of the natural environment and resources by ensuring that they are properly priced into the cost of development.

BUSINESS AS USUAL IS NOT ENOUGH

Malaysia is at a critical point in its economic development. There has been a loss of growth momentum over the past decade, and it has become increasingly clear that the historical drivers of growth can no longer be relied on to deliver strong economic outcomes. It is more difficult to generate high rates of economic growth in an increasingly competitive global economy. Growth can no longer be taken for granted, but needs to be earned. There are four reasons why a fundamentally new approach is required.

Historical Growth Engines are Slowing Down

Malaysia's relatively sluggish economic performance over the past several years indicates that the historical engines of Malaysia's economic growth are slowing down. A large part of the reason for this relatively poor growth performance has been slow labour productivity growth. To transform productivity, significant improvements are required in two areas. First, the level of business investment will need to be substantially increased. Achieving the 6 percent annual growth rate to 2020 will require private investment to grow by more than 12 percent over the next five years, a significant increase from the 2 percent per annum growth achieved in the past five years. Second, enhanced investments in human capital will be made to support a high-skilled, knowledge-based and innovation-intensive economy.

Risk of Being Stuck in the Middle

Malaysia is no longer able to remain competitive with low-income countries as a high volume, low-cost producer. At the same time it has not yet moved up the value chain and become competitive with high-income countries. Other countries are more competitive than Malaysia in both low-cost production and in high-value markets. This is not a sustainable position. Strategies that were successful in driving Malaysia's transformation from a poor country, reliant on rubber and tin at Independence, into a diversified middle-income economy are not appropriate for the next stage of Malaysia's developmental journey.

An Unsustainable Fiscal Position

Malaysia has run fiscal deficits every year since 1998, with a deficit of 7 percent of GDP recorded for 2009. Moving back to fiscal sustainability and achieving the Government's commitment of a deficit of 3 percent of GDP by 2015 will require a change in direction. Investor attitudes to sovereign debt have changed significantly over the past two years, and capital markets may be less inclined to finance sovereign debt on the terms they have extended in the past. There is also increasing evidence of fiscal policy competition between countries, with governments cutting corporate tax rates to obtain a competitive edge. In order for Malaysia to offer competitive personal and corporate tax rates and invest in education, research, public services and infrastructure, it will need to strengthen its fiscal position substantially.

Increasing Global Competition for Markets, Capital and Talent

The global economy is becoming much more competitive. The emergence of new, highly competitive regional and global companies has eroded the strong position of Malaysian-based companies in the manufacturing and services sectors. In addition, companies, investors and talent have an increasing number of opportunities and location options. Malaysia, therefore, needs to demonstrate a clear value proposition in order to attract and retain them. Moreover, many other governments are aggressively positioning themselves to compete for talent and capital. The low levels of foreign direct investment (FDI) that Malaysia has attracted over the past decade are one indication of a weakening competitive position.

THE ETP IS PART OF A COMPREHENSIVE GOVERNMENT AGENDA

The ETP is the Government's economic agenda in response to these challenges. It also complements existing programmes, such as the GLC Transformation Programme, with similar objectives. There are four common foundations for the ETP:

- **1Malaysia, People First, Performance Now.** The 1Malaysia concept seeks to reinforce national unity, with respect for the values of the different communities, and is anchored on the principle of fairness and equity. In economic terms, this means that opportunities and growth will be shared equitably. People First refers to a *rakyat*-centric approach to planning and delivery, and Performance Now shows the Government's determination to have a sharp focus on delivery and results;

- **Government Transformation Programme (GTP).** The GTP was introduced in 2010 to transform the Government's effectiveness in the delivery of services and to sharpen accountability for outcomes. It incorporates six National Key Result Areas (NKRAs): reducing crime, fighting corruption, improving student outcomes, raising living standards of low-income households, improving rural basic infrastructure and improving urban public transport;

- **New Economic Model.** The Government established an independent National Economic Advisory Council (NEAC) to develop recommendations on the design of a new economic model. The council's report released in April 2010, provided a diagnosis of the challenges and opportunities facing the Malaysian economy and recommends eight strategic reform initiatives. Much of this thinking has been built into the Tenth Malaysia Plan, and the ETP; and

- **Tenth Malaysia Plan.** The Tenth Malaysia Plan outlines the Government's development plan for the next five years. It focuses on unleashing economic growth, promoting inclusive socio-economic development, developing and retaining talent, building an environment that enhances quality of life and transforming government. It identified the 12 NKEAs that will receive prioritised policy and investment focus.

THE ECONOMIC TRANSFORMATION PROGRAMME

The starting point of the ETP will be the implementation of concrete changes in specific sectors and areas of the economy. That is why the 12 NKEAs were selected. Labs were established for each of the 12 NKEAs to determine specific initiatives and projects that would drive economic transformation. The 12 labs consisted of representatives of the private sector and civil service and were facilitated by PEMANDU.

The labs provided the private sector an opportunity to work on and shape a transformative, sector-specific strategy and roadmap. Detailed plans, describing the aspirations, strategies and concrete actions, were developed for each NKEA. These plans include requirements for public funding, investment and labour.

Every initiative proposed was anchored on GNI to ensure that it contributes towards transforming Malaysia into a high-income economy. To calculate the GNI impact, each NKEA Lab identified initiatives, which were classified as either EPPs or business opportunities. EPPs are projects that should generate big results fast. They are clearly defined initiatives that have potential investors identified, a well-developed implementation plan and clearly articulated funding requirements. Business opportunities capture the potential of the sector to grow organically. Some business opportunities will be triggered by the successful execution of EPPs. The labs also identified the enablers and policy reforms required for sectoral growth.

It is important to emphasise that the ETP will be an evolving programme. The initiatives defined in the labs are not intended to be a detailed blueprint of economic activity in Malaysia for the next 10 years—they merely serve as a starting point. A number of projects will evolve, some will change quite radically and some will be discontinued. Many new initiatives and activities that have not even been thought of yet will emerge as the reforms take hold and markets develop.

12 NKEAs

Overview of the NKEAs

The 12 NKEAs are at the core of the ETP. An NKEA is defined as a driver of economic activity that has the potential to directly and materially contribute a quantifiable amount of economic growth to the Malaysian economy. The 12 NKEAs selected are: Oil, Gas and Energy; Palm Oil; Financial Services; Tourism; Business Services; Electronics and Electrical; Wholesale and Retail; Education; Healthcare; Communications Content and Infrastructure; Agriculture; and Greater Kuala Lumpur/Klang Valley.

The NKEAs were selected because they are significant engines of future growth and their expected contribution to GNI in 2020 will help Malaysia achieve high-income status. In addition to the 11 industry sectors, Greater Kuala Lumpur/Klang Valley was selected as an NKEA through a separate process. Kuala Lumpur currently accounts for about one third of Malaysia's GDP. Cities are significant drivers of growth, and a thriving Kuala Lumpur is vitally important to the health and performance of the overall economy. The portfolio of NKEA sectors will evolve over time, depending on the performance of various sectors in the economy. There will be a rigorous process to remove slow-growing sectors from the NKEA portfolio as well as to identify emerging drivers of growth that may be added.

What Does it Mean to be an NKEA?

Malaysia will focus its economic growth efforts on NKEAs, which will receive prioritised Government support including funding, top talent and Prime Ministerial attention. In addition, policy reforms such as the removal of barriers to competition and market liberalisation will be targetted at the NKEAs.

The programme will involve deliberate choices and trade-offs. Prioritising investment in NKEA sectors implies reducing investment in other sectors. The designation of sectors as NKEA sectors has to have real resource implications if it is to lead towards a meaningful change. The same philosophy of prioritisation will also apply to other support provided by the Government to sectors, such as operating expenditure and sector-specific policy and regulatory change.

The NKEAs will have dedicated focus from the Prime Minister and will have fast-track mechanisms to resolve disputes or bottlenecks. The Government is committed to the ongoing support of growth in the non-NKEA sectors. However, the Government will focus its efforts on the NKEAs because of the significance of the GNI contribution that these parts of the economy can drive.

Why is Focus on the NKEAs Important?

Growth in the past was driven largely by a deliberate sectoral diversification strategy. Initially, competitiveness across multiple sectors could be supported by our low-cost base. However, an excessively diverse sectoral strategy is no longer sustainable, given that Malaysia can no longer rely on low costs as a competitive advantage.

In today's globalised economy, production networks are increasingly regional thus leading to greater regional integration. Malaysia's desire to shift towards higher value-add and knowledge-intensive activities necessitates specialisation, in terms of having a critical mass and an ecosystem of firms and talent to drive economies of scale.

There are five reasons why focusing on a relatively small number of sectors is important in generating economic benefit for Malaysia:

- **Align policies coherently.** Having a clear view on priority sectors means that it will be easier to deliver a coherent, coordinated policy agenda;

- **Avoid sub-scale investment.** To achieve substantial, sustained impact, the investment made into a particular sector needs to be meaningful;

- **Develop a clear value proposition.** Having a limited number of priority sectors contributes to having a clear national-value proposition, which can be readily communicated to local and foreign investors;

- **Provide leadership focus.** Relatively scarce government leadership time (the Prime Minister and senior officials) can be allocated in a meaningful way to priority areas; and

- **Allow for higher quality monitoring.** It will be easier to measure and monitor the performance of a limited number of sectors, increasing the likelihood of economic impact.

What Is Different About The ETP?

The ETP builds on the direction outlined in the Tenth Malaysia Plan to develop a markedly different approach to delivering Government's objectives. There are five specific aspects of the ETP that are new and distinctive, which will ensure that the ETP delivers the improved outcomes that Malaysia needs.

Focus on Key Growth Engines - 12 NKEAs

Malaysia will exploit its competitive advantages by prioritising public investment and policy support behind a limited number of key growth engines. The ETP focuses on the 12 NKEAs announced in the Tenth Malaysia Plan. These NKEAs are expected to make substantial contributions to Malaysia's economic performance.

Private Sector-led, Government Facilitated

The private sector will take the lead role in terms of making investment and employment decisions. The projects and opportunities that are identified in the ETP have been co-created by the public and private sectors. Importantly, most of the projects are mainly funded from private sources. The Government's role will be that of an active facilitator of private sector-led development through resource and policy support.

131 Concrete Entry Point Projects to Kick Start the Programme

The ETP is focused on actions and not concepts. The ETP contains well-developed and specific ideas and actions to grow each of the NKEAs, rather than broad statements of intent. These proposed ideas have been developed through collaboration between the public and private sectors, and in many cases these projects are close to being launched. The ETP also identifies a series of specific policy and regulatory reforms that are needed to drive growth in the NKEAs and Malaysia's broader economy.

Anchoring on GNI to Get Value for Money

Projects and initiatives have been selected on the basis of rigorous financial and economic analysis to ensure that they maximise the return on public sector investment, i.e. GNI per ringgit of public investment. In a challenging fiscal environment, government spending and investment will be directed only to those areas where it can be used in a highly productive manner.

PEMANDU to Ensure Strong, Transparent Delivery

The Government has established an ETP Unit in PEMANDU to deliver and monitor this programme. Clear and demanding key performance indicators will be specified for each of the individual NKEAs and for the ETP as well as for the inclusiveness and sustainability measures. Performance on all measures will be reported publicly every year.

ETP WAS CO-CREATED BY THE PRIVATE AND PUBLIC SECTORS

Thousand Person Workshop Held to Determine NKEAs

The Thousand Person Workshop convened in May 2010 was a unique opportunity for 1,000 professionals, including over 800 up-and-coming leaders of industry, non-governmental organisations, statutory bodies and over 200 leaders in the civil service to jointly determine the focus of Malaysia's economic transformation.

In breakout sessions, groups of 30 to 70 people worked together to set the aspirations for a sector, by jointly assessing Malaysia's historic performance and its potential to bridge the gap to that of best-in-class nations over the next decade.

After the 20 breakout sessions, the facilitators developed a consolidated economic picture depicting how Malaysia could achieve the GNI per capita of a high-income economy by 2020. Each participant in the workshop then voted on what they perceived should be the focus of the ETP: the NKEAs. The resulting votes were then compared to sector studies and an economic model of sectoral growth. The resulting output was endorsed by the Cabinet as the 11 key sectors and 1 geography to focus on.

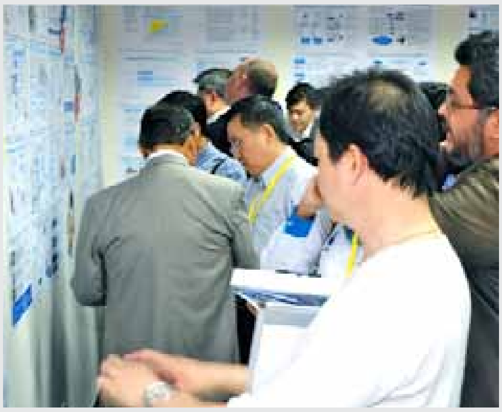
The workshop ended with a united call for commitment from the participating private sector firms and public sector agencies to dedicate their best personnel to the subsequent NKEA labs.

Labs Assembled the Best Minds from Private and Public Sectors to Chart Growth Plans

The 12 NKEA labs that began in June 2010 marked an intense private sector-led effort to determine the in-depth transformation plans needed to ensure Malaysia attains high-income nation status by 2020.

These labs brought together 500 experts, of which 350 were from 200 private corporations and the rest representatives of 60 public institutions (Ministries, agencies and universities), and all dedicated full-time to defining and detailing the ETP.

500
of the best minds



Each lab had 30 to 50 experts possessing an unparalleled depth of expertise and breadth of exposure in the sector. For example, the Oil, Gas and Energy NKEA lab participants had 470 years of collective sector experience, which spanned exploration and production, refining, oil field services, power and alternative energy forms such as nuclear and solar. Each lab was guided by a senior private sector leader to ensure that the ideas generated were innovative, yet pragmatic and rooted in sound business logic.

The overall approach was aligned by a central team of experts from the Economic Planning Unit, Ministry of Finance and Department of Statistics to ensure the lab's ideas were aligned with the design principles outlined in key national strategic plans (such as the Tenth Malaysia Plan) and would help Malaysia achieve the high-income nation target by 2020.

The labs ran for a rigorous eight-week period that began with fact finding and research to identify the best practices, success stories and innovations that Malaysia could adopt. These ideas were distilled through intense collaborative sessions of brainstorming and problem solving among the lab participants and supported by detailed analysis of select ideas that would maximise GNI impact while minimising the need for public-funding support.

The NKEA labs' assumptions, approaches and outputs were also frequently syndicated with key stakeholders during the entire process. There were more than 40 syndication meetings held with the lab sponsors—the lead Ministers and Prime Minister —including an Open Day in early July when the Prime Minister visited each NKEA lab. Additionally there were over 600 syndication meetings with key Government agencies such as the Economic Planning Unit and Bank Negara as well as representatives of major domestic and foreign corporations.

The co-creative efforts of the public and private sectors defined 131 ready-to-execute EPPs with three-feet level detailed plans and 60 broader business opportunities that would help Malaysia reach its GNI targets by 2020. The NKEA labs also secured memoranda of understanding with private sector players during the eight weeks and secured the public funding necessary to kick start 70 projects in 2011. The labs then crafted a clear post-lab delivery plan for each sector to ensure the successful launch and monitoring of the ETP.

Rapid Syndication with Key Stakeholders to Ensure Ownership and Momentum Post Labs

The consolidated output of the NKEA labs as well as plans for individual EPPs and business opportunities were reviewed in detail by the entire Cabinet, which endorsed them at a special Cabinet Workshop held in August 2010. At the workshop, the Prime Minister and the Cabinet publicly pledged their support to private sector companies to develop Malaysia to its fullest potential and re-invigorate domestic and foreign investor confidence.

Following the cabinet workshop, three Open Days were held in Kuala Lumpur, Kuching and Kota Kinabalu to share the results of the NKEA labs and obtain input from the *rakyat*. The clear articulation of Malaysia's ETP was met with significant approval from the *rakyat* and business community who also provided useful insight on how to maximise impact and ensure successful delivery of the projects.

The combined wealth of expertise from the private sector, public sector, senior Government leaders and the rakyat resulted in the crafting of the ETP roadmap detailed here that positions Malaysia better than ever to deliver on the promise of transforming our lives and our community.

BECOMING A HIGH-INCOME ECONOMY

The projects and initiatives identified in the ETP will transform Malaysia into a high-income economy with a GNI of just over RM1.7 trillion in 2020 compared to RM660 billion in 2009. This means that GNI per capita will have risen from RM23,700 or USD6,700 in 2009 to beyond RM48,000 or USD15,000 by 2020. This level of GNI per capita would correspond to that of a high-income economy as currently defined by the World Bank.

Of the GNI growth, up to 31 percent is expected to be delivered by the EPPs plus a further 10 percent through multiplier effects. Business opportunities could deliver an additional 33 percent. The remaining 26 percent of incremental growth is expected from other (non-NKEA) sectors.

The four largest NKEAs (Oil, Gas and Energy, Financial Services, Palm Oil and Wholesale and Retail) are projected to generate 60 percent of the incremental GNI growth from the 11 NKEA sectors. The incremental GNI growth from the initiatives in Greater Kuala Lumpur/Klang Valley is calculated separately to avoid double-counting, as some of the income from the 11 NKEA sectors will be generated in the Greater Kuala Lumpur/Klang Valley area.

Developing the Characteristics of a High-income Economy

By 2020 Malaysia will not only have the GNI per capita of a high-income economy, it will also have a number of the key characteristics of a high-income economy. Specifically, the structure of the Malaysian economy will have changed significantly:

- **Services will account for a much greater share of the economy:** By 2020, services will account for 65 percent of GDP, up from 58 percent in 2010;

- **Domestic consumption will be a key driver of growth:** Domestic private-consumption will account for 59 percent of GDP by 2020, compared to 54 percent in 2009, bringing Malaysia in line with developed economies like Taiwan and New Zealand;

- **A more balanced economy will deliver more sustainable growth:** Through the ETP, the structure of the economy will become more balanced with less dependence on resource-intensive industries such as oil and gas; and

- **Malaysia will become a more urbanised country:** The share of the population living in urban areas will grow from 64 percent to 70 percent and much of this growth will be concentrated in Greater Kuala Lumpur/Klang Valley.

While Greater Kuala Lumpur/Klang Valley will be a primary engine of economic growth, there will also be growth opportunities elsewhere in the country such as the development of the solar industry in Sarawak, the development of a global biodiversity hub to attract more tourists to Sabah and the commercialisation of paddy farming and improvements in palm oil yields. In fact, every state and federal territory in Malaysia will be touched by the EPPs, as shown in *Exhibit 2*.

As the structure of the economy changes, so will the profile of the business sector. Malaysia will have grown a number of new national and regional champions by 2020. These companies will drive long-term growth in areas including financial services, business services and healthcare. In addition, SMEs will play a more significant role across the economy. For instance, in education, agriculture and electronics and electrical, SME participation will be actively encouraged through financial support, better access to research and technologies and improving infrastructure.

Exhibit 2

EPPs will be spread around urban and rural Malaysia

■ At least 1 EPP from this NKEA present in state

	Oil, gas and energy	Financial services	Whole sale & retail	Palm oil	Tourism	E&E	Business services	CCI	Edu-cation	Agri-culture	Health-care
Greater KL/KV	■	■	■		■	■	■	■	■		■
Johor	■	■	■	■	■	■	■	■	■	■	■
Kedah	■	■	■	■	■		■	■	■	■	■
Kelantan	■	■	■				■	■	■	■	■
Melaka	■	■	■		■		■	■	■		■
Negeri Sembilan	■	■	■	■	■		■	■	■		■
Pahang	■	■	■	■	■		■	■	■	■	■
Perak	■	■	■				■	■	■	■	■
Perlis	■	■	■				■	■	■	■	■
Pulau Pinang	■	■	■	■	■	■	■	■	■		■
Sabah	■	■	■	■	■	■	■	■	■	■	■
Sarawak	■	■	■	■	■	■	■	■	■	■	■
Selangor	■	■	■	■	■	■	■	■	■	■	■
Terengganu	■	■	■		■		■	■	■	■	■

Innovation and Productivity-Driven Growth

This growth will be coupled by significant changes in how Malaysia does business. At the centre of many of the planned initiatives will be liberalisation measures to promote competition. These will be especially important in attracting multi-national corporations to Greater Kuala Lumpur/Klang Valley, in developing a regional financial footprint and in stimulating growth in Islamic financial services.

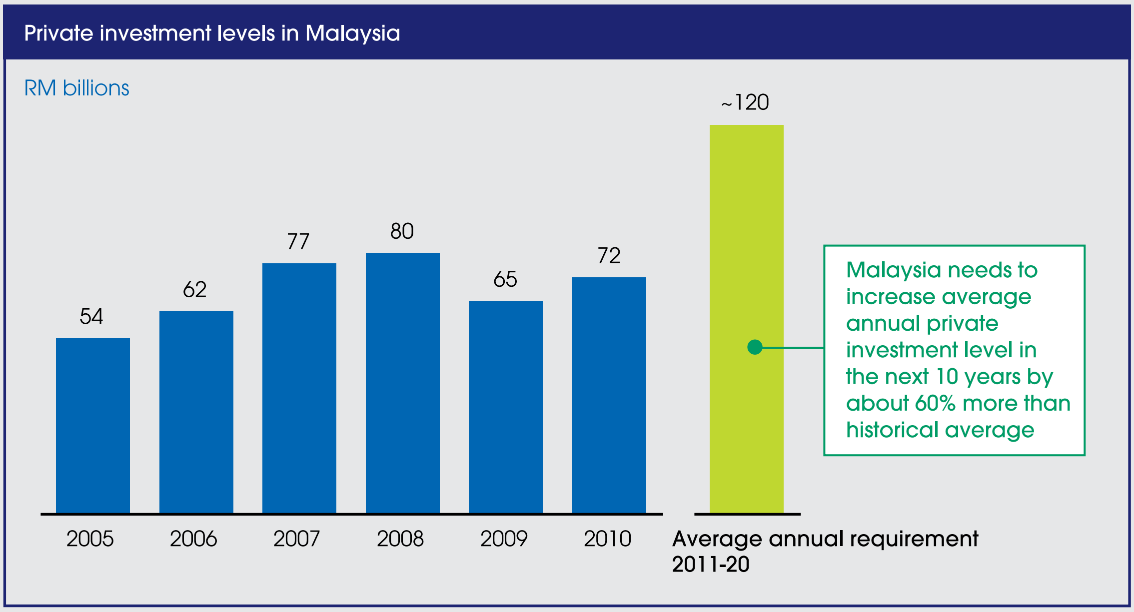
The economy will be driven by innovation and a shift to higher value-add activities, such as higher margin downstream food products for the palm oil sector. While we continue to innovate, there will also be a much greater focus on quality and on improving standards. For example, the quality of skills training will be improved through industry-led bodies that will set standards, issue guidelines on content and harmonise the skills-training curriculum across sectors. Moving towards high-income will also require a marked increase in labour productivity. Initiatives such as introducing new harvesting techniques in oil palm plantations can potentially increase labour productivity by a factor of four.

Private Investment Will Be the Catalyst for Growth

Investment in the Malaysian economy to 2020 will be driven and led by the private sector. Private investment will account for 92 percent of the RM1.4 trillion investment required for the NKEAs from 2010 to 2020 and public funding for only 8 percent. This requires an investment from the private sector of around RM120 billion per year, a significant increase from the RM72 billion in 2010 (*Exhibit 3*).

Exhibit 3

Malaysia will have to generate a significant increase in private investment to deliver the NKEAs



1 Funding requirements for other sectors determined using 2010 GDP share on 2010 private investment requirements

92%

of RM1.4 trillion investment from the private sector

This 92 percent share will bring Malaysia in line with other high-income countries and fits with the new role for Government as facilitator of economic growth. Private investment-led growth also means that the economy will be less dependent on public funding, which is currently constrained by the need to manage the country's fiscal position. Government funding will be targetted at initiatives that will provide the greatest GNI impact for every ringgit of public money spent.

Domestic direct-investment will account for about 73 percent of total private investment with about 27 percent sourced from FDI. Though achieving a high level of domestic investment will be a challenge, Malaysia has a capacity to generate this domestic investment due to the significant gap between our savings and investment rates, which are currently 22 percent and 10 percent respectively.

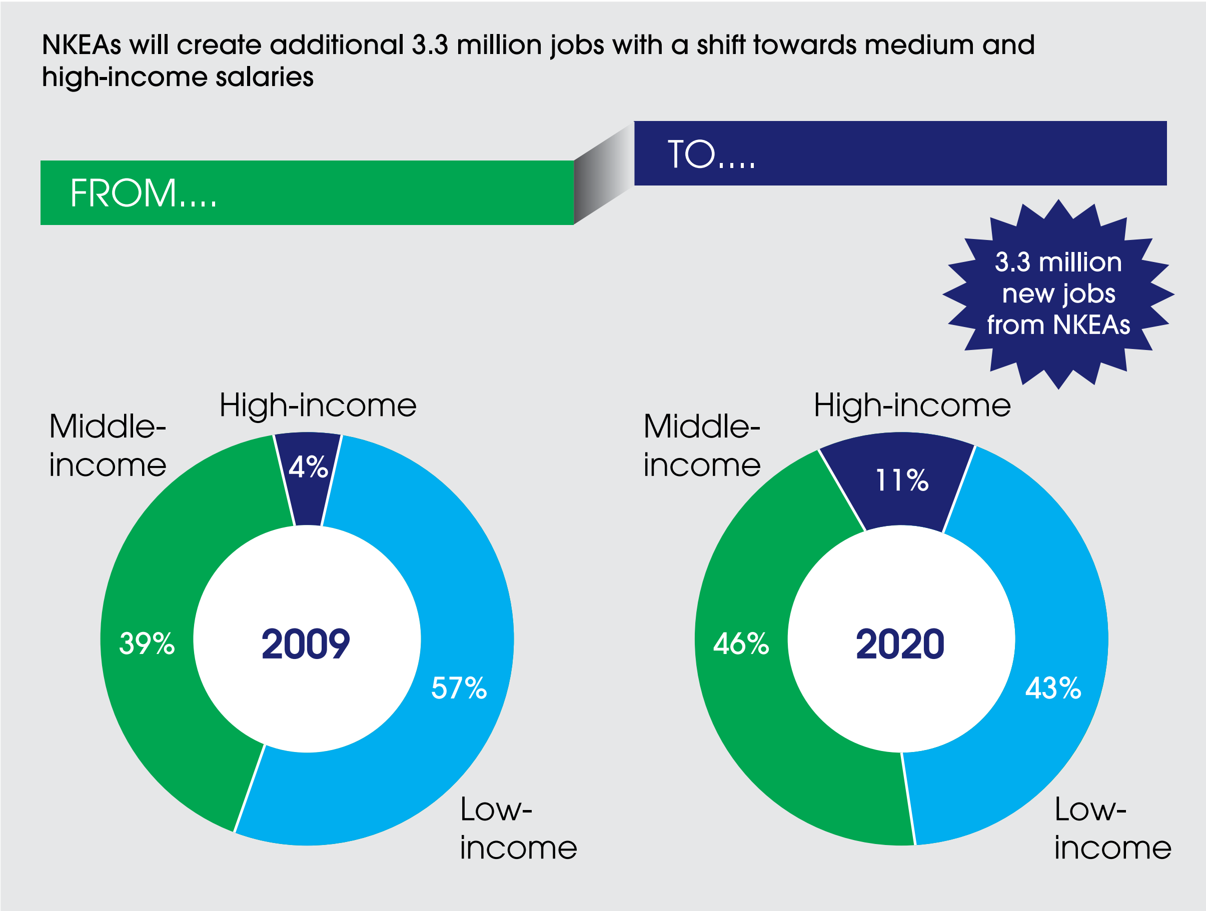
NKEAs Will Facilitate a Shift Towards More Middle and High-income Jobs

3.3

million jobs by 2020, focussed on high-income jobs

The initiatives and reforms of the ETP are designed to deliver growth that will benefit many Malaysians. Many well-paying new jobs will be created. The initiatives are projected to create an incremental 3.3 million jobs. Over 60 percent of these jobs will be middle-income or high-income. The overall effect will be a significant growth in the jobs market, a shift towards higher paid jobs, a wide variety of new opportunities for Malaysians and strengthening of the skills base. Through the new jobs created by the NKEAs and growth in real wages in existing jobs, the number of low-income earners is projected to fall to 43 percent by 2020 (from 57 percent in 2009), as shown in *Exhibit 4*. The percentage of middle-income jobs will increase from 39 percent to 46 percent and the proportion of high-income jobs will increase by almost three times. These new jobs will attract top foreign talent as well as 150,000 high-skilled Malaysian diaspora.

Exhibit 4



SOURCE: NKEA Labs

There will be a better fit between the skills demanded in the labour market and the skills developed. What Malaysia needs most of all is a much larger pool of well-trained and competent individuals with the right vocational and technical training (46 percent of additional jobs). The investment in education in Malaysia is designed to deliver the increased quantity and quality of these vocational and technical qualifications.

MANAGING RISK

The ETP is a highly ambitious programme, and there are certainly risks to implementation. The most significant risk is that the required growth in private sector investment of over 12 percent per annum is not achieved. Since 92 percent of the capital required for the ETP is projected to come from private investment, if this growth in investment does not materialise, the risk is that the economy will not grow in line with the Government's target.

To mitigate this risk, the Government recognises that it has a new role to play in facilitating growth in what is a private sector-led programme of transformation. The Government will be absolutely focused on implementing the reforms identified by the NKEA labs and will target funds to the EPPs, so as to stimulate private investment. In addition, the corporatisation of Malaysian Industrial Development Authority (MIDA) will help enhance Malaysia's ability to attract foreign investment and stimulate domestic investment.

There are other risks to the programme. The global economy is unpredictable and may not grow as quickly as the 4.5 percent projected through the 10 years. There is a limit to what can be done to mitigate this risk. However, the fact that the ETP aims to balance growth across exports and domestic consumption means that Malaysia will be somewhat less exposed to changes in global economic activity than would otherwise be the case.

There is also a potential risk that the delivery of the initiatives will be delayed. This is being tackled head on by the Government. The programme is based on very concrete EPPs and actionable market-driven reforms. There will be clear accountabilities across Government for delivering the reforms and initiatives required to drive economic growth, and a new unit has been established under PEMANDU that will support the ministries, government agencies and private sector in the delivery of the ETP.

HOW WE WILL DELIVER THE ETP

Success of the ETP, is dependent upon effective implementation of the initiatives and actual delivery of the expected outcomes. This will require the public and private sectors to work in true partnership to carry out the 131 EPPs spanning 12 NKEAs.

Our Promise to the Private Sector

To successfully deliver a programme of this scale requires multiple parties to work together in a new way towards a clear common goal. The ETP will require projects to be initiated and carried out by the private sector, and the Government will be held accountable for supporting and facilitating implementation. In this spirit, the Government commits to a specific and actionable Promise to the Private Sector.

Government's Promises to the Private Sector

- Ensure the private sector owns EPPs wherever possible, shifting the public sector's role to providing support and facilitation;
- Fast-track amending regulations, removing barriers and establishing other enablers that are specifically required by EPPs;
- Avoid crowding out private sector investment and focus investment of public funds only as a catalyst;
- Award public contracts for funding EPPs using a merit-based, market-friendly, transparent and rapid process;
- Revamp MIDA to effectively attract foreign and domestic investment at the targetted EPPs;
- Regularly seek and responsively act on feedback from the private sector;
- Provide annual reports to objectively assess the impact of ETP; and
- Maintain ETP as a national priority, ensuring it is prioritised in terms of leadership attention, funding and support.

All of Government Will Come Together and Partner with the Private Sector to Ensure Delivery

To achieve success, we will have to transform EPPs into fully delivered projects. Critical to the implementation of each EPP are three areas—delivery, support and funding. In these, the Government and private sector however will have different focus areas.

The Government will be focused primarily on providing support and high-impact funding. Its role is to ensure that all the relevant enablers are put in place, while removing any hurdles and process delays. Playing a complementary role, the private sector is focused most heavily on funding and delivery. Its role is to fund EPPs with the highest return on capital in sectors where it has proven experience. Companies will also serve as the primary owners for EPP delivery, except in the few cases where it is more natural for the Government to take ownership.

While the private sector will lead the delivery of EPPs and will have responsibility for funding these projects, it will also need to highlight areas where support is required. As such all of Government will come together to ensure delivery. Here are the examples of the roles of Government agencies:

- Ministries will predominantly play a supporting role to resolve any issues that may arise in the implementation of EPPs. However, some ministries may have accountability for the delivery of selected EPPs (varies depending on the NKEA), especially where no natural private sector owner exists;

- Regulators will play a supporting role. Some EPPs may require amendments in regulations or need sector specific incentives. In addition, regulators will coordinate and bring together a group of industry players to collectively implement an EPP or part of an EPP. They will also assess ways to mitigate risks under these projects;

- The Economic Planning Unit and the Ministry of Finance will allocate and disburse the funding for EPPs where public funding is required;

- MIDA will play a supporting role for many EPPs by attracting investment, through marketing and business development activities targetting foreign and domestic investors. MIDA will also seek EPP owners, negotiate incentives where necessary and serve as a one-stop shop for investor contact.
  In some instances, MIDA may lead the first stage delivery of EPPs in the interim, especially those wholly dependent on foreign investment;

- Talent Corporation will provide support to EPPs by executing programmes to attract and retain talent. Similar to MIDA, it may be accountable for the delivery of select EPPs, especially those dependent on attracting talent;

- PEMUDAH (a special taskforce to facilitate business) and the rebranded and restructured Malaysia Productivity Corporation will provide support to NKEAs by reviewing and recommending changes to existing regulations and policy with a view to remove unnecessary rules and compliance costs and improve the speed and ease of delivery;

- UKAS (Unit Kerjasama Awam Swasta), a unit under the Prime Minister's Department to facilitate public-private partnership (PPP) will provide support to EPPs eligible for funding via the Facilitation Fund and in structuring PPPs where relevant; and

- Government-linked investment entities like Khazanah Nasional Berhad and PNB *(Permodalan Nasional Berhad)* will provide funding support by co-investing in EPPs that meet their investment criteria.

ETP Unit has been Established to Facilitate Implementation and Delivery

The size and scope of the transformation programme requires a central facilitation team to bridge together disparate units of government, provide a link to the private sector and present a platform to resolve issues that arise throughout implementation.

The programme will be driven by ETP Unit, a division of PEMANDU. ETP Unit will function as a standalone division with dedicated full-time staff, accountable to PEMANDU's Chief Executive Officer.

ETP Unit's mandate will require its involvement across many aspects of ETP delivery. Its primary role includes architecting the ETP and resolving issues that arise in implementation, mobilising investment by bringing parties together and raising the pressure to perform to accelerate delivery. Additionally, ETP Unit will continue to monitor progress of the EPPs and ensure accountability on both the project owner as well as supporting government institutions. Finally, the unit will be responsible for regular and transparent reporting across NKEAs and the overall ETP.

ETP Unit will form strong linkages and a partnership with the EPU, to ensure alignment on the allocation and disbursement of funding for the programme, which includes direct funding for EPPs as well as for the enablers. The EPU will also ensure that the funding requirements of the ETP will be incorporated in the two-year rolling plans and the Eleventh Malaysia Plan.

Performance Monitoring and Reporting of the NKEAs

The size and scale of our transformation programme requires that each one of the EPPs has clear accountability for ownership, that each of the 12 NKEA areas has robust governance structures in place and that active monitoring and reporting of progress takes place across the entire programme. While specific governance details may differ slightly across NKEAs, there are two common structural elements.

First, the EPPs will have single point accountability. This will in most cases be a natural owner from the private sector, except in cases where public sector ownership is more appropriate. Each EPP owner will be held accountable for milestones set out by the ETP lab groups.

Secondly, there will be common governance structures across NKEAs. Each NKEA will ultimately report to the Prime Minister. There will be a Steering Committee that oversees the success of overall GNI and job targets for each NKEA and works with EPP owners to ensure project milestones are met. The Steering Committee is chaired by the relevant Lead Minister who bears accountability for meeting these targets as they will be translated into KPIs for each Minister. The Steering Committee will typically include senior representatives from both the Government and private sector. The EPP owner will be tasked with executing the projects, consulting and informing ETP Unit if issues arise and reporting progress to the Steering Committees.

Allocating Funding to Achieve the Highest Impact

While the private sector is responsible for driving and funding a significant portion of the ETP, public funds will play an important role in catalysing investment in areas where additional support is needed.

We commit ourselves to safeguarding public resources by allocating funding according to our delivery principles. In this spirit, we will ensure that public funding is prioritised by GNI impact, allocated to owners that are transparently selected based on merit and disbursed according to performance that is judged against milestones and key performance indicators.

Prioritising public funding according the highest return projects

NKEAs have been carefully selected, and each has a significant material impact on the GNI of our nation. As such, we plan to concentrate our development budget on the ETP to ensure it has the funding required for success. Any public spending will be allocated on the basis of maximising GNI per public ringgit of investment.

Transparently selecting owners based on merit

An important element of the programme is ensuring that public funds are distributed through a process that is both transparent and based on merit. Many of the EPPs will not need any Government funding and are open to any company that chooses to take advantage of the opportunity. However, in cases where EPPs require public funding, the Government will conduct a transparent bidding process that complies with the transparent and merit-based assessment processes utilised by the Ministry of Finance.

Distributing funds based on performance

Steering Committees are tasked with ultimate accountability for ensuring that public funding is allocated within each NKEA in a manner that rewards performance. As such, ongoing funding will only be distributed to EPPs where performance meets the milestones defined by ETP labs. In cases where milestones are not met by the specified timeline, a Steering Committee has the responsibility to change the terms of public funding, or withdraw any future funding.

Ongoing funding and capturing future growth opportunities

Funding for the ETP as approved by the Cabinet has been secured and will be allocated in a series of ongoing tranches. The initial tranche of funds for 2011 to 2012 were approved by the Parliament in October 2010. Funds for 2013 to 2015 will be approved in 2012 during the two-year planning cycle as stated in the Tenth Malaysia Plan. Funding for the programme from 2015 to 2018 will be approved under the Eleventh Malaysia Plan. Finally funding for 2018 to 2020 will be approved in 2017.

Over time we have the flexibility to rebalance our funding for NKEAs and EPPs, while limiting the maximum number of NKEAs carried out at any given time to 12. The current set of NKEAs reflects the areas that have the highest GNI growth forecast by 2020, and it is likely that there may be significant growth in other non-NKEA sectors in the future as markets and the environment changes. Furthermore, there may also be cases where EPPs will be removed from the programme if they do not meet GNI and job targets.

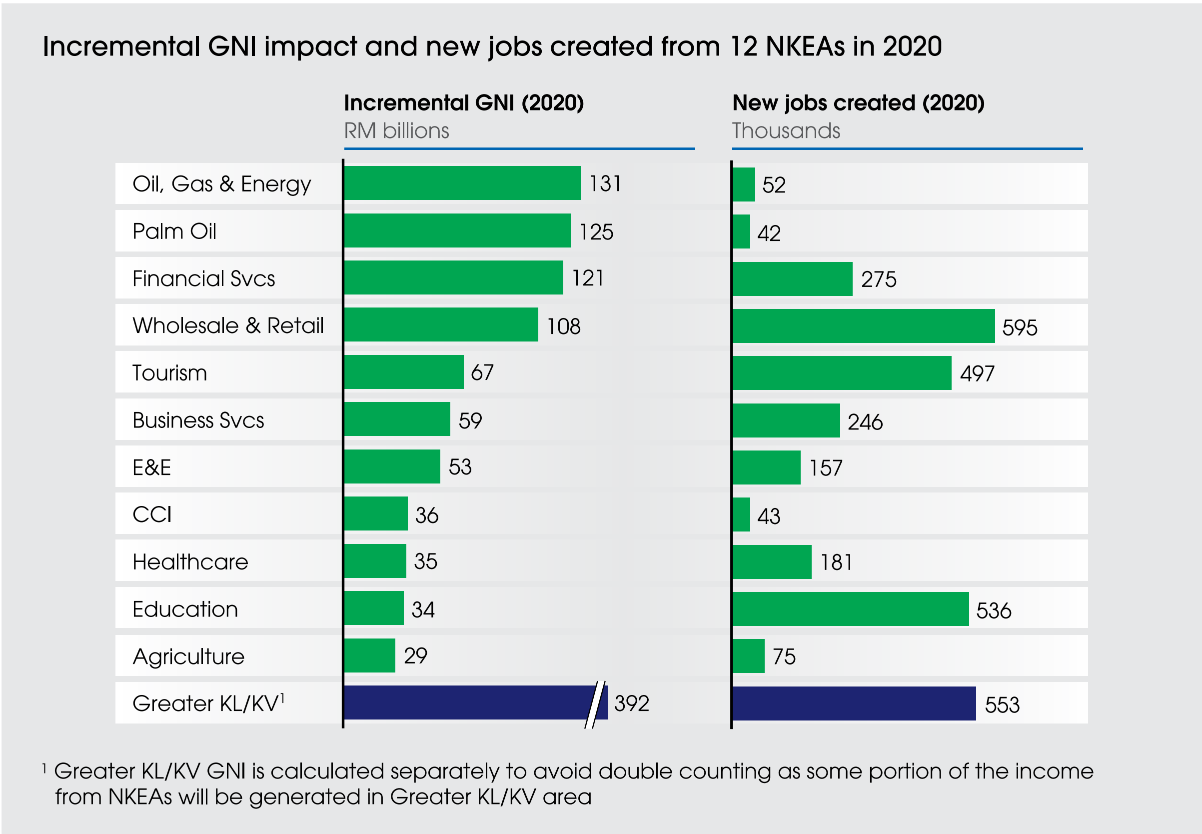
To rebalance the set of NKEAs and EPPs, when it deems it appropriate, ETP Unit may recommend that a new lab process be put in place. This process will bring together participants from both the public and private sectors and will be transparently shared with the public in the spirit of the ETP.

131 Concrete Entry Point Projects

RM0.8 TRILLION INCREMENTAL GNI IMPACT DELIVERED FROM EPPS, BUSINESS OPPORTUNITIES AND MULTIPLIER EFFECT

The ETP will transform the Malaysian economy and deliver the increased GNI required to become a high-income nation by 2020 (*Exhibit 5*). The following sections outline the programmes of each of the 12 NKEAs.

Exhibit 5



Greater Kuala Lumpur/Klang Valley

Where we are today

Greater KL/KV is already on the global map as one of the iconic cities of Southeast Asia. It boasts world-renowned landmarks such as the PETRONAS Twin Towers, a unique blend of diverse cultures and heritage, an extensive road network and high quality basic services such as water and electricity. However, it now faces fierce competition from neighbouring cities in attracting talent and multinational corporations. Its liveability lags many other Asian cities, public transport remains inadequate and many natural assets remain untapped.

Vision for the future

The Greater KL/KV NKEA's vision can be summarised as 20-20 by 2020—that is, to be a city that simultaneously achieves a top-20 ranking in city economic growth (as defined by city GDP growth rates) while being among the global top-20 most liveable cities by 2020.

Targets and aspirations

Our economic aspiration is to grow GNI contribution from approximately RM258 billion to RM650 billion per year. This should move GNI share from approximately 30 percent of the nation's GNI to approximately 40 percent. Growth in Greater KL/KV economic activities will increase total employment from 2.5 million in 2010 to 4.2 million by 2020. Additional aspirations include increasing per capita GNI from RM40,000 to RM70,000 per year, achieving a top-20 ranking in the EIU Liveability Index survey and growing the population from 6 to 10 million, with a focus on growing the foreign talent base from 9 percent to 20 percent of the population.

Nine EPPs along four dimensions have been identified to deliver on the Greater KL/KV aspirations.

1. **Greater KL/KV as a magnet:** Dynamic international and regional multinational companies that are emerging leaders within targetted sub-sectors will be encouraged to locate their global or regional headquarters in Greater KL/KV. This will be supported by internal and external immigration programmes to grow Greater KL/KV's population to 10 million by 2020, with a focus on higher-value jobs.

2. **Greater KL/KV connect:** Regional connectivity will be accelerated by deploying a high-speed rail system to connect Greater KL/KV and Singapore. At the same time, intra-city connectivity will be improved with a mass rapid transit system.

3. **Greater KL/KV new places:** High potential destinations within Greater KL/KV will be identified as attractions and upgraded to enhance liveability for residents and draw tourists and migrants looking to visit or relocate to Greater KL/KV. For instance, downtown KL City is blessed with two rivers and valuable waterfronts that will be exploited as retail and commercial centres. In addition, we will increase the amount of green space essential to improving the city's overall quality of life. Also, Greater KL/KV has many natural assets that can be leveraged as points of attraction (e.g. the old Pudu Jail site with its iconic gate). Strategic redevelopment with sharply defined boundaries has the potential to create more iconic places within Greater KL/KV.

4 **Greater KL/KV enhanced services:** Gaps in basic services will be addressed to ensure a well-functioning and liveable city. Pedestrian walkways within KL city are woefully inadequate and not integrated. Fixing this will enhance not only the liveability of the city, but also boost tourism and commercial potential. We will also improve provision of adequate solid waste management collection and processing.

Enabling growth

Greater KL/KV EPPs will require a cumulative funding of RM172 billion from 2010 to 2020, 34 percent of which is expected to come from the public sector.

Oil, Gas and Energy

Where we are today

The oil, gas and energy sector has been a mainstay of Malaysia's growth and contributes approximately 20 percent of national GDP. With the prospect of decreasing production from a maturing asset base, we will have to pursue sector-wide opportunities to reach the ambitious real annual-growth target and provide a sustainable energy platform.

Vision for the future

By 2020, Malaysia will have a more diversified oil, gas and energy sector that remains vital to our development, and that builds on the nation's competitive advantages. A key thrust would be to intensify exploration and enhance production from domestic reserves. We will also develop a strong regional oil field services and equipment hub and a stronger presence in the regional midstream logistics and downstream markets. Finally, Malaysia has the potential to grow alternative energy sources such as nuclear, solar and hydro to overcome the decline in domestic natural gas production.

Targets and aspirations

The Oil, Gas and Energy NKEA is targetted to raise total GNI contribution to RM241 billion by 2020 from RM110 billion in 2009. As the base case projects a natural 2 percent decline in oil and gas production, this GNI target will require the NKEA to grow at an ambitious rate of 5 percent.

In achieving this, an additional 52,300 jobs will be created. A significant proportion of these jobs will be highly-skilled jobs with an estimated 21,000 jobs for qualified professionals such as engineers and geologists, with monthly salaries in the range of RM5,000 to RM10,000.

A total of 12 entry point projects have been developed across four themes to raise the sector's output and meet energy demand over the 10-year timeframe.

1 **Sustaining oil and gas production:** Three EPPs will overcome the projected decline of 1 to 2 percent in domestic oil and gas production—capturing value from mature fields through enhanced oil recovery, using innovative solutions to develop small fields and intensifying our exploration activities.

2 **Enhancing growth in downstream:** Malaysia can capture the value created from increasing international flows of crude oil and refined products by building a regional oil-storage hub and developing a regasification terminal for imported liquefied natural gas.

3 **Making Malaysia the number one Asian hub for oil field services:** Malaysia will attract multinational corporations, consolidate domestic fabricators to increase their likelihood of winning major contracts and partner with world-class companies to establish a presence in the construction and installation portion of the value chain.

4 **Building a sustainable energy platform for growth**: Malaysia will diversify its energy sources beyond gas to fuel growth and honour our commitment to lower carbon emissions. Alternative sources such as solar and nuclear power will be developed, while at the same time energy efficiency measures will also be undertaken.

Enabling growth

Achieving our ambitious target will require RM218 billion in funding. Of this, less than 1 percent will be from the public sector. Additionally RM64 billion will be needed to offset the current decline in oil production, and the tax rebates to enhance energy efficiency will likely require RM12 billion.

Three key enablers need to be in place to ensure we achieve our target. These are providing effective investment support to ensure investors are actively courted and deals are enabled; ensuring investors can bring in the necessary expatriate talent; and introducing measures to increase the supply of graduates to staff the approximately 21,000 new jobs created at or above graduate level by 2020.

Financial Services

Where we are today

The importance of the financial services sector to the Malaysian economy has been growing over the past decade, with the financial services sector's share of GDP growing from an average of 9.9 percent of GDP between 2000 and 2005 to an average of 10.9 percent over the period 2006 to 2009. However, the sector faces critical challenges, including lack of scale, lack of liquidity and diversity in the capital markets, low levels of financial literacy and competition from regional financial centres such as Singapore, Hong Kong and increasingly Indonesia.

Vision for the future

We aim to evolve Malaysia's financial services sector to serve the needs of businesses and consumers in a high-income economy and to increase its depth and regional and global market shares in select niches.

Targets and aspirations

The Financial Services NKEA is targetted to raise total GNI contribution by RM121 billion to reach RM180 billion by 2020. In addition, through this NKEA, an additional 275,000 jobs will be created, with 56 percent of them offering an average income of above RM4,000 per month.

In order to achieve this vision, we have identified a portfolio of EPPs for the financial services sector along four strategic thrusts.

1 **Strengthen the core:** We will ensure all facets of the industry remain healthy and vibrant and are able to effectively and efficiently support the needs of businesses and consumers. This means revitalising our capital markets, deepening and broadening our bond markets, transforming developmental finance institutions and creating an integrated payments ecosystem.

2 **Serve the needs of the high-income population:** We will evolve the products and services that financial institutions offer to serve the changing needs of our citizens and residents as the nation migrates towards higher-income status. This means insuring our population, accelerating the growth of our private pensions industry and spurring the growth of our wealth management industry.

3 **Develop new growth sectors:** We will seed new sectors for growth, starting with accelerating and sustaining a significant asset management industry.

4 **Go on the offensive:** We will encourage our financial institutions to go on the offensive and tap external markets for their continued growth. This means developing regional bank champions and becoming the indisputable global hub for Islamic finance.

Enabling growth

Achieving our growth targets of growing the financial services sector by three times by 2020 will require cumulative funding of RM211 billion over the next 10 years. The public sector is expected to provide 4 percent of this investment.

Underlying all of these initiatives are industry-wide barriers that need to be addressed, some urgently and dramatically, or we will fail to deliver on these aspirations. These include devising ways to create an attractive business environment for international and long-term capital, improving our ability to attract, develop and retain talent, organising a more seamless regulatory environment, improving tax competitiveness and improving Malaysia's reputation or brand in financial services.

Wholesale and Retail

Where we are today

Malaysia's wholesale and retail sector (hereafter shortened to retail) is a significant contributor to GNI. It contributed about RM57 billion to GNI in 2009 and also contributed around 500,000 jobs. To achieve our 2020 GNI target, retail will be a key driver of domestic consumption, which in turn will lead to economic growth.

In recent years, retail seems to have gone into a decline. For instance, AT Kearney's Global Retail Development Index places the Malaysian retail sector in 17th position among 30 emerging economies in 2010, down from 10th in 2009 and 8th in 2008.

Vision for the future

We aim to increase the importance of retail as a driver of domestic consumption, hence the need to reverse the decline of the sector. We target to more than double its GNI contribution by 2020.

Targets and aspirations

We aim for the Retail NKEA to raise GNI contribution by RM108 billion to reach a total contribution of RM165 billion per annum by 2020.

The Retail NKEA EPPs will also create around 370,000 new jobs over the next 10 years. Of this, 7,800 will be senior management posts, 11,600 managerial, 19,000 professional and technical, 19,000 executive, 37,000 supervisory, 18,000 clerical and the rest operational. In addition, business opportunities will create around 225,000 jobs.

A total of 13 EPPs have been developed across five themes to deliver the GNI growth.

1. **Growing the success of large retail businesses:** We will support the expansion of large retail businesses like hypermarkets, malls and big box boulevards. In doing this, we will give special attention to large local-retail companies in their efforts to expand domestically and overseas.

2. **Modernising small- and medium-sized retail businesses:** We will mitigate the effects of large format expansion on small- and medium-sized local players by supporting the latter to transform their efficiency and service levels. This will cover small retailers (e.g. grocers), market traders, automotive workshops and food centres.

3. **Removing import duties to encourage retail expenditure:** We will make most imported retail products duty-free, making them cheaper for consumers and hence increasing consumption.

4. **Boosting retail expenditures of tourists:** We will intensify initiatives to raise local and foreign tourist expenditure on goods and services. This will be through setting up wellness resorts, organising unified sales and intensifying the transformation of KLIA into a retail hub.

5. **Expanding revenues from online retail:** We will encourage the expansion of online retail by developing a local platform. This would help local retailers to distribute their products online and match them with consumer searches.

Enabling growth

The total funding requirement for the Retail NKEA amounts to RM255 billion, of which almost 100 percent will be funded by the private sector.

Common enablers will be put in place to make it easier for retailers to do business and at the same time increase the level of competition and choice for customers. These enablers are in the areas of increasing access to finance, further liberalising the retail sector to make setup and expansion easier, upgrading transportation infrastructure and growing human capital in the sector.

Palm Oil

Where we are today

Malaysia's palm oil industry is the fourth largest contributor to the national economy and currently accounts for RM53 billion in GNI. The industry spans the value chain from upstream plantations to downstream processing. The development is mainly private sector driven and remains heavily skewed towards upstream activities. However, with limited land available to expand plantations, Malaysia will need to enhance upstream productivity and capture the full potential of existing downstream opportunities to sustain growth in this sector.

Vision for the future

Palm oil will remain a major contributor to the Malaysian economy over the next 10 years building on a core set of advantages including rising relative-demand globally versus substitutes, continued high oil-yield per hectare over substitutes, distinctive edge in yield and quality over competitor nations such as Indonesia and a conducive regulatory environment. These would be supplemented by superior productivity through mechanisation and a stronger presence in the lucrative downstream segment.

Targets and aspirations

The Palm Oil NKEA is targetted to raise total GNI contribution by RM125 billion to reach RM178 billion by 2020. In achieving this, an additional 41,000 jobs will be created, of which 40 percent will be high-skilled jobs earning average monthly incomes of RM6,000.

The NKEA plans to implement eight core EPPs that span the palm oil value chain.

1. **Upstream productivity and sustainability:** These EPPs will focus on improving upstream productivity and transforming Malaysia's oil palm plantations by accelerating the replanting of aging oil palms, mechanising plantations using equipment such as Cantas™, stringently enforcing best practices to enhance fresh fruit-bunch yield, implementing strict quality control parameters to enhance oil extraction rate and developing biogas facilities at palm mills to capture the methane gas released during the milling process.

2. **Downstream expansion and sustainability:** These EPPs will target capturing the lucrative downstream segment where Malaysia has little presence today by focusing on developing finished segments that generate high value, including oleo-derivatives and selected food and health-based segments, as well as commercialising second-generation bio fuels from the resulting bio mass that is generated in the industry.

Enabling growth

Achieving our aspirations will require cumulative funding of RM124 billion over the next 10 years with 98 percent of the funding coming from the private sector. The total public funding for capital expenditure is expected to be RM2.9 billion with an additional RM2.7 billion in the form of tax incentives, soft loans and cash incentives to promote private-sector development in the downstream sector.

There are also three key sector-wide enablers that must be set up including increasing the number of university courses and graduates in chemical engineering, bio engineering and related courses to meet the demand for the nearly 80,000 skilled personnel; extending the Brain Gain Malaysia programme to Malaysian diaspora who are food scientists and fast-moving-consumer-goods marketing specialists in leading global food and non-food downstream companies; and industry companies and Government agencies such as Malaysian Palm Oil Board playing a key role in collecting information such as business intelligence and product intelligence to ensure we stay ahead of the industry.

Tourism

Where we are today

Malaysia is one of the world's top destinations, in the top 10 in arrivals and top 15 in global receipts. Tourism is our fifth largest industry, generating RM37 billion in GNI in 2009. The industry is expected to continue growing with arrivals rising from 24 million in 2009 to 36 million in 2020.

Vision for the future

Malaysia's growth in tourism has mostly relied on growth in arrivals rather than yield: 75 percent of growth has been from increased arrivals and 25 percent from increased yield. Going forward, we must focus on growing yield. To attract the higher-yield segment, we will need to both improve and upgrade our offerings and services and enhance connectivity to our key priority markets.

Targets and aspirations

The tourism industry is targetted to raise total GNI contribution by RM67 billion to reach RM104 billion by 2020. This will require the sector to triple from the starting position of RM37 billion in 2009.
This incremental increase is driven by 12 EPPs, which will deliver RM28.4 billion in incremental GNI and three business opportunities that will deliver RM28.6 billion in incremental GNI. In achieving this, an additional 497,000 jobs will be created.

A total of 12 EPPs have been developed across six themes to deliver significant results within a 10-year timeframe.

1. **Affordable luxury:** Shopping currently accounts for 28 percent of our total tourism receipts, compared to 35 percent in Singapore and 57 percent in Hong Kong. We will position ourselves as a shopping destination and aim to grow shopping receipts to 35 percent by 2020.

2. **Nature adventure:** Malaysia aims to become one of the world's best offerings of biodiversity. We target to have a recognised network of different biodiversity sites of international calibre, which will be developed and/or rehabilitated and allow for tourist participation in rehabilitation activities.

3 **Family fun:** This theme primarily targets the rapidly growing middle-class of India, China and the Middle East, which represent about 48 percent of global population but only 13 percent of global tourism departures, and offers them a destination in Southeast Asia for family entertainment.

4 **Events, entertainment, spa and sports:** Malaysia lags our neighbours in the magnitude and variety of events as well as in our nightlife offerings. Hosting more international events and promoting a vibrant nightlife is necessary to attract tourists and provide a boost to the tourism industry.

5 **Business tourism:** Business tourism represents a small part of our industry, with just 5 percent of total arrivals and 19 percent of receipts (2009), unlike Singapore, where it accounts for 30 percent of tourist arrivals and 40 percent of receipts. We believe there is potential to further grow this segment.

Cross-theme projects — Medium-haul connectivity and better quality hotels:
Two cross-theme projects will support delivery of the other projects: enhancing connectivity to priority medium-haul markets and improving the rates, mix and quality of our hotels.

Enabling growth

Achieving our aspirations will require RM204 billion in funding over the next 10 years. Of this funding, only 2 percent is expected to come from the public sector. We have identified four sector-wide enablers critical to unleashing the sector's full potential. They are increasing and focusing our marketing in priority markets; re-introducing selective visa on arrival; ensuring an adequate supply of qualified human capital; and improving the tourism environment by improving offerings and accessibility (e.g. taxi services), access to funding and quality of frontline staff.

Electronics and Electrical

Where we are today

The Electronics and Electrical sector (E&E) is an important contributor to the national economy, accounting for RM37 billion in GNI (6 percent of national GNI), 522,000 jobs and 41 percent of Malaysia's total exports in 2009. The sector has spawned successful local firms and virtually every leading global firm operates here.

Nonetheless, E&E faces significant challenges in maintaining growth in the face of competition from China, Taiwan, Singapore and other Asian countries. In the last decade, E&E's share of exports has declined. Furthermore, our focus has been on assembly, the lower value-added segment, while other countries have captured higher value-added activities in research and development, design and manufacturing.

Vision for the future

We aim to strengthen Malaysia's E&E capabilities across the value chain, particularly in higher value-added upstream activities. Our focus will also be on attracting more leading multinational companies to operate in Malaysia and creating more Malaysian champions.

Targets and aspirations

We will revitalise Malaysia's E&E sector to increase GNI by RM53 billion to reach RM90 billion by 2020 and provide an additional 157,000 jobs (both high-skilled and medium-skilled).

Our strategy is to focus on 15 EPPs across four geographic clusters (Northern Corridor, Greater Kuala Lumpur/Klang Valley, Johor and Sarawak) and five target sub-sectors.

1. **Semiconductors:** Our efforts in this important part of our E&E sector have been typically in areas with lower value-add such as test and assembly. We will follow a strategy of building on our strong foundations in mature technology semiconductor fabrication and expanding into advanced packaging and design of integrated circuits as well as supporting the growth of substrate manufacturers.

2. **Solar:** With a strong start in solar and solid experience in the similarly structured semiconductor industry, Malaysia has a promising future in a promising technology. By 2011, we will have the third largest market share in the world. A concerted effort to increase the number of silicon, wafer, cell and module producers will allow us to leap into second place of a much larger industry by 2020.

3. **Light-emitting diodes:** Malaysia has a strong lead in solid-state lighting, one of the fastest growing segments. We need to move up the value chain from packing and testing to chip and application research and development by creating a cluster of international and domestic companies.

4. **Industrial electronics:** Industrial electronics involves the manufacturing of precision equipment used in industrial and commercial settings. Test and measurement, wireless communication, transmission and distribution and automation markets are the most attractive for further development.

5. **Electrical home appliances:** Malaysia has been successful domestically with the development of strong local home appliance companies. The next step is to grow scale and build a strong international distribution network.

Enabling growth

The total cumulative funding requirement from 2010 to 2020 is RM78 billion, with 12 percent coming from the public sector, and the remaining 88 percent from the private sector.

We have also identified common enablers critical to the success of the E&E industry. The enablers are grouped into those specific to the four key regional clusters (e.g. granting MSC status) and more general cross-cutting enablers grouped by government role (e.g. removing restrictive regulations), talent (e.g. increasing training courses), infrastructure (e.g. enhancing stability of electricity supply to industrial parks) and technical ecosystem (e.g. establishing centres of excellence).

Business Services

Where we are today

Malaysia's business service sector contributes RM20 billion to GNI in 2009 or 2.9 percent, creating significant scope for growth. In other emerging markets, like China and the Philippines, the business services sector is forecasted to grow by around 11 percent over the next decade. Malaysia should aim to match or even surpass these levels, if it expects to meet its GNI growth rates.

Vision for the future

By 2020, we would like to move closer to the benchmark of developed markets like the United Kingdom, where the business services sector contributes roughly 20 percent of both GDP and employment and 14 percent of exports. We believe a vibrant business services sector will be beneficial as it is a high value-add sector, generates significant multiplier effects in the economy and raises overall productivity across the economy.

Targets and aspirations

We aim to grow the GNI contribution of the business services sector by RM59 billion to reach RM79 billion in 2020. This incremental increase is driven by six EPPs and three business opportunities that will deliver an additional 246,000 jobs by 2020.

A total of six EPPs have been developed across two themes to deliver significant results within a ten-year timeframe.

1. **Accelerate the growth of differentiated sectors:** As a small country, Malaysia's supply of talent is dwarfed by regional giants such as China and India. For example, it is estimated that China has a total pool of 1.6 million engineers, compared with just 49,000 in Malaysia. Likewise, India has a pool of around 2.3 million finance and accounting professionals, compared with Malaysia's 83,000.

   To compete, Malaysia needs to sharpen the focus of its business services sector. This means concentrating attention on the sectors in which it has an advantage and where its products and services are differentiated.

2. **Develop future growth segments:** In a world of accelerating change and increasing competition, Malaysia cannot afford to stand still. While capitalising on our current strengths, we must also look to the future and identify the industries and jobs that will drive growth in the next decade and beyond.

   There are numerous examples of forward-looking countries that have stolen a march on their rivals by investing early in nascent sectors. For example, in the early 2000s, South Korea invested heavily in broadband connectivity, resulting in the highest broadband penetration in the world. This spurred growth across a range of products and services, including smart phones, wireless technologies and home entertainment services such as video on demand.

Enabling growth

Achieving our aspirations will require RM41 billion in funding over the next 10 years, of which only 9 percent is expected to come from the public sector.

We have also identified one sector-wide enabler critical to unleashing the full potential of the sector — increasing the skill of our workforce to meet the needs of our services sector. We recommend a set of actions focused on increasing the relevance of skills education and training to industry demands, attracting global talent and increasing the participation of skilled women in the services workforce to 45 percent.

Communications Content and Infrastructure

Where we are today

The Communications Content and Infrastructure (CCI) sector spans a wide ecosystem, from content generation to networks, services and devices. In 2009, the sector contributed RM22 billion of GNI from telecommunications, TV and broadcasting as well as post and courier.

For Malaysia to transition from a middle-income to high-income economy the continued development of the communications content and infrastructure sector is fundamental. The sector should now build on the infrastructure investments of the past and shift to providing applications and content in order to enable the knowledge-based society.

Vision for the future

The CCI NKEA aims at driving continued high growth in communications and enabling the paradigm shift from infrastructure to applications and content.

Targets and aspirations

We will raise the sector's GNI contribution by RM36 billion in 2009 to reach RM58 billion by 2020. This incremental increase is driven by 10 EPPs that will deliver RM16.6 billion in incremental GNI and four business opportunities that will deliver RM11.7 billion in incremental GNI. In achieving this, an additional 43,000 jobs will be created.

A total of 10 EPPs have been developed across three themes to deliver significant results within a 10-year timeframe.

1. **Serving tomorrow:** We will address the paradigm change of shifting profit pools to content and services by strengthening Malaysia's domestic value-add in advanced applications, particularly content creation and platforms, payments and electronic commerce and connectivity applications.

2. **Pushing boundaries:** We will fully leverage communications content and infrastructure in other sectors through coordinated efforts to provide access, devices, applications and content and facilitate the shift to a knowledge-based economy, particularly in e-Learning, e-Healthcare and e-Government.

3 **Enhancing foundations:** Capitalise on next-generation infrastructure opportunities and build infrastructure to support the future growth of Malaysia, with particular focus on coverage, affordability and quality of access.

Enabling growth

Achieving our aspirations will require RM51 billion in funding over the next 10 years, of which only 2 percent is expected to come from the public sector.

One sector-wide enabler critical to unleashing the full potential of the sector is improving human capital. Having the right human capital is critical to the success of initiatives within CCI, and the positive outcome of this NKEA will be driven greatly by the level of qualification and skills that the sector attracts and develops.

Education

Where we are today

Education is one of the most critical drivers for our transformation from a middle- to high-income nation due its impact on productivity and human capital development. It is also an engine of growth in its own right. The sector contributes approximately RM27 billion or 4 percent of GNI in 2009. There are several important opportunities for improvement as the current education sector is filled with sub-scale SMEs, has limited international focus and lacks harmonised regulations.

Vision for the future

The focus of the Education NKEA will be on strengthening the private education services sector by increasing private consumption and investments as well as expanding education exports. We envision a rebranding of Malaysia—from a stopover location for education to a major education centre of choice and a pivotal hub in the global education network. We envision a 2020 where education is a big business that delivers significant, widespread and sustained GNI impact, while raising standards and widening access. Only then will Malaysia be able to develop the first-world talent base that it both needs and deserves.

Targets and aspirations

The Education NKEA is targetted to raise total GNI contribution by RM34 billion to reach RM61 billion by 2020. As public sector growth is expected to be limited, this goal will require the private education sector to grow six-fold.

In achieving this, an additional 536,000 jobs will be created, with the majority of them in professional and technical fields. We also aspire to triple our foreign student enrolment from around 70,000 today to 200,000 by 2020.

A total of 13 EPPs have been developed across three themes to raise overall education standards and deliver significant results within a 10-year timeframe.

1 **Rapid scale-up initiatives:** A major challenge for the industry is fragmentation and lack of scale. Accordingly, we need to encourage existing providers to increase capacity, or make it easier for new providers to enter the market. At the same time, we need to maintain high-quality standards and prevent any crowding out of existing providers.

2 **Concentration and specialisation initiatives:** A discipline cluster is a network of academic institutions and industry players that partner to improve offerings and raise standards so as to expand their reach and recognition. Such clustering will enable Malaysian institutions to address the challenges of scale and quality that beset the industry by allowing them to leverage shared resources, jointly mitigate risks and develop proprietary quality standards in coordination with industry. Multiple discipline clusters can be developed to meet the human capital pipeline needs of each NKEA sector.

3 **Demand generation initiatives:** There are significant opportunities across the education sector to substantially increase individual willingness to pay for high-quality course offerings as well as to export education by developing Malaysia as a regional education hub.

Enabling growth

Achieving our aspiration of six-fold growth will require RM20 billion in funding over the next 10 years, of which only 6 percent constitutes new public funding.

We have also identified five sector-wide enablers critical to unleashing the full potential of the private education market, ranging from improving access to supply-side financing to raising quality through regulatory reform. These enablers will help private providers meet demand opportunities, promote more public-private partnerships in the funding of education and empower students and families as paying consumers.

Agriculture

Where we are today

The agriculture sector plays an important role in Malaysia's economic development—providing rural employment, uplifting rural incomes and ensuring national food security. Excluding industrial crops such as palm oil and rubber, the agriculture sector contributed RM20 billion or 4 percent of Malaysia's GNI in 2009. Traditionally labelled as the poor man's sector, the face of agriculture is slowly changing as entrepreneurs in diverse businesses like swiftlet nest-ranching and large-scale paddy (rice) farmers are able to move up to Malaysia's high-income group.

Vision for the future

By 2020 agriculture will be transformed into agribusiness, moving towards a model that is inclusive but simultaneously anchored on market needs, economies of scale and value chain integration. Malaysia will focus on large global markets with high growth potential such as aquaculture and premium processed foods, while maintaining a strong presence in strategic sub-sectors such as paddy and livestock to ensure national food security. To do so, we will need to capitalise on natural resources while enhancing productivity and adopting a truly demand-driven approach.

Targets and aspirations

The Agriculture NKEA is targetted to raise total GNI contribution by RM34 billion to reach RM49 billion by 2020. The NKEA will create an additional 75,000 jobs, mostly in rural areas, where we target to increase the incomes of farmers participating in our initiatives by two to four times.

The NKEA plans to bridge this gap through 16 EPPs that catalyse the establishment of market-driven, industrial scale and integrated agriculture-related businesses along four themes.

1. **Capitalising on Malaysia's competitive advantage:** We aim to unlock value from Malaysia's biodiversity, including developing our diverse natural herbs into premium herbal products, commercialising our unique native seaweed varieties, expanding swiftlet nest-production, farming through integrated cage aquaculture systems and rearing cattle in oil palm estates.

2. **Tapping premium markets:** We will focus efforts on expanding production of premium grade fruit and vegetables and certified shrimps for export as well as developing premium processed foods and introducing a fragrant rice variety for non-irrigated areas.

3. **Ensuring food security objectives are consistent with increasing GNI:** The Government will ensure that food security objectives are met. As the population continues to grow, these EPPs will scale up and strengthen productivity of paddy farming and cattle ranching as well as establish local dairy clusters with the help of foreign players to help meet increasing demand.

4. **Expanding participation in the regional value chain:** We aim to expand our participation in the region by acquiring foreign firms, undertaking contract farming activities overseas and providing regional services in niche areas such as molecular marker discovery and validation for breeding.

Enabling growth

Achieving our aspirations will require cumulative funding of RM22 billion over the next 10 years with 62 percent coming from the private sector. Of the total public funding for capital, half will go towards upgrading irrigation in granary areas and the rest to develop critical infrastructure such as water intakes, roads and jetties.

In addition, five key enablers are required to support the implementation of the EPPs and business opportunities ranging from providing incentives for anchor companies (to transform from small-scale production-centric activities to a large-scale, market-centric approach) to strengthening adoption of good agricultural practices, making regulatory changes, strengthening logistics and ensuring a sufficient pipeline of human capital.

Healthcare

Where we are today

The healthcare industry has become a powerful engine of economic growth, due to demographic shifts such as extended longevity and a rise in lifestyle diseases such as hypertension and cardiovascular ailments and diabetes. Malaysia's spending on healthcare, at 5 percent of GDP, is above our regional peers, and public spending is a disproportionate contributor to healthcare costs. Currently, the sector contributes to RM15 billion in GNI.

Vision for the future

We aim to grow three sub-sectors within healthcare: pharmaceuticals, health travel and medical technology products. There is significant opportunity to move from a net importer to a significant player in the RM422 billion prescription and pharmaceutical drug industry. Malaysia will also develop the more profitable medical technology sub-sectors such as medical devices, diagnostic equipment and healthcare information technology. Finally, we are aiming to bounce back in the attractive health travel sector to match the growth of our neighbours Singapore and Thailand. Our goal is to migrate from primarily a lower-value product strategy to a more comprehensive product, services and asset strategy that better leverages our competencies.

Targets and aspirations

We aspire to generate RM35 billion incremental GNI contribution to reach RM50 billion by 2020. The Healthcare NKEA is also targetting to welcome 1 million health travellers and conduct 1,000 clinical trials, all of which will result in approximately 181,000 new jobs.

These projects represent an aggressive export campaign, an upgraded services platform and a commitment to better healthcare for Malaysians. The six EPPs are categorised into three themes.

1. **Quick wins:** These are initiatives that can be implemented immediately in 2010 as they are already being debated within the public sector and require low to moderate levels of private sector support to enable successful execution. Under this theme, we are looking to mandate health insurance for foreign workers and create an eco-system to support clinical trials.

2. **Strategic opportunities:** The two strategic opportunities for healthcare, pursuing exports in generic drugs and reinvigorating our health travel segment, are transformational and hence will require significant change in how we think about our industry and how the public and private sectors work together. They will move Malaysia up the healthcare value chain.

3. **Longer term bets:** We believe that we must tackle more difficult issues in order to gain a strong position early in new technologies, such as telemedicine, and to establish Malaysia as a source of significant medical innovation. The two EPPs will require government to work hard to gain the support, commitment and energy of a variety of public and private sector partners.

Enabling growth

Given our ambitious target to grow the healthcare sector and treble its contribution to GNI, a significant amount of investment will be needed. The healthcare sector will require RM23 billion cumulatively from 2011 to 2020 to fund growth. Notably, we estimate that only 1 percent of this sum will be public funds, while the remaining 99 percent will be funded by the private sector.

There are five key enablers that need to be in place to ensure that the Healthcare GNI targets can be met. These include securing the right human capital, utilising our existing infrastructure more effectively, changing regulations and policy, creating cross-border alliance and co-ordinating more targetted and aggressive marketing.

ENABLING THE SUCCESS OF THE ETP

Much of the GNI impact of the NKEAs will be achieved through private sector investment and action. However, delivery of many of the EPPs requires government action including policy and regulatory change, funding and investment in areas such as education or infrastructure. Only about 15 percent of the EPPs do not request specific government funding or policy support.

About 70 percent of these required government enabling actions are specific to the individual EPPs. In addition, there are a series of required government actions that are common across multiple EPPs and across multiple NKEAs. It will be more effective and efficient to coordinate these cross-cutting actions than solve them on an individual basis as they arise.

In addition, these enabling actions will also support GNI growth resulting from the business opportunities in the NKEAs and in the non-NKEA sectors. This is important because the business opportunities in the NKEAs comprise 33 percent of the incremental GNI required to achieve the 2020 GNI target and the non-NKEA sectors account for an additional 26 percent. Without these broader policy enablers, it is unlikely that the GNI growth required will be delivered.

Four categories of enablers are required: promoting private investment, growing human capital, improving the business environment and investing in infrastructure.

Promoting Private Investment

Private investment is at the core of the ETP. In many cases, delivering this investment will require some enabling support from the Government. Some 66 of the 131 EPPs made a formal request for government assistance to promote private investment. These requests fall into two broad categories; more aggressive investment attraction to obtain both domestic and foreign investment and various forms of fiscal incentives.

Investor attraction. The Government has already taken significant steps recently to attract both FDI and DDI, notably through the plans to revamp MIDA that were announced in the Tenth Malaysia Plan and to expand MIDA's mandate to include attracting domestic investment. The specific requests from the various EPPs will provide focus to these reform efforts.

There are two categories of investor attraction: targetted outreach to potential investors and broader marketing campaigns. The targetted outreach activities include identifying and negotiating with specific investors to participate in identified projects. MIDA will be responsible for working with industry to lead these investor outreach activities and will act to achieve the key milestones for the EPPs. In addition to these targetted activities, MIDA will also undertake broader marketing campaigns in relevant NKEAs in order to promote Malaysia as an attractive investment location to foreign investors.

Fiscal incentives. Many of the EPPs require government financial support in the form of general tax credits and holidays, tax incentives that are directly aimed at increasing specific investment or other forms of non-tax fiscal support such as grants or soft loans. Rather than a blanket change to the tax code, the Government will empower MIDA, and other agencies as appropriate, to negotiate the requested incentives with the investors on a case-by-case basis. However, the Ministry of Finance will establish a common approach and framework to provide the basis for conducting these negotiations.

Growing Human Capital

Human capital is critical to the success of the ETP. About 32 percent of the EPPs, representing RM120 billion of GNI contribution, require direct investments in human capital. In addition, almost all other EPPs will require human capital investments indirectly, as the majority of the 3.3 million jobs created are in middle and high-income categories. A review of skills requirements in the NKEAs show that, on current trajectory, there could be up to 1 million vacancies in 2020 that will be difficult to fill, ranging from relatively lower-skilled sales assistants to highly skilled positions, e.g. medical practitioners. To address the human capital needs of the various EPPs and business opportunities, the Government will take action to build the capabilities of existing talent in Malaysia, attract foreign talent to work in Malaysia and ease immigration rules to facilitate the entry of foreign talent.

Building domestic capabilities. The Government will deliver a coordinated approach to deliver the right level of training and education required by the NKEAs. The Ministry of Higher Education and the Ministry of Human Resources will coordinate with the relevant NKEA Lead Ministries to assess skills gaps and devise and deliver appropriate courses. Another important requirement for the success of the ETP is development of management and leadership talent for the NKEAs. In this regard, Talent Corporation, which is being established under the Prime Minister's Department, will be involved in building the capabilities of the top talent most needed for the NKEAs, such as pivotal leaders and specialised talent to lead the EPPs.

Attracting talent from overseas. The Government will act to attract Malaysians currently living and working in other countries to return to Malaysia as well as non-Malaysians to build their careers in Malaysia. The actions that will be taken include designing and implementing attractive expatriate packages (e.g. personal income tax incentives), designing and implementing marketing efforts (e.g. roadshows, targetted outreach) and assisting expatriates with applications to work in Malaysia (e.g. assistance with visas, work permits). Talent Corporation will lead these initiatives to attract, motivate and retain the required talent.

Removing restrictive immigration regulations. The Government will act to simplify immigration procedures and increase the ease of entry for skilled workers. In addition, a revamp of selected immigration policies is needed by some NKEAs to implement their EPPs. For example, for the Education NKEA, to raise the number of foreign students in Malaysia, the application process for foreign student passes needs to be accelerated and the ability for these students to work to fulfil practical training requirements will be reviewed. These will be negotiated on a case-by-case basis between the individual sector representations, their respective NKEA lead ministries and the Ministry of Home Affairs.

Improving the Business Environment

The general business environment in Malaysia is a source of substantial competitive disadvantage for Malaysia. Consistent feedback from private sector investors indicates that the business environment is still a key factor constraining investment. Too often, Malaysian firms face a tangle of regulations that have accumulated over the years and now constrain growth. In light of the complexities the EPPs are facing, many of them have requested enablers that will improve the business environment, including liberalising their sectors and making it easier to do business.

Beyond just the EPPs, improving the business environment is an important way in which to achieve the substantial increase in private investment in business opportunities and non-NKEA sectors required to achieve the 2020 GNI targets. Specific ideas contained in the Tenth Malaysia Plan include a comprehensive review of regulations (led by the restructured Malaysia Productivity Corporation), further liberalisation of the services sector, regulatory exemptions for SMEs and streamlining government-to-business interfaces.

Building Infrastructure

Substantial additional infrastructure investments are required to support the economic growth that will be delivered through the ETP. Our focus will not be on providing infrastructure in a reactive manner. Rather, we will put in place forward-looking infrastructure development plans with a view to future-proof the Malaysian economy. Two types of infrastructure will receive particular attention due to their central role in driving GNI.

Broadband. The Government's objective is to raise Malaysia's broadband penetration rate to 75 percent of households by the end of 2015 (from around 40 percent currently). This is being achieved through a combination of high speed broadband (up to 100 Mbps) in high economic impact areas (such as Greater Kuala Lumpur/Klang Valley) and broadband to the general population (below 5 Mbps) in semi-urban and rural areas. The Malaysian Communications and Multimedia Commission and Ministry of Information, Communications and the Arts will continue to work with telecommunications companies to widen network coverage, increase network speeds and further increase broadband affordability. The Government will also amend the Uniform Building By-Law 1984 to mandate developers to incorporate broadband facilities in residential and commercial areas.

Logistics. To support the success of the ETP, we will upgrade existing infrastructure such as roads, ports and airports and construct new logistics infrastructure if there is a sufficient business case in order to facilitate the efficient movement of people and goods.

Improving logistical infrastructure will have far-reaching impact for the country beyond the NKEAs. For this reason, the Government has already committed to enhancing access and connectivity under the Tenth Malaysia Plan. Specifically, the Government has committed to building and improving roads (e.g. the East Coast Highway linking Kuantan and Kuala Terengganu), developing the rail network (e.g. extending the north–south electrified double-track railway line to Johor Bahru), upgrading maritime infrastructure (e.g. expanding capacity at Westport of Port Klang) and improving airports (e.g. building a new low-cost carrier terminal at Kuala Lumpur International Airport). The EPU will coordinate this programme of infrastructure investment.

LIST OF 131 ENTRY POINT PROJECTS

No.	EPP	2020 GNI (RM Milliions)	Jobs
	Agriculture		
1	Expanding the production of swiftlet nests	4,541.2	20,800
2	Unlocking value from Malaysia's biodiversity through herbal products	2,213.9	1,822
3	Upgrading capabilities to produce premium fruit and vegetables	1,571.5	9,075
4	Venturing into commercial scale seaweed farming in Sabah	1,410.6	12,700
5	Farming through integrated cage aquaculture systems	1,383.0	10,072
6	Scaling up and strengthening of paddy farming in other irrigated areas	1,370.3	(9,618)
7	Replicating integrated aquaculture model (iZAQs)	1,273.2	11,890
8	Scaling up and strengthening paddy farming in Muda area	1,033.6	(14,880)
9	Securing foreign direct investment in agriculture biotechnology	819.9	1,208
10	Strengthening the export capability of the processed food industry	884.3	4,928
11	Establishing a leadership position in regional breeding services	466.6	5,390
12	Establishing dairy clusters in Malaysia	326.3	761
13	Strengthening current anchor companies in cattle feedlots	182.9	2,000
14	Rearing cattle in oil palm estates	150.0	3,600
15	Investing in foreign cattle farming	116.5	NA
16	Introducing fragrant rice variety for non-irrigated areas	100.1	NA
	Business Services		
17	Growing aviation maintenance, repair and overhaul services	13,350.5	20,720
18	Building globally-competitive outsourcers • Government outsourcing	6,863.8	43,330
19	• GLC outsourcing		
20	• Foreign outsourcing		
21	Positioning Malaysia as a world-class data centre hub	2,462.4	13,290
22	Jump-starting a vibrant green technology industry	7,236.3	47,590
23	Growing large pure play engineering services	3,495.2	11,550
24	Developing a global Islamic financial services advisory hub	3,140.1	2,010
	Education		
25	Scaling up early childcare and education centres	3,891.6	129,956
26	Improving early childcare and education training	338.3	370
27	Scaling up international schools	2,644.2	10,371
28	Expanding private teacher training	433.9	434

No.	EPP	2020 GNI (RM Milliions)	Jobs
29	Scaling up private skills-training provision	2,110.8	5,528
30	Expanding international distance learning	350.5	3,920
31	Building an Islamic finance and business education discipline cluster	1,189.9	4,365
32	Building a health sciences education discipline cluster	2,869.9	11,854
33	Building an advanced engineering, science and innovation discipline cluster	635.9	4,308
34	Building a hospitality and tourism discipline cluster	617.9	2,314
35	Launching EduCity@ Iskandar	1,015.7	1,164
36	Championing Malaysia's international education brand	2,787.7	152,672
37	Introducing public-private partnerships in basic education	160.2	1,010
	Electronics and Electrical		
38	Growing radio frequency identification (RFID)	1,448.7	3,948
39	Solid state lighting • Developing a world-class SSL cluster	5,186.7	13,843
	• Creating local SSL champions		
40	Building a test and measurement hub	1,365.7	7,468
41	Incorporating Agilent Labs		
42	Expanding radio communications providers	373.4	400
43	Growing automation equipment manufacturing	125.5	1,200
44	Building transmission and distribution companies	350.5	426
45	Building a home appliance manufacturing hub and international distribution network	1,078.3	17,993
46	Semiconductors: • Executing a smart follower strategy for mature technology semiconductor fabrication plants	11,022.4	13,011
	• Developing assembly and test using advanced packaging technology		
	• Developing integrated circuit design firms		
	• Supporting the growth of substrate manufacturers and related industries		
47	Solar: • Increasing the number of silicon producers	14,194.6	57,344
	• Growing wafer and cell producers		
	• Increasing module producers		
48	Cross-cutting and regional enabler funding	NA	NA

No.	EPP	2020 GNI (RM Milliions)	Jobs
Financial Services			
49	Revitalising Malaysia's capital markets	3,325.2	8,598
50	Deepening and broadening bond markets	183.2	1,429
51	Transforming or rationalising developmental financial institutions	1,790.5	NA
52	Creating an integrated payment eco-system	2,647.7	7,765
53	Insuring most, if not all, of our population	1,544.0	8,659
54	Accelerating growth of the private pension industry	2,061.1	2,208
55	Spurring the growth of a nascent wealth management industry	2,096.0	6,147
56	Accelerating and sustaining a significant asset management industry	2,396.7	7,430
57	Developing regional banking champions	5,564.3	(8,524)
58	Becoming the indisputable global hub for Islamic finance	7,242.4	11,644
Healthcare			
59	Mandating private insurance for foreign workers	171.3	NA
60	Creating a supportive ecosystem to grow clinical research	578.4	905
61	Pursing generics export opportunities	13,853.7	12,440
62	Reinvigorating health travel through better customer experience, proactive alliances and niche marketing	4,294.4	5,295
63	Creating a diagnostic services nexus to achieve scale in telemedicine for eventual international outsourcing	355.9	281
64	Developing a health metropolis: A world-class campus for healthcare and bioscience	986.2	4,436
Greater Kuala Lumpur/Klang Valley			
65	Attracting the right mix of internal and external talent	118,212.1	560
66	Building an integrated urban mass rapid transit system	21,266.1	20,000
67	Connecting to Singapore via a high-speed rail system	6,223.8	28,700
68	Attracting 100 of the world's most dynamic firms within priority sectors	41,440.5	234,001
69	Revitalising the Klang River into a heritage and commercial district	4,280.5	17,041
70	Greening Greater KL/KV to ensure residents enjoy sufficient green space	991.5	2,817
71	Creating a comprehensive pedestrian network	6.4	279
72	Creating iconic places and attractions	464.4	13,481
73	Developing an efficient solid waste management ecosystem	156.5	NA
74	Sewerage - Non River	(91.7)	NA
Oil, Gas and Energy			
75	Deploying nuclear energy for power generation	212.3	2,637

No.	EPP	2020 GNI (RM Milliions)	Jobs
76	Building up solar power capacity	457.5	1,906
77	Attracting MNCs to bring their global oil-field service and equipment operations to Malaysia	6,124.8	20,000
78	Consolidating the domestic fabricators	4,108.8	5,000
79	Developing engineering, procurement and installation capabilities and capacity through strategic partnerships and joint ventures	4,028.8	15,000
80	Building a regional oil storage and trading hub	1,625.7	790
81	Unlocking premium gas demand in Peninsular Malaysia	2,404.1	NA
82	Improving energy efficiency	13,925.7	NA
83	Tapping Malaysia's hydroelectricity potential	5,693.9	590
84	Rejuvenating existing fields through enhanced oil recovery	8,469.7	411
85	Developing small fields through innovative solutions		
86	Intensifying exploration activities		
	Palm Oil		
87	Accelerate the replanting of oil palm	4,612.0	NA
88	Improve fresh fruit bunch yield	10,172.7	1,600
89	Improving worker productivity	1,692.4	(82,500)
90	Increasing the oil extraction rate	13,711.1	10,000
91	Developing biogas facilities at palm oil mills	2,934.0	2,000
92	Developing oleo derivatives	5,813.5	5,858
93	Commercialising second generation biofuels	3,261.5	1,044
94	Expediting growth of food and health-based downstream segments	4,924.7	74,942
	Communication, Content and Infrastructure		
95	Ensuring broadband for all	2,160.5	7,155
96	Extending reach	2,688.5	3,135
97	Offering a smart network	1,665.7	4,186
98	Extending the regional network	2,289.8	1,220
99	Connecting 1Malaysia	1,783.1	2,056
100	Deploying 1Malaysia payments	1,005.9	1,478
101	Nurturing Malaysia's creative content	3,081.9	10,326
102	Launching e-Healthcare	1,402.5	250
103	Establishing e-Learning for students and workers	1,487.3	800
104	Deepening e-Government	1,100.1	1,000

No.	EPP	2020 GNI (RM Milliions)	Jobs
	Tourism		
105	Developing the world's first eco-nature integrated resort in Sabah	706.6	7,733
106	Designating KLCC-Bukit Bintang as a vibrant shopping precinct	1,159.2	14,546
107	Establishing three new premium outlets in Malaysia	875.2	1,500
108	Declaring Malaysia as a global biodiversity hub	1,486.9	2,919
109	Positioning Malaysia as a duty free shopping destination for tourist goods	7,838.3	64,294
110	Creating a straits Riviera	1,758.2	9,713
111	Targetting more international events	426.7	8,036
112	Establishing dedicated entertainment zones	740.4	5,614
113	Developing local expertise and better regulating the spa industry	666.2	5,644
114	Establishing Malaysia as a leading business tourism destination	3,947.0	16,720
115	Improving rates, mix and quality of hotels	5,528.7	64,424
116	Enhancing connectivity to priority medium-haul markets	3,310.5	13,402
	Wholesale and Retail		
117	Developing 1Malaysia malls	2,226.8	3,777
118	Developing big box boulevards	1,222.5	9,609
119	Setting up wellness resorts	2,674.9	21,545
120	Making Malaysia duty-free	3,258.3	31,145
121	Developing a virtual mall	823.0	6,629
122	Modernising via the Small Retailer Transformation Programme (TUKAR)	5,577.0	51,544
123	Organising unified Malaysia sales	1,776.9	14,312
124	Developing makan bazaars	226.5	4,205
125	Transforming automotive workshops	1,139.1	9,117
126	Transforming KLIA into a retail hub	958.2	7,716
127	Increasing number of large format stores	8,514.2	68,574
128	Developing pasar komuniti	8,827.6	140,947
129	Facilitating local businesses to acquire stakes in foreign retail businesses	1,031.0	415
130	White Lab EPP by Company 1	104.3	NA
131	White Lab EPP by Company 2	2,028.2	NA

LIST OF 60 BUSINESS OPPORTUNITIES

No.	EPP	2020 GNI (RM Milliions)	Jobs
Agriculture			
1	Transformation of domestic snack industry	258.7	4,928
2	Ornamental fish	196.9	100
3	Aqua feed mill	133.4	342
4	Foreign herbal products distributor acquisition	191.1	15
5	Nutraceuticals from other herbs	80.8	390
6	FDI for tropical herbs	51.9	310
7	Free range chicken (village chicken)	62.5	6,000
8	Mushroom project	57.0	1,293
9	SFI/Country food facilities move to Malaysia	47.0	635
10	Aqua export centre (for live fish and chilled aqua products)	35.5	92
11	Packaged fruit production such as jackfruit	16.7	767
Business Services			
12	Develop multi-disciplinary practice professional services firms in the construction industry	62.6	138
13	Creative multimedia content (CMC)	1,137.0	3,630
14	Organic growth of construction professional services	2,190.5	13,762
15	Organic growth of engineering services	57.4	217
16	Organic growth of aviation maintenance, repair and overhaul	283.9	12,059
17	Organic growth of foreign outsourcing	791.1	25,192
18	Increasing skilled resources in the services sector	717.8	42,999
19	Organic growth of data centre hubs	509.1	7,059
20	Strengthening the accounting sector	329.4	2,003
Education			
21	Other discipline clusters	184.3	186
22	Organic growth of government provision of public education	2,846.5	159,024
23	Organic growth of non-prioritised segments	1,417.2	92,930
24	International house	24.8	118

No.	EPP	2020 GNI (RM Milliions)	Jobs
Electronics and Electrical			
25	Industries supporting fabrication plants, bump and sort companies and substrate companies	1,021.6	24,664
26	LED applications for medical devices, automotive industry, signal and display signboards and aerospace and defence industry	729.2	5,040
27	Radio frequency identification application projects	51.5	229
28	Solar upstream development business opportunities	2,499.9	11,500
Financial Services			
29	Organic growth of commercial banking	9,239.7	70,879
30	Organic growth of investment banking	1,628.6	14,554
31	Organic growth of Islamic banking	3,483.6	39,623
32	Organic growth of insurance and takaful	4,096.8	46,098
33	Organic growth of asset management and wealth management	592.6	4,744
34	Organic growth of DFIs and others	3,446.7	53,412
Healthcare			
35	Pharmaceutical sector organic growth	148.0	0
36	Medical technology sector organic growth	694.2	2,492
37	Health service sector organic growth	3,396.8	142,585
38	Assisted living	317.5	11,400
39	In-vitro diagnostic contract manufacturing	22.5	1,170
Greater Kuala Lumpur/Klang Valley			
40	Property development market	62,078.4	235,834
Oil, Gas and Energy			
41	International exploration and production projects	1,848.2	195
42	Increase in volumes for primary logistics (pipelines and depots)	1.6	0
43	Increase of petrochemical output through process improvement	1,073.1	0
44	Increase in distribution and marketing of petroleum products	458.1	3,245
45	Increased electricity consumption driven by GDP growth	3,516.2	2,520
46	Increased electricity transmission and distribution volumes and capacity	1,758.1	0
47	MESI - Malaysia Energy Supply Industry	470.0	0

No.	EPP	2020 GNI (RM Milliions)	Jobs
Palm Oil			
48	Upstream developments (organic growth)	13,986.0	0
49	Downstream investments (organic growth)	3,496.0	26,489
50	Biodiesel expansion (organic growth)	493.1	2,131
51	Organic growth (inflation effect)	5,324.0	0
Communication, Content and Infrastructure			
52	Mobile services development	1,128.5	5,788
53	Fixed services development	541.3	3,250
54	Courier, post and broadcast services development	500.9	7,563
55	Net regional transfer services development	1,480.6	664
Tourism			
56	Organised tours	293.8	7,447
57	Food and beverage outlets	1,114.7	9,608
58	Taxi industry	222.9	44,994
59	Baseline growth	7,297.7	220,610
Wholesale and Retail			
60	Organic growth	14,125.0	225,481

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chapter 1
New Economic Model

Chapter 1: New Economic Model of Malaysia

Malaysia has achieved significant economic and social progress over the past several decades. However, the world economy is changing, and Malaysia needs a fundamentally new economic model in order to become a high-income nation. Our historical growth engines are slowing, we risk being caught in a middle-income trap, our fiscal position is arguably unsustainable while global competition for markets, capital and talent is increasingly intense. In response, the Economic Transformation Programme (ETP) represents a marked change in approach that builds on the Tenth Malaysia Plan and input from the National Economic Advisory Council (NEAC). The ETP focuses on key growth engines or National Key Economic Areas (NKEAs). It relies heavily on private sector-led growth, describes very specific investments and policy actions and has a clear transparent implementation roadmap with strong performance management.

MALAYSIA HAS MADE SIGNIFICANT PROGRESS

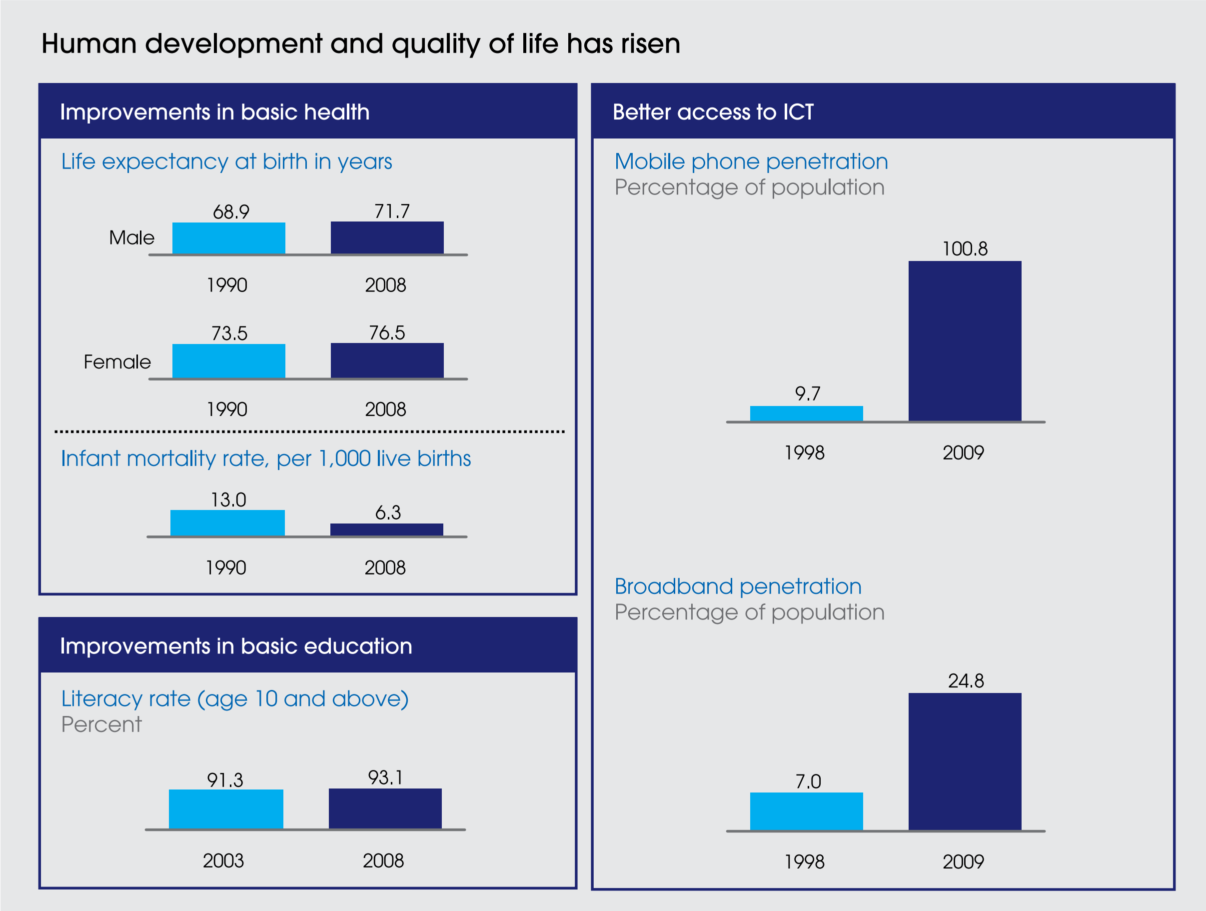
Sustained rapid economic growth has raised Malaysia from an agricultural and commodity-based low-income economy to a successful middle-income economy. Our story of moving from low-to middle-income status is one of the world's success stories of the past few decades. Since 1945, Malaysia is one of only 13 countries[1] to have sustained growth of over 7 percent or more for 25 years.

This strong economic performance has helped improve the quality of life for Malaysians and supported advances in education, health, infrastructure, housing and public amenities, some of which are shown in *Exhibit 1-1*.

Growth has also been accompanied by a near-eradication of hardcore poverty, which fell from 6.9 percent in 1984 to 0.9 percent in 2010. Primary school enrolment is now nearly universal. Basic healthcare has improved in the past two decades with life expectancy rising and infant mortality rates falling significantly. As a result, Malaysia's score in the United Nations Human Development Index rose from 0.67 in 1980 to 0.83 in 2007, surpassing the 0.8 score benchmark for countries with high standards of human development.

[1] *The 13 countries are Botswana, Brazil, China, Hong Kong SAR, Indonesia, Japan, Republic of Korea, Malaysia, Malta, Oman, Singapore, Taiwan and Thailand*

Exhibit 1-1



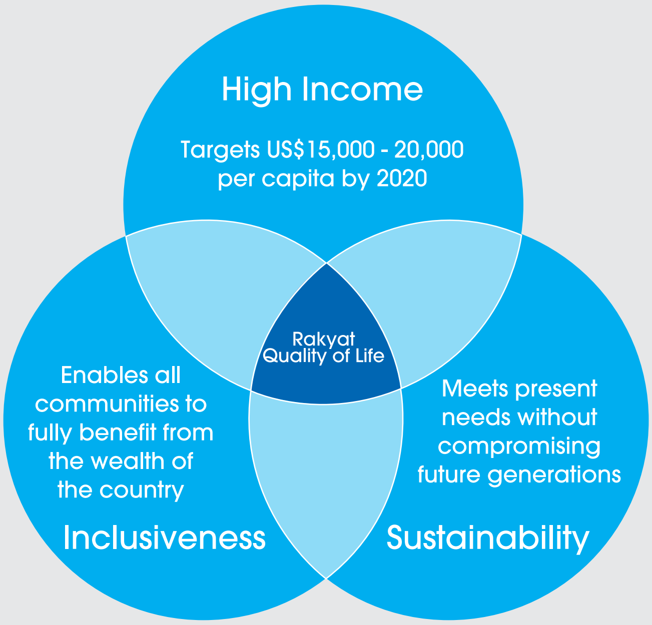
SOURCE: *Ninth Malaysia Plan; Ministry of Health; Ministry of Education; Malaysian Communications and Multimedia Commission*

Despite this progress, significant challenges remain. For example, 7 percent of the rural population live below the poverty line; only 80 percent of the workforce have education up to SPM *(Sijil Penilaian Menengah)* qualifications (high school equivalent to O-levels); and Malaysia's economic growth has been sluggish over the decade since the Asian financial crisis. Our task is to build on the platform we have established over the past few decades and create the next generation of national development.

BECOMING A HIGH-INCOME NATION THAT IS BOTH INCLUSIVE AND SUSTAINABLE

The Government is aiming for Malaysia to become a high-income nation that is both inclusive and sustainable by 2020. These goals will be reached jointly. The Government will not seek short-term progress on one goal at the expense of delaying progress on the others. The ETP is designed to drive Malaysia forward from its current stagnant situation to be a high income economy which is both inclusive and sustainable as shown in *Exhibit 1-2*

Exhibit 1-2



High-income Economy

The Government defines high income as a per capita income USD15,000 or RM48,000 in 2020, based on the World Bank's current definition of high income. Malaysia's per capita gross national income (GNI) is currently about RM23,700 or USD6,700. Therefore, achieving high-income status by 2020 will require GNI to grow at an annual real growth rate of 6 percent between 2011 and 2020.

The Government's high-income objective is not just a quantitative target. It is also about Malaysia becoming an advanced, developed nation with an economy possessing the characteristics that are common to developed nations. Specifically, Malaysia will focus on developing:

- A large and thriving services sector, to supplement the nation's historical strengths in oil and gas, agriculture and manufacturing;

- A balanced economy, with significant contributions from private consumption and investment as well as from government spending and exports. In developed countries domestic demand typically accounts for 50 to 70 percent of GDP. In Malaysia it is currently 53 percent; and

- Productivity levels similar to those of other leading Asian economies. Achieving this will require developing an economy that is more heavily driven by skills, innovation and knowledge.

These three structural shifts in the economy will support Malaysia's ongoing growth and will enable Malaysia to compete more effectively with other developed nations in the region and beyond.

Inclusive Society

The way in which Malaysia grows to achieve this high-income target will be inclusive in nature, enabling all Malaysians to share in the benefits. The Government will encourage employment-rich growth that creates new higher-wage jobs. We will also invest in education and training to ensure that more Malaysians are able to participate in these new opportunities.

A key focus will be on ensuring that substantial improvements are made for people with the lowest household incomes. Specific attention will be paid to lifting the incomes of the bottom 40 percent of households, with a target of increasing the mean monthly income of this group from RM1,440 in 2009 to RM2,300 in 2015, as stated in the Tenth Malaysia Plan.

Sustainable Growth

The measures we take to achieve high-income status must be sustainable in both economic and environmental terms, meeting present needs without compromising those of future generations.

In economic terms, growth will have to be achieved without running down Malaysia's natural resources. Malaysia will not achieve high-income status simply through the income derived from extracting Malaysia's natural resources.

In addition, Malaysia's fiscal policy will be made sustainable. There will be a much stronger focus on investment led by private sector that will avoid reliance on government funding. As stated in the Tenth Malaysia Plan, the Government is committed to reduce its fiscal deficit from 7 percent in 2009 to 3 percent in 2015.

In environmental terms, the Government is committed to the stewardship and preservation of our natural environment and non-renewable resources. The Government will ensure that environmental resources are properly priced and that the full costs of development are understood before investment decisions are made.

BUSINESS AS USUAL IS NOT ENOUGH

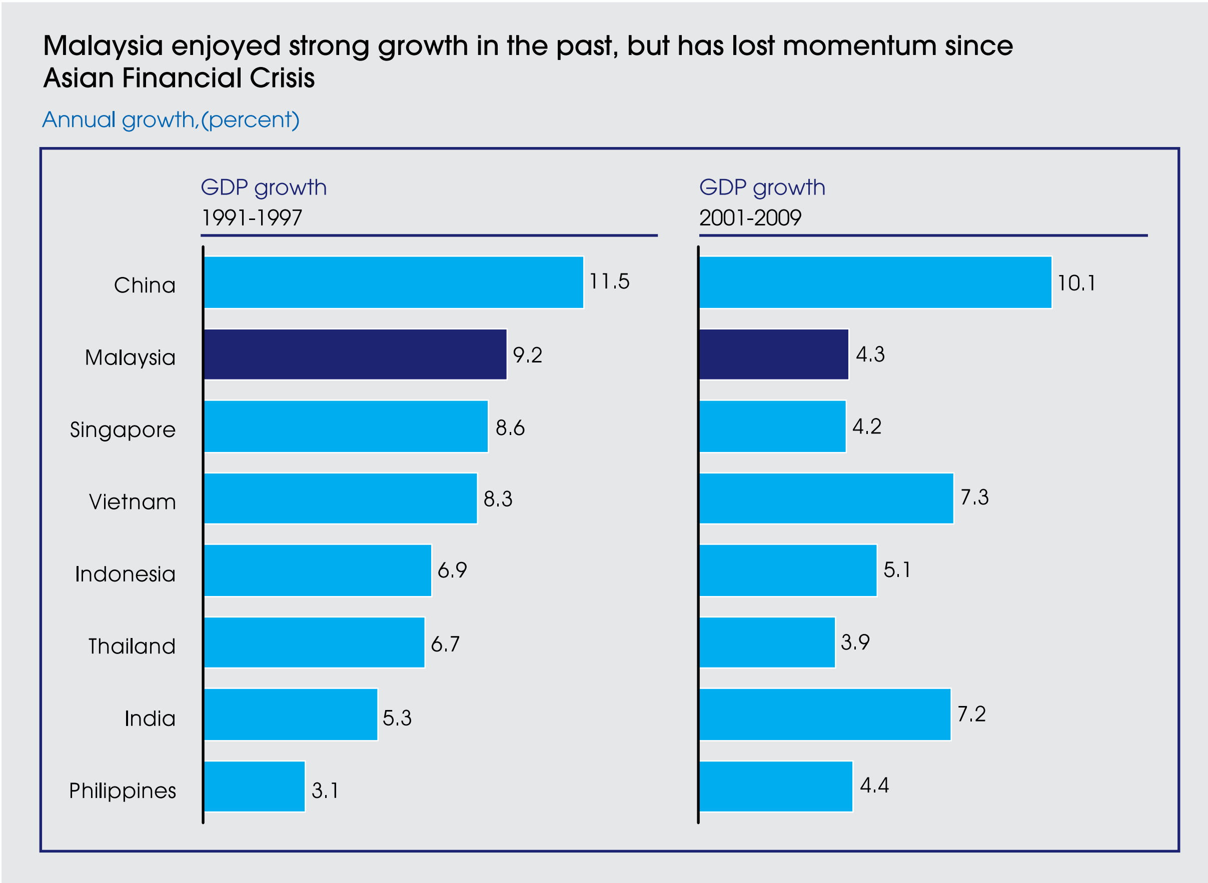
Business as usual will not be enough to deliver on the goals of high income, inclusiveness and sustainability. Malaysia is at a critical point in its economic development. There has been a loss of growth momentum over the past decade, and it has become increasingly clear that the historical drivers of growth can no longer be relied on to deliver strong economic outcomes. In an increasingly competitive global economy it is more difficult to generate high rates of economic growth. Growth can no longer be taken for granted, but needs to be earned.

To achieve developed nation status by 2020, economic growth of 6 percent a year will be required. Delivering this level of growth demands a comprehensive, structured transformation of the economy. The following are four key reasons why a fundamentally new approach is required.

Historical Growth Engines are Slowing Down

Malaysia's relatively sluggish economic performance over the past several years indicates that the historical engines of Malaysia's economic growth are slowing down . After strong growth through much of the 1990s, Malaysia's economic growth over the past decade has been considerably slower – at about half of the average of the previous decade, as shown in *Exhibit 1-3*.

Exhibit 1-3

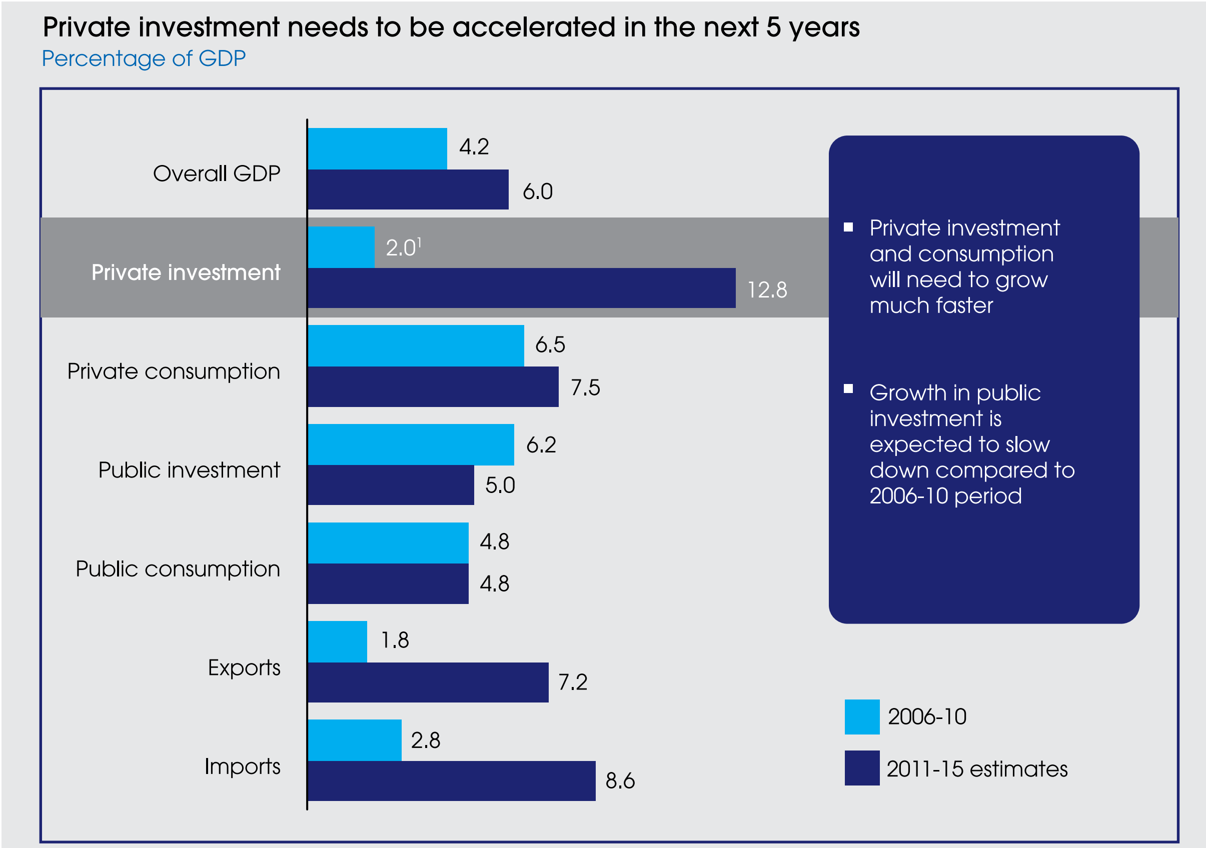


SOURCE: World Economic Outlook (April 2010), International Monetary Fund

A large part of the reason for this relatively poor growth performance has been slow labour productivity growth. Transforming Malaysia's economic performance will therefore require a transformation in productivity growth.

Delivering this transformation will require significant improvements in two areas. First, the level of business investment will need to be substantially increased. Private investment grew at just 2 percent per year over the past five years rather than the 10 percent projected in the Ninth Malaysia Plan. The Tenth Malaysia Plan estimates that achieving the 6 percent annual growth rate required to achieve high-income status will require annual growth of private investment of 12.8 percent to 2015, as shown in *Exhibit 1-4*.

Exhibit 1-4



[1] Private investment contracted by 17.2% in 2009

SOURCE: Economic Planning Unit and Department of Statistics Malaysia

Private sector investment growth has slowed considerably relative to the pre-1997 period for reasons including the high cost of doing business in Malaysia, lengthy bureaucratic procedures, investors' concern about the availability of skilled professionals and inadequate opportunities for investment.

Second, enhanced investments in human capital will be made to support an economy based on high-skilled labour, knowledge and innovation. Malaysia cannot move to high-income status by retaining its reliance on ready access to a low-cost, low-skilled workforce. In addition, labour force growth is expected to be slower, meaning that there will need to be a renewed focus on productivity as a growth engine.

This need to find new growth engines is reinforced by Malaysia's declining domestic reserves of oil and gas. Malaysia will need to find new sources of income to compensate for reduced income from its natural resources.

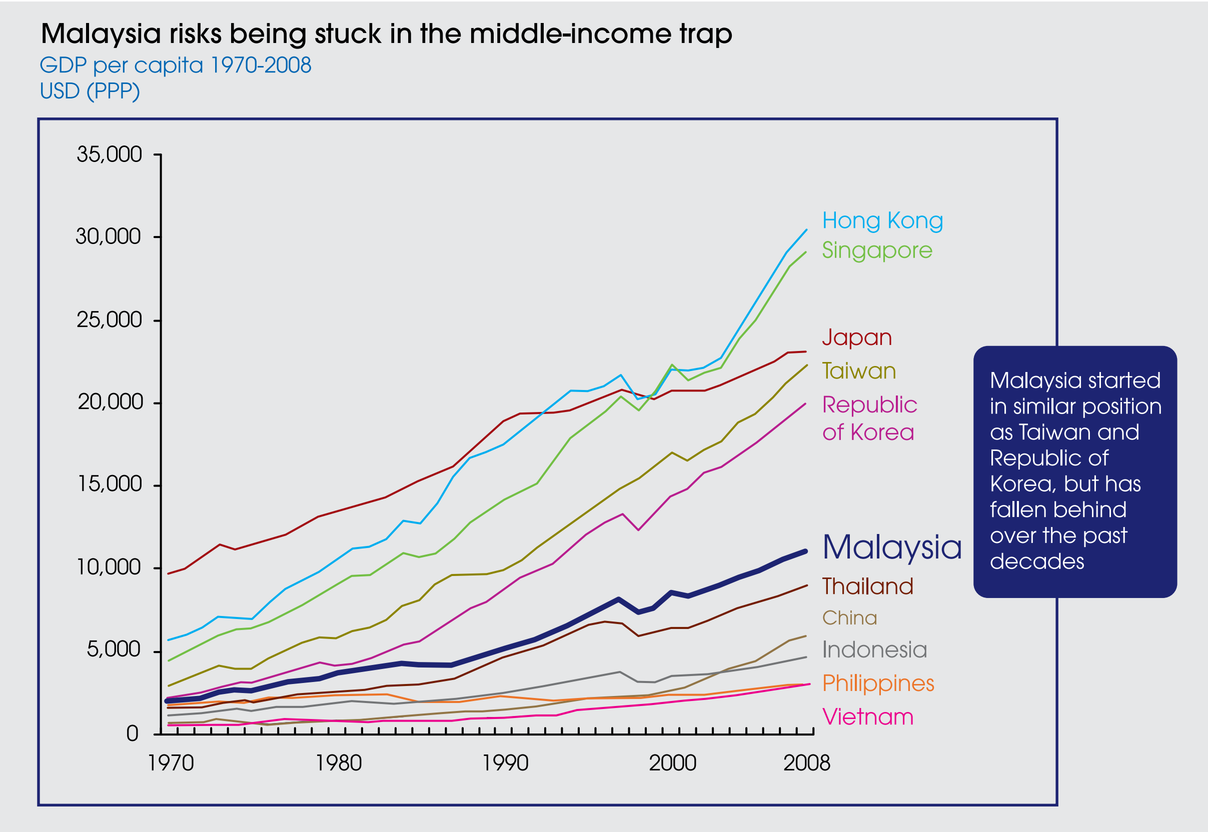
Risk of Being Stuck in the Middle

There are also signs that Malaysia is at risk of being stuck in the middle-income trap, as shown in *Exhibit 1-5*. Malaysia is no longer able to remain competitive with low-income countries as a high-volume, low-cost producer. At the same time it has not yet moved up the value chain and become competitive with high-income countries. Other countries are more competitive than Malaysia in both low-cost production and in high-value markets. This is not a sustainable position.

Strategies that were successful in driving Malaysia's transformation from a poor country, reliant on rubber and tin at Independence into a diversified middle-income economy, are not appropriate for the next stage of Malaysia's developmental journey.

Indeed, many other countries that grew rapidly through the 1970s and 1980s found it difficult to continue their growth once they reached middle-income status. Of the 13 countries to have sustained 7 percent growth for 25 years or more, just 6 have successfully transitioned to high-income status. It was only those countries that undertook a systematic programme to transform the underlying structure of their economies that were able to rise from middle-income status to become high-income countries.

Exhibit 1-5



SOURCE: *The Conference Board and Groningen Growth and Development Centre, Total Economy Database, January 2009*

An Unsustainable Fiscal Position

Malaysia has run fiscal deficits every year since 1998, with a deficit of 7 percent of GDP recorded for 2009, as shown in *Exhibit 1-6*. Public debt levels are expected to reach over 60 percent of GDP by 2015. Moving back to fiscal sustainability and achieving the Government's commitment of a deficit of 3 percent of GDP by 2015 will require a marked change in direction.

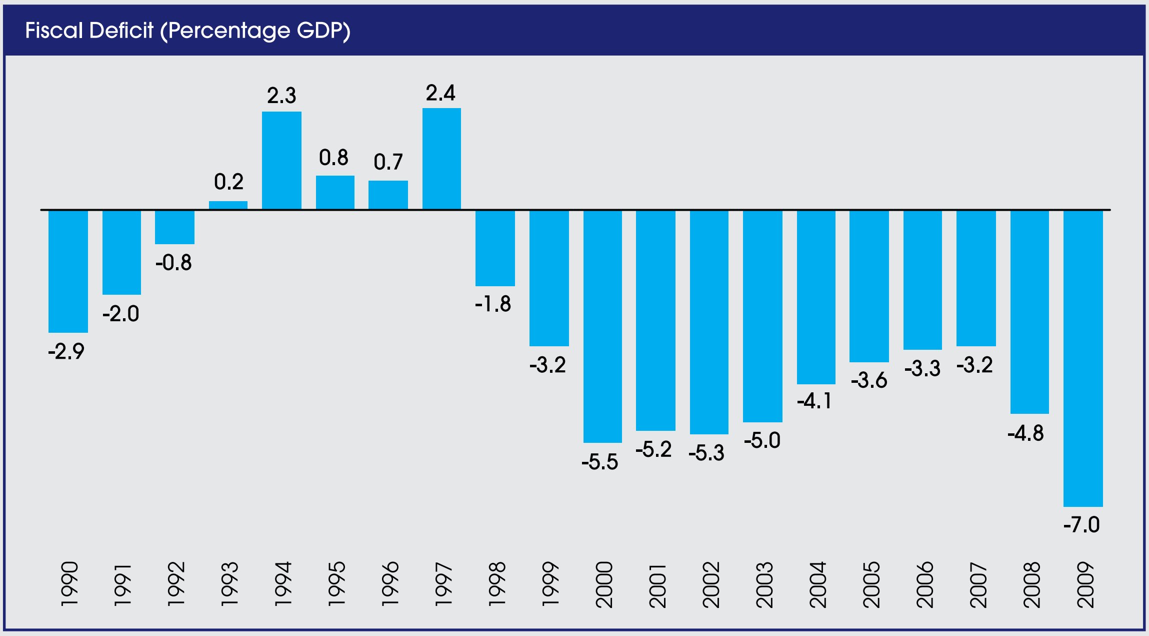
This fiscal consolidation is imperative for Malaysia. Investor attitudes to sovereign debt have changed significantly over the past two years, and capital markets may be less inclined to finance sovereign debt on the terms they have extended in the past.

There is also increasing evidence of fiscal policy competition between countries, with governments cutting corporate tax rates to obtain a competitive edge. In order for Malaysia to offer competitive personal and corporate tax rates, while at the same time invest in education, research and infrastructure, it will need to strengthen its fiscal position substantially.

This task is made more challenging by the projected decline in domestic petroleum production over the next decade as historically revenues from this source has been a significant contributor to government revenues. In this context, fundamental changes need to be made to fiscal policy. There is a need to widen the Government's tax revenue base so that a much greater share comes from broad-based income and consumption taxes (such as a goods and services tax). In addition, expenditure on subsidies will be rationalised significantly to channel these resources to only those in need. Tight fiscal discipline will be imposed across the board.

Exhibit 1-6

Increasing deficit limits flexibility of Government to stimulate economy

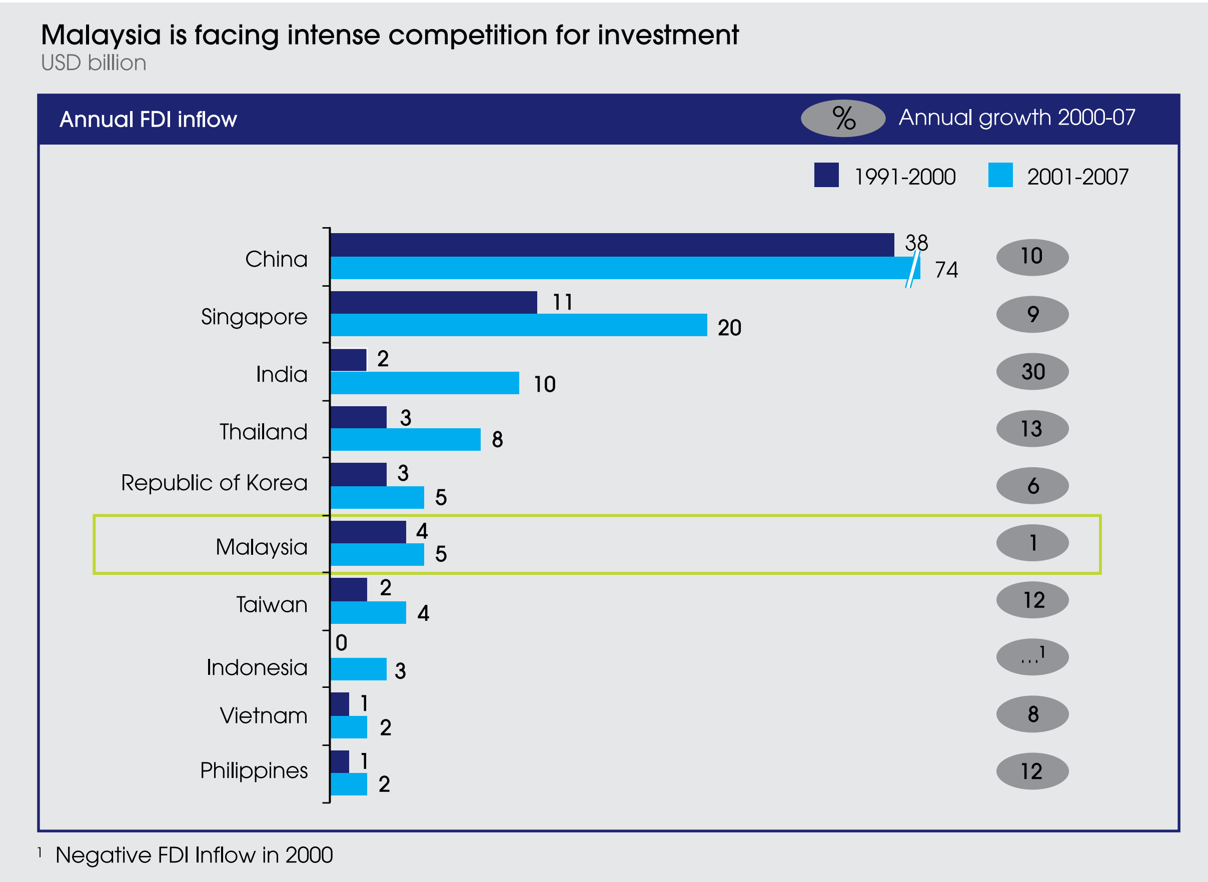


Increasing Global Competition for Markets, Capital and Talent

The global economy is becoming much more competitive. The emergence of new, highly competitive regional and global companies has eroded the strong position of Malaysian-based companies in the manufacturing and services sectors. Malaysia will need to work much harder to achieve and sustain competitive advantage, namely by investing in infrastructure and human capital and ensuring that the tax and regulatory environment is conducive to growth.

In addition, firms, investors and talent, have an increasing number of opportunities and location options. Therefore Malaysia needs to demonstrate a clear value proposition in order to attract and retain them. Many other governments are aggressively positioning themselves to compete for firms, talent and capital. As shown in *Exhibit 1-7*, the low levels of foreign direct-investment that Malaysia has received over the past decade are one indication of a weakening competitive position.

Exhibit 1-7



SOURCE: Euromonitor; Economist Intelligence Unit

Given the shortage of high-wage employment opportunities at home, Malaysia is also losing talent through the emigration of Malaysians, many of them with tertiary qualifications. More than 700,000 Malaysians now live and work in other countries. Until Malaysia is able to generate stronger economic growth and to create opportunities for people, it will struggle to attract and retain talent.

THE ETP IS PART OF A COMPREHENSIVE GOVERNMENT AGENDA

The ETP is the culmination of a substantial body of work to develop the Government's economic agenda in response to this emerging environment. However it is not intended to dictate sector-specific policies, but rather serve as input, for example into the Financial Sector Masterplan by Bank Negara Malaysia or the Securities Services Masterplan by the Securities Commission. It also serves to complement existing programmes with similar objectives. For example, the GLC Transformation Programme that seeks to build regional and global champions will support the delivery of the ETP. There are several key common foundations for the ETP.

1Malaysia, People First, Performance Now

The 1Malaysia concept seeks to reinforce national unity, with respect for the values of the different communities, and is anchored on the principle of fairness and equity. In economic terms, this means that opportunities and growth will be shared equitably. 'People First' refers to a *rakyat*-centric approach to planning and delivery, and 'Performance Now' shows the Government's determination to have a sharp focus on delivery and results.

Government Transformation Programme

The Government Transformation Programme was introduced in 2010 to transform the Government to be more effective in its delivery of services and accountable for outcomes. The programme incorporates six National Key Result Areas (NKRAs): reducing crime, fighting corruption, improving student outcomes, raising living standards of low-income households, improving rural basic infrastructure and improving urban public transport. National key performance indicators have been specified for these NKRAs, and a new organisation, the Performance Management and Delivery Unit (PEMANDU), was created to manage delivery against these targets.

Tenth Malaysia Plan

The Tenth Malaysia Plan outlines the Government's development plan for the nation between 2011 and 2015 (to move Malaysia to high-income status by 2020). It focuses on unleashing economic growth, promoting inclusive socio-economic development, developing and retaining talent, building an environment that enhances quality of life and transforming Government. It identified the 12 NKEAs that will be the subject of prioritised policy and investment focus and that are the main focus of the ETP.

WHAT IS DIFFERENT ABOUT THE ETP

The ETP builds on the direction outlined in the Tenth Malaysia Plan to develop a markedly different approach to delivering the Government's objectives. The innovative approach in the ETP recognises that incremental improvements to the status quo will not be enough for Malaysia to become a high-income nation. There are five specific aspects of the ETP that are new and distinctive. These aspects will ensure that the ETP delivers the improved outcomes that Malaysia needs.

Focus on Key Growth Engines – 12 NKEAs

Malaysia will leverage its competitive advantages by prioritising investment and policy support behind a limited number of key growth engines. The ETP focuses on the 12 NKEAs announced in the Tenth Malaysia Plan. These NKEAs are expected to make substantial contributions to Malaysia's economic performance. Other countries have demonstrated that strategic focus is an important element of rapid economic development, particularly for small- and medium-sized countries.

Private Sector-led, Government Facilitated

The private sector will take the lead role in terms of making investment and employment decisions. The projects and opportunities that are identified in the ETP have been co-created by the public and private sectors. Importantly, most of the projects and opportunities identified will be mainly funded from private sources. The Government's role will be that of an active facilitator of the private sector through resource and policy support, rather than the principal driver, as it has been in the past. Increasingly, Malaysia will be a developed economy in which the private sector is the primary engine of national growth.

131 Entry Point Projects to Jump-start the Programme

The ETP is focused on action not concepts. The ETP contains well-developed and specific ideas and actions to grow each of the NKEAs, rather than broad statements of intent. These ideas have been developed through collaboration between the public and private sectors, and in many cases these projects are close to being launched. The ETP also identifies a series of specific policy and regulatory reforms that are needed to drive growth in NKEA sectors and the overall Malaysian economy. Specific recommendations are made as to the required actions for these policy and regulatory reforms.

Anchoring on GNI to Get Value for Money

The projects and initiatives have been selected on the basis of rigorous financial and economic analysis to ensure that they maximise the return on investment, particularly on public sector investment. In a challenging fiscal environment, value for money has been a guiding principle. Government spending and investment will be directed only to those areas where it can be used in a highly productive manner.

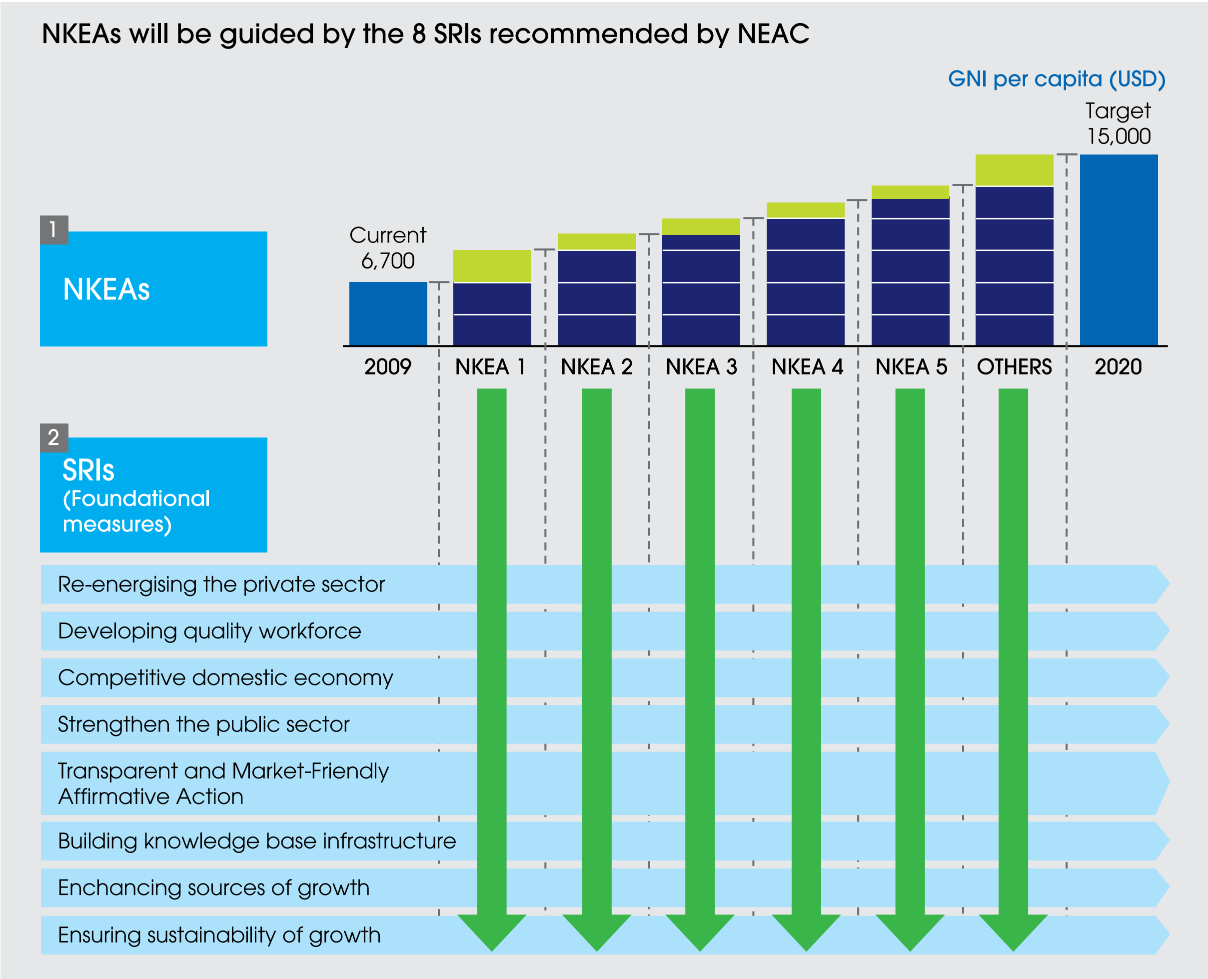
PEMANDU to Ensure Strong, Transparent Delivery

The Government has established an ETP Unit in PEMANDU to facilitate delivery and monitor this programme of change. Clear and demanding key performance indicators will be specified for each of the individual NKEAs and for Malaysia's overall economic performance. These performance measures will be reported publicly every year.

Guided by the Foundational Measures recommended by NEAC

The Economic Transformation Programme (ETP) will transform Malaysia into a high income, inclusive and sustainable economy. The NKEAs will be guided by the foundational measures (SRIs) recommended by the NEAC, as shown in *Exhibit 1-8*.

Exhibit 1-8



OVERVIEW OF THE NKEAS

NKEAs are at the core of the ETP. An NKEA is defined as a driver of economic activity that has the potential to directly and materially contribute a quantifiable amount of economic growth to the Malaysian economy. The 12 NKEAs are: Greater Kuala Lumpur/Klang Valley; Oil, Gas and Energy; Financial Services; Wholesale and Retail; Palm Oil; Tourism; Electronics and Electrical; Business Services; Communications Content and Infrastructure; Education; Agriculture; and Healthcare. Of the 12 NKEAs, 11 are industry sectors and one – Greater Kuala Lumpur/Klang Valley – is a geographical sector.

How were the 12 NKEAs Selected

The NKEAs were selected based on their expected contribution to GNI in 2020, and thus the extent to which these sectors can assist Malaysia to achieve high-income status. This was based on an assessment of the growth opportunities in the sector and Malaysia's ability to capture these opportunities. To achieve consensus on the initial portfolio of NKEAs, the Government conducted analysis on the economic performance of all of the sectors, looked at forecasts of sectoral growth and reviewed sector studies. In addition, a Thousand Person Workshop was convened in May 2010. The participants in the workshop were leaders from the public and private sectors, research institutions and civil society. The objective of the workshop was to prioritise the key sectors of growth for Malaysia until 2020.

This workshop commenced with 20 mini-workshops (consisting of 30 to 70 participants each) on 20 sectors of the economy. The mini-workshops were provided with historical sector growth rates, independent forecasts for the sectors and international benchmarks for economic growth. Participants in each mini-workshop debated the growth potential of that sector and provided an estimate of the likely growth rate for that sector through to 2020. Once the growth rates for all sectors had been estimated, all workshop participants were surveyed. The results of the survey were used to create a list of potential NKEAs. This list was consistent with subsequent economic analysis and was endorsed by the Cabinet.

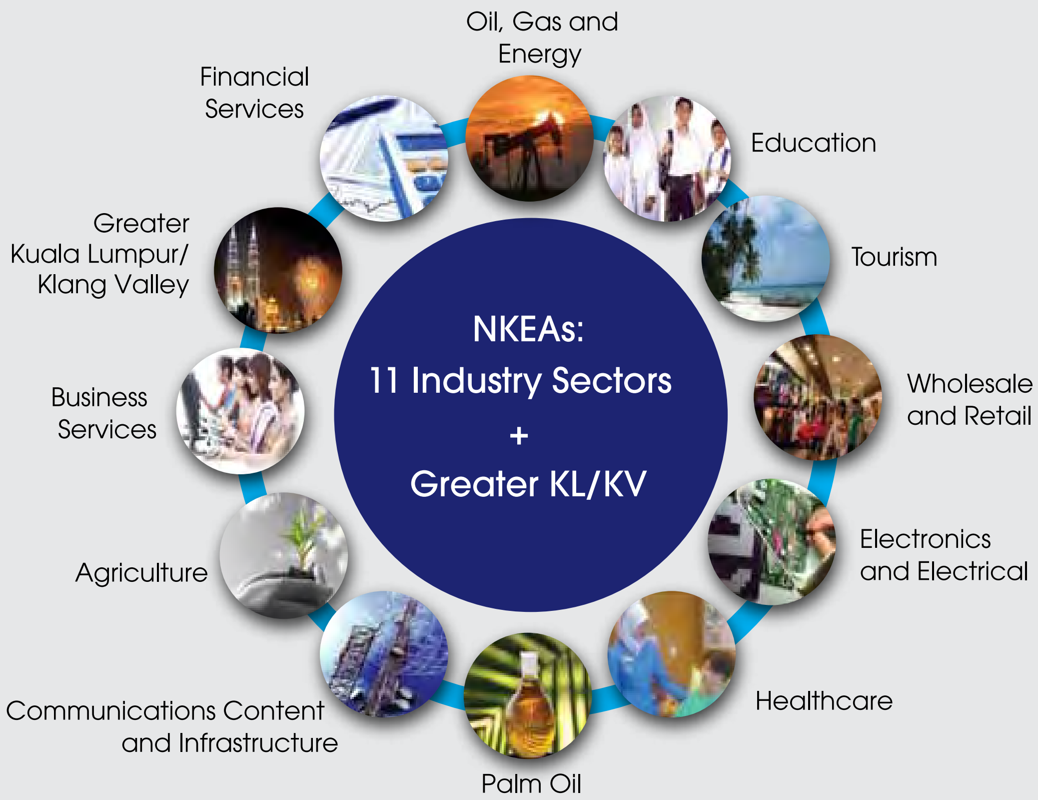
In addition to the 11 industry sectors, Greater Kuala Lumpur/Klang Valley was selected as an NKEA through a separate process. Kuala Lumpur currently accounts for about one third of Malaysia's GDP. Cities are significant drivers of growth, and a thriving Kuala Lumpur is vitally important to the health and performance of the overall Malaysia economy. On average, cities have productivity three times higher than in rural areas. Kuala Lumpur, as Malaysia's primary city, will therefore be a critical driver of economic growth.

The 11 sectors are expected to deliver 74 percent of the GNI growth potential over the next decade. Overall, these NKEA sectors are sectors in which Malaysia has current or potential competitive advantage, representing a mix of service, manufacturing, agriculture and extractive industries. These sectors are spread across urban and rural areas and are likely to support growth in the rest of the economy.

The way in which these NKEA sectors grow and develop will be consistent with the Government's inclusiveness and sustainability goals. These sectors employ 59 percent of the working population, and so growth in these sectors will generate broad benefits.

Exhibit 1-9

11 industry sectors were prioritised in addition to Greater KL/KV



The portfolio of NKEA sectors, as shown in *Exhibit 1-9* will evolve over time, depending on the performance of various sectors in the economy. The 12 NKEAs shown are not permanent choices, but will be formally assessed at points in the future. There will be a rigorous process to remove slow-growing sectors from the NKEA portfolio as well as to identify emerging areas of growth that may be added to the NKEA portfolio. This process is described in more detail in Chapter 4. This is important because the 2020 GNI criteria means that the initial list of NKEAs are either existing large sectors of the economy or medium-sized sectors with strong growth prospects. But there are several small sectors in the economy, with strong growth prospects, that will likely grow to become significant GNI contributors in the future. As these sectors develop, it may be likely that they will become candidates for NKEA status.

What Does it Mean to be an NKEA

Malaysia will focus its economic growth efforts on NKEAs. NKEAs will receive prioritised Government support including funding, top talent and Prime Ministerial attention. In addition, policy reforms such as the removal of barriers to competition and market liberalisation will be targetted at the NKEAs. The Tenth Malaysia Plan notes that the comprehensive review of business regulations that will be undertaken to improve the business environment will commence with the regulations that impact the NKEAs.

This focus will involve deliberate choices and trade-offs. Prioritising investment in NKEA sectors implies reducing investment in other sectors. The designation of sectors as NKEA sectors has to have real resource implications if it is to lead to meaningful change. The same philosophy of prioritisation will also apply to other support provided by the Government to these sectors, such as operating expenditure and efforts aimed at sector-specific policy and regulatory change.

The non-NKEA sectors will also benefit from policy measures that will improve the general business environment. This includes the policies announced in the Tenth Malaysia Plan, such as infrastructure investment, a revamped Malaysia Productivity Corporation and reduced business compliance costs amongst others.

The Government is committed to the ongoing support of growth in the non-NKEA sectors. However, the Government will focus its efforts on the NKEAs because of the significance of the GNI contribution that these parts of the economy can drive.

Why is Focusing on the NKEAs Important

Malaysia's success in transforming itself from a poor country at Independence to a middle-income economy today was driven largely by a deliberate diversification strategy. Initially, competitiveness across multiple sectors could be supported by our generally low-cost base. However, an excessively diverse strategy is no longer sustainable, given that Malaysia can no longer rely on a low-cost base as a source of competitive advantage.

In today's globalised economy, production networks are increasingly regional thus leading to greater regional integration. The next phase of transformation, from a middle-income to high-income nation, requires a shift towards higher value-add and knowledge-intensive activities. Competitiveness in higher value-add activities necessitates specialisation in terms of having a critical mass and an ecosystem of firms and talent to drive economies of scale. Malaysia's relatively small population further limits the number of areas that its economy can specialise in and be truly globally competitive.

A shift from an initial phase of diversification across sectors towards specialisation is therefore needed. The benefits from focusing on a limited number of sectors have been observed in many other countries, such as Taiwan, Republic of Korea and Singapore. Countries that have transformed from middle-income to high-income have typically focused on priority sectors.

The Government has taken a deliberate decision to focus on a limited number of sectors in order to generate competitive strength in these areas of the economy. One of the important innovations in the ETP is the tightness of the degree of focus. In this respect, the ETP represents a new way of doing things for Malaysia. There are five key reasons why focusing on a relatively small number of sectors is important in generating economic benefit for Malaysia.

Align policies coherently

Having a clear view of the priority sectors means that it will be easier to deliver a coherent, coordinated policy agenda. It allows the Government to align policies in a range of different areas, such as education, infrastructure and immigration policy, behind a common objective.

Avoid sub-scale investment

To achieve substantial and sustained impact, the investment and other commitments made to a particular sector need to be meaningful. If investments are spread across too many sectors, the risk is that the investments are diluted to a scale that is not sufficient to achieve transformational change. This is a particularly important for small- and medium-sized countries.

Develop a clear value proposition

Having a limited number of priority sectors contributes to establishing a clear national-value proposition, which can be readily communicated to investors (both foreign and local). This contributes to a more positive investment environment; potential investors can be confident that government support and investment will be directed to the priority areas.

Provide leadership focus

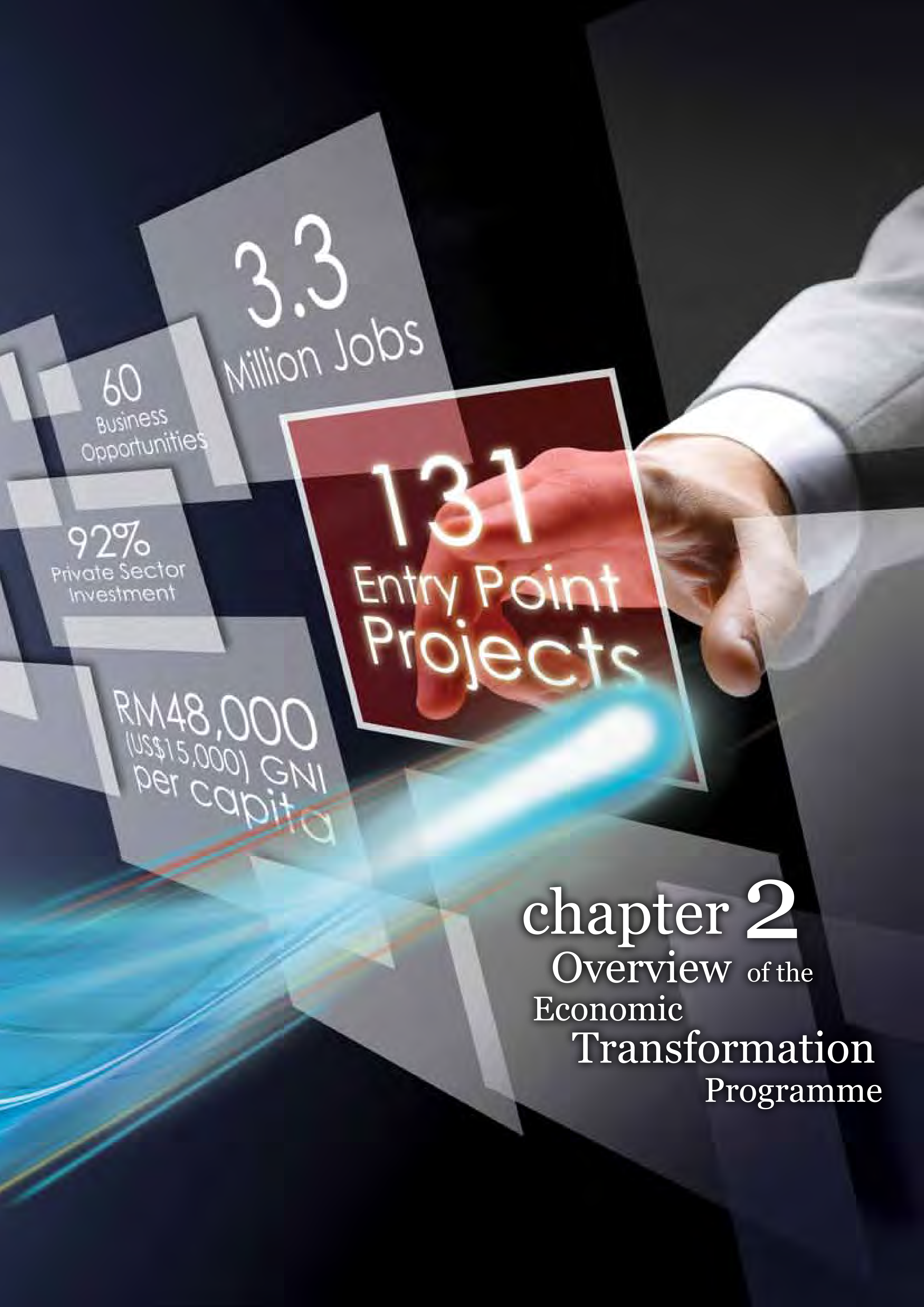
Having priority sectors means that relatively scarce government leadership time (the Prime Minister, other Ministers and senior officials) can be allocated in a meaningful way to the priority areas – rather than being spread thinly across multiple areas.

Allow for higher quality monitoring

A limited number of priority sectors makes it much easier to measure and monitor the performance of these sectors, increasing the likelihood of economic impact. Success of sector-based policy is linked to a rigorous process of monitoring – under-performance needs to be remediated and good performance rewarded. It is easier to do this in a timely manner when the focus is on a tightly-defined group of sectors.

CONCLUSION

Malaysia faces significant economic challenges. Our growth rates have slowed and global competition is increasingly intense. We face fiscal sustainability issues and we are neither a low-cost nor a high-value economy. To respond to these challenges, the ETP represents a markedly different approach while building on the Tenth Malaysia Plan and incorporating inputs from NEAC. The ETP focuses on 12 key growth engines (NKEAs), relies heavily on the private sector, is based on a series of specific projects and is anchored on GNI. The next chapter discusses the methodology we used to devise the ETP and the impact that we expect the programme to deliver.



chapter 2
Overview of the Economic Transformation Programme

Chapter 2: Overview of the Economic Transformation Programme

The Economic Transformation Programme (ETP) will result in Malaysia becoming a high-income nation with GNI per capita of RM48,000 or USD15,000 by 2020. As well as achieving its GNI target, by 2020 Malaysia will develop many of the characteristics of a high-income economy: services will account for over 65 percent of GDP; private consumption will account for almost 60 percent of GDP; and Malaysia's dependency on oil will be reduced from 21 percent of GDP in 2008 to 14 percent. This will be a private sector-led transformation with 92 percent of the over RM1.4 trillion of investment required coming from the private sector. Finally, the ETP will raise income levels across Malaysia by creating an additional 3.3 million jobs, over 60 percent of which will be in medium-income or high-income salary brackets.

The ETP requires Government to play a new role as a facilitator of economic growth – liberalising markets, incentivising investment, removing barriers and letting the private sector lead. This role will be critical to mitigate the risks to the programme and to ensure successful delivery.

DEVELOPING THE ECONOMIC TRANSFORMATION PROGRAMME

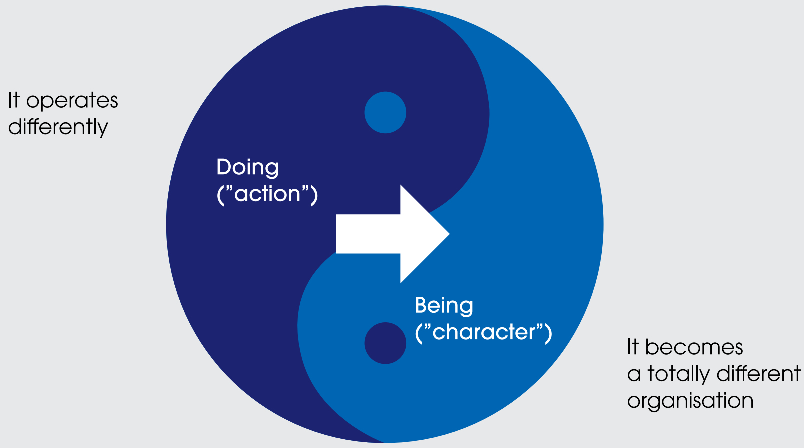
The ETP is not about incrementally improving Malaysia's economy, it is about transforming it. We believe that transformational change is achieved by changing how things will be done, which in turn changes how things will be. This means that by fundamentally changing how things are done in the economy, we will change the character and structure of the economy and thus achieve transformation *(Exhibit 2-1)*.

Exhibit 2-1

Transformation engine

Transformation entails fundamental change in
- the way the organisation does its activites (doing)
- the character of the organisation (being)

To achieve big fast results



Therefore we believe the starting point for the ETP should be the implementation of concrete changes in specific parts of the economy. That is why the 12 National Key Economic Areas (NKEAs) were selected. That is also why a programme of 12 labs was conducted, one for each NKEA.

Each lab was asked to determine concrete initiatives and projects that would drive the economic transformation necessary for Malaysia to become a developed nation by 2020. The 12 labs, covering the 11 economic sectors and the development of Greater Kuala Lumpur/Klang Valley, were represented by the private sector and civil service and facilitated by PEMANDU (the Performance Management and Delivery Unit under the Prime Minister's Department). In all, 500 people participated, the majority of whom came from the private sector.

The ideas generated in the ETP labs were anchored on the policy direction set out in the Tenth Malaysia Plan, including a private sector-led economy, market liberalisation to drive and encourage growth through innovation, development of world-class talent and investment in improving infrastructure.

The labs, which ran for eight weeks, provided the private sector an opportunity to work on and shape a transformative, sector-specific strategy and roadmap. Each lab set out a detailed plan that describes the aspirations, strategies and concrete action plans for one of the 12 NKEAs. These plans include the required funding, investment and labour necessary to deliver the stated aspirations. Critical to the success of the labs was intense syndication and debate among multiple stakeholders including industry experts (international and domestic), potential investors, regulatory bodies and the Government. These syndication sessions helped ensure that the initiatives were tangible and realistic.

What is a lab?

A lab is an intense forum in which relevant participants (from private sector corporations and public sector agencies) are brought together in a group with the objective of finding radical yet practical and specific solutions to problems. The lab creates an environment for participants to experiment, rigorously debate and challenge the status quo. During the course of a lab, participants conduct brainstorming sessions to generate ideas, conduct analysis to determine the feasibility of those ideas and test and refine them with multiple stakeholders.

Guidelines for the ETP labs

In developing ideas, the labs were given specific guidance on the types of projects and initiatives expected so that initiatives would:

- Contribute significantly to GNI;
- Emphasise private investment-led projects with Government playing the role of a facilitator. Investment from the Government should not exceed 10 percent of the total project investments;
- Be fiscally neutral or reduce the deficit;
- Strengthen sector fundamentals and move Malaysia to higher value-added activities;
- Allow Malaysia to reduce its dependence on resource-intensive sources of growth;
- Shift the income distribution towards high-income segments; and
- Reduce the number of Malaysians in low-income brackets.

Methodology

The labs were asked to identify initiatives that would kick-start Malaysia's economic growth. Every initiative proposed by the labs is therefore anchored on its impact on Malaysia's GNI. For each initiative the labs were also asked to calculate the private investment and public funding needed and the labour market implications in terms of new jobs created and skills required.

The GNI impact for each initiative was calculated based on the income approach, as illustrated in *Exhibit 2-2*. The approach was syndicated with and endorsed by the Economic Planning Unit, Ministry of Finance, Bank Negara Malaysia and Department of Statistics.

Exhibit 2-2

GNI is calculated using a simple methodology approved by experts across Government

GNI calculation method defined...

GNI: Economic Output accruing to the residents of a country = GDP Economic Output produced within the boundary of a country +/− Net income from abroad Net income from labour and capital to and from foreigners

- GDP is calculated using the Income approach (Value-add by sector): GDP = EBITDA[1] + Employee Compensation

- Corporate:
  - + Income earned by Malaysia corporations abroad
  - − Income earned by foreign corporations in Malaysia
- Individual:
  - + Income repatriated by Malaysians living abroad
  - − Income repatriated by foreigners living in Malaysia

...and syndicated with experts across Government

EPU
ECONOMIC PLANNING UNIT
PRIME MINISTER'S DEPARTMENT, MALAYSIA

MOF

Jabatan Perangkaan
MALAYSIA

[1] Earnings before Interest, Tax, Depreciation & Amortisation

SOURCE: Australian bureau for Statistics / National accounts; US Dept of Commerce; Bureau of economic analysis

To calculate the GNI impact, each NKEA lab identified initiatives that it classified as either entry point projects or business opportunities.

Entry point projects (EPPs) are projects that should generate big results fast. They are clearly defined initiatives that have potential investors already identified, a well-developed implementation plan and funding requirements clearly articulated. The EPPs are the initial wave only, and further projects will be identified and pursued over the coming years.

Business opportunities capture the potential of the sector to grow organically. These represent concrete opportunities. Some business opportunities will be triggered by the successful execution of EPPs. For example, the development of integrated resorts and hotels across Malaysia will create business opportunities for tour operators and land transportation businesses throughout Malaysia.

Many of the business opportunities highlighted will need further discussions to convert them into specific projects with potential investors identified, and a well developed implementation plan. Funding requirements will also need to be clearly detailed out. Beyond these identified opportunities, there will be many other ventures, large and small, that will emerge across the economy.

This will require collaboration with the relevant agencies such as MIDA and the respective ministries. Government will look into establishing a clear framework and process that faciltates and ensures efficient implementation and delivery of these opportunities.

The multiplier effect captures the economic impact of the development of EPPs on all the other economic sectors. As one sector grows, it will create demand for goods and services provided by others. For example, as the tourism sector develops it will create additional demand for financial services that will result in additional GNI. This additional GNI is captured through multiplier calculations.

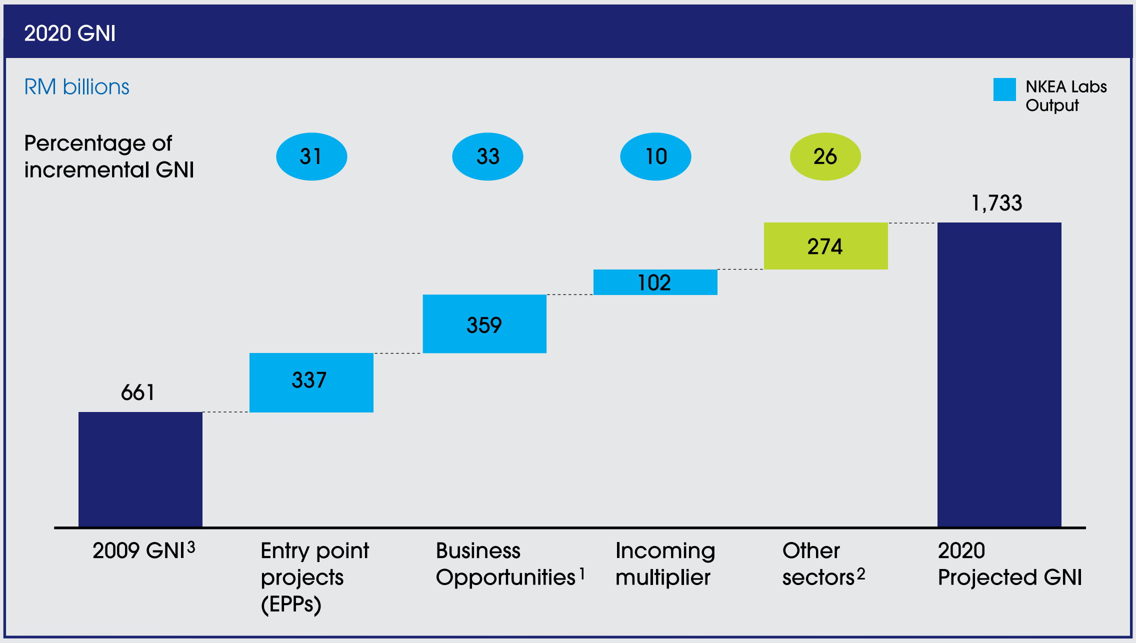
BECOMING A HIGH-INCOME ECONOMY

The projects and initiatives identified in the ETP will transform Malaysia into a high-income economy with a GNI that increases from RM660 billion in 2009 to just over RM1.7 trillion in the 2020. This means that GNI per capita will have risen from RM23,700 or USD6,700 in 2009 to beyond RM48,000 or USD15,000 in 2020. As a result, Malaysia is expected to reach the World Bank's definition of a high-income economy by 2020. To do this, Malaysia needs to achieve GDP growth of 6 percent per year, which is significantly higher than the 4.5 percent projected for the global economy by the IMF World Economic Outlook in April 2010.

As shown in *Exhibit 2-3*, the work of the ETP Labs suggests that EPPs can deliver up to 31 percent of the incremental GNI growth required and a further 10 percent through multiplier effects. Business opportunities could deliver an additional 33 percent. The remaining 26 percent of incremental growth is expected from other (non-NKEA) sectors.

Exhibit 2-3

The 11 Sector NKEA labs identified EPPs and business opportunities that could contribute incremental GNI impact of ~RM800 billion

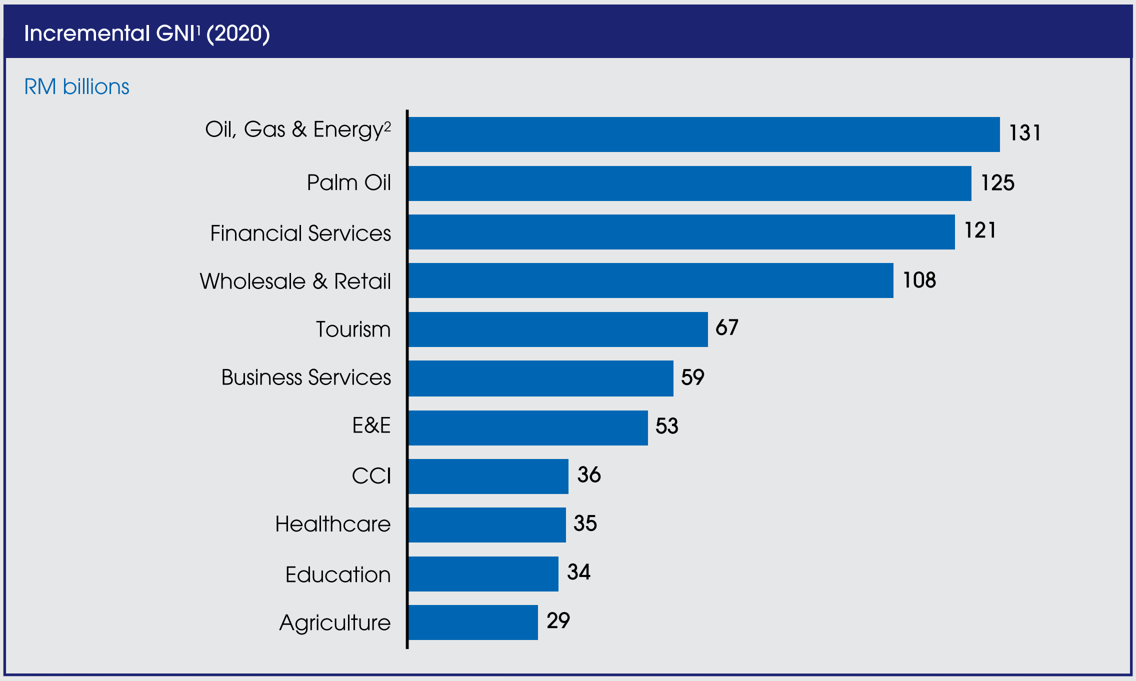


1 Oil, Gas & Energy business opportunities includes RM32 billion (USD10 billion) oil price adjustment
2 Excludes multiplier effect and assumes growth rate for other sectors as stated in the Tenth Malaysia Plan
3 Assumes historical 2009 exchange rate of RM3.52 : USD1.0

Note that Greater KL/KV GNI is not included to avoid double counting as some portion of the income from NKEAs will be generated in the Greater KL/KV area. Of the remaining NKEAs, Oil, Gas and Energy is projected to contribute the largest amount of incremental GNI. As illustrated in *Exhibit 2-4*, four NKEAs (Oil, Gas and Energy, Financial Services, Palm Oil, and Wholesale and Retail) are projected to contribute 60 percent of the incremental growth amongst the 11 NKEA sectors.

Exhibit 2-4

Oil, Gas and Energy, Palm Oil, Financial Services, and Wholesale and Retail contribute ~60% of incremental GNI impact from NKEAs in 2020

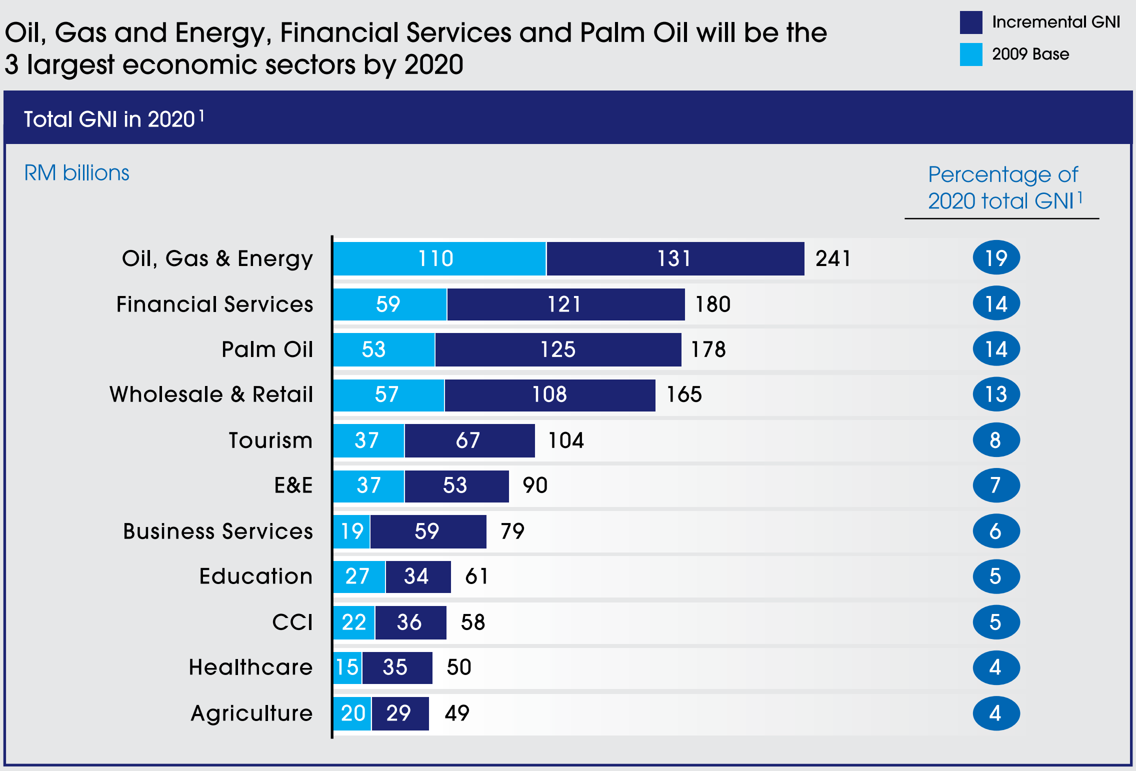


[1] Based on 11 sector NKEAs only, does not include other sectors
[2] Oil, Gas & Energy opportunities includes RM32 billion (USD10 billion) oil price adjustment

By 2020 oil, gas and energy will still be the largest sector in the Malaysia economy, but its share of the economy will have fallen due to strong growth in sectors such as financial services and palm oil. The wholesale and retail sector will also have grown considerably to become the fourth largest sector in the economy, as shown in *Exhibit 2-5*.

Exhibit 2-5

Oil, Gas and Energy, Financial Services and Palm Oil will be the 3 largest economic sectors by 2020



[1] Based on 11 sector NKEAs only, does not include other sectors

Growth Driven by Innovation and Reform

This growth will be driven by strategies and reforms that are market-friendly, centred on innovation and increasing value-add, focused on raising quality, standards and productivity and concentrated on areas where Malaysia has specific strengths.

Many of the planned initiatives are centred around market liberalisation and an intensification of competition. These factors will be especially important in attracting multi-national companies to Kuala Lumpur, in developing a regional financial footprint and in stimulating growth in Islamic financial services. The liberalisation of gas prices and reduction of subsidies will also sharpen market disciplines.

Economic growth will be spurred by innovation and a shift to higher value-added activities. The shift to food products in the Palm Oil NKEA means Malaysia will compete in higher-margin downstream markets. In the Healthcare NKEA, the development of clinical research and the expansion of contract manufacturing in medical devices will strengthen Malaysia's position in areas of global growth.

There will be a much greater focus on quality and on improving standards. The quality of skills training will be improved through industry-led bodies that will set standards, issue guidelines on content and harmonise the skills-training curriculum across sectors.

Labour productivity will increase significantly. For example, the roll-out of new harvesting techniques for palm oil will increase labour productivity in some holdings; Program TUKAR will see the development of a shared distribution centre for smaller retail outlets that will significantly increase efficiency and productivity; and land-sharing agreements will enable rice farmers to benefit from commercial-scale production.

Within the NKEAs, growth will be concentrated in sub-sectors where Malaysia has sustainable competitive advantage. Amongst others, in Financial Services, the key growth area is in Islamic financial services where Malaysia has a distinctive track record. In Oil, Gas and Energy, Malaysia is especially well-positioned to develop a regional oil field services hub because of the captive domestic oil and gas industry as well as our proximity to oil fields in the region.

Characteristics of a High-income Economy

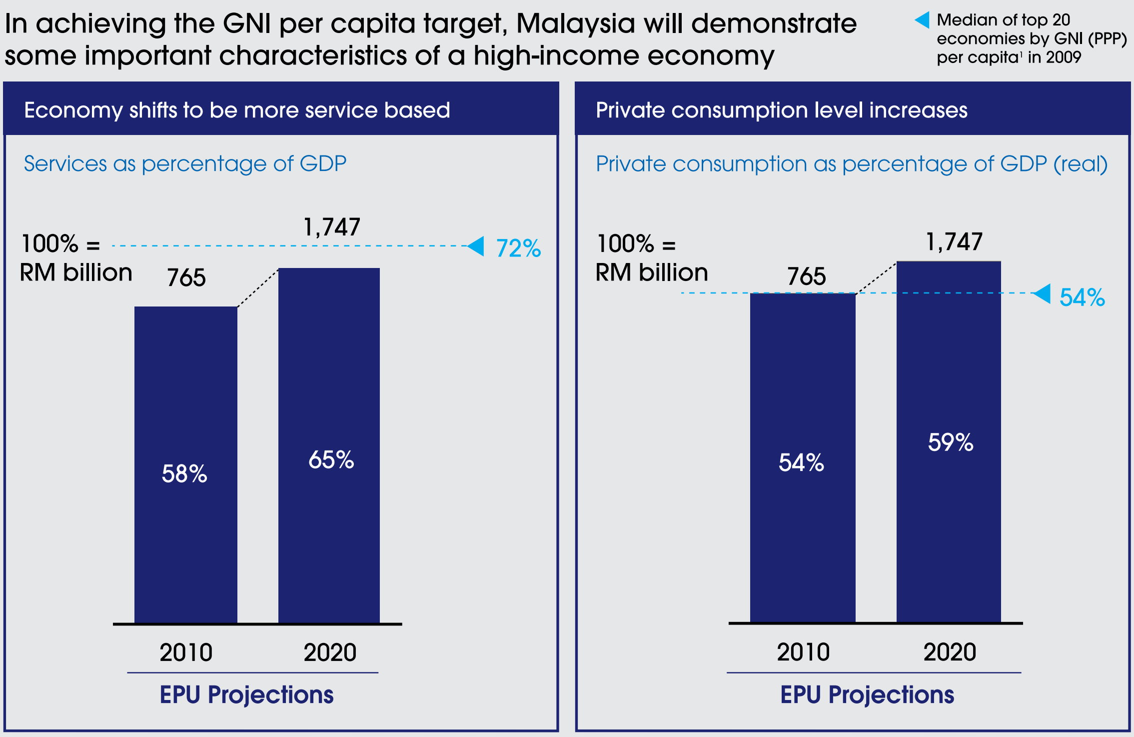
By 2020 Malaysia will not only have the GNI per capita of a high-income economy, it will also share a number of key characteristics. To begin with, the structure of the Malaysian economy will have changed significantly as can be seen in *Exhibit 2-6*.

- Services will account for a much greater share of the economy. By 2020, services will account for 65 percent of GDP, up from 58 percent in 2010. This growth will be concentrated in the Financial Services, Wholesale and Retail, Business Services, Tourism, Healthcare and Education NKEAs. As an example, in the Healthcare NKEA, annual growth of 10 percent is targetted in areas including health travel, specialist care centres and assisted living; and

- Domestic consumption will be a key driver of growth. Domestic consumption will account for 59 percent of GDP by 2020, compared to 54 percent in 2010. This will be partly a result of growth in sectors including wholesale and retail, financial services and healthcare services as well as growing urbanisation. This is especially important because it means that Malaysia will reduce its reliance on exports as a driver of demand. This growth in domestic demand would bring Malaysia in line with developed economies like Taiwan and New Zealand.

Exhibit 2-6

In achieving the GNI per capita target, Malaysia will demonstrate some important characteristics of a high-income economy



[1] Selected based on World Bank ranking (2009): Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Iceland, Ireland, Italy, Japan, Luxembourg, Netherlands, Norway, Singapore, Spain, Sweden, UK, USA

As well as a change in structure, Malaysia's economy will become more balanced and less dependent on resource-intensive industries. In particular, the petroleum industry's share of GDP will fall from 21 percent in the year 2008 to 14 percent in 2020. A more balanced and diversified economy should help ensure that growth will be sustainable over the long term.

As a result of the EPPs and the NKEAs, Malaysia will also become a more urbanised country. We estimated that the share of the population living in urban areas will grow from 64 percent to 70 percent and much of this growth will be concentrated in Greater Kuala Lumpur/Klang Valley. This will provide many new job opportunities for Malaysians, and the expectation is that some Malaysians from urban and rural areas will migrate in order to participate in these opportunities.

While Greater Kuala Lumpur/Klang Valley will be a primary engine of economic growth, there will be growth opportunities right across Malaysia. These include the development of the solar industry in Sarawak, the development of a global biodiversity hub to attract more tourists to Sabah and the commercialisation of paddy farming and improvements in yields within palm oil. The state-by-state coverage of the proposed EPPs is laid out in *Exhibit 2-7*.

Exhibit 2-7

EPPs will be spread around urban and rural Malaysia

■ At least 1 EPP from this NKEA present in this state

	Oil, gas and energy	Financial services	Whole-sale & retail	Palm oil	Tourism	E&E	Business services	CCI	Edu-cation	Agri-culture	Health-care
Greater KL/KV	■	■	■		■	■	■	■	■		■
Johor	■	■	■	■	■	■	■	■	■	■	■
Kedah	■	■	■	■	■		■	■	■	■	■
Kelantan	■	■	■				■	■	■	■	■
Melaka	■	■	■		■		■	■	■		■
Negeri Sembilan	■	■	■	■	■		■	■	■		■
Pahang	■	■	■	■	■		■	■	■	■	■
Perak	■	■	■				■	■	■	■	■
Perlis	■	■	■				■	■	■	■	■
Pulau Pinang	■	■	■	■	■	■	■	■	■		■
Sabah	■	■	■	■	■	■	■	■	■	■	■
Sarawak	■	■	■	■	■	■	■	■	■	■	■
Selangor	■	■	■	■	■	■	■	■	■	■	■
Terengganu	■	■	■		■		■	■	■	■	■

By 2020 Malaysia will also have grown a number of new national and regional champions. These companies will drive long-term growth in areas including financial services, business services and healthcare services.

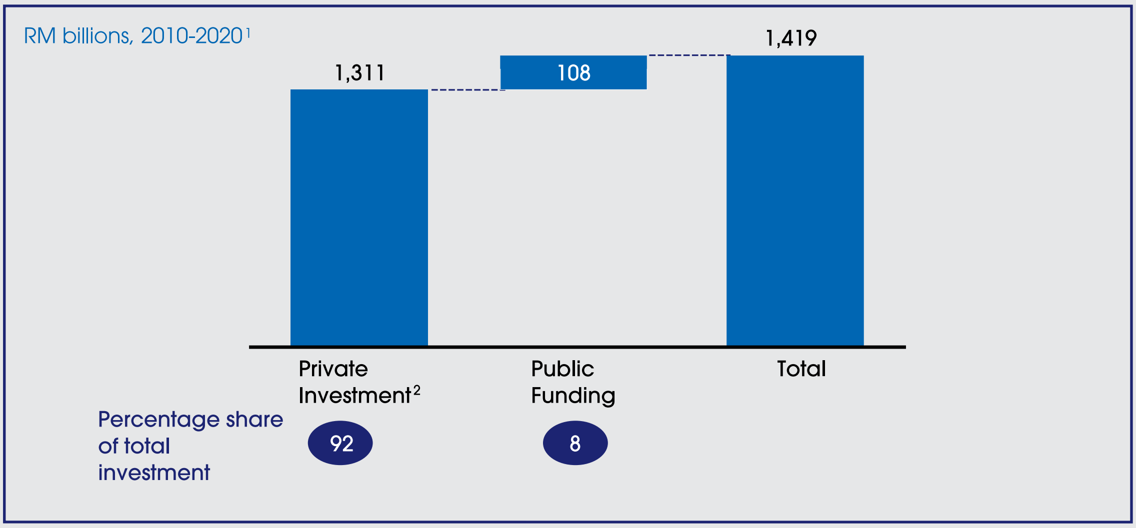
Finally, small- and medium-sized enterprises (SMEs) will play a more significant role across the economy. For instance, in education, agriculture, electronics and electrical and palm oil sectors, SME participation will be actively encouraged through the provision of financial support and better access to research and technologies as well as from improvements to infrastructure.

PRIVATE INVESTMENT-LED GROWTH

Investment in the Malaysian economy to 2020 will be driven and led by the private sector. Private investment will account for 92 percent of overall investment in the NKEAs and public funding for only 8 percent as shown in *Exhibit 2-8*. This is a significant increase from the 37 percent share of private investment in 2008 and is consistent with the targetted growth rate in private investment of 12.8 percent in the Tenth Malaysia Plan (2011 to 2015) as well as the longer-term target of 12.2 percent growth from 2011 to 2020. This 92 percent share fits with the new role for Government as a facilitator of economic growth as set out in the Tenth Malaysia Plan.

Exhibit 2-8

Private investment makes up ~92% of total required to deliver NKEAs



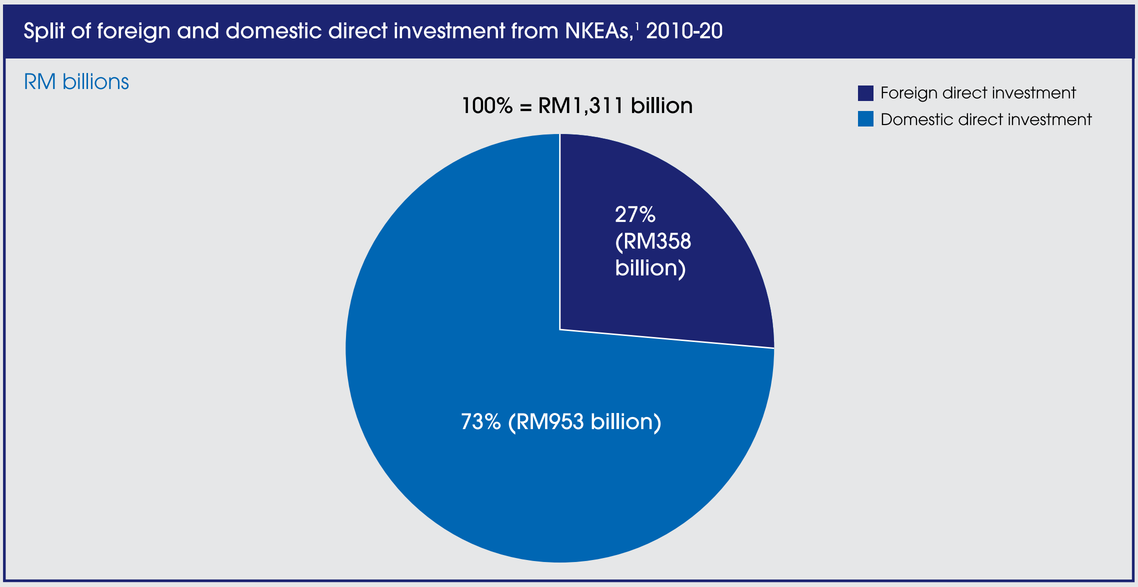
[1] Excludes funding needs for Greater KL/KV business opportunity
[2] Private investment figure stated here combines GLCs and other private investment

Private investment-led growth means that the economy will be less dependent on Government funding, which is constrained by the need to manage the nation's fiscal position. It also means that investment will be subjected to market disciplines and targetted at areas where private investors believe there is the greatest chance of success. Government funding will be targetted at initiatives that will maximise GNI impact for every ringgit of public money spent.

Of the total private investment required, domestic direct investment will account for approximately 73 percent, and about 27 percent will be sourced from foreign direct investment as shown in *Exhibit 2-9*.

Exhibit 2-9

NKEAs need about RM1.3 trillion private investment over 2010-2020, of which 73% is expected to be domestic direct investment

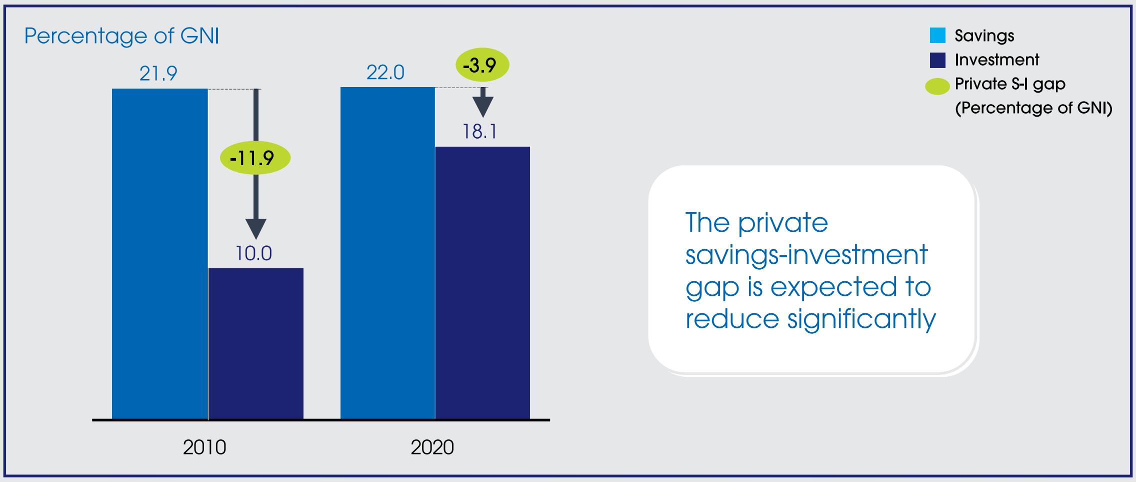


1 Excludes Greater KL/KV business opportunity
2 For business opportunities, the FDI:DDI was assumed to be the same as that for the EPPs

As highlighted in *Exhibit 2-10*, Malaysia has the capacity to generate this high level of domestic investment because of a significant gap between its rates of savings and investment. Malaysia's savings rate is a very healthy 22 percent of GDP, but the investment rate is only 10 percent, resulting in a gap of 12 percent. The savings rate is projected to stay relatively constant, so there is room for the investment rate to rise significantly. The EPU projects that the domestic investment rate could reach 18 percent by 2020, which would deliver the total investment needed for the ETP.

Exhibit 2-10

Analysis of domestic private savings-investment gap shows there is enough capacity to generate the required domestic invesment

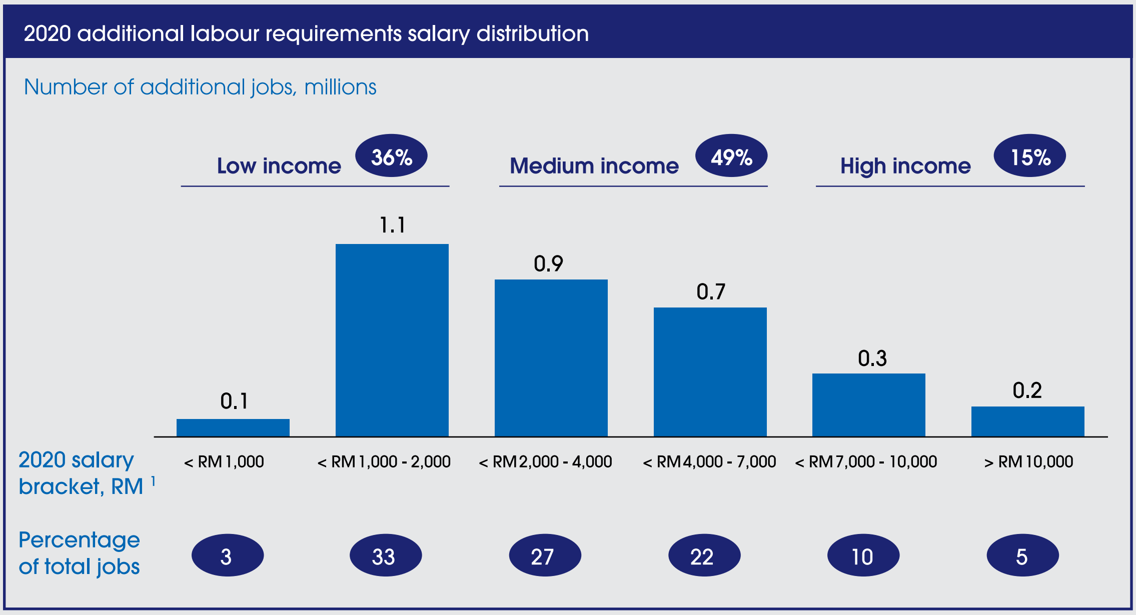


CREATING MIDDLE- AND HIGH-INCOME JOBS

The initiatives and reforms of the ETP are designed to deliver growth that will benefit many Malaysians. In particular, an incremental 3.3 million jobs are projected to be created from the initiatives developed in the NKEA labs. Over 60 percent of the new jobs will have middle or high salaries as shown in *Exhibit 2-11*.

Exhibit 2-11

NKEAs will create additional 3.3 million jobs with a high proportion being medium- and high-income salary

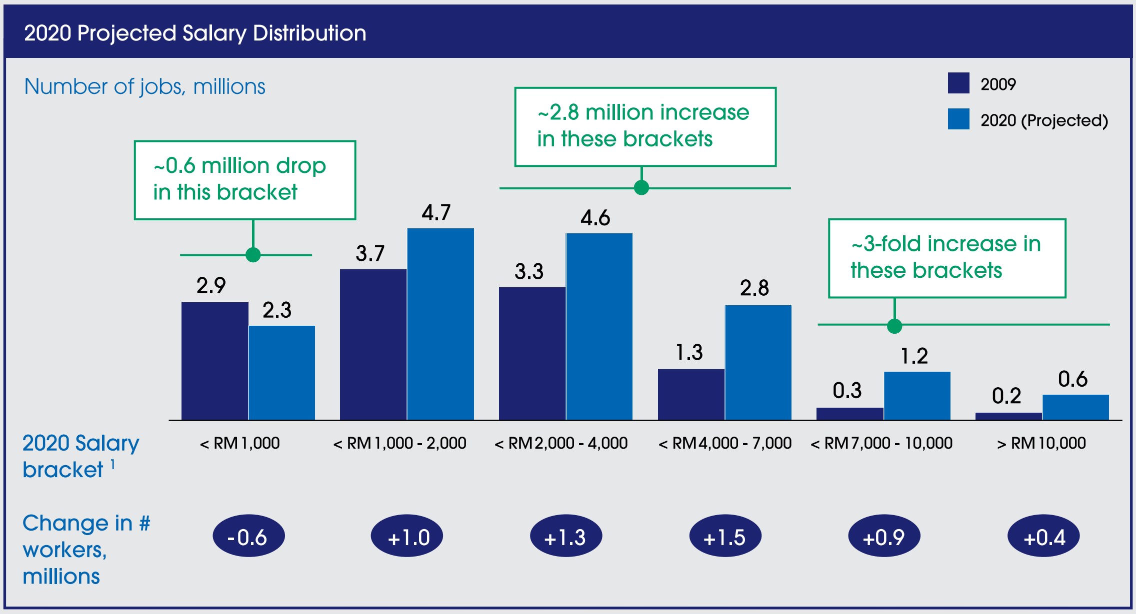


¹ Salary brackets reflects 2020 nominal RM

An overall impact of the ETP will be significant growth in the job market, a shift towards higher paid jobs, a wide variety of new opportunities for Malaysians and a strengthening of the skills base. In 2009 approximately 57 percent of employed workers were low-income earners. Due to the combined effect of new jobs created by the NKEAs and growth in real wages some 600,000 workers will move out of the lowest income bracket as shown in *Exhibit 2-12*. There will be a 2.8 million increase in the number of people on middle-income salaries and a 3-fold increase in the number of high-income jobs. These new job opportunities will attract high-skilled foreign workers as well as talented Malaysians back to Malaysia. The Greater Kuala Lumpur/Klang Valley NKEA aims to attract 150,000 high-skilled Malaysian diaspora to return to help meet this demand.

Exhibit 2-12

NKEAs will help reduce proportion of low-income workers and increase proportion of middle- to high-income workers

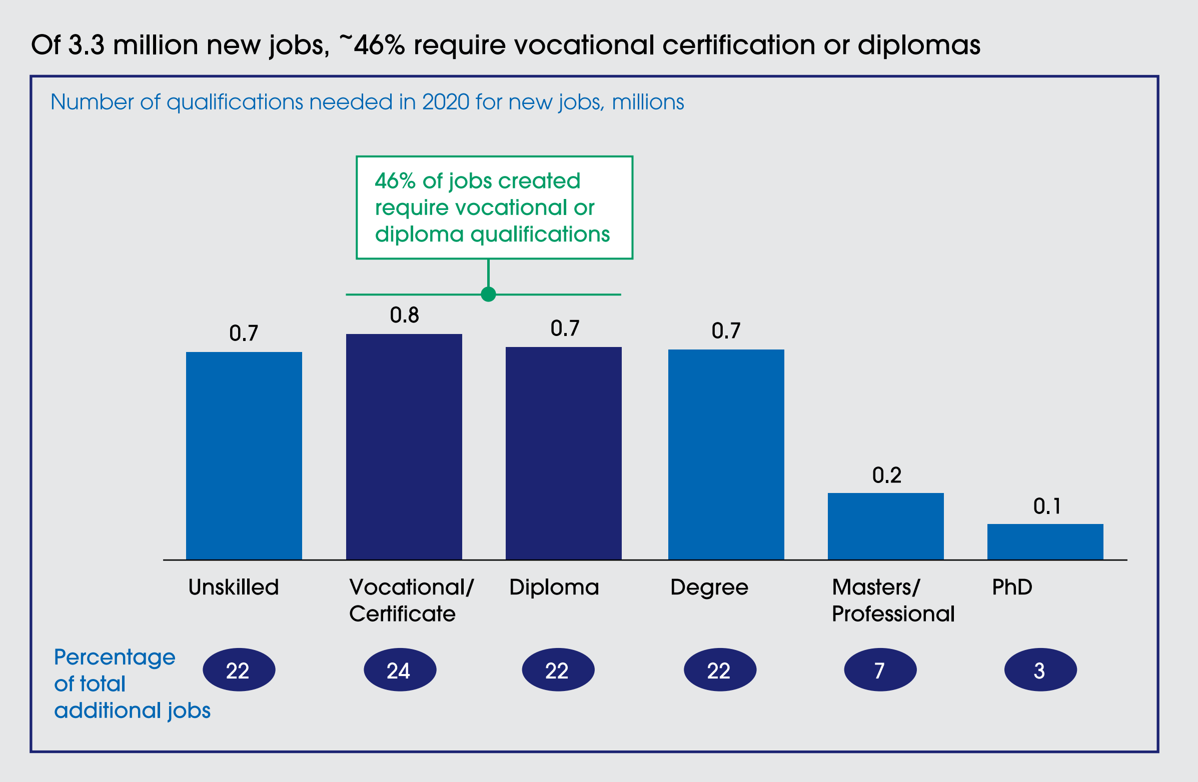


[1] Salary brackets reflects 2020 nominal RM, 2009 salary brackets are adjusted to match this

Assumptions: Workers uniformly distributed in each salary bracket; all workers' wages grow at EPU projected rate for 2010 -2020 of 3.6%; non-NKEA sector real labour productivity grows at EPU projected rate for 2010-2020 of 3.6%, non-NKEA sector has same distribution as national average

In the years towards 2020, there will be a better fit between the skills demanded in the labour market and the skills developed. What Malaysia needs most of all is a much larger pool of well-trained and competent individuals with the right vocational and technical training (46 percent of additional jobs) as shown in *Exhibit 2-13*. Investment in education in Malaysia is designed to deliver increased quantity and quality of these vocational and technical qualifications.

Exhibit 2-13



MANAGING RISK

The ETP is a highly ambitious programme, and there are of course risks to implementation. The most significant risk is that the required growth in private sector investment of 12.2 percent per annum is not achieved. Malaysia is starting from a position of relatively low growth in private investment (both domestic and foreign), so this is a real challenge. Since 92 percent of the capital required for the ETP is projected to come from private investment, if this growth in investment does not materialise, the risk is that the economy will not grow in line with the Government's target.

The Government understands the importance of securing this private investment and is taking a number of actions to mitigate this risk. Most importantly, the Government recognises that it has a new role to play in facilitating growth in what is a private sector-led programme of transformation. The ideas and investment opportunities developed in the labs came from the private sector. The reforms required were also identified by the private sector. The Government will be absolutely focused on implementing these reforms so as to stimulate private investment. Government funding of development projects and incentives will also be targetted at those projects that bring with them significant private investment and that will drive GNI growth. In addition, the corporatisation of Malaysian Industrial Development Authority (MIDA) will help enhance Malaysia's ability to attract foreign investment and stimulate domestic investment.

There are other risks to the programme. The global economy is unpredictable and may not grow as quickly as the 4.5 percent projected through the 10 years. There is a limit to what can be done to mitigate this risk. However, the fact that the ETP aims to balance growth across exports and domestic consumption means that Malaysia will be somewhat less exposed to changes in global economic activity than would otherwise be the case.

There is also a potential risk that the delivery of the initiatives will be delayed. This is being tackled head-on by the Government. The programme is based on very concrete and actionable initiatives in each of the 12 NKEAs. Specific projects have been identified to drive GNI growth along with the market-driven reforms needed to attract investment and facilitate growth. These are all based on rigorous analysis and are driven by the private sector. There will be clear accountabilities across Government for delivering the reforms and initiatives required to drive growth, and a new ETP Unit has been established under PEMANDU that will support the ministries, government agencies and the private sector in the delivery of the ETP. The Government will report regularly and transparently on the progress of implementation.

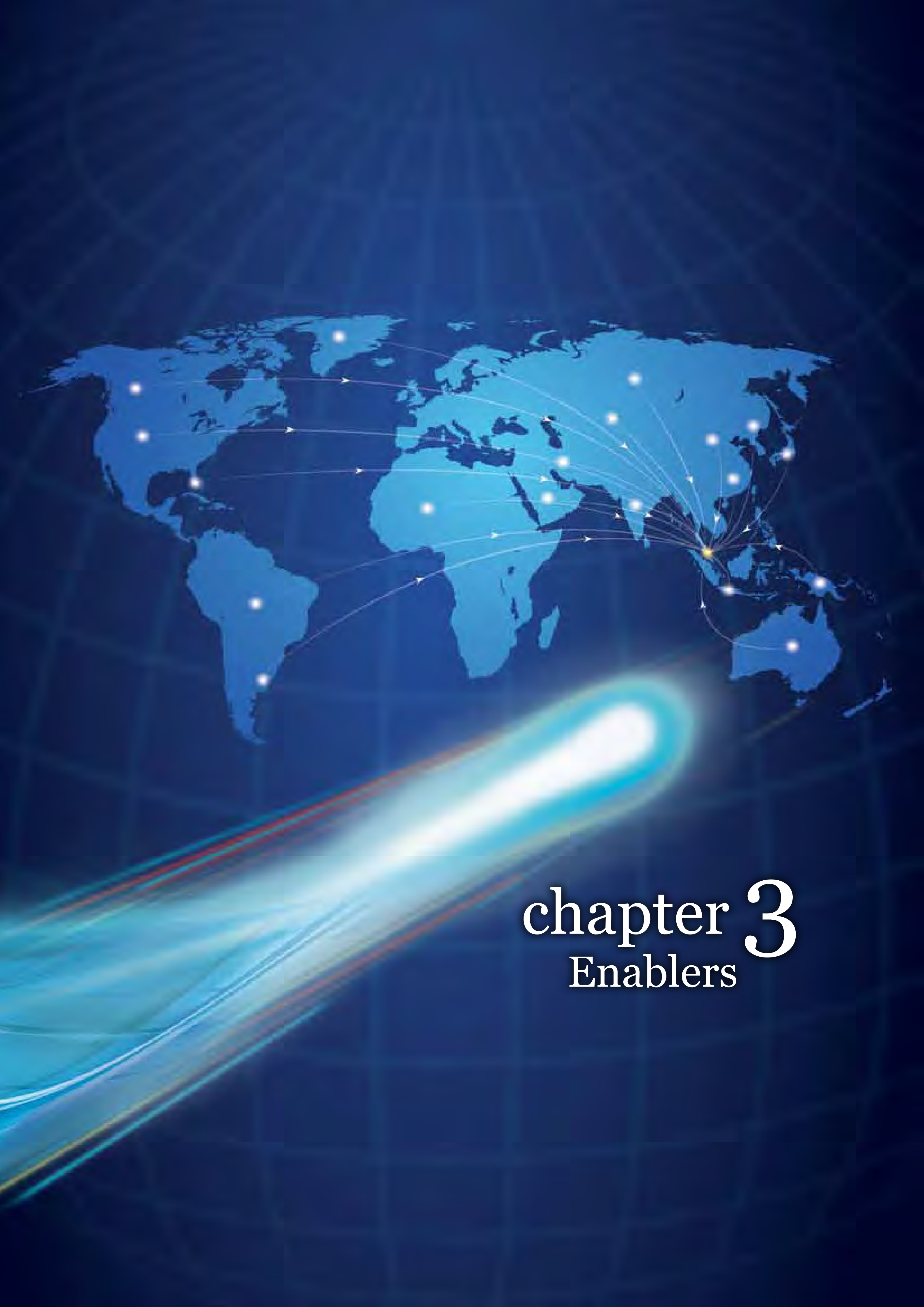
An Evolving Programme

It is important to reiterate that the ETP will evolve. The initiatives defined in the labs are not intended to be a definitive blueprint of economic activity in Malaysia for the next 10 years – they merely serve as a starting point. That is why the term “entry point project” is used. Implementation will be market-led, and markets are dynamic and fast-changing. A number of projects will evolve, some will change quite radically and some will be discontinued. Many new initiatives and activities that have not even been thought of yet will emerge as reforms take hold, new opportunities emerge and markets develop.

However we will not compromise on the Government’s goal of becoming a high-income nation by 2020, nor will we compromise on ensuring the Government plays its part in facilitating and incentivising private sector-led investment and development and in implementing the reforms required.

CONCLUSION

The ETP will transform the Malaysian economy and deliver the economic growth required to become a high-income country: achieving GNI per capita of at least RM48,000 or USD15,000 by 2020. The NKEAs will deliver 74 percent of this growth through a programme of initiatives and reforms that are market-driven and focused on areas where Malaysia has competitive advantage. The transformation will be led by the private sector, and over 90 percent of the funding required will come from private investment. Through the ETP over 3 million new jobs will be created, the majority of which will be middle-income or high-income jobs. This will lead to a significant overall increase in income levels. The Government’s role is to facilitate this economic growth by delivering reforms, incentivising investment and ensuring public funding is targetted where it will have most impact.



chapter 3
Enablers

Chapter 3: Enabling the Success of the ETP

Much of the gross national income (GNI) impact of the National Key Economic Areas (NKEAs) will be achieved through private sector investment and action. However, delivery of many of the entry point projects (EPPs) requires government action. These government actions include policy and regulatory change and funding in areas such as education or infrastructure. Only about 15 percent of the EPPs do not request specific government funding or policy support.

About 70 percent of the required government enabling actions are specific to an individual EPP or across an NKEA and are described in detail in the NKEA chapters of this Roadmap. In addition, there are a series of required government actions that are common across multiple EPPs and across multiple NKEAs. It will be more effective and efficient to coordinate these cross-cutting actions than solve them on an individual basis as they arise.

In addition, these enabling actions will support GNI growth resulting from the business opportunities in the NKEAs as well as in the non-NKEA sectors. This is important because the business opportunities in the NKEAs comprise 33 percent of the incremental GNI required to achieve the 2020 GNI target, while the non-NKEA sectors account for an additional 26 percent of incremental GNI. Without these broader policy enablers, it is unlikely that the GNI growth required will be delivered.

Four categories of enablers are discussed below. The first is promoting private investment - attracting and supporting domestic and foreign investment as well as developing a clear framework for delivering fiscal support. The second is growing human capital - attracting foreign talent to Malaysia to support growth in areas such as Greater Kuala Lumpur/Klang Valley, streamlining immigration rules and procedures and investing systematically in vocational education for Malaysians. The third is improving the business environment - reducing compliance costs, deregulating and improving the efficiency of government operations in order to generate a substantial increase in private investment. The fourth is investing in infrastructure, such as broadband and logistics.

PROMOTING PRIVATE INVESTMENT

Private investment is at the core of the Economic Transformation Programme (ETP). In many cases, delivering this investment will require some support from the Government. Of the 131 EPPs, 59 make a formal request for government assistance to promote private investment. These requests fall into two broad categories: more aggressive investment promotion to obtain both domestic and foreign investment and various forms of fiscal incentives.

Investor Attraction

A total of RM1.3 trillion in additional investment is required from the private sector to fund the EPPs and business opportunities identified in the ETP. About 73 percent of this capital or RM953 billion is expected to come from domestic sources. As noted in Chapter 2, Malaysia has a high domestic savings rate, indicating that this capital is available. The priority is to ensure that this domestic-capital is attracted to the productive opportunities identified in the NKEAs.

Given the importance of domestic investment to the delivery of the ETP targets, we will expand the remit of the Malaysian Industrial Development Authority (MIDA) to include attracting domestic investment. Specifically, MIDA will reach out to domestic investors, both broadly through roadshows and mass communications as well as through targetted identification and negotiation.

MIDA will also assist domestic investors in their negotiations with government agencies on incentives, regulations and navigating administrative procedures. In addition, MIDA will co-ordinate and consolidate the various efforts of the five growth corridors – Iskandar Malaysia, Northern Corridor Economic Region, East Coast Economic Region, Sarawak Corridor of Renewable Energy and Sabah Development Corridor. In addition to these domestic sources of capital, 27 percent of the capital required to finance the EPPs is estimated to be sourced in the form of foreign direct investment (FDI), amounting to a total of RM358 billion over the 10 years to 2020. Some of the NKEAs, particularly Greater Kuala Lumpur/Klang Valley, Electronics and Electrical (E&E) and Oil, Gas and Energy, rely on attracting FDI.

Malaysia's FDI performance has lagged many countries in the region over the past decade. In 2009, Malaysia received just RM4.9 billion of FDI, a reduction of 81 percent on the 2008 inflow. Over the same period, FDI inflows into the entire Southeast Asian region reduced by just 22 percent, and increased in the Philippines (26 percent) and Singapore (54 percent).

To attract both the substantial amounts of domestic and foreign investment required, Malaysia will fundamentally strengthen its investment attraction activities. This began with the corporatisation and empowerment of MIDA announced in the Tenth Malaysia Plan and the expansion of its scope to cover domestic investment. The specific requests from the various EPPs will sharpen the focus of these reform efforts. There are two categories of investor attraction: targetted outreach to potential investors and partners as well as broader-marketing campaigns (*Table 3-1*).

Targetted outreach activities include identifying and negotiating with specific investors to participate in identified projects. For instance, we will target foreign investors to participate in five oleo hubs in the Palm Oil NKEA and encourage existing investors to bring in advanced packaging lines in the E&E NKEA. MIDA will be responsible for working with the respective industry to lead these investor-outreach activities and will act to achieve the key milestones for the EPPs.

In addition to these targetted activities, MIDA will also undertake broader marketing campaigns in relevant NKEAs in order to promote Malaysia as an attractive investment location. An example is organising international roadshows to position Malaysia as a world-class data centre hub.

Table 3-1

Description	Enablers required from EPPs	Lead agency	GNI impact (RM billion)
Targetted outreach for partners	11 EPPs, including • E&E: Encourage assembly and test players already in Malaysia to bring in advanced packaging lines; outreach to IC design firms and substrate manufacturers • Palm Oil: Attract targetted foreign investors to set up their plants in five oleo hubs • Tourism: Attract entertainment outlet operators to invest in gazetted entertainment zones	Malaysian Industrial Development Authority	20.3
Broader marketing campaigns	5 EPPs, including • Business Services: Hold roadshows to position Malaysia as a world-class data centre hub • E&E: Promote Sarawak as a site for silicon producers; promote Northern Corridor and Klang Valley as sites for wafer and cell producers • Healthcare: Fund pharmaceutical trade shows to promote made-in-Malaysia generics exports		34.9
Total			**55.2**

Fiscal Incentives

Many of the EPPs require government financial support for either capital expenditure or operating expenditure. Broadly, this Government support can come in the form of general tax credits and holidays, tax incentives that are directly aimed at increasing specific investment and other forms of non-tax fiscal support such as grants or soft loans. *Table 3-2* describes the types of fiscal incentives that have been requested. These incentives will only be disbursed upon demonstration of commitment from the private sector. The Agriculture NKEA requests tax concessions to help attract foreign partners to invest in an integrated food park. Investment tax allowances have also been requested to encourage greater levels of private investment in a range of sectors, such as advanced packaging plants in the E&E sector.

The non-tax incentives requested by the EPPs, consists mainly of grants and loans from various government agencies. Although these incentives have been identified by 22 EPPs, the amounts requested are relatively small (e.g. RM19 million grant to build early childcare and education training centres). Many of the loans or grants requested are from funds that have already been set up by the Government for these specific purposes, such as the Green Technology Fund and working capital loans from SME Corporation.

Many of the incentives are specific to sectors. Rather than a blanket change to the tax code, the Government will empower MIDA and other agencies as appropriate, to negotiate requested incentives with investors on a case-by-case basis. However, the Ministry of Finance will establish a common approach and framework to provide the basis for conducting these negotiations. This will mean that the provisions for these incentives do not have to be designed from scratch each time. The Government will also review these requests to ensure that only those requests with the highest potential GNI impact receive financial support from the public sector.

Table 3-2

Description	Enablers required from EPPs	Lead agency	GNI impact (RM billion)
Tax credits and holidays	7 EPPs, including • E&E: Exempt pioneering silicon producers and wafer and cell producers from tax • Healthcare: Provide tax breaks to companies qualifying for Health Metropolis status • Agriculture: Give tax concession to foreign partners that set up in an integrated food park	Ministry of Finance	22.9
Investment tax allowance	4 EPPs, including • Palm Oil: Provide tax incentive for acquisition of foreign oleo derivatives and food companies • Tourism: Provide investment tax allowance (ITA) for 4-star and 5-star hotel construction, upgrades and refurbishments • E&E: Provide incentive to scale up advanced packaging plants		17.5
Non-tax incentives (e.g. grants and loans)	22 EPPs, including • Education: Fund the building of new early childcare and education (ECCE) training centres or the expansion of existing ones • E&E: Give R&D and training grants for the expansion of LED companies • Agriculture: Set up a low-interest financing scheme for rural entrepreneurs with Agrobank	Economic Planning Unit and Ministry of Finance	60.6
Total			**101.1**

GROWING HUMAN CAPITAL

Human capital is critical to the success of the ETP. Significant improvements are required in the size and nature of the talent pool in Malaysia in order to deliver the required GNI growth in the NKEAs. A third of the EPPs, representing RM120 billion of GNI contribution, require direct investments in human capital. Other EPPs will also require human capital development albeit indirectly. Examples of human capital required include aquaculturists (Agriculture), accountants (Business Services), wealth managers and financial products specialists (Financial Services) and nurses (Healthcare). Importantly there will also be a significant requirement for leadership talent for managerial and administrative positions across all NKEAs.

The 3.3 million jobs expected to be created in the NKEA sectors are required across the range of qualifications, from unskilled labour to vocational certificates and diploma holders to advanced professional degree graduates. A review of skills requirements in the NKEAs show that, on current trajectory, there could be up to 1.0 million job vacancies in 2020 that will be difficult to fill. These range from relatively low-skilled sales assistants and hotel housekeeping staff to high-skilled positions requiring advanced degrees, such as engineers, lecturers, financial analysts and general medical practitioners.

To address the human capital needs of the EPPs and business opportunities, the Government will take action to build the capabilities of existing talent in Malaysia, attract foreign talent to work in Malaysia and ease immigration rules to facilitate the entry of talent. Building the pool of human capital will not only benefit the EPPs and business opportunities, but also provide a ready pool of technical, critical thinking and leadership skills needed to run future business opportunities as well as projects in non-NKEAs.

Domestic Capability-Building

The skills necessary to meet the demands of some EPPs need to be developed domestically, either through up-skilling existing workers, or through training programmes at universities and other educational or training institutes. As part of the Tenth Malaysia Plan, the Government has, in addition to systematically upgrading tertiary institutions, committed to significantly increase funding and focus on upgrading technical and vocational training.

The companies driving these EPPs have asked the Government to partner with them in providing training or to incorporate specific areas of study into programmes at public universities. An example of such requests is establishing the Centre for Engineering and Excellence (CEE) for the private sector and academia to interact on postgraduate, postdoctoral programmes as well as to work on research-based projects, based on demand from the private sector (such as the E&E NKEA). Others include the introduction of more data centre-focussed courses at public universities, including topics like networks, server virtualisation and green IT (Business Services) and joint training to increase the number of certification auditors in the integrated aquaculture industry (Agriculture). *Table 3-3* gives an overview of the required actions.

Another important requirement for the success of the ETP is the development of senior management and leadership talent for the NKEAs. In this regard, the Talent Corporation (discussed below) will be involved in building the capabilities of top talent most needed for the NKEAs, such as the pivotal leaders and specialised talent to propel the success of the EPPs.

A coordinated approach to deliver the right level of training and education for these priority areas will be delivered by the Government. Talent Corporation, the Ministry of Higher Education and the Ministry of Human Resources will coordinate with the relevant NKEA Lead Ministries to assess skills gaps and to devise and deliver appropriate courses. Many of these skill gaps will be in technical and vocational fields such as hospitality management and nursing. The Government is committed to supporting technical education and vocational training (TEVT) through harmonising accreditation across ministries, industries and private skills-training providers.

Table 3-3

Description	Enablers required from EPPs	Lead agency	GNI impact (RM billion)
Training courses	29 EPPs, including • Healthcare (in coordination with Ministry of Health): Train more radiologists and sub-specialists in various radiology and pathology fields; partner with private healthcare providers to participate in allied health training programmes; establish centres of excellence for innovative care, research and specialised education • Agriculture (in coordination with Ministry of Agriculture): Upgrade knowledge on standards for integrated aquaculture (IZAQ); issue guidance and procedures on seaweed farming operations • Business Services: Train 600 engineers to grow large pure play engineering services firms; run green technology seminars for financial institutions to help them fund and partner green technology start-ups • E&E (in coordination with Ministry of Science, Technology and Innovation): Train talent in IC design, semiconductors, wafer and cell manufacturing; co-fund MSc and PhD programmes with private companies; introduce courses on soft skills; expand fast-track programmes for new industry hires • Tourism (in coordination with Ministry of Tourism): Set up training centres to produce local experts in the spa industry; train tourist police in foreign languages • Financial Services (in cooperation with Bank Negara Malaysia, Securities Commission): Provide training in specialised areas like capital-market risk management, product development, specialised trading, wealth management and asset management	Ministry of Higher Education and Ministry of Human Resource	61.4
University courses and modules	15 EPPs, including • Agriculture (in coordination with Ministry of Agriculture): Restructure existing agricultural courses to ensure sufficient emphasis on core fields such as animal nutrition, animal husbandry, animal breeding, agronomy and agriculture information and communications technology; increase places for newer fields such as aquaculture • Business Services: Invite foreign university to set up local campus to teach aviation engineering (maintenance, repair and overhaul); introduce data centre courses • Healthcare (in coordination with Ministry of Health): Create links between Malaysian Masters programmes and international colleges for radiology and pathology • Palm Oil (in coordination with Ministry of Plantation Industries and Commodities): Increase the number of courses in chemical engineering, bio-engineering, food science, food technology, nutrition and health, product research and development and product design	Ministry of Higher Education	17.4
Total			**78.8**

Overseas Talent

The Government will attract Malaysians currently living and working in other countries to return to Malaysia as well as non-Malaysians to build their careers in Malaysia. There is significant potential in both of these areas. It is estimated that in 2009 there were over 700,000 Malaysians living abroad, with up to two-thirds of them, professionals.

EPPs from many NKEAs require talent from overseas (*Table 3-4* gives an overview), e.g. Greater Kuala Lumpur/Klang Valley, Education and Financial Services. While we recognise that many overseas Malaysians and non-Malaysians will choose to come to Malaysia for the opportunities created by the ETP, a substantial effort by the Government will be necessary to attract the sheer quantity of talent required. The Tenth Malaysia Plan reports that the number of skilled expatriates in Malaysia more than halved between 2000 and 2007, from 82,500 to 38,100.

The actions that will be taken include:

- Design and implement attractive expatriate packages (e.g. personal income tax incentives) for both overseas Malaysians and skilled non-Malaysians;
- Design and implement marketing efforts (e.g. roadshows, targetted outreach); and
- Assist expatriates with their applications to work in Malaysia (e.g. visas, work permits).

The Talent Corporation will be established under the Prime Minister's Department to lead initiatives to attract, motivate and retain the top talent that the nation most critically needs. In addition to delivering top Malaysian talent to support the ETP, the Talent Corporation will also:

- Actively identify, engage and network with highly-qualified and talented members of the Malaysian diaspora. This will be through broad marketing efforts like roadshows and career fairs, but also through more targetted activities such as searching for and recruiting specific foreign talent;
- Coordinate with the Immigration Department and diplomatic missions to reach out to foreign talent, ranging from those with required expertise in the NKEAs to graduates of top universities worldwide with high potential; and
- Consolidate and enhance existing talent attraction programmes such as the Returning Expert (programme to encourage Malaysian citizens with expertise residing overseas to return to Malaysia) and Brain Gain (Ministry of Science, Technology and Innovation programme to attract talent pool of Malaysian diaspora and foreign researchers, scientist, engineers and technopreneurs).

The Economic Planning Unit is leading the establishment of the Talent Corporation, which is expected to be formed by January 2011.

Table 3-4

Description	Enablers required from EPPs	Lead agency	GNI impact (RM billion)
Targetted communications and outreach	5 EPPs, including • Financial Services: Maintain a national database to track Malaysian financial services experts abroad and notify them of opportunities • Business Services: Collect and analyse profiles of Malaysian professional diaspora; launch targetted communications, network and match job opportunities • CCI: Provide scholarships to foreign creative content producers and hire upon graduation • Palm Oil: Target top Malaysian food scientists and technologists, fast-moving consumer goods marketing specialists, industrial chemical engineers and bio-engineers that live abroad • Greater KL/KV: Track and engage with top 5,000 most interesting Malaysian diaspora individuals[1]	Talent Corporation	3.1
Broader marketing campaigns	5 EPPs, including • Business Services: Run campaigns to market Malaysia as a destination for professional talent; develop one-stop talent portal • Financial Services: Attract global Islamic finance experts		7.2
Total			**10.3**

Immigration Regulations

Malaysia's immigration laws have seen many positive changes in recent years, with regards to simplifying the entry of skilled foreign workers. However, the private sector – across many industries – continues to identify difficulties in bringing in foreign talent due to remaining restrictive immigration regulations. For example, there are no provisions that make it easy for high-performing foreign graduates of Malaysian universities to secure a job in Malaysia (e.g. automatic one-year visas). Malaysia risks losing these skilled workers to countries such as Singapore that have more flexible immigration policies.

The Government will act to simplify immigration procedures; for example, removing restrictions on middle- and high-income expatriates to allow them to work in services sectors, as well as further shortening application times and procedures. The government will develop and implement a set of criteria for the removal of restrictions on – or automatic approval of – visas and work permits.

1 This EPP will contribute to RM118 billion in GNI by 2020. However the GNI contribution from Greater KL/KV is not included to avoid double counting as some portion of the income from the other NKEAs will be generated in the Greater KL/KV area.

A revamp of selected immigration policies is also needed by some NKEAs to implement their EPPs. For example, for the Education NKEA to raise the number of foreign students entering Malaysia, the application process for foreign student passes needs to be accelerated and the ability for these students to work during term time to fulfil practical training requirements needs to be reviewed. Similarly for the medical tourism EPP within the Healthcare NKEA to succeed, express visa applications and extensions for health travellers and their companions need to be expedited. These will be negotiated on a case-by-case basis between the individual sector representatives, their respective NKEA lead ministries and the Ministry of Home Affairs. *Table 3-5* provides an overview of the actions needed.

Table 3-5

Description	Enablers required from EPPs	Lead agency	GNI impact (RM billion)
Simplify and speed up application processes	7 EPPs, including • Financial Services: Implement online immigration applications and processing • Oil, Gas and Energy: Implement short, fixed approval times for applications to obtain and renew work and residence permits • Healthcare: Shorten the time required by private hospitals to bring in foreign doctors, nurses and other health professionals • E&E: Reduce processing time (to less than one month for new applications and less than two weeks for renewals)	Ministry of Home Affairs	6.4
Remove restrictive immigration and right-to-work policy	9 EPPs, including • E&E: Provide automatic approval for foreign talent involved in knowledge work (e.g. engineers and designers) for solid state lighting companies • Business Services: Abolish restrictions on expatriates for key services subsectors; provide one-year working visa to foreign students with CGPA of 3.5 and above from local universities • Tourism: Allow foreign students studying hospitality or tourism-related courses to work up to 20 hours a week		5.6
Total			**12.0**

IMPROVING THE BUSINESS ENVIRONMENT

The general business environment in Malaysia is a source of substantial competitive disadvantage for Malaysia. Malaysia has made improvements in recent years, including the setting up of PEMUDAH (a special task force to facilitate business), which coordinated improvements such as halving the processing time for expatriate employment pass applications from 14 to 7 days and implementing an online business licence application system. In spite of these improvements, consistent feedback from private sector investors indicates that the business environment is still a major factor constraining investment. Too often, businesses face a tangle of regulations that have accumulated over the years and now constrain growth. Examples of how this affects the Education and E&E sectors follow as *Box 3-1* and *Box 3-2* respectively.

Box 3-1

Education Example

Malaysia has one of the most liberal regimes in the world for encouraging private investment into the education sector. However, actual investment has remained far short of potential because the general business environment is not seen as attractive by domestic and foreign investors. Establishing a kindergarten, for example, requires obtaining multiple licences, notifications and approvals, e.g. from the Ministry of Education, Ministry of Health, Companies Commission, Electricity Commission, Employees Provident Fund, Social Security Organisation, Inland Revenue, local authority, Occupational Health and Safety Department and Fire Department. Some of these vary by state and even district (e.g. local authority requirements), making national expansion much more difficult.

Box 3-2

Electronics and Electrical example

As described in the E&E chapter, an industry survey was conducted of E&E companies. On some of the dimensions reported to be less important, such as water availability and the cost structure, Malaysia was very competitive. However, on more important dimensions like government regulations and the ease of dealing with government, Malaysia was ranked about equal with China, and often behind Singapore.

Exhibit 3-1 further illustrates how Malaysia lags its regional competitors, as described in the World Bank's Doing Business Report 2010. Specifically, while Malaysia ranked highly in terms of ease of accessing credit and procedural ease of employing workers, it was behind on dimensions such as ease of starting a business (it takes around 11 days, compared to 6 days in Hong Kong), dealing with construction permits (involves 25 procedures, compared with 13 in Republic of Korea) and registering property (it takes 144 days, compared to 29 days in China).

Exhibit 3-1

Malaysia ranks 23rd in the World Bank Doing Business 2010 Report 2010 Global ranking

2010 Global ranking

	Ease of doing business	Starting a business	Dealing with construction permits	Registering property	Trading across borders	Enforcing contracts
Singapore	1	4	2	16	1	13
New Zealand	2	1	5	3	26	10
Hong Kong	3	18	1	75	2	3
USA	4	8	25	12	18	8
UK	5	16	16	23	16	23
Thailand	12	55	13	6	12	24
Japan	15	91	45	54	17	20
Republic of Korea	19	53	23	71	8	5
Malaysia	**23**	**88**	**109**	**86**	**35**	**59**

SOURCE: World Bank

The Investing Across Borders 2010 Report echoed the message that Malaysia's ease of doing business can be improved, especially for foreign investors. It also found that Malaysia was behind Asian competitors like Singapore and Republic of Korea, and even trailed ASEAN neighbours such as the Philippines, Vietnam and Indonesia in the level of foreign equity ownership allowed in sectors such as banking, healthcare and telecommunications.

In light of the complexities the EPPs are facing, many of them have requested enablers that will improve the business environment. These include:

- **Liberalisation**
  Examples include allowing foreign legal firms with expertise in Islamic finance to operate in Malaysia (Financial Services) and removing equity ownership conditions for accessing product development funds (Tourism); and

- **Ease of setup and operations**
  Examples include streamlining licensing procedures to set up early childhood education centres (Education) and further speeding up the processing time of approvals for healthcare facilities (Healthcare).

Beyond the EPPs, improving the business environment is an important way in which to achieve the substantial increase in private investment in business opportunities and non-NKEA sectors required to achieve the 2020 GNI targets (as described in Chapter 1). Specific ideas are contained in the Tenth Malaysia Plan, which in turn draws on advice provided by the National Economic Advisory Council. These include a comprehensive review of regulations, further liberalisation of the service sector, reduction in regulatory costs for SMEs and a streamlined Government-to-business interface.

Comprehensive Review of Regulations

By 2015, the Government aims to make Malaysia one of the top 10 nations in the world for the ease of doing business. To achieve this goal, the Government will begin with a comprehensive review of business regulations, starting with regulations that impact the NKEAs. Regulations that contribute to improved national outcomes will be retained, while redundant and outdated regulations will be eliminated. This review will be led by Malaysia Productivity Corporation, which will be revamped and restructured to ensure it has the necessary capabilities and resources.

Further Liberalisation of the Services Sector

The Government will act to liberalise the services sector to encourage greater investment. For example, removing equity ownership requirements from services sub-sectors (e.g. Retail) to encourage foreign investment; broader recognition of qualifications, e.g. for architects, engineers, allied healthcare professionals and educators; and removing restrictions on the composition of Boards. Several agencies will be involved in driving this work: Ministry of International Trade and Industry, Ministry of Education, Ministry of Science, Technology and Innovation and Ministry of Home Affairs.

Reduction in Regulatory Costs for SMEs

Many regulatory issues are felt disproportionately by SMEs, who typically do not have the financial resources to deal with regulatory requirements in a cost-effective manner. In order to encourage entrepreneurial activity, the Government will exempt some of the more costly business regulations for companies employing five or fewer people until the company expands beyond five employees. Regulations will be eased for these companies in areas such as business registration and requirements for employers. International experience has shown that this can be a highly-effective method of stimulating entrepreneurship.

Streamlined Government-to-business Interface

In addition to reforming the policy and regulatory environment, the Government will also undertake a series of actions to improve the interface between business and Government to make investing and operating in Malaysia more attractive. Improving the quality and timeliness of Government services and increasing transparency and certainty in government decision-making will yield significant productivity gains.

BUILDING INFRASTRUCTURE

Malaysia's physical infrastructure has grown significantly in the last five years. However, substantial additional infrastructure investments are now required to support the economic growth that will be delivered through the ETP. We will not provide infrastructure in a reactive manner. Rather, we will put in place forward-looking infrastructure development plans, with a view to future-proof the Malaysian economy.

Two types of infrastructure will receive particular attention due to their central roles in driving GNI: broadband and logistics.

Broadband

Broadband is a critical piece of enabling infrastructure for the success of EPPs in areas like Communications Content and Infrastructure, Electronics and Electrical, Financial Services, Wholesale and Retail, Business Services and Education. For instance, broadband will:

- Increase capacity (bandwidth) to spur data centre hubs (Business Services);
- Enhance speed to facilitate transmission of large IC design documents (E&E); and
- Widen coverage and access to boost virtual mall (Wholesale and Retail).

Beyond the EPPs, broadband is also critical to the growth of other sectors of our economy.

The Government's objective is to raise Malaysia's broadband penetration rate to 75 percent of households by the end of 2015 (from around 40 percent currently). This is being achieved through a combination of high speed broadband (up to 100 Mbps) in high economic impact areas (such as Greater Kuala Lumpur/ Klang Valley) and broadband to the general population (below 5 Mbps) in semi-urban and rural areas. The Government is jointly funding the rollout of the former via a partnership with the private sector and the latter partly through the Universal Services Provision fund.

The Malaysian Communications and Multimedia Commission and Ministry of Information, Communications and the Arts will continue to work with telecommunications companies to widen network coverage, increase network speeds and further increase broadband affordability. The Government will also amend the Uniform Building By-Law 1984 to mandate developers to incorporate broadband facilities in residential and commercial areas.

Logistics

Malaysia has some of the region's best logistical infrastructure, including the award-winning Kuala Lumpur International Airport, the North-South Highway linking the length of Peninsular Malaysia and Port of Tanjung Pelepas in Johor.

To support the success of the ETP, we will upgrade existing infrastructure, such as roads, ports and airports, and construct new logistics infrastructure if there is a sufficient business case, in order to facilitate the efficient movement of people and goods.

Infrastructure investments are one of the core themes of the Greater KL/KV NKEA: the high speed rail link between Kuala Lumpur and Singapore and the mass rapid transit system within Greater KL/KV. In addition, infrastructure investment has been requested to upgrade Bintulu into an international airport to attract silicon producers (E&E) and to speed up construction of roads leading to a big box boulevard in Nusajaya (Wholesale and Retail).

Improving logistical infrastructure will have far-reaching impact for the country beyond the NKEAs. For this reason, the Government has already committed to enhancing access and connectivity under the Tenth Malaysia Plan. Specifically, the Government has committed to:

- **Building and improving roads**
  Several key roads such as the Penang Second Bridge (linking Penang island to the mainland) and the South Klang Valley Expressway are scheduled to be completed from 2012 onwards;

- **Developing the rail network**
  The Government will extend the North-South electrified double-track railway line to Johor Bahru, purchase new train sets (and refurbish existing ones) and modernise facilities and technologies for rail services on the east coast of Peninsular Malaysia and Sabah;

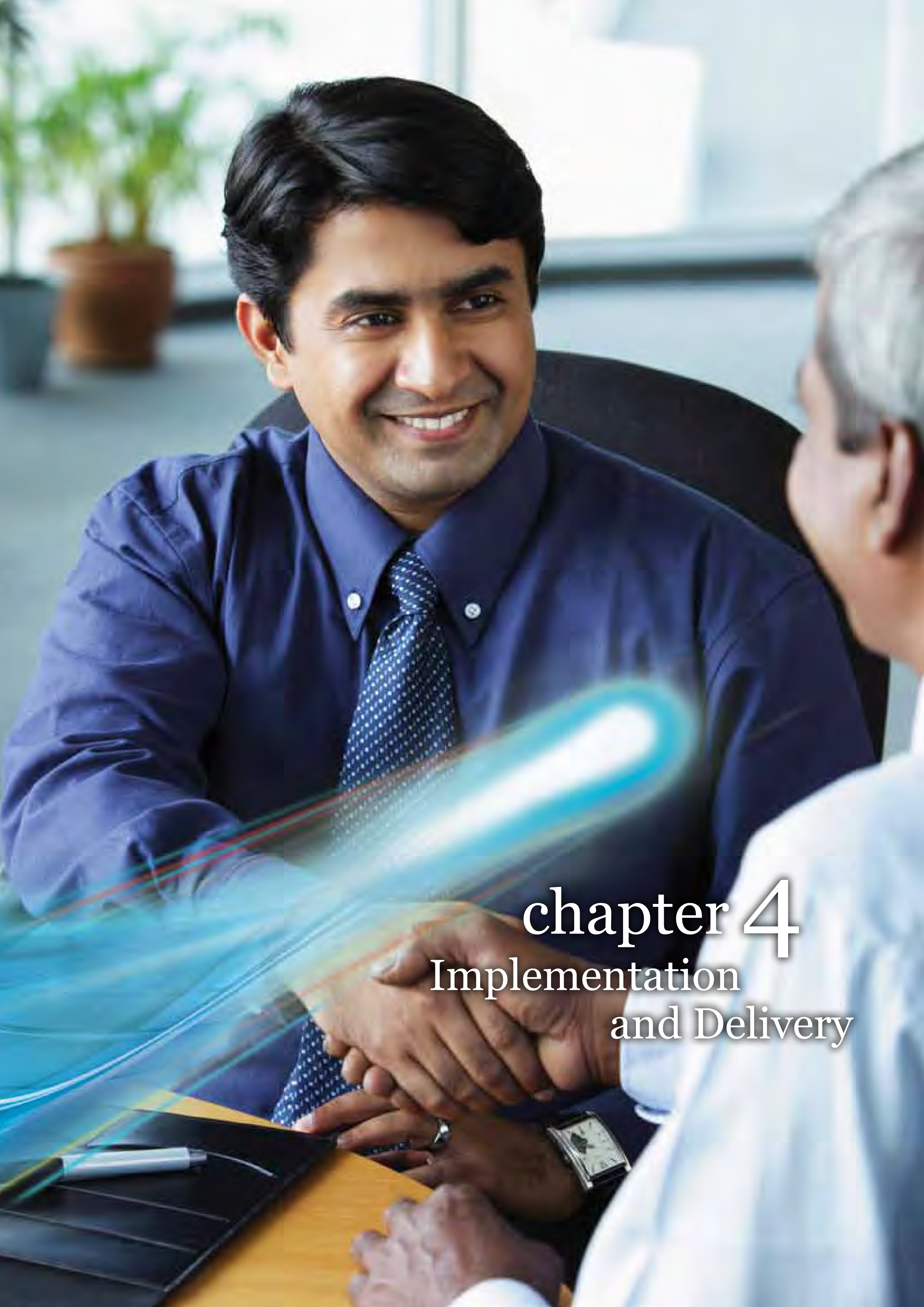
- **Upgrading maritime infrastructure**
  Initiatives include dredging port channels to cater for bigger vessels and expanding capacity at Westport of Port Klang, Port of Tanjung Pelepas and Penang Port; and

- **Improving airports**
  Among others, the Government is building a new low-cost carrier terminal at Kuala Lumpur International Airport and expanding passenger and cargo capacity at Penang International Airport.

The Economic Planning Unit will, along with the Ministry of Transport and the Ministry of Works, coordinate this programme of infrastructure investment.

CONCLUSION

Though the success of the ETP will be very much in the hands of the private sector who will implement the 131 EPPs, the Government will have a big role to play in facilitating the growth of the sectors through enabling actions that support the EPPs and the business opportunities. Successfully attracting more than RM1.3 trillion of domestic and foreign private investment will hinge on investment promotion activities as well as the development of a clear framework for fiscal support. Staffing the 3.3 million new jobs being created by the NKEAs will require a significant effort at growing human capital, through investing systematically at developing local business leaders, attracting foreign talent and streamlining immigration. The Government will also look at creating a conducive business environment through deregulating, reducing compliance costs and improving the efficiency of government operations in order to encourage the private sector. Finally, the ETP will require further infrastructure build up, such as broadband and logistics, to support the transformation of Malaysia into a high-income economy.



chapter 4
Implementation and Delivery

Chapter 4: Implementation and Delivery

The Economic Transformation Programme (ETP) has been designed to transform Malaysia into a high-income developed nation with a RM1.7 trillion (USD523 billion) gross national income (GNI) economy by 2020.

Success however, is dependent upon effective implementation and delivery. This will require the public and private sectors to work in partnership to carry out 131 entry point projects (EPPs) spanning the 12 National Key Economic Areas (NKEAs).

To ensure rapid and effective delivery of the ETP, the Government has:

- Committed to a specific and actionable Promise to the Private Sector to play an effective facilitation role to ensure private sector ownership, transparent funding, swift implementation and clear accountability throughout EPP delivery;

- Brought together all of Government to work in partnership with the private sector, with each agency having clear roles and responsibilities, to ensure coordinated implementation of EPPs and enablers;

- Established an ETP Unit under PEMANDU, which will work with the Economic Planning Unit to facilitate delivery, from resolving issues to monitoring performance;

- Designed performance monitoring and reporting mechanisms to ensure accountability for EPP delivery and public transparency of outcomes; and

- Built a process to allocate public funding to the highest impact areas in terms of GNI, and in a transparent manner – both now and in the future.

OUR PROMISE TO THE PRIVATE SECTOR

To successfully deliver a programme of this scale requires multiple parties to work together – in a new way – towards a clear, common goal of becoming a high-income nation by 2020.

The ETP is fundamentally different from many other government programmes. While the Government is held accountable to architect and facilitate the process, the private sector will be attracted to take ownership for, invest in and deliver EPPs under this programme. While the scale of funding is large, it will be transparently and swiftly allocated, based on merit, to a set of carefully defined EPPs, which will be initiated and carried out by the private sector. Challenging issues and potential delays may arise, and when they do, the Government commits to serve as an accessible partner to drive through rapid resolution.

In this spirit, we set out to achieve a level of accountability and efficiency that has rarely been seen in public-private sector partnerships before.

The Government promises to:

- Ensure the private sector owns EPPs wherever possible, shifting the public sector's role to providing support and facilitation;
- Fast-track amending regulations, removing barriers and establishing other enablers that are specifically required by EPPs;
- Avoid crowding out private sector investment and focus investment of public funds only as a catalyst;
- Award public contracts for funding EPPs using a merit-based, market-friendly, transparent and rapid process;
- Revamp Malaysian Industrial Development Authority (MIDA) to effectively attract foreign and domestic investment at the targetted EPPs;
- Regularly seek and responsively act on feedback from the private sector;
- Provide annual reports to objectively assess the impact of the ETP; and
- Maintain the ETP as a national priority, ensuring it is prioritised in terms of leadership attention, funding and support.

ALL OF GOVERNMENT WILL COME TOGETHER AND PARTNER WITH THE PRIVATE SECTOR TO ENSURE DELIVERY

The process of transforming an EPP from an idea into a fully executed project that has delivered GNI impact and new jobs requires several components.

Delivery ownership is needed to ensure that there is always a single point of accountability. As part of the labs, the private sector has co-created the ideas, developed implementation and funding plans and identified the required enablers for the EPPs. While many of the EPP owners identified are part of Government, these owners are considered to be initial caretakers that will manage a transparent process to select EPP owners and allocate funds. As part of this process, the private sector will drive EPP implementation.

Support is needed to ensure that required enablers are in place. For example, building an eco-tourism resort requires more than just private sector actions. Implementation might require putting in regulations to restrict maritime activity that damages coral, building roads to provide access to new areas or other supporting actions. It is the Government's role to eliminate these hurdles, ensuring that the required enablers are put in place rapidly and delays are minimised.

Funding is needed to ensure that every EPP has sufficient funds to cover its developmental and operational costs and may require contributions from both private and public sources. The private sector is expected to provide the majority of funding, while the Government will ensure that its contributions are used for the highest impact EPPs and are allocated transparently.

While the private sector will lead the delivery of EPPs and will have responsibility for funding these projects, it will also need to highlight areas where support is required. As such all of Government will come together to ensure delivery. Here are examples of the roles of Government agencies:

- Ministries will predominantly play a supporting role to resolve any issues that may arise in the implementation of EPPs. However, some ministries may have accountability for the delivery of selected EPPs (varies depending on the NKEA), especially where no natural private sector owner exists;

- Regulators will play a supporting role. Some EPPs may require amendments in regulations or need sector specific incentives. In addition, regulators will coordinate and bring together a group of industry players to collectively implement an EPP or part of an EPP. They will also assess ways to mitigate risks under these projects;

- The Economic Planning Unit and the Ministry of Finance will allocate and disburse funding for EPPs where public funding is required;

- MIDA will play a supporting role for many EPPs by attracting investment through marketing and business development activities targetting foreign and domestic investors. MIDA will also seek EPP owners, negotiate incentives where necessary and serve as a one-stop shop for investor contact. In some instances, MIDA may lead the first stage delivery of EPPs in the interim, especially those wholly dependent on foreign investment;

- Talent Corporation will provide support to EPPs by executing programmes to attract and retain talent. Similar to MIDA, it may be accountable for the delivery of select EPPs, especially those dependent on attracting talent;

- PEMUDAH (a special taskforce to facilitate business) and the restructured and rebranded Malaysia Productivity Corporation will provide support to NKEAs by reviewing and recommending changes to existing regulations and policies with a view to remove unnecessary rules and compliance costs and improve the speed and ease of delivery;

- UKAS (Unit Kerjasama Awam Swasta), a unit under the Prime Minister's Department to facilitate public-private partnership (PPP) will provide support to EPPs eligible for funding via the Facilitation Fund and in structuring PPPs where relevant; and

- Government-linked investment entities like Khazanah Nasional Berhad and PNB (Permodalan Nasional Berhad) will provide funding support by co-investing in EPPs that meet their investment criteria.

A NEWLY ESTABLISHED ETP UNIT WILL WORK WITH THE ECONOMIC PLANNING UNIT TO FACILITATE DELIVERY

To manage the delivery of the programme, we have set up the Economic Transformation Programme Unit (ETP Unit). ETP Unit is a division of PEMANDU, the Performance Management and Delivery Unit under the Prime Minister's Department, reporting to PEMANDU's Chief Executive Officer. The Economic Planning Unit is entrusted to prepare national development plans and allocate funding for all development projects. The ETP Unit will coordinate closely with the Economic Planning Unit to ensure delivery of EPPs.

ETP Unit Will Drive Delivery of the Programme

ETP Unit's role is to:

- **Architect and lead the ETP**
  The ETP Unit is tasked with bridging public and private sectors. It has already designed and led a Thousand Person Workshop to determine the NKEAs, facilitated the eight-week NKEA labs and held Open Days for the public. It is tasked with adapting the ETP to tackle any execution challenges and changes in the local or global economic environment;

- **Solve issues that arise and support implementation as needed**
  Through regular meetings with EPP owners, ETP Unit will identify issues, bring relevant parties together and help resolve problems. ETP Unit may also raise issues to the highest levels of government, for example the Economic Council. In some cases, where no natural owner exists, the ETP Unit will be accountable to report progress on several EPPs;

- **Bring necessary parties together to invest in EPPs**
  In cases where there is no clear owner for EPPs or where fundraising efforts have not met targets, the ETP Unit may identify and bring together other units of Government that have not yet been involved in the process. For example, it may notify MIDA (which holds a mandate to mobilise investment from both domestic and foreign sources) where its support is required. It will also work with EPP owners on alternative ways of structuring and accessing investment;

- **Ensure accountability and intensely monitor delivery of outcomes**
  ETP Unit is tasked with ensuring that each EPP has an owner, clear key performance indicators and milestones prior to distributing funds. It is also responsible for monitoring and reporting progress. As part of this process, a formal review will be held every six months between the Prime Minister and the relevant Lead Minister. In preparation for this review, ETP Unit will prepare a confidential report that summarises the progress of the NKEA over the previous six months and action plans for the next six months to resolve roadblocks to achieving targets. This report will be used by the Prime Minister as the basis for his formal performance review dialogues with the relevant Lead Minister;

- **Support communication and engagement, particularly to investors**
  The ETP Unit will prepare and present the ETP on a regular basis through forums including investor road-shows, Invest Malaysia conferences and targetted outreach to potential high-impact investors including domestic and international funds; and

- **Provide an annual report to the public**
  The ETP Unit is responsible for regular and transparent reporting across NKEAs. As part of this effort, it will publish an annual report to the public that will transparently describe the achievements of the ETP and the rationale for any performance gaps, if any. The annual report will provide details across all NKEAs, all individual EPPs and their supporting enablers. The first report will be published in Q1 2012.

Leadership, Reporting and Staff

The CEO of PEMANDU will be held accountable to the Prime Minister, to ensure that the overarching GNI and job creation targets of the ETP are delivered. As such, he is expected to work closely and interact regularly with the Prime Minister and other leaders at the highest levels of Government to ensure the programme's success.

ETP Unit will have dedicated full-time staff to carry out its mandate. Staff will be selected through a rigorous process to identify and appoint the best and brightest people, not only from across the civil service, but also from the private sector. Staff will possess outstanding leadership skills and problem-solving abilities and share a passion for public service. They will be accountable for setting key performance indicators (KPI) and overseeing performance for NKEAs and specific EPPs.

Economic Planning Unit's Linkage and Partnership with the ETP Unit

The Economic Planning Unit is entrusted to prepare economic development plans for the nation, and ETP Unit will foster a close working partnership with it to carry out its mandate of ensuring EPP delivery.
While ETP Unit is focused primarily on ensuring delivery of EPPs, the Economic Planning Unit will take a leadership role in closely related matters, including:

- **Allocating and disbursing funding for EPPs**
While the Cabinet and Parliament ultimately approve funding for the programme, the Economic Planning Unit is a driver of the process in that it reviews funding requests and provides feedback throughout. This is to ensure that funding is allocated to the highest impact EPPs. Once funding is allocated to specific EPPs, the Ministry of Finance is responsible for disbursing the funds on an annual basis. As part of this process, the Economic Planning Unit will ensure that specific KPIs and owners are identified before funding is disbursed, and that ongoing funding is not disbursed in cases where performance has not been met and where the Lead Minister advises against additional funding;

- **Incorporating the ETP into future Malaysia plans**
The Economic Planning Unit plays an important role in ensuring that the ETP is fully integrated into Malaysia's five-year planning cycle. By incorporating the ETP into the Eleventh Malaysia Plan, the Economic Planning Unit ensures that there is alignment in the Government's transformation agenda and that funding can continue without delay as part of the budget process; and

- **Ensuring that key enablers are in place**
The Economic Planning Unit will play a prominent role in driving many enablers identified under the NKEAs. It will need to ensure that these enablers are put into place swiftly to allow for timely implementation of the EPPs. For example, the Scaling Up Early Child Care and Education (ECCE) Centres EPP (under the Education NKEA) requires that the Economic Planning Unit work together with the Ministry of Finance to assist in securing preferential loans from government institutions.

PERFORMANCE MONITORING AND REPORTING

While having clearly defined roles and responsibilities is an important step for ensuring accountability, it is not sufficient. The size and scale of our transformation programme requires that each of the 131 EPPs has clear ownership responsibility, each of the 12 NKEA areas has robust governance structures in place for accountability and that the entire programme has active monitoring and progress reporting.

While specific governance details may differ slightly across NKEAs, there are common structural elements. In this section we describe the common elements that will bring about timely EPP delivery, namely single point accountability and governance structure.

Ensuring Single Point Accountability for Each EPP

To support rapid and transparent delivery, we will ensure that:

- **Every EPP will be led by the most natural owner in the private sector, except in a few cases where public sector ownership is more appropriate**
  As mentioned earlier in this chapter, many of the EPP owners listed in this roadmap will serve as initial caretakers who will oversee the process of transparently selecting private sector owners, assigning detailed milestones and administering funding. The ultimate responsibility for most EPPs will rest with private sector managers who will lead implementation efforts on the ground;

- **Various Government agencies will work with the EPP owner to support delivery**
  Before the funding and implementation of any EPP begins, the project owner will submit a detailed list of the relevant parties to the Steering Committee, detailing their roles in the process and their degree of involvement. We will utilise the RASCI[1] framework to ensure that every person involved with the execution of an EPP and enabler is assigned one or more roles, as shown in *Exhibit 4-1*; and

- **Each EPP owner will be held accountable for meeting the milestones and key performance indicators and Lead Ministers are responsible for overall NKEA performance**
  Detailed milestones will be developed and agreed upon at the Steering Committee level prior to the Ministry of Finance disbursement of any EPP funding (see detail in next section). Reaching these milestones according to agreed-upon timelines is the responsibility of the individual EPP owner, who regularly communicates with an assigned member of the ETP Unit to raise any challenges in implementation faced and request swift resolution. The Lead Minister is accountable for the overall GNI and job targets in their respective NKEA, which requires performance across all EPPs. The expected outcomes will be translated into KPIs for each of the Ministers.

Common Governance Structures across NKEAs to Ensure Accountability

While there will be small variations in governance structures across NKEAs, the governance mechanism for EPPs and NKEAs is common across all sectors.

EPP owners will be accountable for execution and delivery. Owners will be primarily private sector leaders at the senior executive level who have significant involvement and committed ownership of the EPP.

Steering Committees oversee the success of overall GNI and job creation targets for each NKEA and work with EPP owners to ensure milestones are met. Each Steering Committee is chaired by the relevant Lead Minister, who bears responsibility for meeting these targets. Steering Committees will typically include senior representatives from both the government and private sector. In some cases, industry advisory panels may also be represented (e.g. Communications Content and Infrastructure NKEA and Electronics and Electrical NKEA). Steering Committees meet regularly (typically each month) to review progress, provide guidance and resolve conflicts.

1 RASCI is a framework for identifying roles and responsibility during a transformation and change programme. It stands for Responsible, Accountable, Supportive, Consulted, and Informed.

Exhibit 4-1

Roles and responsibilities

Structure		RASCI Framework
• Assist in resolving most challenging ETP issues • Review minister performance • Direct outreach to highest impact potential investors	Prime Minister	• **Consulted** on major and cross-ministry / agency issues • **Informed** of progress on the NKEAs and key EPPs
• Guidance and direction • Resolve conflicts • Oversee all NKEA matters	Steering Committee Chair: Lead minister	• **Consulted** on key decisions / issues at the NKEA and EPP level • **Informed** of progress on each EPP and key initiatives
• Set Steering Committee agenda • Bring all EPPs and NKEA issues together for the Steering Committee • Monitor progress and resolve issues with EPP teams	ETP Unit / Implementing Ministry	• **Responsible** (Implementing Ministry) for the key actions / decisions made relating to the EPP • **Support** (Pemandu) in overseeing implementation of all NKEAs and support in ensuring delivery
• Implementation of EPPs • Delivery of outcomes	EPP 1 | EPP 2 | EPP 3 | . . . | EPP 8 • EPP Owners • Team Members	• **Accountable** (EPP owners) for overseeing the implementation of the initiatives under the EPPs • **Support** (Team members) EPP owners in delivering outcomes

ALLOCATING FUNDING TO ACHIEVE THE HIGHEST IMPACT

While the private sector will fund a significant portion of the ETP, public funding plays an important role in catalysing investment in areas where additional support is needed.

The Government commits to safeguarding and fully leveraging public funds. In this spirit, we will ensure that public funds are prioritised for the NKEAs and EPPs with the highest GNI impact. Public funds will also be allocated to owners who are transparently selected based on merit and disbursed according to performance that is judged against milestones and key performance indicators.

Prioritising Public Funding to NKEAs and Highest Impact EPPs

The NKEAs have been carefully selected, and each has a disproportionate and material impact on the GNI of our nation. As such, we plan to prioritise the allocation of our development budget to the ETP to ensure NKEAs have the funding required for success.

We will also commit to prioritise public spending according to the EPPs with the highest leverage, where leverage is defined as the incremental GNI that can be achieved per public ringgit invested.

Transparently Selecting Owners Based on Merit

An important element of carrying out the programme is ensuring that all public funds are distributed through a process that is both transparent (e.g. with rules and processes clearly laid out) and based on merit (e.g. with fairness to all bidders).

Many of the EPPs will not need any Government funding and are open to any company that chooses to take advantage of an opportunity. In cases like these, the Government will simply focus on removing any barriers for those investments and monitoring each EPP to ensure it delivers the planned outcome.

Some EPPs, however, involve public funding. In cases like these, the Ministry of Finance will ensure that a transparent and merit-based process takes place. For example, the Expanding Private Teacher Training EPP in the Education NKEA requires the Government to select private sector partners to provide ECCE training for public sector teachers. Such a scenario requires a competitive bidding process (through a request for proposal, or RFP) to select providers based on merit.

In cases such as these, where Government funding will support a limited number of private sector partners, a bidding process will take place and will comply with the transparent, merit-based assessment process utilised by the Ministry of Finance.

Disbursing Funds Based on Performance

Funding will only be disbursed to EPPs where performance meets the milestones defined by the Steering Committee and the Lead Minister.

In cases where milestones are not met by the specified timeline, a Steering Committee has the responsibility to take one of several courses of actions:

- **The terms of funding can be changed if more urgency is needed**
  For example, the Steering Committee can put in place stricter milestones, shorter deadlines and more detailed reporting requirements in an effort to better monitor progress, identify issues and resolve them rapidly; or

- **Future funding can be withdrawn**
  This applies to cases where an EPP is deemed no longer feasible, or the GNI and job creation targets are later deemed to be significantly less than originally anticipated.

Ongoing Funding and Capturing Future Growth Opportunities

Funding for the ETP programme as approved by the Cabinet has been secured and will be allocated in a series of ongoing tranches.

- The initial tranche of funds for 2011 to 2012 was approved by the Parliament in October 2010;
- Funds for 2013 to 2015 will be approved in 2012 during the two-year planning cycle as stated in the Tenth Malaysia Plan;
- Funding for the programme from 2015 to 2018 will be approved under the Eleventh Malaysia Plan; and
- Final funding for 2018 to 2020 will be approved in 2017.

Over time we have the flexibility to rebalance our funding for NKEAs and EPPs. The current set of NKEAs reflects the areas that have the highest GNI growth forecast by 2020, and it is likely that there may be significant growth in other non-NKEA sectors in the future as markets and the environment changes. Furthermore, there may also be cases where EPPs will be removed from the programme if they do not meet GNI and job targets.

When it deems it appropriate, ETP Unit may recommend that a new lab process be put in place to rebalance the set of NKEAs and EPPs. This process will bring together participants from both the public and private sectors and will be transparently shared with the public in the spirit of the ETP.

CONCLUSION

The success of any transformation programme usually lies in the doing. The ETP will be judged by how the 131 EPPs and the enablers are implemented and delivered. This will require the public and private sectors to work in partnership. To signal its commitment, the Government has made a specific and actionable Promise to the Private Sector to play an effective facilitation role throughout delivery. Additionally, all of Government will be brought together to ensure coordinated implementation of the EPPs and enablers. This includes the PEMANDU ETP Unit, which will work closely with the Economic Planning Unit to lead this programme. To ensure accountability and public transparency of outcomes, the ETP was designed with clear performance monitoring and reporting mechanisms. Finally, public funding will be allocated into the highest impact areas in terms of GNI throughout the course of this programme.

chapter 5
Greater
Kuala Lumpur/Klang Valley

Chapter 5: Developing Greater Kuala Lumpur/Klang Valley as an Engine of Economic Growth

"YAB Prime Minister has identified Greater KL/KV as one of the twelve NKEAs to act as the driver of economic growth and propel the country's economy further.

For a period of eight weeks, Greater KL/KV Lab members worked very hard in analysing, debating, syndicating and meeting with all the relevant stakeholders before recommending the findings of the Lab and finally documenting the findings.

Now that the plans are in place, we realise that we have to work even harder to turn these great ideas into practical realities to achieve the desired outcome. It is my aspiration not only to see Greater KL/KV increase its contribution to the country's GNI but also to be a safe and comfortable place to live for the rakyat and ultimately fulfil all its potential to stand tall amongst the great cities of the world.

As Minister responsible for Greater KL/KV NKEA, I am committed to delivering this and hope that all Malaysians will support me and my team in this endeavour."

YB Senator Dato' Raja Nong Chik bin Raja Zainal Abidin

All great countries have iconic cities that are also pillars of their economic growth. The United Kingdom has London, the United States has New York, China has Beijing and Shanghai, and Japan has Tokyo. In Malaysia, Kuala Lumpur has long been the pillar and the face of our country, driving the national economy and boasting landmarks such as the Twin Towers. That must continue and intensify. Malaysia will not achieve its gross national income GNI growth aspirations without a significant, increased contribution from its primary city.

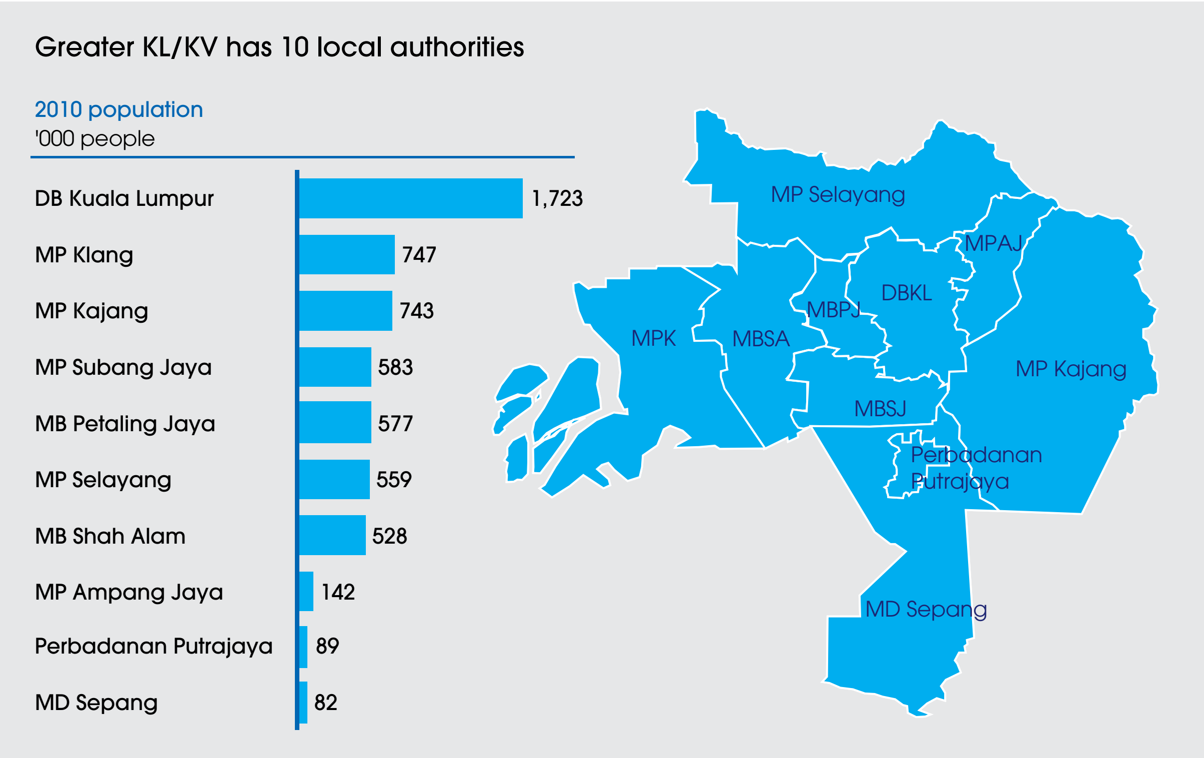
At the same time, urbanisation brings challenges. In all of history's episodes of rapid economic growth, cities have come under strain. From the squalor of industrial revolution London, to the slums and congestion of 1980s Mexico City, or the pollution of modern day Beijing, citizens' lives have often been impacted. The aspiration for Greater Kuala Lumpur/Klang Valley (henceforth Greater KL/KV) is to drive rapid growth in parallel with upgrading the city's liveability. Rarely, if ever, has this been achieved, but it is our priority for Malaysia's next decade.

DEFINITION OF THE Greater KL/KV NKEA

For this National Key Economic Area (NKEA), Greater KL/KV extends beyond the boundaries of Kuala Lumpur. It is defined as the area covered by 10 municipalities, each governed by local authorities: DB Kuala Lumpur (DBKL), Perbadanan Putrajaya, MB Shah Alam (MBSA), MB Petaling Jaya (MBPJ), MP Klang (MPK), MP Kajang, MP Subang Jaya (MPSJ), MP Selayang, MP Ampang Jaya (MPAJ) and MD Sepang, as illustrated in *Exhibit 5-1*.

This Greater KL/KV metropolitan area is smaller than that of the Kuala Lumpur National Conurbation as defined under the latest review of the National Physical Plan. It focuses on the highest density economic agglomerations within the Conurbation, including important sites such as the Kuala Lumpur International Airport. In 2010, the population of Greater KL/KV is approximately 6 million, and it contributes about RM263 billion to the nation's GNI. This translates to 20 percent of the national population contributing 30 percent of the nation's GNI, proving that Greater KL/KV is indeed the engine of the nation's economic growth and hence designated as a NKEA.

Exhibit 5-1



SOURCE: Department of Statistics

MARKET ASSESSMENT

While there is great potential for Greater KL/KV to act as an even bigger engine of Malaysia's economic growth, we need to overcome several key challenges in order to unlock it.

Rationale for the Greater KL/KV NKEA

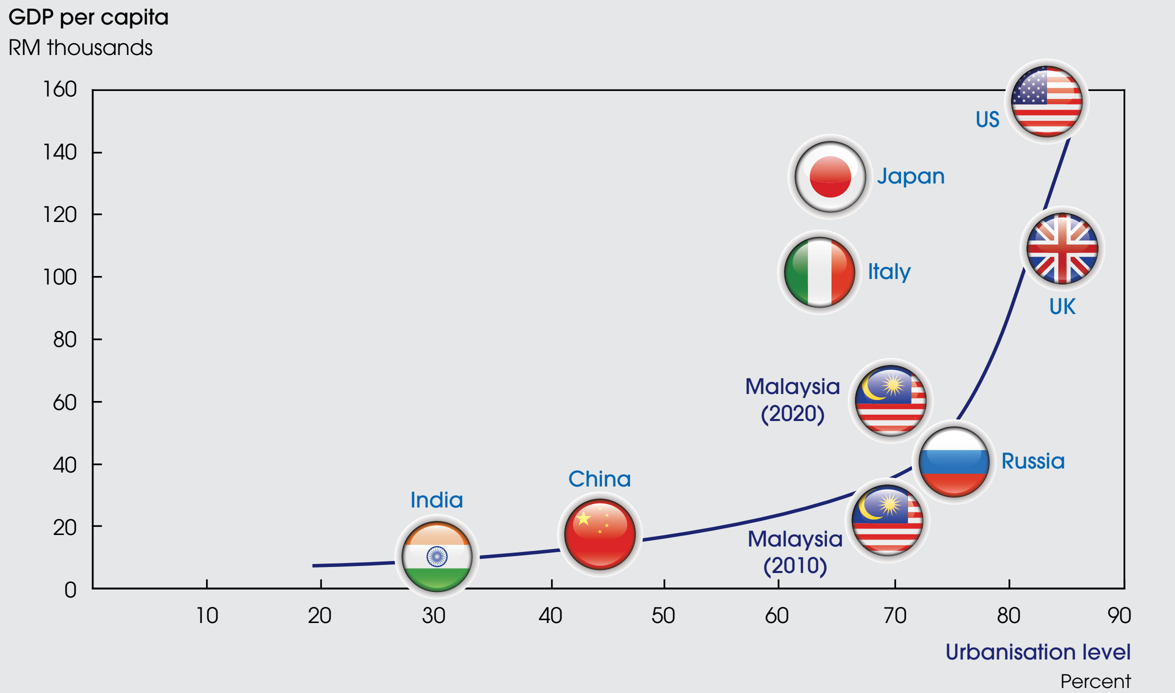
Greater KL/KV is a unique NKEA, as it has a geographical focus rather than the industry focus of the other 11 NKEAs. This is in recognition of the unique and critical role that cities play in shaping and driving any nation's economy. A 2009 report by the World Bank[1] shows that as economies grow from low to high income, economic activities become increasingly concentrated spatially. This has been true in Malaysia, and will continue to be true as Malaysia advances toward high-income status.

Greater KL/KV was selected as a NKEA to reflect four important dynamics:

- **Urbanisation is a driver of GNI growth:**
  Urbanisation is one of the most important drivers of economic growth in any country. Gaining a critical mass of concentrated population powers economic specialisation and the resulting step-changes in productivity and economic output. In fact, urbanisation has historically been an enormous driver of economic growth. In China, it has been an essential component of the vast economic growth of the past decades. A cross-country comparison shows that urbanisation levels correlate strongly to average income levels (*Exhibit 5-2*). More importantly, as countries like Malaysia transition into a services-based economy, large and urbanised cities become even more critical, with their concentrations of infrastructure, talent and economic inter-relationships that support the economic transformation.

Exhibit 5-2

There is high correlation between urbanisation and growth



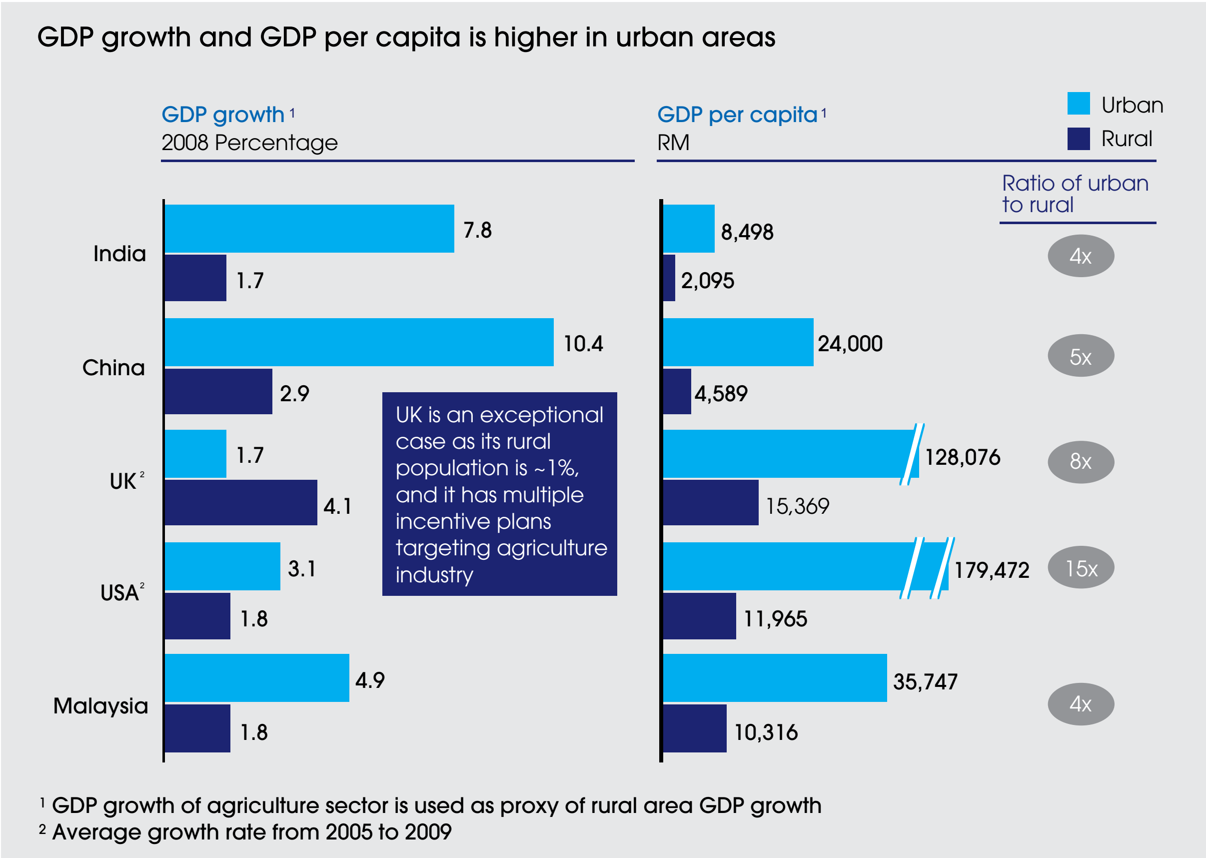
SOURCE: Global Insight, 2010

1 *World Developmwnt Report 2009: Reshaping Economic Geography and quoted in the Tenth Malaysia Plan*

Malaysia is only part way along the urbanisation journey. Today's urbanisation level of 67 percent and GNI per capita of RM22,000 falls short of more developed countries like the USA (83 percent and RM153,000 respectively), the UK (87 percent and RM108,000 respectively) and Japan (67 percent and RM133,000 respectively). As Malaysia aims to reach high-income status by 2020, we will need to accelerate the pace and intensity of urbanisation.

Urbanisation is clearly a powerful force. The movement from rural to urban employment boosts labour productivity and household incomes and often improves household incomes by a factor of 10 or more (*Exhibit 5-3*);

Exhibit 5-3



SOURCE: CIA World Fact book, IMD, Bureau of Economic Analysis

- **The primary city matters most**
  Greater KL/KV dominates Malaysia's urban economy – and by a large margin. Greater KL/KV is the largest contributor at a GNI per capita level, both today and in 2020, by more than 7 times over the next largest urban centre of Johor Bahru, and by more than 2.5 times over the largest industry sector - oil, gas and energy. Over the next decade, Greater KL/KV is targetted to grow in population by 5 percent per year and achieve GNI growth of 10 percent a year. Changing this trajectory by even one 1 percentage point will have significant impact on the nation's overall economy;

- **Urban productivity does matter**
  Simple rural-urban migration is not sufficient. Urban productivity matters, and globally there is significant variation from city to city. City size, shape and density patterns drive energy and other resource usage, as well as liveability outcomes. Many of the outcomes result from the interplay of density patterns and transport infrastructure, which determines how efficiently and comfortably the city operates day-to-day. In addition, basic services such as sewerage, solid waste management, electricity and water must be sufficient to meet demand levels caused by population size. The challenge for Greater KL/KV, therefore, is to harness the power of urbanisation while shaping it to maximise urban productivity to simultaneously pursue efficiency and liveability; and

- **A great city needs to be a liveable city**
  People vote with their feet. In today's global and mobile economy, professionals can choose where to live and work. The war for talent is not between nations, but between cities. Cities that are vibrant and liveable are magnets for highly-skilled people. Typically, wealthy cities perform well on liveability measures by providing for basic needs such as education, healthcare and safety while also catering to the cultural and other demands of an increasingly diverse and cosmopolitan society. Therefore, while urbanising intensively, Greater KL/KV must also focus on improving liveability.

Challenges for Greater KL/KV

Greater KL/KV is already on the global map as one of the iconic cities of Southeast Asia. It boasts world-renowned landmarks such as the Twin Towers and events such as the Formula One race as well as a unique blend of diverse cultures and heritage. Greater KL/KV is also blessed with an abundance of natural assets such as riverfronts, green spaces and forest reserves. Periodic investments in infrastructure have provided a superior road network and high quality basic services such as water and electricity.

Greater KL/KV clearly has great potential. However, questions remain.: First, how do we become the regional location of choice for big businesses? Second, how do we reverse the brain drain and attract top talent back into the city? Third, how do we accelerate the pace of economic growth to escape the middle-income trap? Unless several challenges are addressed with urgency, Greater KL/KV runs the risk of being marginalised by other growing cities across the region. Among these challenges are:

- **Fierce competition from neighbouring cities**
  Greater KL/KV is not the first-choice location for multinational companies and professionals looking for a base in Asia or even Southeast Asia. As a nation, Malaysia lags regional competitors in attracting foreign companies. There are approximately 1,600 foreign companies based in Malaysia compared to 4,000 in Beijing, 6,000 in Singapore and 17,000 in Shanghai. Even in sectors where Malaysia may appear well-placed to compete, such as Islamic finance, we are not as dominant, in terms of presence of key global players, as we could be;

- **Liveability lags many other Asian cities**
  Today Greater KL/KV ranks 79th out of 130 cities on the EIU's global liveability index, and 10th out of 31 Asian cities ranked. There is a need for improvement across multiple liveability dimensions including security, healthcare, education, culture and environment;

- **Public transport remains inadequate**
  Urban public transport in Greater KL/KV is congested, fragmented and often unreliable. Our roads face increasing congestion by the day. Public transport modal share stands at just 12 percent (as of 2009), having declined from 34 percent in 1985 and 20 percent in 1997.[2] Other major metropolitan areas, such as Singapore, Hong Kong and Tokyo, typically have public transport modal shares over 50 percent; and

- **Natural assets remain untapped**
  The Klang and Gombak rivers are polluted, and deliver little of their potential, either commercially or as destinations that can add to the city's vitality. In addition, Greater KL/KV is at risk of losing its natural abundance of parks and green spaces to unchecked urban growth.

2 Based on 1999 Study on Integrated Urban Transport Strategies for Environmental Improvement conducted by the Japan International Co-operation Agency, or the JICA Study

TARGETS AND ASPIRATIONS

Nine entry point projects (EPPs) will be pivotal towards achieving our aspiration for Greater KL/KV – 20-20 by 2020.

20-20 by 2020

Economic dynamism and liveability should be pursued in parallel. The Greater KL/KV aspiration can be summarised as 20-20 by 2020 – that is, to be the only city that simultaneously achieves a top-20 ranking in city economic growth (as defined by city gross domestic product growth rates) while being among the global top-20 most liveable cities by 2020. This is a daunting challenge, as no other city has consistently managed to achieve this. Historically, most cities have tended to grow first and repair liveability issues later, such as in the case of London, New York and more recently Shanghai. On the other hand, some cities are highly liveable but remain relatively small, such as Copenhagen, Vancouver and Zurich. Greater KL/KV will pursue both growth and liveability in parallel.

The economic aspiration for Greater KL/KV is to grow its GNI contribution by 2.5 times, from RM258 billion to approximately RM650 billion per year. This should move GNI share from approximately 30 percent of the nation's GNI to approximately 40 percent, representing a dynamic growth rate of 11 percent per year. Related to this, additional aspirations include:

- Increasing per capita GNI by close to two times from RM40,000 to RM70,000 per year;
- Achieving a top-20 ranking in the EIU Liveability Index survey. More tangibly, this means outperforming cities such as Seoul (ranked 58th in 2010), Singapore (53rd in 2010), and Hong Kong (31st in 2010); and
- Growing the population from 6 to 10 million, with a focus on growing the foreign talent base from 9 percent to 20 percent of the population, especially for high-value talent; and
- Creating 553,000 jobs over and above the employment that will be created specifically by the other NKEAs.

Nine EPPS to Deliver RM193.0 Billion of GNI Impact

Nine EPPs along four dimensions have been identified to deliver on the Greater KL/KV aspirations. Combined, these EPPs have the potential to add an incremental RM193.0 billion in GNI contribution. Besides the nine EPPs, a further enabler EPP (expanding and improving sewerage services) will be needed to support population growth. This does not have a GNI impact, but will require public funding of RM4.0 billion.

Dimension 1: Greater KL/KV as a magnet

Greater KL/KV will become a location of choice for companies and professionals. Dynamic international and regional MNCs that are emerging leaders within targetted sub-sectors will be encouraged to locate their global or regional headquarters in Greater KL/KV. This will not only catalyse greater economic activity, but will also generate demand for additional high-value employment. This will therefore be supported by internal and external immigration programmes to grow Greater KL/KV's population to 10 million by 2020, with a focus on higher-value jobs.

- **EPP 1**: Attracting 100 of the world's most dynamic firms within priority sectors; and

- **EPP 2**: Attracting the right mix of internal and external talent.

Dimension 2: Greater KL/KV connect

Greater KL/KV will become well-connected both externally and internally. Regional connectivity will be accelerated by deploying a high speed rail (HSR) system to connect Greater KL/KV and Singapore. Examples from around the world attest to the value of such a high-speed connection, and the two metropolitan areas will benefit significantly from enhanced economic activity via the vital link. At the same time, intra-city connectivity will be improved with a mass rapid transit (MRT) system. As the current urban transport bottlenecks would be compounded by the planned population growth for Greater KL/KV, an integrated MRT is critical to ensure connectivity.

- **EPP 3**: Connecting to Singapore via a high speed rail system; and

- **EPP 4**: Building an integrated urban mass rapid transit system.

Dimension 3: Greater KL/KV new places

Greater KL/KV will become a vibrant and attractive place to live in. High potential destinations within Greater KL/KV will be identified as attractions and upgraded to enhance liveability for residents and draw tourists and migrants looking to visit or relocate to Greater KL/KV. First, downtown KL City is blessed with two rivers and valuable waterfronts that will be exploited as retail and commercial centres. While much work is required to rejuvenate the rivers and redevelop the surrounding areas, the rivers have tremendous potential to enhance the liveability and attractiveness of Greater KL/KV. Second, KL City lags other leading cities in terms of its proportion of green spaces (only 12 square metres of green area per capita versus the WHO standard of 16 square metres per capita). Increasing the amount of green space is essential to improve the city's overall quality of life. Third, Greater KL/KV has many natural assets that can be leveraged as points of attraction (e.g. the old Pudu Jail site with its iconic gate, the old KTM railway station, Chinatown). Strategic redevelopment with sharply defined boundaries has the potential to create more iconic places within Greater KL/KV, adding to its liveability and attractiveness.

- **EPP 5**: Revitalising the Klang River into a heritage and commercial centre for Greater KL/KV;

- **EPP 6**: Greening Greater KL/KV to ensure every resident enjoys sufficient green space; and

- **EPP 7**: Creating iconic places and attractions.

Dimension 4: Greater KL/KV enhanced services

Greater KL/KV will function smoothly and efficiently. Gaps in basic services, such as pedestrian networks, solid waste management, sewerage and city cleanliness must be addressed to ensure a well-functioning and liveable city. Among the many services required for a truly efficient and liveable city, two are prioritised as EPPs. First, pedestrian walkways within KL city are woefully inadequate and not integrated. Fixing this will enhance not only the liveability of the city, but also boost tourism and commercial potential. As Greater KL/KV's population will increase by more than 65 percent over the next 10 years, it is critical to provide adequate solid waste management collection and processing.

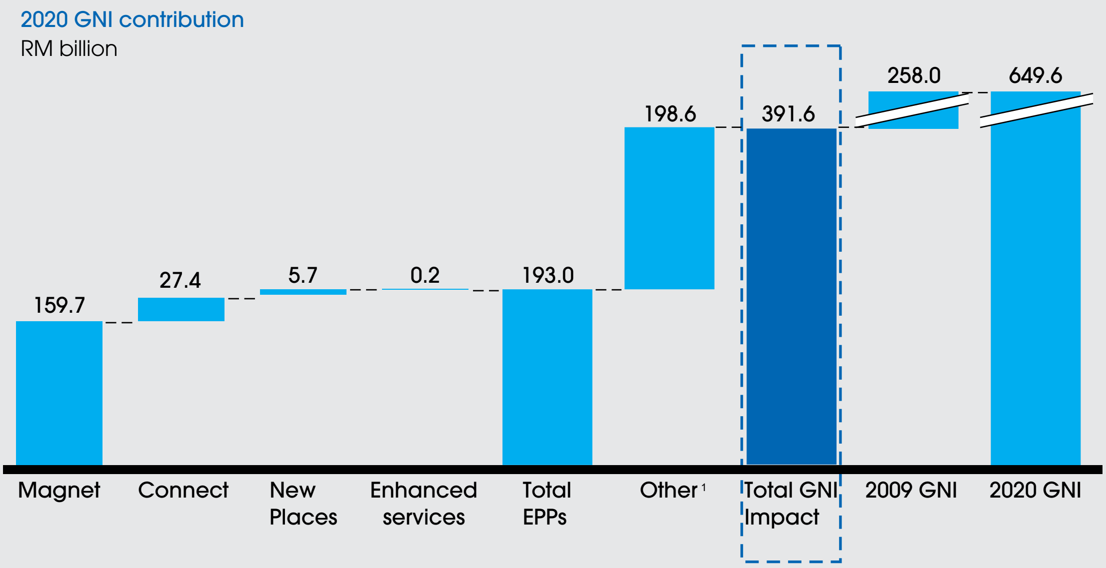
- **EPP 8**: Creating a comprehensive pedestrian network; and

- **EPP 9**: Developing an efficient solid waste management ecosystem.

In addition to the EPPs, baseline growth, business opportunities and the multiplier effect will deliver close to RM200 billion incremental GNI. The various elements are summarised in *Exhibit 5-4*.

Exhibit 5-4

Nine EPPs, three business opportunities, baseline growth and multiplier effect will deliver RM649.6 billion GNI impact by 2020



[1] Other NKEA GNI impact (including baseline growth, business opportunities and multiplier impacts) that directly contributes to Greater KL/KV's GNI

Greater KL/KV AS A MAGNET

Greater KL/KV will need to be a magnet for dynamic firms and global talent. Initiatives that proactively seek to attract such firms and talent will be launched to achieve this aspiration.

EPP 1: Attracting 100 of the World's Most Dynamic Firms within Priority Sectors

Rationale

Size matters. In Greater KL/KV today, the top 4 percent of companies generate 79 percent of total revenue and the top 10 percent of companies contribute to 63 percent of total employment.[3] Stimulating additional economic activity hinges upon the ability of the city to attract large foreign firms or multinational companies (MNCs). Given the aspiration of almost doubling GNI per capita, the form of foreign direct investment being attracted must no longer be investments that leverage low-wage workers, but rather those that create opportunities for higher value-added employment. Towards this end, we seek to attract the world's leading and most dynamic firms to locate their headquarters in the city, especially MNCs relevant to the priority sectors for Greater KL/KV. Attracting 100 such firms will contribute in the order of RM40 billion in annual GNI to Greater KL/KV.

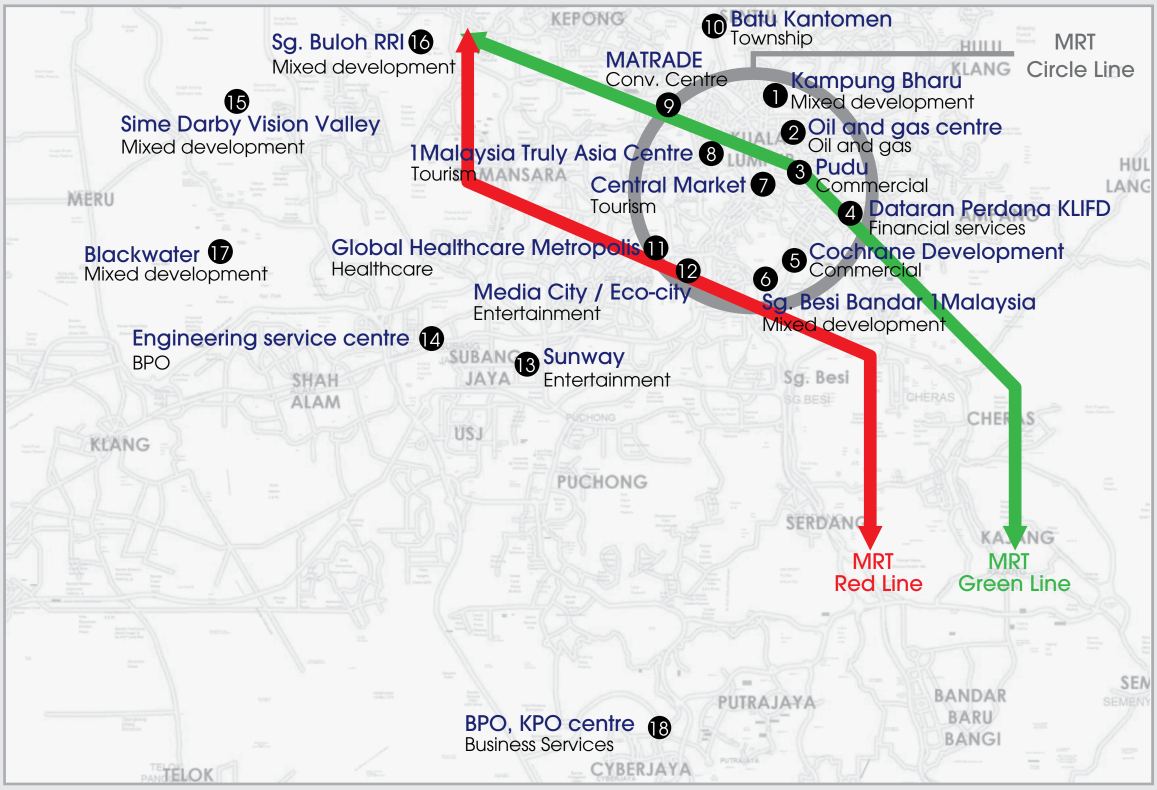
Greater KL/KV's value proposition is clear: a strong talent base with high English proficiency, a strategic location at the heart of fast-growing Asia, superior infrastructure, a lower cost of living compared to competitor cities such as Singapore and Hong Kong, and a liveable environment. However, in order to increase its competitive advantage, Malaysia will need to see significant improvements, especially in the ease of doing business, e.g. as measured by number of days required to start a business, corporate tax rates and investor protection indexes.

Spatially, the firms and economic activities will be focussed in economic clusters across the landscape of Greater KL/KV as shown in *Exhibit 5-5*. These clusters will be serviced with world-class amenities and connectivity. These economic clusters form part of the enhanced proposition to target companies.

3 Based on a Hoover's survey of 2,794 companies, excluding very large companies such as PETRONAS.

Exhibit 5-5

Economic clusters across Greater KL/KV will be developed in priority sectors



Actions

The priority economic sectors for Greater KL/KV were identified based on current and potential contribution to GNI and include financial services, business services, education, tourism and retail. In 2009, these five sectors combined contributed 41 percent to Greater KL/KV's total GNI. Within each of these sub-sectors, companies have been identified globally where a disproportionate number of attractive target MNCs (based on revenue) are located. Examples include Islamic financial institutions in the Middle East such as Bank Melli in Iran and the Dubai Islamic Bank in the United Arab Emirates. These companies would benefit from Malaysia being an Islamic country as well as its strategic location within the fast-growing region of Asia.

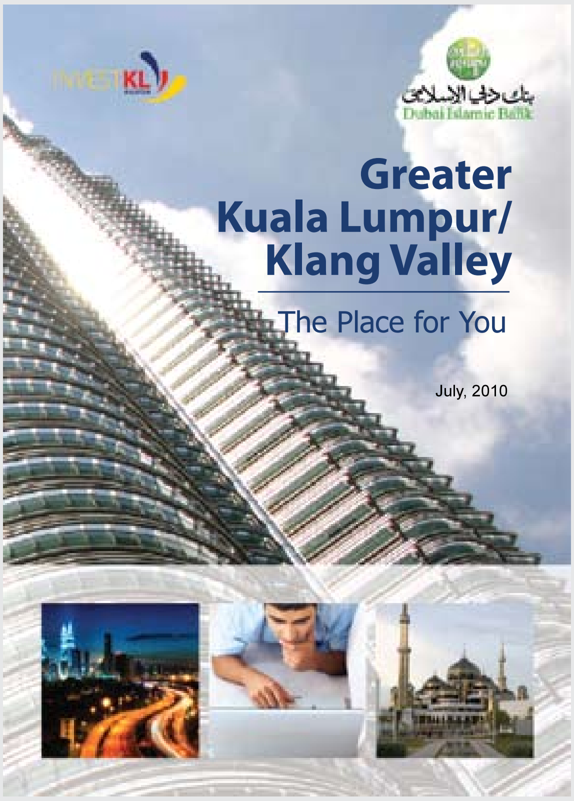
Efforts to attract such companies include establishing attractive incentives for MNCs, proactively marketing to priority MNCs, strengthening our local talent base and reducing the cost of doing business.

Establish an attractive incentive package for MNC HQs. We will improve upon existing criteria for operational headquarters, which currently enjoy tax exemptions of 5 to 10 years. Potential additions to the criteria for Operational Headquarters status qualification include: total parent company assets of greater than RM300 million, minimum paid-up capital of RM5 million from parent company, maintains a sizeable network of companies outside Malaysia, and maintains a pool of 50 percent of skilled staff throughout the incentive period with a clear definition for skilled employment based on certification.

Proactively market Greater KL/KV to priority MNCs. A dedicated marketing and implementation team will create and maintain a database of high priority companies to target with tailor-made pitch-books (*Exhibit 5-6*) that provide a one-stop guide to relocating to Greater KL/KV.

Exhibit 5-6

Priority MNC targets will be actively engaged with tailored pitch books



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Delivering the region's most competitive fiscal package
- Enjoy an attractive range of institutional and personal tax incentives, tailored to provide the region's most competitive fiscal package

Improving your competitive advantage
- Be part of the world's fastest growing Islamic financial hub
- Experience best-in-class infrastructure
- Leverage world-class talent to grow

Ensuring seamless transitions
- Optimise your resources with a one-stop-shop government agency to ensure a seamless transition from your current location

Immersing your employees in a vibrant and dynamic city
- Live, learn, work and play in a vibrant and dynamic city offering an excellent quality of life
- Ensure your employees receive affordable housing, first class education and healthcare services

Leveraging our team for your needs
- Leverage our dedicated and responsive team to meet your company's needs
- Enjoy fast access to the right people to fast-track and maximise your company's growth potential

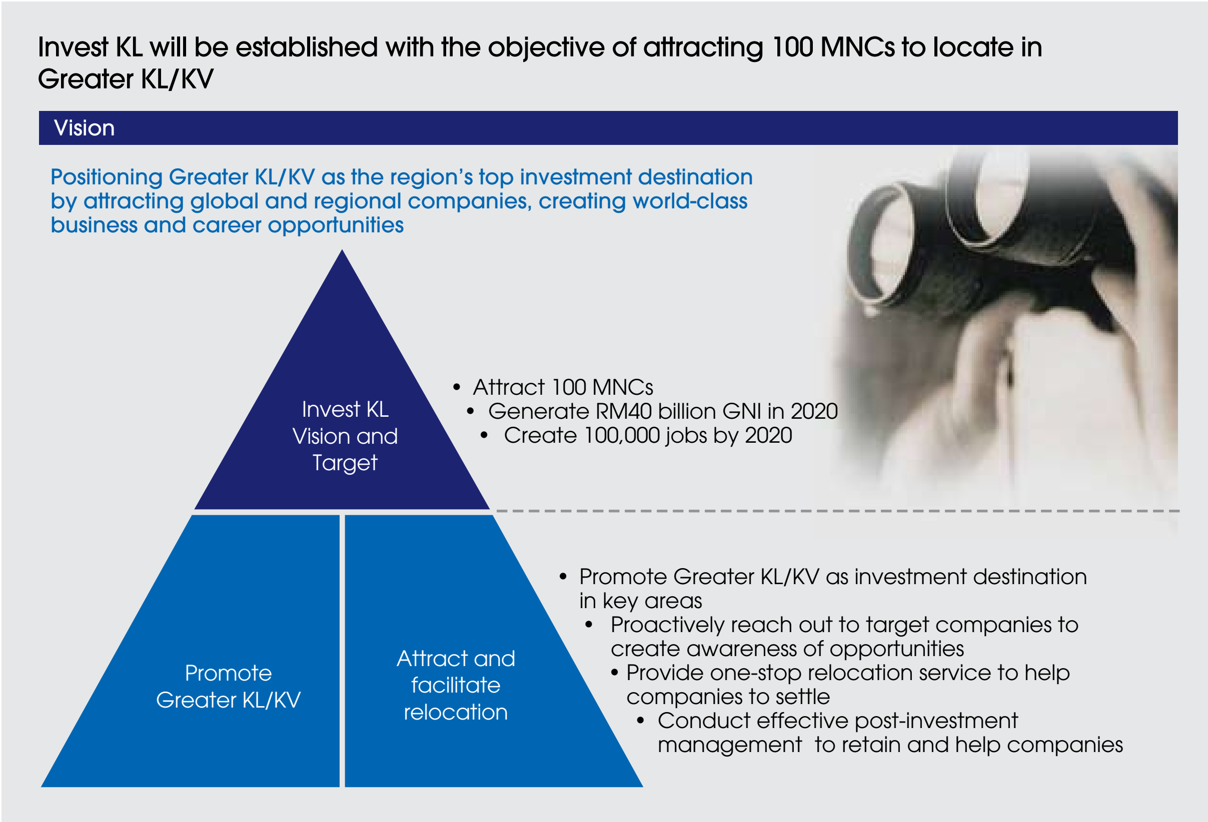
Strengthen the local talent base with an emphasis on up-skilling and re-skilling. Example efforts include initiating the Industrial Skills Enhancement Programme and expanding the Graduate Employability Management Scheme.

Reduce the cost of doing business. We will leverage the initiatives driven by PEMUDAH to date as well as those introduced under the Tenth Malaysia Plan. Examples include introducing a single-window licensing process through e-Government portals for both local and state governments, integrating services across agencies and reducing necessary procedures to three procedures within three days, which is now possible with the introduction of the standard Malaysia company identification number (MyCoID).

An entity that focuses on attracting these companies into Greater KL/KV will be formed. This entity will be known as Invest KL, with a mission to ensure Greater KL/KV becomes the region's top investment destination by attracting companies that have regional and global focus and create world-class business and career opportunities for Greater KL/KV residents. The proposed scope and mandate for this organisation is summarised in *Exhibit 5-7*.

This entity will report into the Ministry of the Federal Territories; however it will be physically co-located with Malaysian Investment Development Authority (MIDA) to benefit from synergies in infrastructure and capabilities that currently reside within MIDA. As a first step towards implementation, the specific and detailed roles and responsibilities of Invest KL, interaction model with MIDA and other related agencies (such as Multimedia Development Corporation), staffing and funding needs, and initial targets will need to be defined by the end of 2010 by the Ministry of the Federal Territories in consultation with MIDA.

Exhibit 5-7



Funding

The funding requirements total RM82.2 billion.

Impact

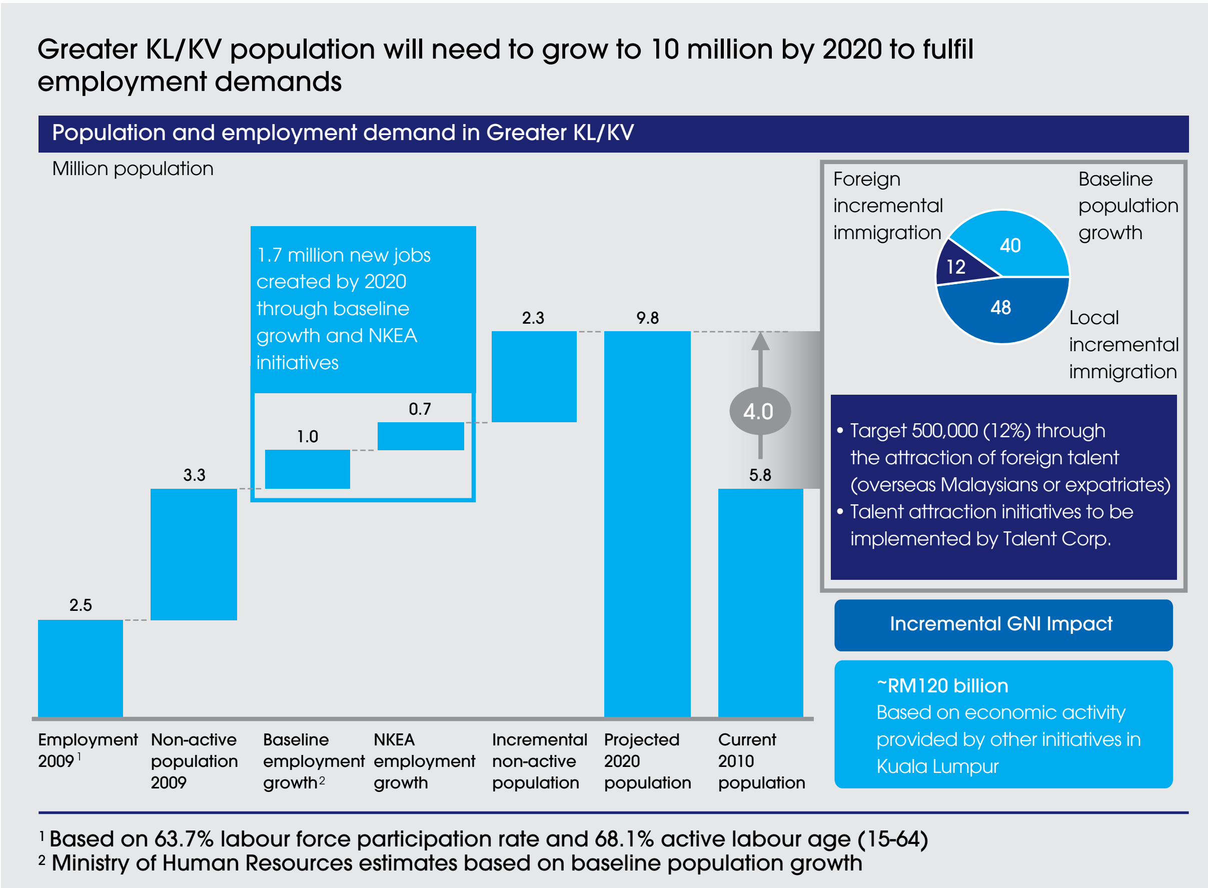
This EPP will generate RM41.4 billion of additional GNI per year and create approximately 234,000 jobs by 2020.

EPP 2: Attracting the Right Mix of Internal and External Talent

Rationale

Growth in Greater KL/KV economic activities will increase total employment from 2.5 million in 2010 to 4.2 million by 2020. This is driven by a combination of baseline employment growth and employment generated by the 12 NKEA projects, which have a high share of employment in Greater KL/KV. Total employment specifically driven by Greater KL/KV EPPs and business opportunities represents around 553,000 new jobs. Overall the incremental employment created is expected to contribute an estimated RM118.2 billion[4] in annual GNI to the city by 2020 *(Exhibit 5-8)*.

Exhibit 5-8



Source: Ministry of Human Resources, Department of Statistics

To fulfil employment demand, Greater KL/KV's population will need to grow from 6 million in 2010 to 10 million by 2020, representing a significant increase in the pace of growth of 5.6 percent per year compared to current baseline estimates ranging between 1.9 to 2.9 percent. This step-change in growth is ambitious, but not unprecedented. For example, over the period of 1999 to 2009, Shenzhen grew at an average rate of 7.1 percent per year. The incremental 4 million people in Greater KL/KV comprise both baseline population growth of 1.6 million people with the remaining from both domestic and international immigration. Of the 2.5 million immigrants expected to relocate to Greater KL/KV, 20 percent is expected to come from abroad, both expatriates as well as the overseas Malaysian community (the Malaysian diaspora).

4 GNI value includes labour contribution from other NKEAs when they locate in Greater KL/KV

Actions

From a demand perspective, five priority employment sectors have been identified for Greater KL/KV: education, financial services, business services, tourism and retail. From a supply perspective, geographical targets were developed to identify countries with a high concentration of Malaysian diaspora, such as Singapore, UK, USA, Australia and Canada, home to over 700,000 Malaysians, and countries such as India, China, Japan and the UK from where close to 50 percent of high-skilled talent in Malaysia originate today. Attracting these high-skilled talents requires a combination of creating the optimal environment in which to live, work and play as well as specific actions that can be taken to proactively engage them.

Establish Malaysia Halls in priority cities as convenient places for overseas Malaysian communities to congregate as well as to function as channels to increase awareness of opportunities and as one-stop centres to assist Malaysians in the process of relocating back to Malaysia.

Leverage leading personages in Malaysia such as the Prime Minister to personally target the top 100 Malaysian diaspora individuals. For example, this can be done through a personal letter to these individuals outlining three tangible things that they can do to contribute to the nation's development (e.g. supporting investments in education).

Track and engage with the top 5,000 most interesting Malaysian diaspora individuals who are internationally acknowledged to have contributed in a significant manner in their fields, including high net worth individuals, promising entrepreneurs and renowned academics. We will use head hunters who will encourage the individuals to relocate to Malaysia.

Upgrade consular services in priority cities to offer fast-tracked and efficient services for high priority individuals who meet baseline criteria, such as by profession or net worth.

Establish awards to recognise world-class Malaysians similar to the World Class New Zealand awards. These awards were established to recognise and celebrate successful New Zealanders and friends of New Zealand who help enhance the international reputation of the nation.

Establish an on-line job search engine specifically targetting Malaysian diaspora and foreigners interested in moving to Malaysia like the Jobs@Singapore portal established by Contact Singapore and the Kea Global Talent Centre for New Zealand.

Leverage top universities to reinvigorate alumni relations and create interest in relocating to Malaysia.

Extend Permanent Resident status to the immediate family members of expatriates who have been granted PR status.

Extend foreign graduate student visas beyond graduation to allow a grace period for foreign students to work locally.

The talent attraction initiatives will ultimately be the responsibility of the Talent Corporation, the setup of which was proposed under the Tenth Malaysia Plan. As mentioned in Chapter 3, we will set this body into operation by early 2011. The Talent Corporation will co-operate closely with Invest KL and MIDA to develop a comprehensive perspective on talent demand as a basis to further prioritise, further develop and implement talent attraction initiatives.

Funding

Total incremental funding requirements are estimated at RM18 million from 2011 to 2020, largely to fund the establishment of Malaysia Halls and other such one-stop centres in international cities.

Impact

This EPP will generate RM118.2 billion of additional GNI per year by 2020.

Greater KL/KV CONNECT

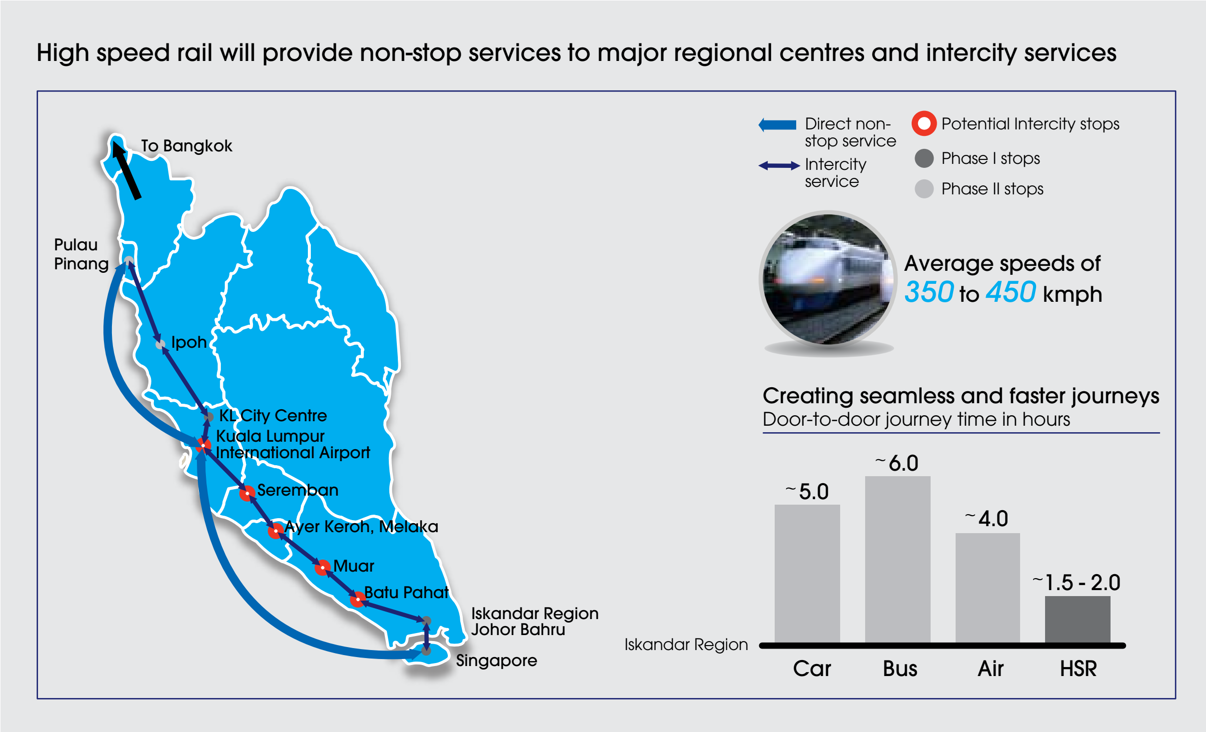
A leading global city needs the physical means to attract millions of people and to move them around within the city. Connectivity to other hubs and connectivity within Greater KL/KV are both critical for urban growth and improved productivity of the urban population. Two EPPs will be deployed to debottleneck connectivity between Greater KL/KV and other cities and within Greater KL/KV.

EPP 3: Connecting to Singapore via a High Speed Rail System

Rationale

Greater KL/KV and Singapore are both truly global cities. The proposed deployment of an HSR system connecting Greater KL/KV and Singapore will connect Southeast Asia's two largest economic agglomerations and unlock economic growth in intermediate Malaysia cities. Today, over 9.2 million trips every year are taken between these two cities, with road-based travel representing the largest share at 68 percent of the market. The HSR service will essentially transform travel on the Greater KL/KV–Singapore route by making daily travel a viable alternative. Door-to-door travel time will take just 1.5 to 2 hours, putting this route into the category of daily travel. This represents a savings of over two hours over air travel, the fastest available mode today (*Exhibit 5-9*).

Exhibit 5-9



The HSR service will yield significant benefits to Greater KL/KV:

Establishing Greater KL/KV as a location of choice for businesses. Businesses will find Greater KL/KV an attractive alternative to Singapore due to its low-cost labour advantage. For example, in the services sector today, labour costs in Singapore are approximately two to three times higher than that of Greater KL/KV.

Transforming the way we travel. Demand for travel will increase significantly with preliminary survey results indicating an increase in demand of three to six times for business and leisure travellers (*Exhibit 5-10*). In other cities, increased demand for travel has influenced the specialisation of businesses and opened up markets for smaller firms, such as in the case of Paris and Lille in France after the introduction of a high speed TGV service through both cities. Increase in demand for leisure travel will be positive for Malaysia, with an estimated increase of RM2 to 5 billion in net tourism spend per year.

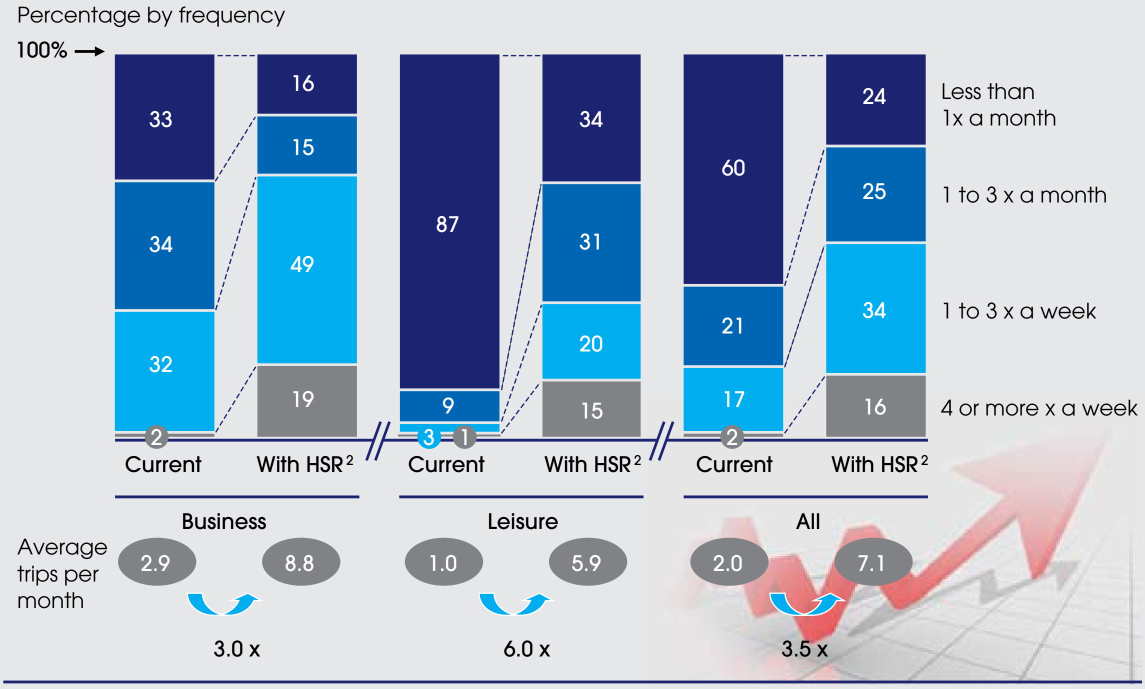
Uplifting the property market. Demand for Greater KL/KV property will increase to match regional peers. Today, property prices in Greater KL/KV are valued at five times below comparable units in Singapore.

Driving worker productivity. Significant reduction in travel time will drive worker productivity. Business travellers place a high value on time spent travelling. Overall, worker productivity can be expected to increase as business travellers not only save up to 2.0 to 2.5 hours per trip but are also able to work in comfort throughout the journey on the HSR service.

Exhibit 5-10

HSR will transform passenger travel with demand potentially increasing by 3 to 6 times in frequency

Trips by frequency of travel (n=200)[1]



[1] Based on survey of KL-Singapore air commuters at KLIA, LCCT and Skypark terminal. Survey responses weighted based on volume of flights from each of the airports

[2] Respondents were asked if they would change their travel frequency and by how much with the introduction of a HSR system that provided 60 minutes shorter travel time

Actions

Economic Planning Unit (EPU) and Suruhanjaya Pengangkutan Awam Darat (SPAD) will jointly drive the initial stages of this initiative. Specifically they will launch a detailed feasibility review of this initiative, to be concluded by the end of 2010. This study will be tabled to the Cabinet to obtain its approval.

The first step in deploying an HSR is validating the case for the rail system. This will entail refreshing the case for the HSR, defining options to optimise on private capital that monetise the property development potential, identifying opportunities around value management to reduce the overall cost of the initiative and defining the preferred operating model. This review will be completed by the end of 2010, with a decision then tabled at Cabinet for approval. At that point, assuming a positive outcome, we will begin discussions and negotiations with Singapore.

Funding

The project is estimated to cost RM16.5 billion.

Impact

This EPP will generate RM6.2 billion of additional GNI per year and create 29,000 jobs in direct and indirect employment by 2020.

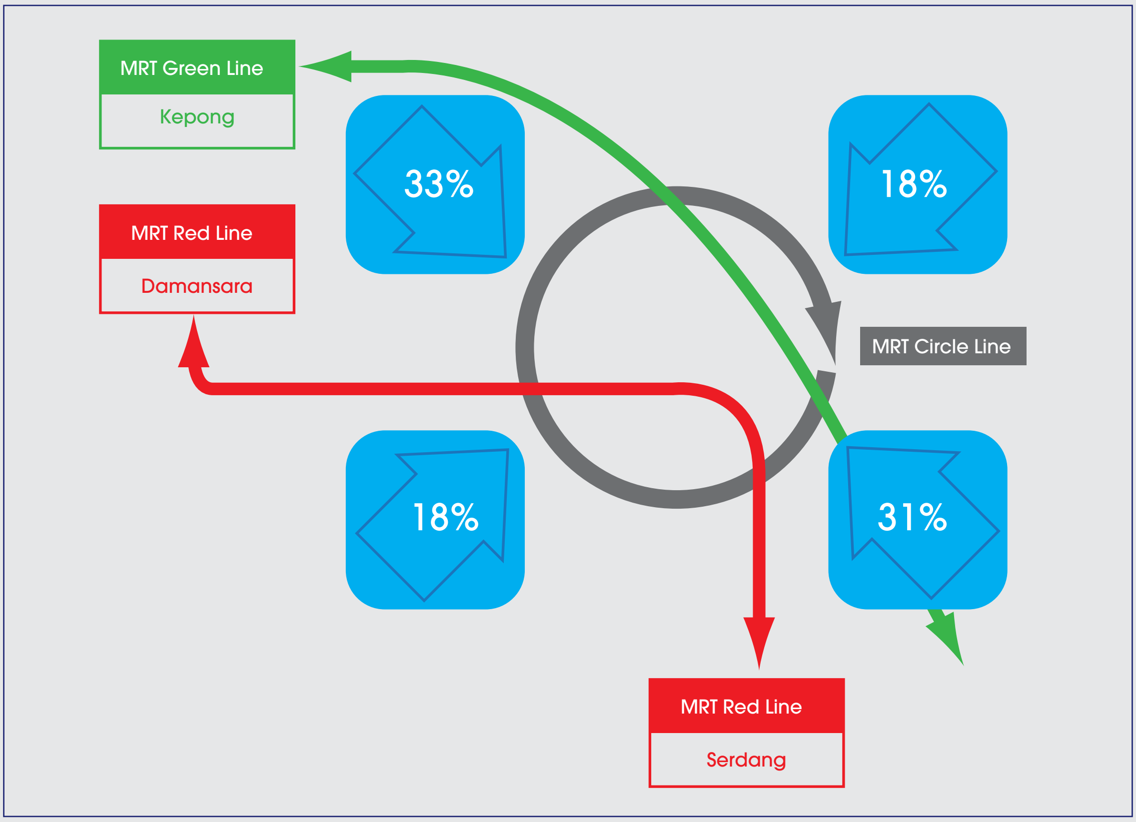
EPP 4: Building an Integrated Urban Mass Rapid Transit System

Rationale

The Greater KL/KV public transportation system is under significant pressure, having gone almost a decade without substantial investment in urban rail capacity. Under the Government Transformation Programme, the Urban Public Transport National Key Results Area initiatives will increase existing urban rail capacity, primarily through investments in rolling stock. However, there is a need to expand the coverage of population living within an accessible distance of an efficient rail system. Moving forward, Greater KL/KV's aspiration to achieve a 50 percent public transport modal share by 2020 will need to be supported by increase in coverage and capacity of urban rail. The proposed MRT system for Greater KL/KV will span 141 kilometres with three major routes serving a radius of 20 kilometres of the city centre. The system is estimated to be able to carry up to 2 million riders by 2020, serving 11 percent of total trips within Greater KL/KV and 64 percent of travel in and out of the KL city centre (*Exhibit 5-11*).

Exhibit 5-11

MRT system will serve over 11% of total travel across *Greater KL/KV* and 64% of travel in and out of KL city centre



SOURCE: Draft KL city plan 2020

In addition to providing much required relief in congestion and an increase in accessibility to Greater KL/KV's transportation landscape, the MRT system will contribute directly to the nation's GNI aspirations. As Malaysia's largest ever infrastructure project, the project will employ an estimated 130,000 people during the peak of construction with a significant multiplier impact in associated industries.

Actions

The proposed approach towards the MRT system marks a fundamental shift in the way we perceive public transportation – moving away from the perception of an MRT system solely as a mass mover of people, to a viable business opportunity where high value commercial developments leverage upon the mass movement of people. Four main levers will ensure that the project delivers a world-class MRT system at the highest value to the public while providing a fair return to the private sector.

Unleash the power of the private sector. Carving out clear roles and risk allocation across public-private sector based on best-in-class PPP (public private partnership) principles while identifying opportunities for private sector contribution to reduce the overall burden on public spending. For example, in the Hong Kong MTR system, capital investments in rail infrastructure are typically cross-subsidised by property development rights accorded to the MTR for areas adjacent to stations. Implementing a similar strategy for the Greater KL/KV MRT requires the introduction of strata titles that allow commercial property development to occur on land allocated for MRT right-of-ways.

Deliver better value, faster by pushing for value management at every stage of implementation: from design to operation. Efforts to optimise value in similarly large capital intensive projects, such as for Metro projects in Japan, have delivered cost savings of 22 percent (on average) to 40 percent (on the construction of a new line). Extracting value at each stage of the process from planning, design, procurement to construction will be critical to deliver similar types and scale of cost savings for the Greater KL/KV MRT system.

Fully integrate system with pace and shape of Greater KL/KV development. The MRT system will need to be designed to serve both existing commercial developments (existing travel demand) as well as upcoming major new developments (future demand) such as the Sungai Buloh Rubber Research Institute development, Matrade Centre and Kuala Lumpur International Financial District. Ensuring full integration of MRT stations and alignment with upcoming new developments will not only allow optimal catchment capture but also facilitate the unlocking of property development values.

Communicate the vision through a productive public consultation process to understand what matters to mass transit customers to inform design and implementation and respond to public concerns proactively over perception of a vendor-driven approach.

To implement the MRT, significant work has already been done by the initial private sector proponent. The Government will, over the next five months, validate this proposal as well as conduct a detailed study to deploy the four levers to minimise the public expenditure required while maximising the public good from this system. The outcome of this detailed study will be tabled to Cabinet by the end of 2010, upon which decisions will be made about the modalities of implementation.

Funding

Preliminary estimates show a total funding requirement of around RM47 billion. This is made up of infrastructure cost of RM36 billion with potentially an additional RM2 billion for expedited land acquisition. Further investments in the range of RM9 billion will be required for the operating assets of the company, such as rolling stock.

Impact

The GNI impact potential from deploying an MRT is estimated in the range of RM21.3 billion per year by 2020. Approximately 20,000 jobs will also be created in direct and indirect employment.

Greater KL/KV NEW PLACES

Cities around the world are often anchored around iconic places within the city. These places enhance the liveability of the city and also become natural focal points for work and play for the inhabitants of the city over the course of a day, naturally spurring economic activity from both locals and visitors.

EPP 5: Revitalising the Klang River into a Heritage and Commercial Centre for Greater KL/KV

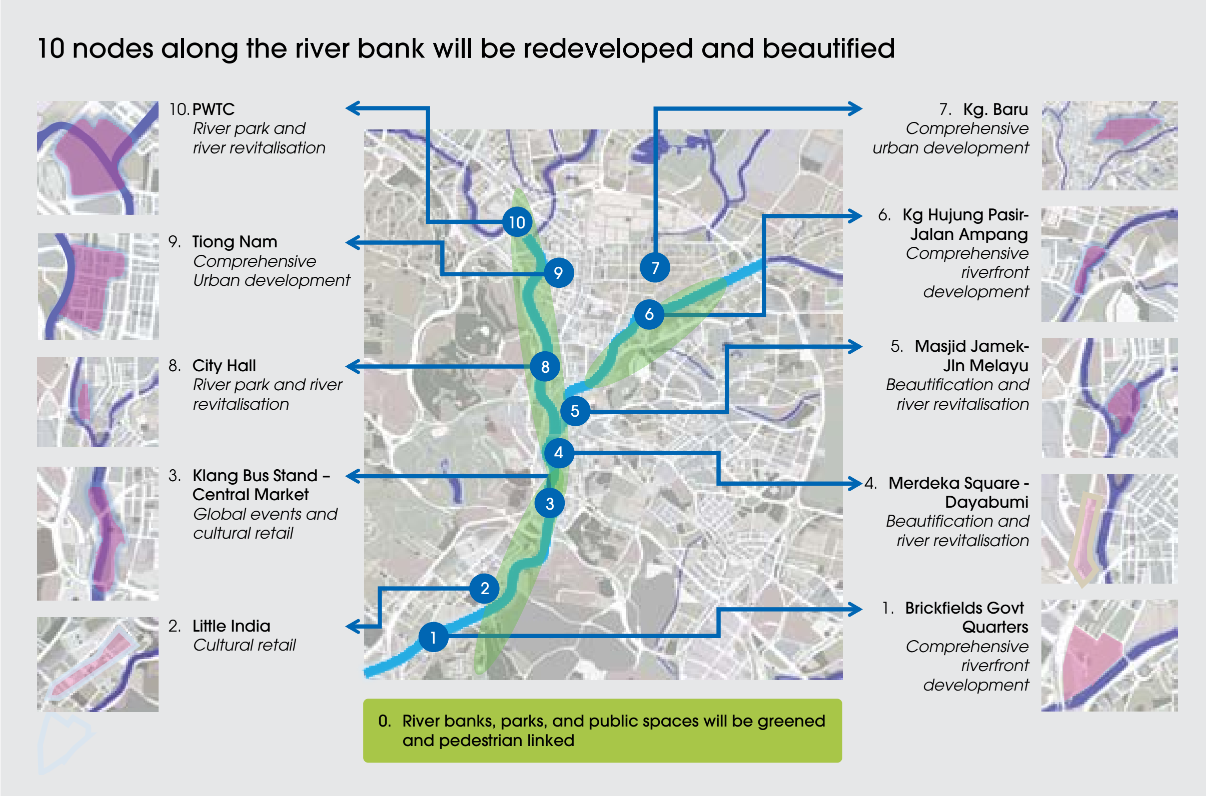
Rationale

The Klang riverfront is perhaps Greater KL/KV's most under-utilised natural asset. The Klang River has all the ingredients to become a vibrant waterfront, i.e. historical importance, heritage centre and location within the city centre, with enormous economic and liveability potential to be realised. A disproportionate number of the top ranking liveable cities boast a waterfront or river that has been leveraged for economic and liveability appeal. Examples include Vancouver, Melbourne, Auckland, Geneva and Seoul.

Actions

Revitalising the river involves redevelopment of several locations along a 10 kilometre stretch of river, along with a thorough river cleanup programme. Ten nodes of economic activity have been identified along the Klang and Gombak Rivers, as illustrated in *Exhibit 5-12*. For each of the nodes, in addition to beautifying the river bank and improving connectivity, mixed use developments will be encouraged to increase retailing, residential options and places of leisure such as parks and green spaces.

Exhibit 5-12

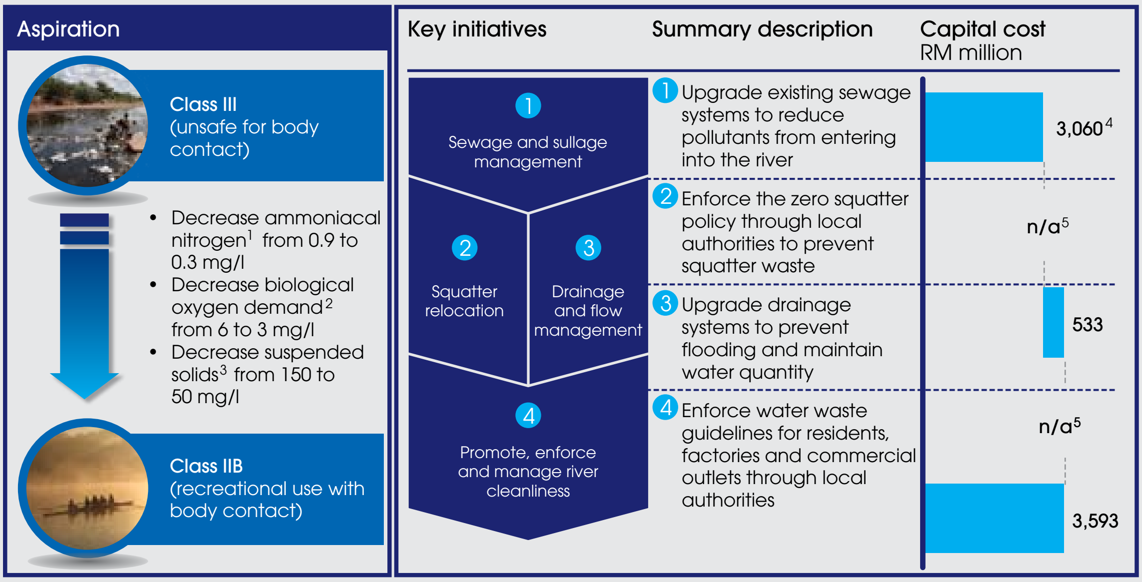


For each of these nodes, Kuala Lumpur City Hall (Dewan Bandaraya Kuala Lumpur, DBKL) will craft detailed development plans anchoring on the development mix, optimal dimensioning for each element and potential PPP structures for the redevelopment.

In parallel, the National Sewerage Department, Department of Irrigation and Drainage and DBKL are performing detailed studies on the river cleanup exercise, which will begin implementation in late 2010 or early 2011. The aspiration is to improve the water quality from its current Class III (defined as unsafe for body contact) to Class IIB (defined as safe for recreational use with body contact). Major cleanup initiatives include upgrading the existing sewerage system to reduce pollutants from entering the river system, enforcing a zero-squatter policy in partnership with DBKL and other local authorities, upgrading drainage systems to prevent flooding and enforcing waste water guidelines for residents, factories and commercial outlets along the river. These initiatives will be conducted in conjunction with the Selangor State Government, as upstream activities will be critical to ensure the water quality downstream in KL. *Exhibit 5-13* summarises these initiatives, together with the expected cost.

Exhibit 5-13

Greater KL/KV needs to address pollution and flooding of Klang river



[1] Ammoniacal nitrogen (AN) is a toxic pollutant often found in sewage and landfill
[2] Higher biological oxygen demand (BOD) BOD indicates higher presence of micro organisms, suggesting higher pollution
[3] Suspended solid (SS) is organic and inorganic particle (e.g. waste, sand) that increases turbidity and reduces oxygen content
[4] Sewage management cost mainly includes upgrading (RM2,300 million) and regionalising (RM740 million) sewage treatment plants
[5] No additional capital expenditure for local authorities to enforce regulations

Implementing any urban redevelopment of this scale and scope is a multi-year and multi-functional effort. The redevelopment will be managed by a small but highly professional statutory Authority established under Federal legislation. The Authority will drive the site master planning and packaging of development sites to developers, the planning and co-ordination of the river cleanup, the enhancement of heritage and cultural components of the redevelopment, the community consultation processes, the overall marketing and the financial and legal aspects of the EPP. The Authority should be formally established by the end of 2011, subject to the legislative timetable.

In the interim, the initiative will be driven by a Joint Development Council (JDC) sponsored by the Minister for Federal Territories and Urban Wellbeing, and co-ordinated by DBKL. The JDC will play a co-ordinating role and act through the capabilities and powers of participants in four taskforces: authority set-up, river cleaning and beautification, planning and development and marketing. This will create momentum for the river revitalisation effort in parallel with the creation of the formal authority that drives it in the longer term.

Funding

Achieving this EPP's target requires a total capital expenditure of RM17.9 billion, RM14.3 billion of which is earmarked as the private investment component in real estate development.

Impact

The potential GNI impact from revitalising and redeveloping the identified nodes along the Klang River is estimated at approximately RM4.3 billion annually by 2020 with approximately 17,000 jobs created by 2020. This is primarily driven by the increased economic activity along the riverfront, enhanced tourism potential and property value appreciation.

EPP 6: Greening Greater KL/KV to Ensure Every Resident Enjoys Sufficient Green Space

Rationale

To become a top-20 liveable city in the world, KL City needs to significantly increase its green space. Today, the amount of green space per person in the city centre is only 12 square metres, which is not only below the WHO standards of 16 square metres per person, but also falls behind other leading liveable cities, such as Vancouver with 22 square metres per person. At current trajectory of population growth, the amount of green space per person will be half that of WHO standards at 8 square metres per person by 2020. The focus of this EPP is within the city centre of Kuala Lumpur as areas beyond the city still have sufficient green spaces.

Greening the city will improve liveability by creating a more comfortable living environment and providing spaces for healthy recreational activities. Furthermore, it increases property values as greener areas tend to command a price premium. Most importantly, it creates a sustainable environment by reducing inner city temperature and greenhouse gases.

Actions

A greener city can be achieved through three main initiatives:

Adopt a green-focussed development policy for both Government and private redevelopments, where the open space requirement of 30 percent of total area will be prioritised for green spaces. This could include major Government redevelopments that are larger than 40.5 hectares such as the TUDM Sg. Besi and any land under the purview of the Public Private Partnership Unit of the Prime Minister's Department (Unit Kerjasama Awam-Swasta, UKAS), Media City Angkasapuri, unused infrastructure reserves and land owned by private entities to be redeveloped.

Employ creative landscaping methods including dense foliage tree planting, rooftop greening and vertical landscaping. Tactically, DBKL will extend its current tree planting initiatives from 25,000 trees to 100,000 trees, with emphasis on large coverage trees to create the look and feel of green corridors. Through rooftop greening, 150,000 square metres of unused rooftops in KL city can be leveraged to increase green space. With vertical landscaping, where greenery are planted in vertical and over-hanging structures, up to 20 percent of additional green surface can be generated for transformed structures.

Integrate parks and promote outdoor events. This will not only give rise to the impression of a green city but also directly contribute to GNI through commercial activities. An integrated park system will be created to include parks of all sizes, landscaped boulevards and paths and public open spaces, where different open spaces in the city are connected through green trails. The vision is to enable people to walk across the span of the city without leaving the green trail. In addition, efforts will be made to proactively draw events to be held in parks, including both public events (e.g. concerts, performances, sports competitions) and private events (e.g. weddings, birthday celebrations, corporate parties).

Funding

Total funding requirements are RM149 million over 2010 to 2020, due to incremental funding requirements for tree planting initiatives.

Impact

The potential GNI impact is estimated at approximately RM1 billion annually, with approximately 3,000 jobs created by 2020.

EPP 7: Creating Iconic Places and Attractions

Rationale

All famous cities in the world have unique attractions that define the distinctive character and identity of the city. The Eiffel Tower and Seine River in Paris, Broadway and the Statue of Liberty in New York, the Oriental Pearl and Bund in Shanghai are all attractions that are intricately linked with the identity of these cities. Today, visualisation of Greater KL/KV is most likely to be associated with the Petronas Twin Towers or the Sultan Abdul Samad building.

However, Greater KL/KV has immense potential to further leverage existing heritage sites that can be preserved and redeveloped in a manner that both celebrates the history and heritage of Greater KL/KV, but also embraces a future as a cosmopolitan and global city. Furthermore, these iconic places also generate higher economic activities through additional hotel stays, retail revenues from visitors and locals and additional employment (*Exhibit 5-14*).

Exhibit 5-14

KL can be positioned as a global city and heritage centre by transforming existing attractions and building new attractions

Emphasis of KL attractions

Global city

- Showcasing KL as a world-class developed city
- Potential focuses include architecture, entertainment, shopping, etc.

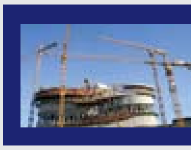
Heritage centre

- Showing KL as a world heritage site that offers one-of-a-kind cultural experience
- Potential focuses include historical landmarks, art, natural beauty, etc.

Approaches to create global attractions

Transform existing attractions

- Leverage existing attraction sites
- Significantly improve quality, change focus, or expand scope



Build groundbreaking new attractions

- Identify areas of interest that are underutilised
- Create new attractions with high global standards

Actions

As a starting point, three priority attractions have been proposed within the city centre, leveraging Greater KL/KV's invaluable heritage assets.

Heritage triangle walking museum links existing cultural and historical sites around the Masjid Jamek – Merdeka Square – Dayabumi – Central Market area through an official walking trail – an experiential journey through the history of KL anchored on unique heritage sites. The objective will be to showcase the city's rich cultural and heritage points, supplemented by interactive kiosks at key sites, live exhibitions and culture-focused retail activities through a network of well-sheltered pedestrian walkways.

Central Market art colony, where the current Central Market building will be transformed and redesigned into a complex with live art studios. The project, a PPP between DBKL and existing owner (Kha Seng Textile), will design incentive packages to attract well-known artists and allocate spaces for live performances and educational events. With a focus on up-scale cultural retailing and leisure, the surrounding areas will also be revitalised through the creation of pedestrian promenades and the relocation of existing craft and souvenir shops to areas surrounding Central Market.

Pudu Jail, which was built in 1895, has the iconic Pudu Jail Gate as a representation of our city's rich history. This site represents an opportunity to blend 115 years of tradition with modern architectural brilliance. The 7.9 hectares site will be transformed into a mixed development of residential, office and retail components, lined with cultural and recreational attractions. Iconic attractions such as a modern art museum to match world-class museums such as the Guggenheim in New York or the Tate Modern in London, concert halls or an open air amphitheatre will be developed on the site. The development will be well connected to the city's pedestrian walkways, monorail and light rapid transit lines with adjacent stations. DBKL will impose requirements to ensure that all buildings will be developed as green buildings, that portions of the original Pudu Jail building is preserved (such as the iconic gate) and that the development provides for a minimum of 30 percent open space that is accessible to the public. The development will also be granted an increase in plot ratio by 20 percent.

Additional sites within Greater KL/KV have the potential to become iconic places such as the old KTM station and China Town. For these sites, DBKL will establish stringent development criteria to include a 30 percent requirement for open spaces, in return for which developers are entitled to 10 percent more plot ratio on the gross area. In addition, DBKL is specifying requirements for iconic attractions consistent with the heritage of the site. To decrease public burden and leverage commercial expertise, redevelopment efforts will be driven through partnerships with the private sector to jointly design and build world-class attractions, especially for locations that are privately owned, such as Central Market.

Funding

Total funding requirements for two major attractions are RM240 million over the period of 2010 to 2020 with the private sector contributing 50 percent.

Impact

The potential GNI impact is estimated at approximately RM460 million annually, with approximately 13,500 jobs created by 2020

Greater KL/KV ENHANCED SERVICES

With the influx of global companies and talent into Greater KL/KV, improved connectivity and new destinations for locals and visitors, key services such as a pedestrian network and solid waste management must be enhanced to ensure sustainable long-term growth. Based on discussions with relevant authorities and owners, other services required for growth (e.g. housing, electricity, water and sewage) will be managed and will not become a significant bottleneck for Greater KL/KV.

EPP 8: Creating a Comprehensive Pedestrian Network

Rationale

Based on a public opinion survey by Seranta Awam, Greater KL/KV is not a pedestrian-friendly city, as it currently has inefficient design, poor maintenance and poor accessibility. Locals and visitors often find that there are no linkages between buildings, poor continuity in pedestrian walkways and lack of access for the physically challenged and elderly.

In addition to a direct impact on liveability, the value of a comprehensive pedestrian network will be significantly enhanced if integrated with other major developments in the city. Linking pedestrian walkways with the MRT system will help improve traffic flow in and out of stations, improve connectivity between transit nodes and increase retail activities either in or near the MRT stations. Connecting pedestrian walkways with the revitalised Klang River will encourage tourists and locals to visit the heart of the city and promote commercial and leisure activities along the river banks.

Actions

Currently, DBKL and the private sector have initiated programmes to construct 4.5 kilometres of covered and elevated pedestrian linkages in the city centre, with an expected completion date of mid 2012. DBKL will complete two sets of walkways by late 2011 with the first linking Berjaya Times Square to Pavilion and the second pair linking Jalan Perak and Pavilion with Crowne Plaza and Jalan P. Ramlee, and linking Jalan Sultan Ismail with Jalan Pinang.

Additionally, Syarikat Prasarana Nasional Berhad (SPNB) will complete six linkages in the city centre by the end of 2010 as part of its broader public transport investment programme, while a PETRONAS-led effort to complete an elevated walkway around the KLCC area will be completed by 2011.

In parallel, a long-term plan will be developed by DBKL to deploy a full pedestrian network across KL city totalling 45 kilometres. Implementation of this extended corridor will begin in 2012 and is expected to be completed by 2014. There are three phases for the comprehensive plan:

- **Phase 1**: 3-kilometre major spine from Merdeka Square to Jalan Tunku Abdul Rahman, which ends at Chow Kit area. This will serve high pedestrian volume in parts of the city with major commercial activities;

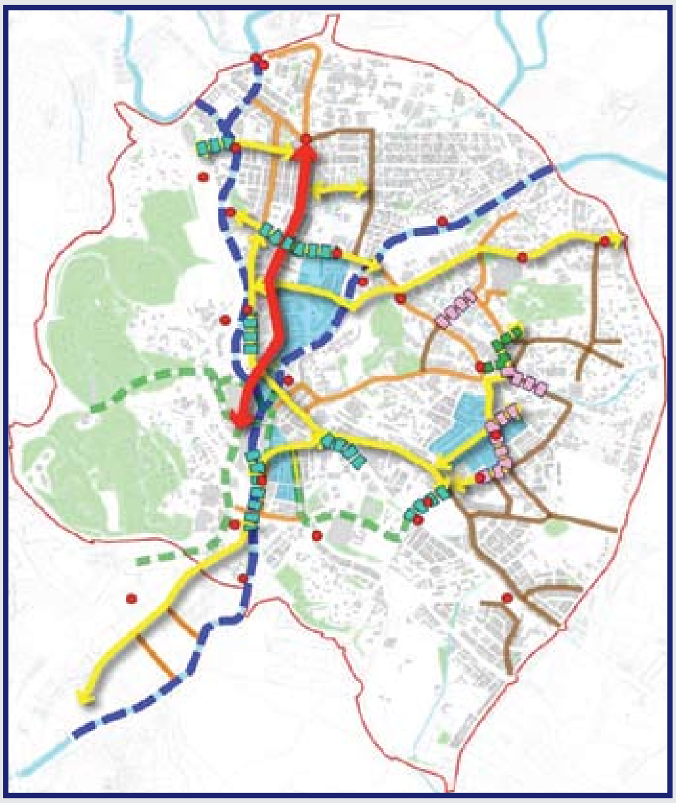
- **Phase 2**: 14 kilometres of primary walkways for high pedestrian traffic between major locations and transit nodes; and

- **Phase 3**: Secondary routes that connect key pedestrian walkways (9 kilometres) and extend the pedestrian coverage throughout city centre (16 kilometres).

Details are illustrated in *Exhibit 5-15*.

Exhibit 5-15

A comprehensive pedestrian network will be developed for KL city centre



Comprehensive plan/Long term

- Major Spine
- Primary Route
- Secondary Route (1st Wave)
- Secondary Route (2nd Wave)
- Riverfront Walkway
- Heritage Trail
- Pedestrian Priority Zone
- LRT Stations

Priority walkway (length, construction period)

- DBKL (~2 km, Oct-Sep 2011)
- SPNB (~2 km, Jun-Dec 2010)
- PETRONAS (~0.5 km, Apr-Feb 2011)

1 Priority walkways for the near term (~2km, by DBKL)

- **Phase 1 (Berjaya Time Square to Pavilion)**
  - ~800m of covered and grounded walkway
- **Phase 2a (Jalan Perak / Pavilion to Crowne Plaza)**
  - ~400m of elevated and covered walkway with air conditioning
- **Phase 2b (Jalan P. Ramlee / Jalan Sultan Ismail to Jalan Pinang)**
  - ~450m, same specifications as Phase 1

2 Comprehensive plan for the long term (~42 km, phased over time)

a **Major spine (~3km)**
- High pedestrian volume with major commercial activities (e.g. retail)

b **Primary route (~14km)**
- High pedestrian traffic between major locations and transit nodes

c **Secondary route**
- First wave (~9km)
  - Connect key pedestrian walkways
- Second wave (~16km)
  - Extend the pedestrian coverage throughiout city centre

3 Other pedestrian walkways

- **River front walkway** – covered by the Revitalising Klang River EPP
- **Heritage trail** – covered by the Iconic Places EPP

SOURCE: Kuala Lumpur City Hall

To create an efficient pedestrian network, DBKL and other relevant local authorities will proactively solicit and incorporate public opinion throughout the design process, conduct a detailed cost analysis to cut construction costs and integrate the design to link with other major developments (e.g. MRT, Klang River revitalisation, retail outlets).

Funding

Total funding requirements are estimated at RM105 million from 2011 to 2020 for the complete pedestrian network.

Impact

The potential GNI impact is estimated at approximately RM6 million annually.

EPP 9: Developing an Efficient Solid Waste Management Ecosystem

Rationale

Current solid waste management practices in Greater KL/KV are not sustainable, driven largely by four major concerns. Firstly, waste generation is expected to grow from 10,000 tons per day to 17,000 tons per day by 2020, exceeding the daily capacity of existing sanitised landfills. Secondly, recycling rates lag behind those of developed nations at just 11 percent (in 2009) compared to Singapore at 57 percent and Denmark at 42 percent. Thirdly, solid waste management fees form a high proportion, approximately 60 percent, of total household assessment fees and represent a significant burden on local authority financing. Finally, poor performance of solid waste collection and public cleaning functions result in high rates of complaint, e.g. DBKL alone receives on average 45 complaints a day on these two services. Moving forward, efficient solid waste management and public cleaning services will be increasingly important to support Greater KL/KV's dense pattern of development.

Actions

Improvements to solid waste management and public cleaning services will focus on four main levers.

Revamp solid waste management fees. Current billing and fee collection methods do not provide transparency into the costs associated with solid waste management. Moving forward, direct billing will be introduced such that premises will be charged separately for solid waste collection and management. Today, solid waste management costs forms a major proportion of a local authority's budget. For example, DBKL assessment fees are currently RM367 per household, and two-thirds of this revenue is channelled solely to solid waste management. Moving forward, solid waste management tariffs will be reflective of costs, differentiated and linked to the volume of waste disposed, to create incentives to reduce waste generation in line with the principle of polluter pays. This principle has been applied successfully overseas such as in the case of a municipality in Belgium that saw waste generation rates stabilise with the implementation of differentiated tariffs and high recycling rates of about 75 percent.

Increase implementation of reduce, reuse and recycle (3R). Initiatives will create a recycling ecosystem to achieve a recycling rate of 40 percent by 2020 (compared to current stated targets of 22 percent). Mandatory separation of waste at source will be enforced (e.g. waste collectors will only pickup separated waste) by 2012. With separation at source, major recycling initiatives to reduce the total amount of waste sent to landfills, such as composting and anaerobic digestion for organic waste (45 percent of total waste generated), can be implemented.

Explore options for solid waste treatment. Currently most waste is disposed of at sanitary and unsanitary landfills. Moving forward, given land constraints and environmental concerns, waste treatment alternatives will need to be established. The Government will review options such as sanitary landfills and incineration as well as mechanical-biological treatment facilities. While the Government will need to, as a matter of policy, decide on the choice of treatment technology, any future investments in waste treatment should be done on a PPP basis with selection of private sector investors done on an open tender basis with reasonable performance based contract tenures.

Ensure performance of waste management and public cleansing concessionaires. Under the federalisation process, waste collection services will be provided under a long term 22-year concession contract. The contract will incorporate meaningful and sufficiently punitive penalties for underperformance (and not just non-payment) and similarly, rewards for good performance. The contract should also provide flexibility to the Government to routinely review tariffs to ensure fair and reasonable rates.

Funding

Total investment requirements over the period of 2011 to 2020 stand at an estimated RM3.5 billion. A significant portion of this will be through private sector investment from the privatisation initiative of collection and waste treatment functions.

Impact

The potential GNI impact is estimated at approximately RM157 million annually.

BUSINESS OPPORTUNITIES

The nine EPPs across four dimensions will transform Greater KL/KV. But the combined effect of attracting global companies and talent, connecting the population, developing new places and enhancing services is much greater than the simple summation of nine projects. Successful implementation of the nine EPPs will lead to additional business opportunities within Greater KL/KV that will continue to enhance Greater KL/KV's liveability and generate incremental GNI. Three opportunities are highlighted here.

Business Opportunity 1: Putrajaya

Greater KL/KV's rapid growth will creates opportunities to reinvigorate Putrajaya. Today, Putrajaya already has many positive facets, including world-class infrastructure, extensive green spaces and waterfront and a daytime working population. However, the city lacks vitality and does not attract activity beyond its role as the administrative capital of the nation. As a starting point, four initiatives are proposed to reinvigorate Putrajaya:

Reshape the main boulevard. As the central spine of the city, both sides of the 4.2-kilometre boulevard need to be enhanced with vibrant activities. Retail shops, upscale street vendors and food and beverage premises will be developed along the boulevard to generate foot traffic, which will bring life to the city centre. In addition, public areas will be designated for and actively attract outdoors events (e.g. art performances, sports and martial arts).

Leverage waterfront potential. The natural lake waterfront will be developed to host waterfront retail and large-scale leisure developments (e.g. a water theme park). With close proximity to the boulevard, these locations will be packaged to draw visitors and residents alike.

Increase connectivity. To provide effective connections with Cyberjaya, Bangi, Kajang and Serdang, a detailed assessment will be conducted regarding the feasibility of reviving the monorail service. In the immediate future, the number of park-and-ride stations will be increased from one to at least four to cover major entry and exit points to Putrajaya.

Draw economic activity. Putrajaya will need to broaden its role beyond one of Government administration to attract other economic activities. One way will be to develop a world-class political science university or higher learning institution for students from the third world and developing countries. A special economic zone will be established by ring-fencing neighbouring areas (e.g. IOI, Cyberjaya) to attract commercial entities with attractive fiscal incentives and other market-friendly policies. Also, partnerships will be explored with established private developers such as IOI to develop selected land plots within Putrajaya.

Business Opportunity 2: Housing

Greater KL/KV will need to house one million new residents by 2020, and the current projected housing supply is expected to be sufficient to meet demand. The challenge lies in providing the right mix of housing, moving from 81 percent of upper middle cost housing in 2009 to 85 percent in 2020 in line with supporting increasing income levels of the Greater KL/KV population. In parallel, with the expected increase in economic activity, there will be a commensurate increase in commercial space required. However for both of these, caution needs to be taken to avoid either a price bubble or an over-supply situation.

Relevant local authorities are aware of this supply-side imbalance and are reflecting this into their approval processes. In addition, greater visibility into the current and projected housing supply and demand will be provided, as NAPIC will provide annually updated data, including information on occupancies and the number of empty units in the market as part of its Property Market Report.

Business Opportunity 3: Basic Water and Sewerage Services

Growing urban economies naturally create more demand for services. To become a top-20 liveable city in the world in parallel with its dynamic growth, Greater KL/KV will need to improve its water and sewerage systems to ensure adequate provision of services and amenities. In the area of water supply, this will be achieved by accelerating the development of water treatment facilities for Langat 2 Phases 1 and 2, which will be critical to meet demand beyond 2014. The Langat 2 project will increase capacity from the current level of 4,600 million litres per day to 6,700 million litres per day.

In addition, to build on the enabler for sewerage services, efforts will be focused on increasing the percentage of population connected to efficient regional networks from 71 percent in Kuala Lumpur and 18 percent in Selangor to 86 percent and 50 percent respectively, moving away from a system of fragmented and small sewerage treatment plants (STPs) that frequently do not adhere to environmental requirements. Further capital investments will be required to support refurbishment and upgrades of 32 regional STPs and 1,495 multipoint STPs that do not currently meet the new DOE quality standards. The target will be to have 91 percent of all STPs upgraded to a Category 1 status by 2020. A sewerage rehabilitation programme will also be carried out to upgrade 346 km of existing sewer network.

FUNDING

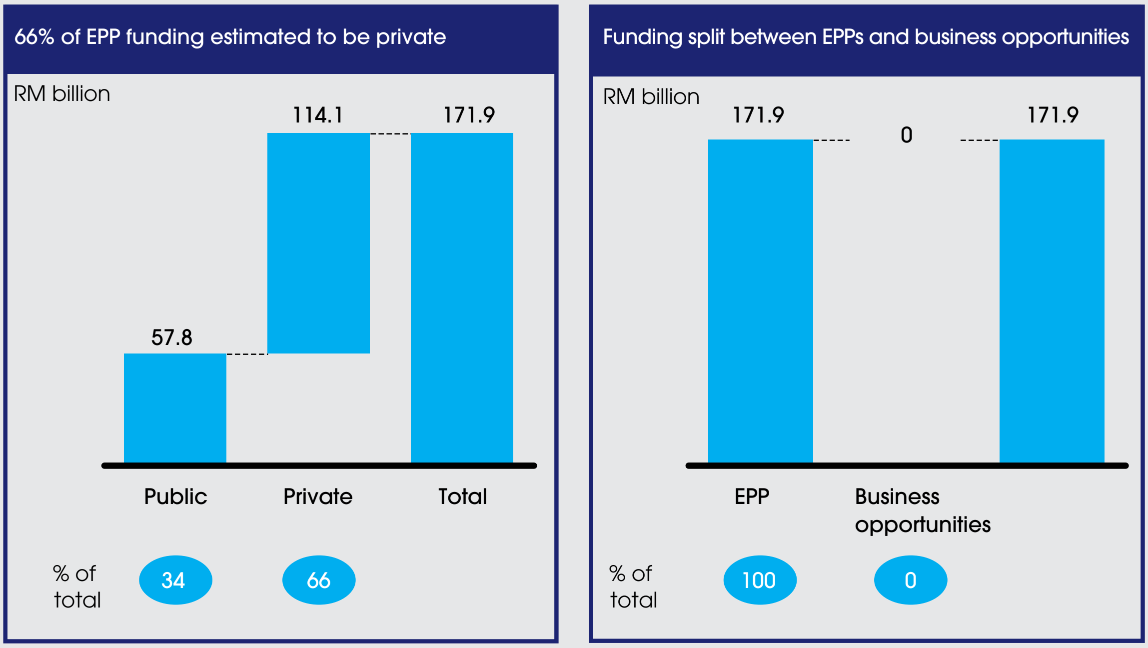
The 20-20 by 2020 challenge of the Greater KL/KV NKEA is a monumental one, which will require significant amount of funding. This funding will be achieved via a public-private partnership model.

Overview of Funding Requirements

The 20-20 aspiration is a challenging one. Tripling Greater KL/KV's GNI by 2020, and moving up the ranks from number 79 to the top 20 in the EIU's Liveability Index will be a monumental task. While the private sector will finance two-thirds of total funding requirements across the nine EPPs, the Government continues to play a critical role in contributing some investment, especially in public service infrastructure to create an environment that is attractive for and conducive to nurturing dynamic and innovative economic activities. As shown in *Exhibit 5-16*, Greater KL/KV EPPs will require a cumulative funding of RM172 billion from 2011 to 2020.

Exhibit 5-16

For the nine EPPs, RM172 billion funding is required, of which 34% will come from public sector



Highlights of investment requirements include:

- **Greater KL/KV Magnet**
  RM82 billion in private sector investment is expected for the attraction of 100 MNCs to locate in Greater KL/KV;

- **Greater KL/KV Connect**
  Current estimates for the HSR and MRT system total RM64 billion from 2011 to 2020 with a public-private investment ratio of 70:30. These estimates are expected to be revised pending the results of studies commissioned to explore levers to increase private sector funding and are discussed in greater detail in the following section;

- **Greater KL/KV New Places**
  RM18 billion investment in the river of life development, greening initiatives and iconic places with a public-private investment ratio of 20:80. This is largely driven by private sector investment in the redevelopment of the 10 River of Life development nodes as well as significant investments in sewerage treatment and drainage upgrades to support river cleaning efforts; and

- **Greater KL/KV Enhanced Services**
  RM8 billion investment to support the upgrading of pedestrian walkways, sewerage services and improvements in solid waste management (e.g. increase in waste treatment capacity and investments in new rubbish collection bins). Solid waste management initiatives are expected to be private sector-driven under the solid waste management federalisation and privatisation exercise.

A New Public-Private Partnership Model to Finance the Delivery of Public Services

Funding Greater KL/KV's ambitions will require a new approach. Across the 12 NKEAs, Greater KL/KV has the largest public sector funding requirement of RM58 billion or 34 percent of total investment requirements. This reflects in part the critical role that Government will play in continuing to invest, especially in public service infrastructure, to support the pace and scale of Greater KL/KV's growth. In the case of Greater KL/KV, two priority EPPs alone, the MRT and HSR systems, could amount to nearly 90 percent of the total public investment requirement or RM50 billion over the next decade.

Globally, public infrastructure projects are increasingly financed through PPPs. Infrastructure requirements amounting to USD 1 trillion will be required over the next decade in Asia alone. PPPs can provide innovative sources for procurement and funding, along with a risk transfer to the private sector, which is often better equipped to manage risks. For example, in the UK, PPPs have reduced overall costs by 20 percent and proportion of projects with budget or time over-runs have reduced by 60 to 70 percent. In addition, through properly designed incentives PPPs can better allocate risks and broaden sources of financing. In the case of Greater KL/KV, a new approach to financing large infrastructure projects is required to reduce the total public investment requirements in today's tight fiscal environment.

Two levers are most critical: packaging of commercial opportunities and driving capital productivity. First, private sector contributions to investments can be increased by linking the infrastructure project to other high profit-generation opportunities such as property development, thus creating incentives for greater private sector involvement. Second, driving capital productivity in design, construction and operations will ensure the lowest amount of funds overall (both public and private) to deliver the highest value.

In terms of packaging commercial opportunities, international examples have demonstrated how investments in public transport infrastructure can be cross-subsidised through capturing the potential from monetising the air-space development rights on and around rail stations, especially stations in areas with high commercial potential. The Hong Kong MRT operator (MTR Corporation) is a benchmark reference case with over 55 percent of its profits derived from property development and rental. In the case of Greater KL/KV, there is significant value in monetising these same air rights, and using this to offset part of infrastructure costs. This however requires an upfront process where station locations are selected not only on the basis of accessibility and connectivity, but also on air rights or developmental potential. In addition, PPP structures need to be defined to allow the Government to capture or monetise part of this value.

On the second lever, total costs must be addressed to drive capital productivity. There is typically significant opportunity to reduce the overall cost from a lifetime cost perspective, covering both upfront capital cost and subsequent operations and maintenance costs. Savings are best identified and captured through value management and world-class delivery, ensuring a design that meets functional requirements that consciously avoids unnecesary gold-plating and then optimising procurement and construction costs. Examples from other deployments such as the Japanese metro system have shown a reduction in overall cost by 22 to 40 percent by applying these principles.

Current estimates of public investment required for the MRT an HSR systems are RM38 billion and RM12 billion for the infrastructure component. This does not account for the potential to significantly reduce these amounts through implementation of the two levers above. EPU, SPAD and the Ministry of Finance will launch two parallel studies (mentioned in previous sections) to quantify these reductions for both infrastructure projects as well as outline clear implementation processes to capture them in close partnership with the private sector. These studies are expected to be completed end of 2010 and early 2011, respectively.

GOVERNANCE AND DELIVERY

Successful implementation of Greater KL/KV EPPs will require co-ordination, further planning and focus. The tasks will be complicated by the cross-functional and cross-jurisdictional nature of the area of Greater KL/KV. Implementation of all the identified EPPs will require participation and co-operation of multiple local authorities, agencies, ministries, private sector participants, the public and of course other NKEA EPPs. Co-ordination in planning and execution is critical.

As each of the EPPs moves forward, their plans will be further refined and augmented. For example, precise routing of the MRT and HSR systems must still be defined, and there are several parcels of land in KL that would benefit from redevelopment efforts like those planned today for the Klang River. Furthermore, implementation of the Greater KL/KV NKEA will involve significant further planning and elaboration of the current EPPs.

6 Globally, infrastructure transport projects, even those implemented through PPPs, typically receive some form of government financial support due to the size of investment required and the recognition that these projects deliver huge multiplier and productivity benefits to cities that cannot be captured and monetised explicitly by the project on a standalone basis. There is an increasing trend to separate infr astructure investments (i.e. investments in rail tracks, tunnels) from operating asset investments (i.e. trains). Operating assets can be financed privately on a standalone basis and the investment recovered through fare revenues.

At the same time, success for each EPP will require clear accountability and ownership. As such, a natural owner of each EPP has been identified. The owner will have primary delivery responsibility for the EPP. Beyond the respective primary owner, related entities who will have a role in the success of the EPP have also been identified. These are summarised in *Table 5-1*.

Table 5-1

EPP	Lead initiative owner	Other key agencies, companies and organisations
Attracting 100 of the World's Most Dynamic Firms within Priority Sectors	Invest KL	Ministry of Federal Territories and Urban Wellbeing Malaysian Investment Development Authority Multimedia Development Corporation Selangor State Investment Centre 10 local authorities of Greater KL/KV
Attracting the Right Mix of Internal and External Talent	Talent Corporation	Ministry of Home Affairs Immigration Department Ministry of Human Resources
Connecting to Singapore via a High Speed Rail System	Suruhanjaya Pengangkutan Awam Darat (SPAD)	Economic Planning Unit Ministry of Finance Ministry of Transport
Building an Integrated Urban Mass Rapid Transit System	Suruhanjaya Pengangkutan Awam Darat (SPAD)	Economic Planning Unit Ministry of Finance Ministry of Transport Kuala Lumpur City Hall and other affected local authorities
Revitalising the Klang River into a Heritage and Commercial Centre for Greater KL/KV	River of Life Joint Development Unit to be formed under Kuala Lumpur City Hall	Ministry of Federal Territories and Urban Wellbeing Department of Irrigation and Drainage Department of Environment National Water Services Commission Department of Sewerage Services Selangor government, Selayang and Ampang local authorities
Greening Greater KL/KV to Ensure Every Resident Enjoys Sufficient Green Space	Kuala Lumpur City Hall and other local authorities	Ministry of Natural Resources and Environment
Creating Iconic Places and Attractions	Kuala Lumpur City Hall and other local authorities	Ministry of Tourism Ministry of Information, Communications, and Culture Khazanah Nasional Berhad
Creating a Comprehensive Pedestrian Network	Kuala Lumpur City Hall and other local authorities	Ministry of Federal Territories and Urban Wellbeing Selangor State Government
Developing an Efficient Solid Waste Management Ecosystem	Solid Waste and Public Cleansing Management Corporation	Department of Solid Waste and Public Cleansing Management Ministry of Housing and Local Government Local authorities

For all nine EPPs, detailed implementation plans have been developed. The owners and most of the involved agencies for each of these EPPs have given input and are aligned on the implementation plans. *Exhibits 5-17 and 5-18* summarise the key milestones across the four dimensions.

Exhibit 5-17

Key milestones for Greater KL/KV in the short term

	2010 Q3	2010 Q4	2011 Q1	2011 Q2	2011 Q3	2011 Q4	2012 Q1	2012 Q2	2012 Q3	2012 Q4
Greater KL/KV as a magnet			• Invest KL established • Talent Corporation established		• First One-Stop centre launched • First new MNC establishes HQ in Greater KL/KV		• MY Home portal for diaspora launched		• 8-12 new MNCs attracted to Greater KL/KV	
Greater KL/KV connect				• Construction on Phase 1 of MRT system begins • Cabinet decision on HSR system			• Construction of HSR system begins (subject to decision to proceed)			
Greater KL/KV new places	• River cleansing efforts begin		• Planting of 75,000 trees begins				• River Development Authority establised		• Construction of world-class attractions begins	
Greater KL/KV basic services					• 2km walkway in city centre completed by DBKL			• Construction of comprehensive pedestrian network begins	• Distribution of recycling bins to all households begins	

Exhibit 5-18

Key milestones for Greater KL/KV up to 2020

2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020

Greater KL/KV as a magnet

- 45-55 new MNCs attracted to Greater KL/KV
- All 20 One-Stop centres launched
- 100 new MNCs attracted to Greater KL/KV

Greater KL/KV connect

- Phase 1 of MRT system operational
- HSR operational (subject to decision to proceed)
- Phase 2 of MRT system operational

Greater KL/KV new places

- Planting of 75,000 trees completed
- Klang River becomes Class IIB
- 16 sq m of green space per person achieved
- Development completed for 1 node on the river
- Development completed for more than 5 nodes
- Development of all 10 nodes completed

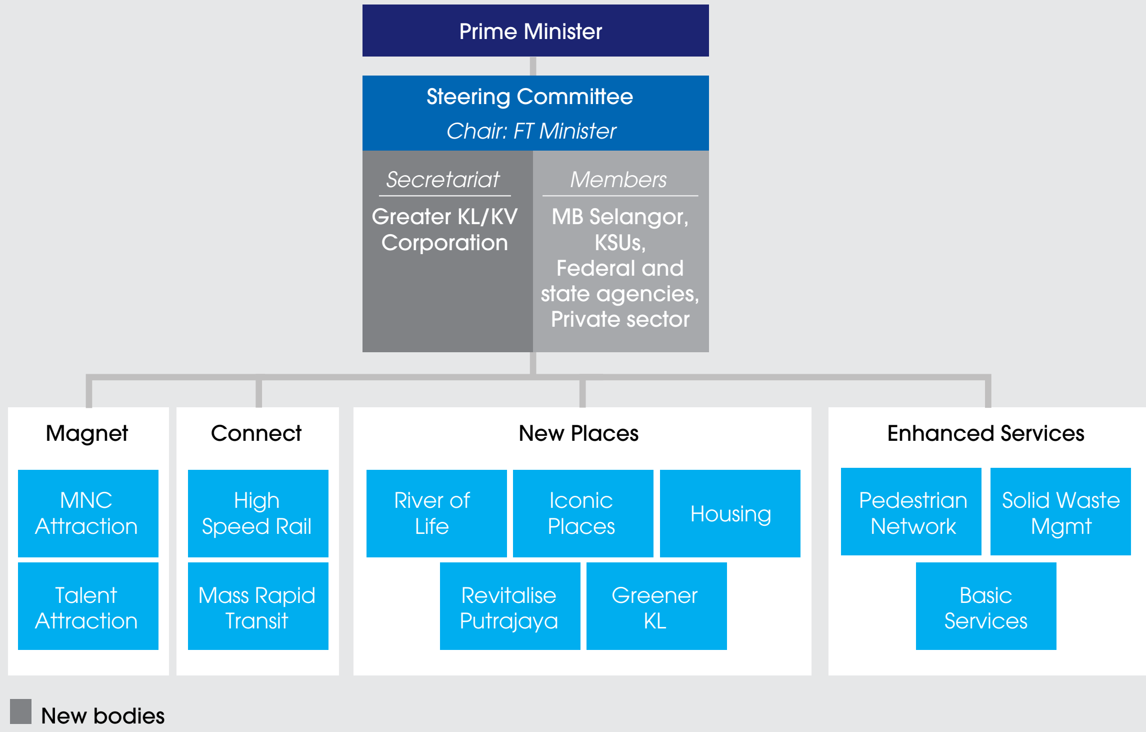
Greater KL/KV basic services

- 3R introduced as part of education syllabus
- Major pedestrian spine completed (3 km)
- Direct billing and "polluter pays" principle implemented
- New waste treatment facility operational
- Primary pedestrian route completed (14 km)
- Secondary pedestrian route completed (25 km)
- Integrated recycling centres rolled out

Given the need for co-ordination, further planning and focus, an overall governance structure is also required. The goal is to monitor implementation and deliver on not only the nine EPPs, but also on the three broader business opportunities, and to ensure the timely co-ordination across agencies and private sector. The overall governance structure that will be put in place is summarised in *Exhibit 5-19*. It is designed to be heavy enough to drive successful execution of the EPPs, but not so heavy that it duplicates the functions of existing government bodies and agencies. It achieves this by creating just three roles above the EPPs: The Prime Minister as ultimate sponsor, a Greater KL/KV Steering Committee and a Greater KL/KV Corporation that also acts as Secretariat to the Steering Committee.

Exhibit 5-19

Governance for Greater Kuala Lumpur/Klang Valley NKEA



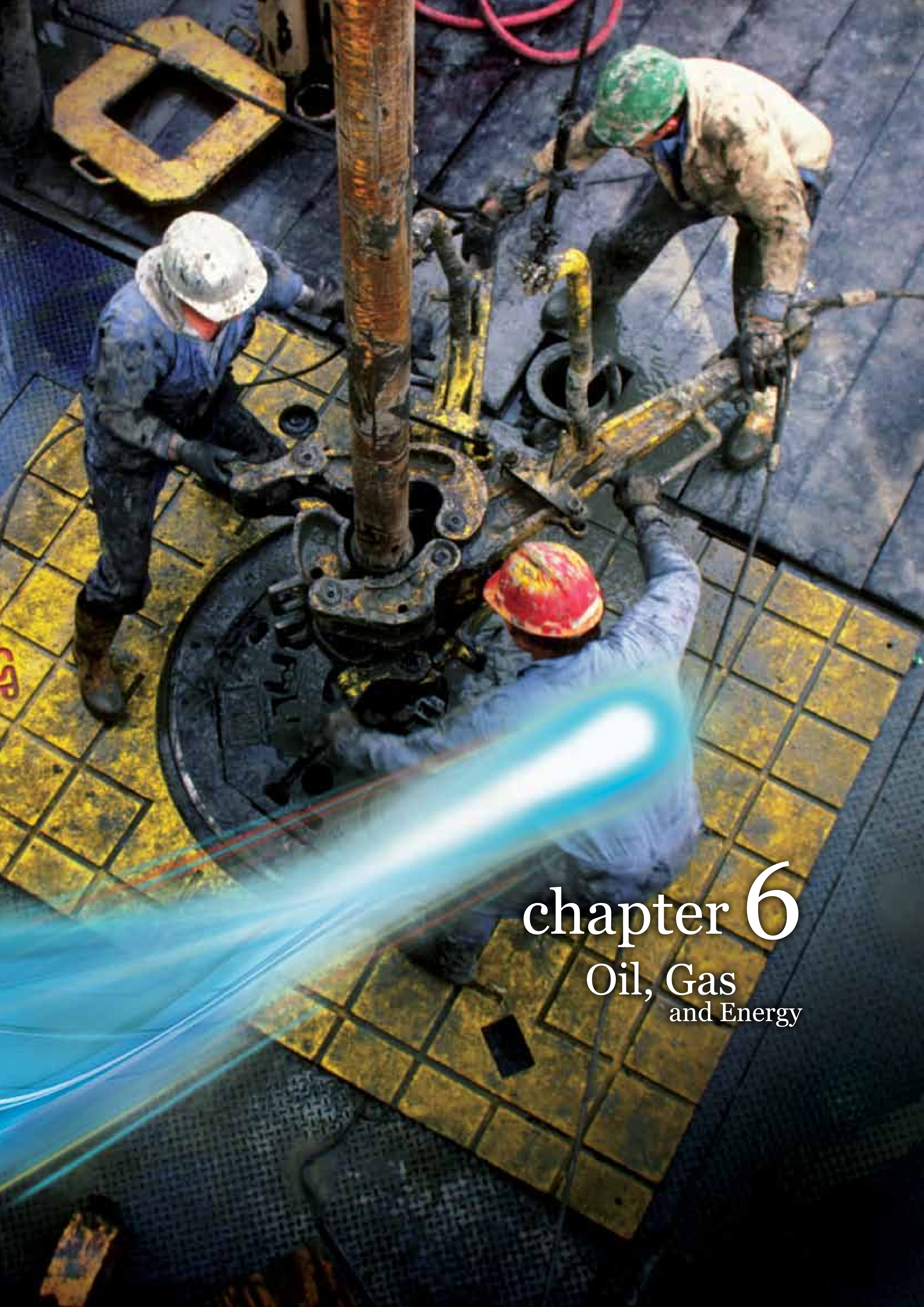
The Prime Minister will act as the ultimate sponsor, supported by the Minister of Federal Territories, who leads the Greater KL/KV Steering Committee.

The Greater KL/KV Steering Committee members include key affected ministers (e.g. Minister for EPU, Minister of Finance and Minister for Housing and Local Government), Chief Secretary to the Government (KSN), Director General of the EPU, Secretary General to the Ministry of Finance, Kuala Lumpur's Mayor, Selangor's Chief Minister and Director General for UKAS as well as several prominent people from the community and private sector. The steering committee will meet once a month and will monitor progress on key initiatives, help resolve issues and barriers and ensure implementation and expedited delivery.

The Greater KL/KV Corporation is the executive component of this governance structure. It serves as Secretariat to the Steering Committee and as the driver and co-ordinator across EPPs on a day-to-day basis. The Corporation will be staffed with 8 to 10 professional personnel who have relevant subject matter expertise across the EPPs and necessary support staff. The Chief Executive of the Greater KL/KV Corporation will be critical. The individual targetted for this position will be a high-performing, high-profile and well- connected leader, with the ability to effectively influence and build coalitions of support to enable accelerated implementation across the EPPs.

Summary of Greater Kuala Lumpur/Klang Valley NKEA	
• **Incremental GNI impact in 2020**	RM391.6 billion
• **Additional jobs in 2020**	553,000
• **Critical targets and milestones within 6 to 12 months** • Invest KL established • First One-Stop centre launched • Construction on Phase 1 of MRT system begins • Planting of 75,000 trees begins • 2-kilometre walkway in city centre completed	

Box 5-1 summarises the Greater KL/KV NKEA.


chapter 6
Oil, Gas
and Energy

Chapter 6: Powering the Malaysian Economy with Oil, Gas and Energy

"Oil, gas and energy are an essential driving force for any modern economy. Under the astute management of PETRONAS, the domestic oil and gas industry has played a crucial role in the growth of the Malaysian economy. However, after decades of oil and gas production, our domestic resources will inevitably start to deplete. To prepare for this, we will strengthen other value creating activities in the oil and gas value chain and ensure that we have a sustainable energy platform for the future. To this end, the Government will develop Malaysia into a leading oil and gas services hub in Asia, grow Malaysia's role in oil storage, logistics and trading and import LNG to serve latent gas demand and attract new-gas based industries. At the same time we will ensure that we develop an energy efficient, diversified and sustainable energy mix to power our future."

YAB Dato' Seri Mohd. Najib Tun Abdul Razak

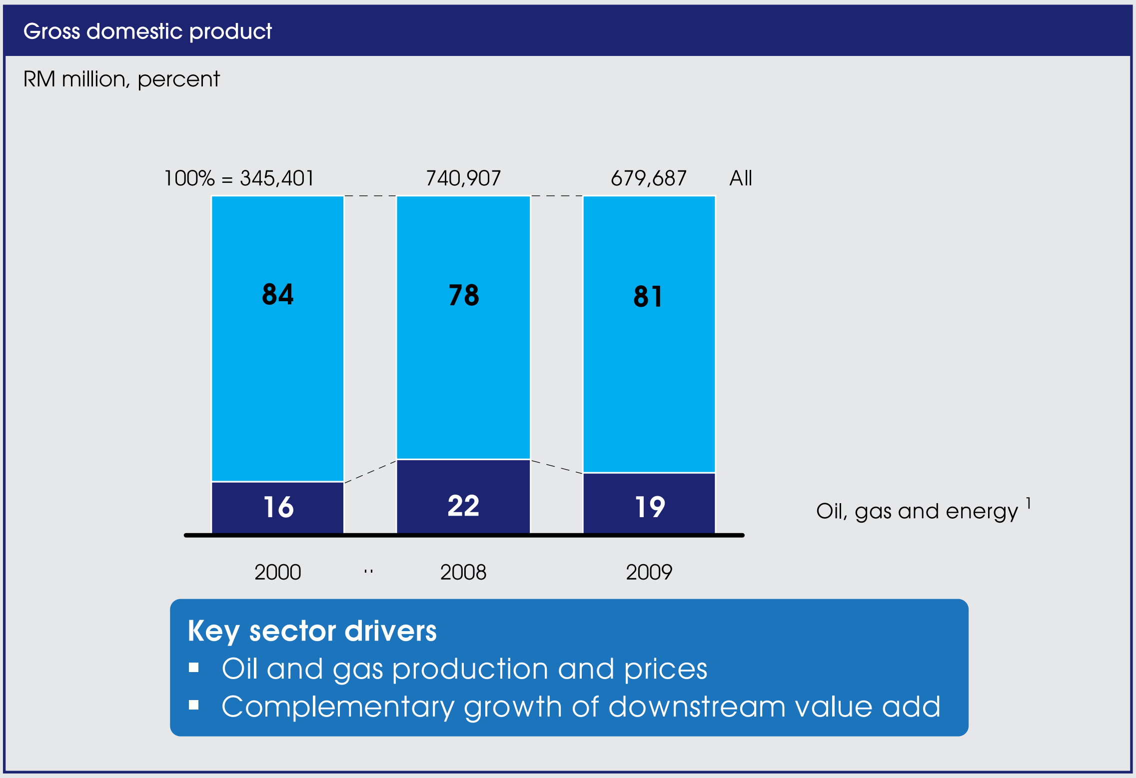
"The green economy is no longer a myth. Today, the Malaysian Government is taking decisive steps to ensure that our energy future is green, sustainable and diverse and that Malaysia uses energy in the most efficient manner. By practicing energy efficiency in our daily lives (which is expected to lead to savings of RM14 billion in GNI terms by the year 2020), as well as by exploring new sources of alternative energy such as nuclear, solar and hydroelectric power, we can work together to preserve the environment and energise the Malaysian economy towards becoming a developed nation by the year 2020."

YB Dato' Sri Peter Chin Fah Kui

Oil and gas production have been a mainstay of Malaysia's growth since oil was first drilled in 1910 in Sarawak. The founding of PETRONAS in 1974 provided vital impetus to the development of oil and gas resources in Malaysia. In parallel, the consumption of electricity has grown steadily to 110 gigawatt hours, putting Malaysia on par with Thailand in terms of electricity usage per capita, driven by increased levels of prosperity and the industrialisation of the nation. The combined oil, gas and energy sectors represented RM127 billion or 19 percent of GDP in 2009, as shown in *Exhibit 6-1*.

Exhibit 6-1

Oil, gas and energy have played a central role in the Malaysian economy



1 Includes crude petroleum, refined petroleum products and natural gas production

SOURCE: Annual National Accounts, 2000-9, Department of Statistics, Malaysia

DEFINITION OF THE OIL, GAS AND ENERGY NKEA

The oil and gas industry is generally divided into upstream, midstream and downstream activities. Upstream activities consist of exploration, development and production of oil and gas resources. Midstream and downstream activities range from the transportation of oil and gas, to refining and processing through to marketing and trading of end products. The energy sector comprises power generation, transmission and distribution.

In terms of size, upstream oil and gas production including petroleum and gas contributes RM87 billion, while downstream activities including refining contributes RM24 billion. Separately, the energy sector contributes an additional RM16 billion to this sector.

The availability of domestic hydrocarbon resources gave Malaysia a natural impetus to develop the oil and gas sector. PETRONAS, the national oil corporation, continues to play a major role in driving the industry's growth through its development of oil and gas resources as well as the creation of opportunities for local companies to build up their capacity and capability across the value chain. PETRONAS' Petroleum Management Unit regulates upstream activities, while PETRONAS subsidiary Petronas Carigali participates in production sharing contracts (PSC) with other PSC contractors such as Shell, ExxonMobil, Murphy Oil, Talisman, Petrofac, Newfield and others.

The midstream segment consists of pipeline, transportation and other logistic assets that are mainly controlled by PETRONAS and other oil companies operating in Malaysia. The contribution of this segment amounts to approximately RM3.2 billion annually.

In the downstream segment, two major integrated petrochemical zones have been established in Kerteh, Terengganu and Gebeng, Pahang. These industrial zones have attracted foreign investments mainly from the USA, Germany and Japan (e.g. from Dow Chemical, BASF and Idemitsu), complementing investments from PETRONAS. These investments involve the production of petrochemical materials such as polypropylene, acetyls, and other such materials. There are also refineries operated by PETRONAS (in Kerteh, Terengganu and Sungai Udang, Melaka), Shell and ExxonMobil (both in Port Dickson, Negeri Sembilan).

The oil field services and equipment (OFSE) industry supports primarily upstream activities and currently contributes RM1 to RM2 billion in GDP. Included in this sector are land drilling services, offshore drilling services, geophysical services, engineering and contracting (E&C), equipment assembly and manufacturing, offshore structure fabrication and installation and operations and maintenance (O&M). While most of the major international players in OFSE such as Schlumberger, Baker Hughes and Technip are already present in Malaysia, PETRONAS has supported the development of local companies such as Scomi, SapuraCrest, Kencana, Petra Perdana and Wasco.

The oil, gas and energy NKEA also includes power generation, transmission and distribution. In 2009, energy contributed approximately RM16 billion to GDP. The industry is governed by the Ministry of Energy, Green Technology and Water (KeTTHA) and is regulated by the Energy Commission (Suruhanjaya Tenaga). Electricity is supplied by Tenaga Nasional Berhad (TNB) and a number of other major independent power producers (IPPs). Power in Malaysia is mainly fuelled by natural gas and coal, which accounted for 92 percent of power production in 2009. Hydroelectricity or hydropower accounted for only 6.5 percent of power generation in 2009. The total power generation capacity connected to the Malaysian national grid is 24 gigawatts, with a maximum demand of about 17 Gigawatts recorded in 2010.

MARKET ASSESSMENT

Oil and Gas Production

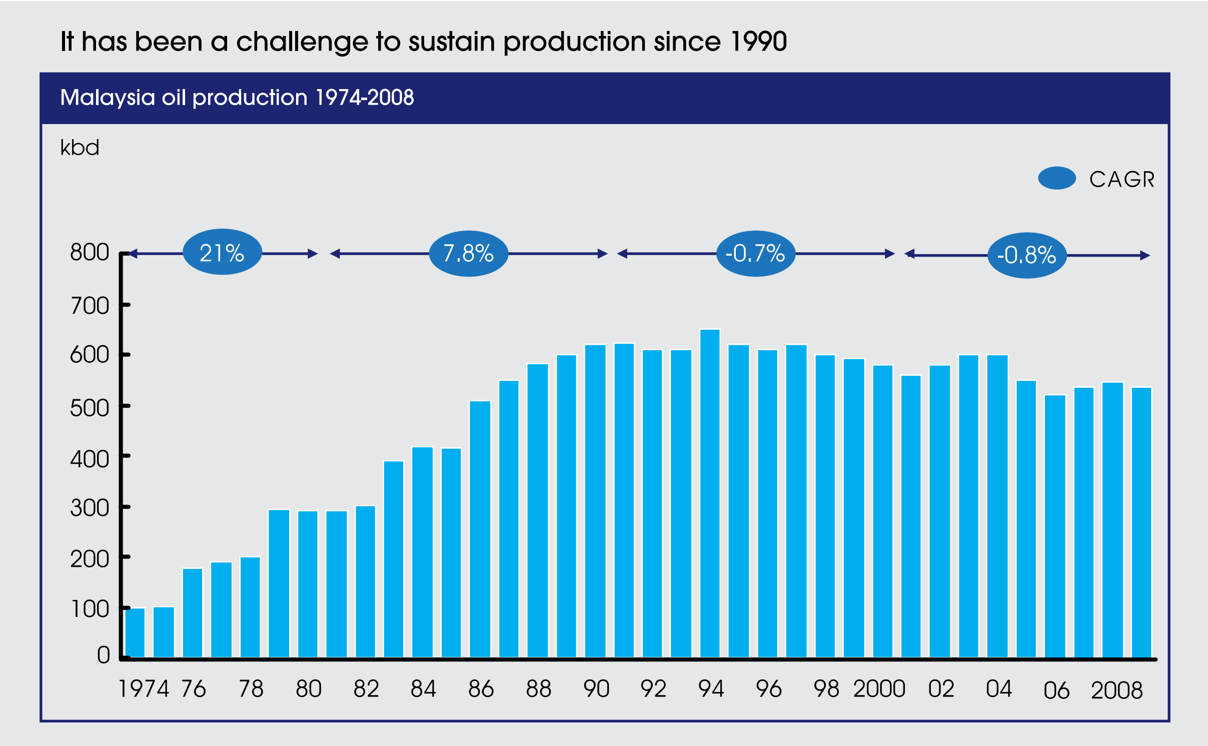
Global oil and gas production has grown by approximately 1.5 percent per year in the last decade, driven by robust demand in OECD countries and rapidly rising demand from developing economies, notably China and India. According to the International Energy Agency the global growth outlook for 2010 to 2020 for both oil and gas demand will shift further to developing economies in this decade. While “green” policies and de-carbonisation are taking place, especially in developed economies, any impact on oil and gas demand is not expected to be marked until the end of the decade. Demand for gas, especially, may actually benefit in the near term, as natural gas is both plentiful and green vis-à-vis other fossil fuels.

Global oil and gas supply capacity jumped ahead of demand during the financial crisis of 2008 and 2009. This created a temporary but significant price dip in oil prices and enduring turmoil in global gas markets. The ongoing volatility in gas markets has been exacerbated by significant supply additions in the USA from domestic production of shale gas. A tighter balance of supply and demand is expected in both oil and gas by the middle of the decade, as demand growth catches up with supply infrastructure.

In the last decade, growth in the upstream sector in Malaysia has been driven more by rising prices in oil and gas than by increases in production. PETRONAS' international expansion has also contributed to Malaysia's GNI.

Malaysian oil production peaked in the mid 1990s at approximately 600,000 barrels per day, as shown in *Exhibit 6-2* below. This is due to the normal maturation of the traditional shelf basins and means that most of the economically attractive fields are likely to have been found and developed, and new discoveries are more likely to be smaller and more technically demanding than those that were developed earlier.

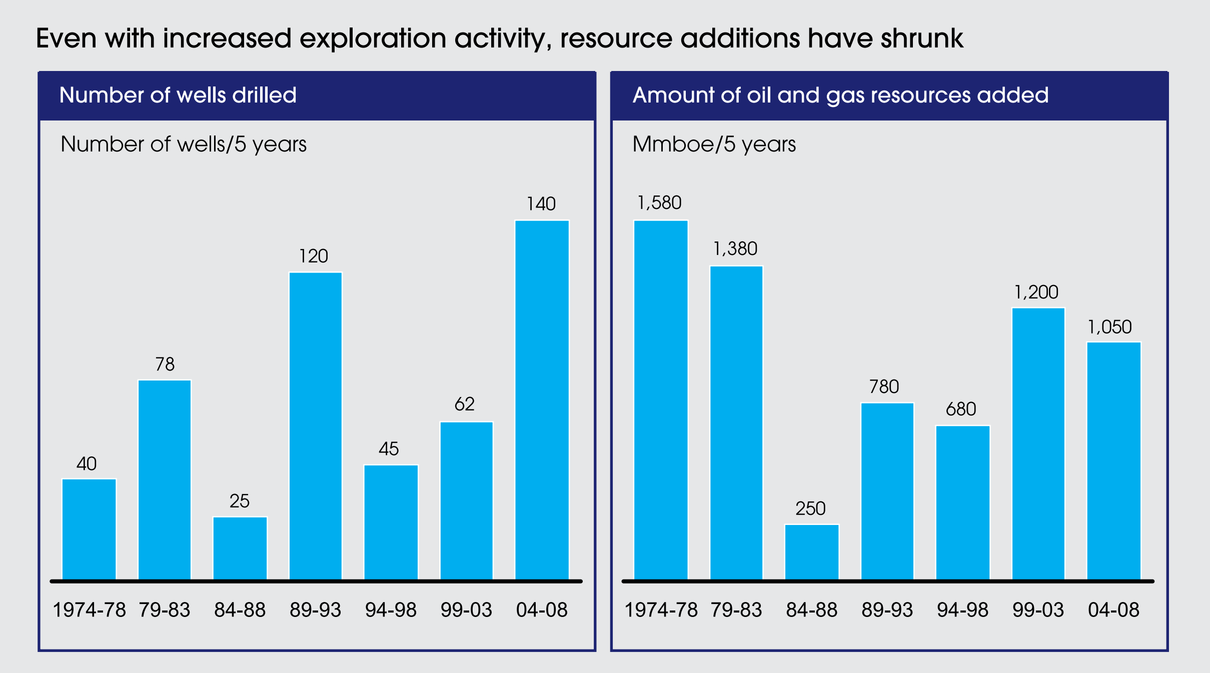
Exhibit 6-2



SOURCE: PETRONAS

It is unlikely that domestic oil and gas production will grow substantially beyond current levels, as the oil and gas discoveries from the mature basins are, on average, smaller than in the past. *Exhibit 6-3* shows that despite a stable number of exploration wells being drilled, the size of discovered resources is declining.

Exhibit 6-3



SOURCE: PETRONAS

Without significant efforts being made in upstream exploration, development and production, we expect oil and gas production in Malaysia likely to decline by 1 to 2 percent per year on average in the coming decade.

Despite the declining conventional oil and gas resource base, there remains significant potential in mature, small and technically more complex fields. Future growth could come from initiatives such as enhanced oil recovery, innovative approaches to the development of small fields, or through intensifying exploration activities to achieve a faster pace of oil and gas discoveries.

Oil Field Services

The Asian market for oil field services has grown by approximately 20 percent per year over the last decade, primarily driven by the shift towards more technically challenging fields, e.g. deepwater, and increases in the price of oil, which has boosted industry margins. The sector outlook continues to be bright, driven by the upbeat outlook for offshore exploration activity in Southeast Asia, tight gas developments across Asia and the liquefied natural gas (LNG) boom in Australia.

The market for OFSE in the region is quite fragmented, with most of the players setting up operations in Malaysia, Indonesia, Singapore and Thailand. This is unlike Europe and America, where OFSE activities are centred around hubs such as Aberdeen, Stavanger and Houston. This presents an opportunity for Malaysia, as most of Malaysia's offshore producing fields are more mature than those of our Southeast Asian neighbours (i.e., Indonesia, Thailand and Vietnam). This means that there will be significant opportunities for maintenance and replacement of assets, in addition to development of new fields, which will continue to drive growth in this subsector.

Mid- and Downstream Oil

The regional midstream logistics market (oil and oil product storage) also offers a positive growth outlook, as crude oil consumption in the Asian region is expected to grow by 420 thousand barrels per day in each year from 2010 to 2015. The increased flow of hydrocarbons in the region will require additional storage capacity (for transhipment, sales and marketing and trading purposes). At the same time, the region's existing trading hub, Singapore, is nearing full utilisation.

Downstream processing (petrochemicals and refining) and marketing industries are likely to also show at least modest growth levels. The opportunity to expand the large installed petrochemical complexes in Malaysia will depend on regional supply and demand balances as well as on the opportunity to introduce process and product innovations. Likewise, the pace of potential refinery expansion will be driven by regional supply-demand balances.

Mid- and Downstream Natural Gas

There exists a positive growth outlook for the Malaysian domestic gas market: economic growth will increase the volumes needed by existing gas consumers, and the lower gas prices compared with fuels like diesel and liquefied petroleum gas (LPG) will make switching to natural gas attractive. The depletion of gas resources in Peninsular Malaysia and the technical and economic challenge of sending gas from Sabah and Sarawak to Peninsular Malaysia by pipeline limit the availability of gas to feed this demand-growth. The import of liquefied natural gas (LNG) from international markets into Peninsular Malaysia could help to meet the growing demand for gas, provided that such gas is sold in Peninsular Malaysia at liberalised and unregulated market prices.

Energy

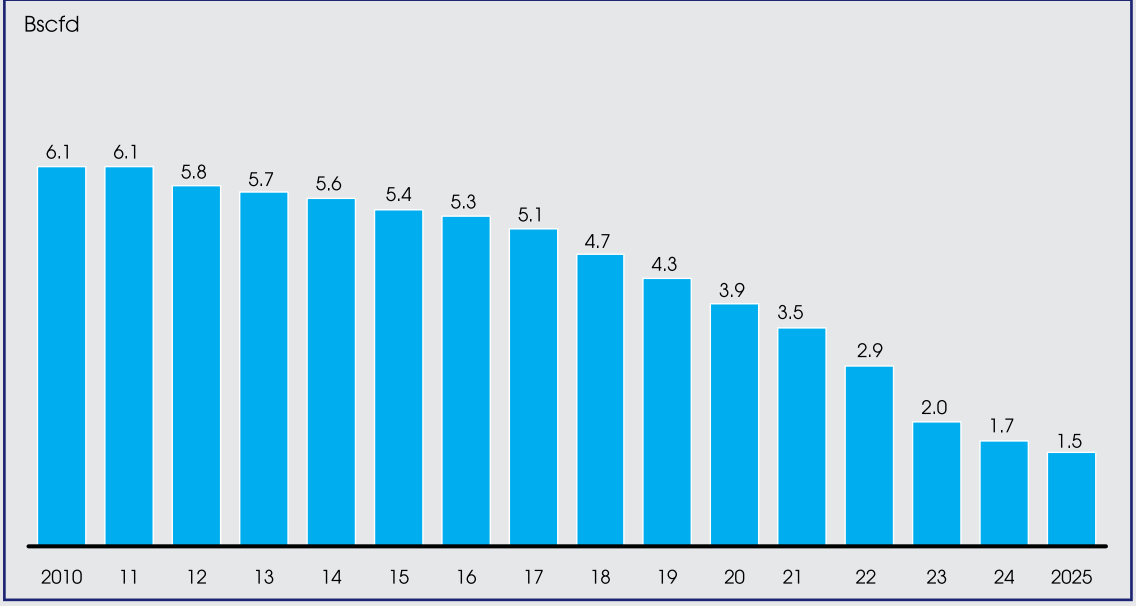
Malaysia is going to need more energy as our economy continues grow: 6 gigawatts of new generation capacity is expected to be needed by 2020 to provide energy for businesses and the growing population, representing an increase of about 25 percent over installed capacity in 2009.

The power sector faces a major challenge as declining gas production will have an impact on the power generation industry. Currently, 58 percent of power generation in Peninsular Malaysia is based on natural gas, with the remainder coming from coal (37 percent) and hydro (5 percent). However, domestic gas supply within the Pensinsula is projected to decline as shown in *Exhibit 6-4*.

Exhibit 6-4

Based on projects already online, Malaysia's gas production is forecast to decline from around 2010

Malaysia's gas production forecast 2010-25

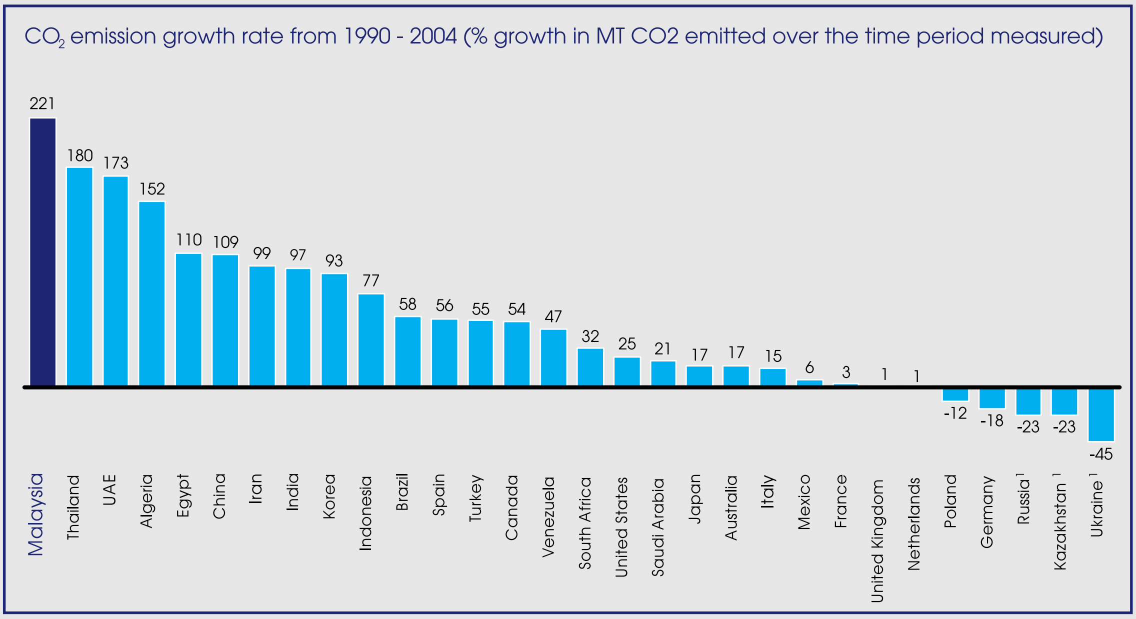


SOURCE: WoodMac

With the recent growth in energy consumption, Malaysia has experienced high growth in greenhouse gas (GHG) emission levels, compared with peers (*Exhibit 6-5*). Therefore alternative energy sources such as nuclear, power and solar will become more attractive in the future, as Malaysia strives to reduce its carbon emissions.

Exhibit 6-5

Malaysia is one of the world's fastest growing countries in terms of carbon emissions



1 Growth rate values refer to the 1992 – 2004 period (instead of the 1990-2004 period)

SOURCE: Human Development Report 2007 - 2008 with focus on "Fighting Climate Change"

TARGETS AND ASPIRATIONS

The Oil, Gas and Energy NKEA is targeting 5 percent annual growth for the sector in the decade from 2010 to 2020. This is indeed an ambitious goal, particularly against a backdrop of the natural 2 percent decline of oil and gas production. This target translates into an increase of RM131.4 billion in the period from 2010 to 2020. Beyond economic growth in this decade, the oil gas and energy sectors are also responsible for building a sustainable energy platform for the rakyat and business, in this decade and into the future.

12 EPPs, Business Opportunities and Baseline Growth to Deliver RM131.4 billion of GNI Impact

We have identified 12 EPPs, as well as two business opportunities within the oil, gas and energy sector. These EPPs will contribute RM47.1 billion to GNI to meet 2020 targets. An additional RM61.2 billion will come from business opportunities and baseline growth. Thus, the NKEA expects to deliver a RM131.4 billion GNI impact and create an additional 52,300 jobs in the oil, gas and energy sectors (*Exhibit 6-6*). A significant proportion of these jobs will be highly-skilled jobs, with an estimated 21,000 (40 percent) for qualified professionals such as engineers and geologists, with monthly salaries in the range of RM5,000 to RM10,000.

The incremental GNI includes RM23.1 billion of GNI from the multiplier effect created by EPPs from other sectors. The largest sources of the multiplier effect on the OGE NKEA are the Palm Oil, Tourism and Electronics and Electrical NKEAs, for example, an increase in usage of energy due to an increase in tourists visiting Malaysia.

To achieve this target, the Government and the oil, gas and energy industry will focus on four thrusts: sustaining oil and gas production, enhancing downstream growth, making Malaysia the number one Asian hub for oil field services and building a sustainable energy platform for growth.

Sustaining oil and gas production

This involves extending the lifecycle of existing resources by optimising exploration, development and production activities. Three EPPs have been identified:

- **EPP 1:** Rejuvenating existing fields through enhanced oil recovery;
- **EPP 2:** Developing small fields through innovative solutions; and
- **EPP 3:** Intensifying exploration activities.

Enhancing downstream growth

This thrust aims at tapping two sources of growth in the downstream sub-sector to take advantage of growth opportunities and improve the supply of oil and gas to end users:

- **EPP 4:** Building a regional oil storage and trading hub; and
- **EPP 5:** Unlocking premium gas demand in Peninsular Malaysia.

Making Malaysia the number one Asian hub for oil field services

This thrust aims at positioning Malaysia as an OFSE hub for Asia, leveraging the nation's strategic location at the centre of the Asia Pacific region and adjacent to international shipping lanes. Three EPPs have been identified:

- **EPP 6:** Attracting MNCs to bring a sizeable share of their global operations to Malaysia;
- **EPP 7:** Consolidating domestic fabricators; and
- **EPP 8:** Developing engineering, procurement and installation capabilities and capacity through strategic partnerships and joint ventures.

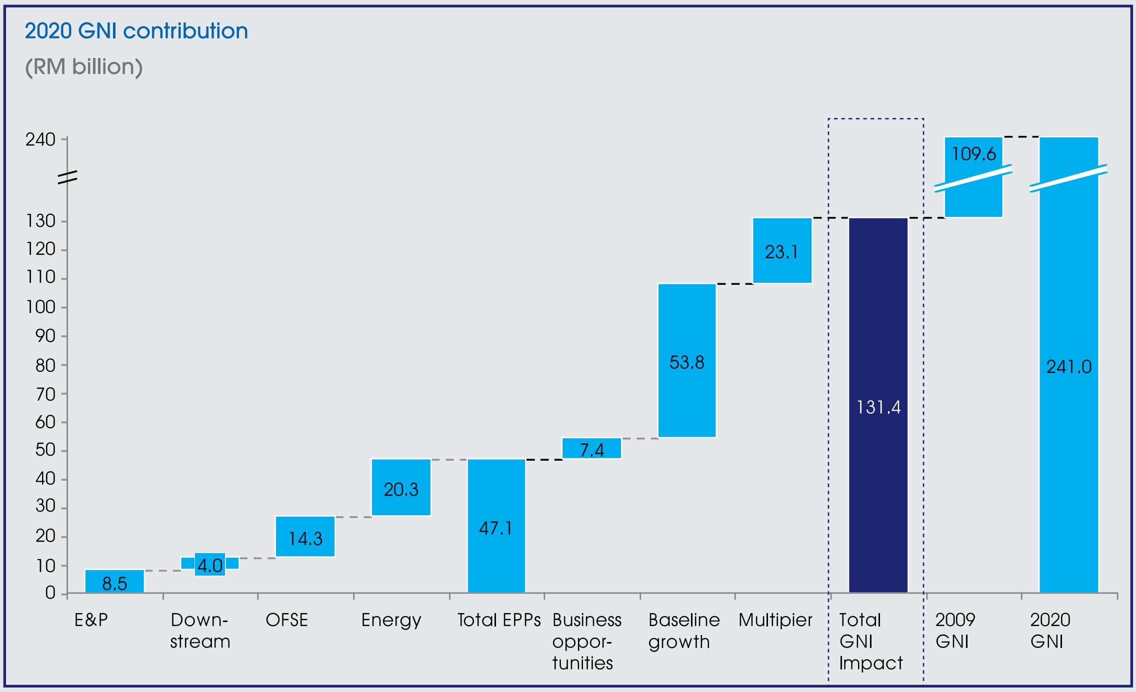
Building a sustainable energy platform for growth

This thrust includes initiatives that aim at ensuring energy security for Malaysia as the nation strives for growth towards becoming a high-income economy. This also involves reducing reliance on fossil fuels while growing our power generation capacity. Four EPPs have been identified to improve Malaysia's energy security and efficiency:

- **EPP 9:** Improving energy efficiency;
- **EPP 10:** Building up solar power capacity;
- **EPP 11:** Deploying nuclear energy for power generation; and
- **EPP 12:** Tapping Malaysia's hydroelectricity potential.

Exhibit 6-6

12 EPPs, two business opportunities, baseline growth and multiplier effect will deliver RM131.4 billion incremental GNI impact by 2020



SUSTAINING OIL AND GAS PRODUCTION

Without targeted intervention, domestic oil and gas production will decline by approximately 1 to 2 percent per year over the coming decade to approximately 1.44 million barrels of oil equivalent per day by 2020. Three EPPs focus specifically on addressing this decline and executing measures to maintain our current levels of oil and gas production. Achieving this will require a significant effort by PETRONAS, the PSC contractors in Malaysia and the multitude of industries that service the upstream sector and the Government. Success will mean a GNI contribution of approximately RM23 billion versus the base case by 2020. This represents an incremental GNI of RM8.5 billion (above expected losses of RM14 billion from declining production in existing fields if these EPPs are not deployed), with an incremental funding requirement of RM36.4 billion on top of an estimated RM64.9 billion directed to restore the loss from oil production decline (total investment required is RM100.3 billion). The three EPPs in tandem are expected to generate 400 additional jobs.

EPP 1: Rejuvenating Existing Fields through Enhanced Oil Recovery

Rationale

Enhanced oil recovery (EOR) refers to a technique that uses external energy to improve oil recovery from mature oil fields. Using methods such as gas or chemical injection or thermal flooding, the amount of oil recovered from the underground reservoirs can be increased from a range of 20 to 35 percent (industry norms) to 30 to 50 percent. EOR requires advanced technologies and focused efforts by some of the industry's leading minds as well as significant capital investments.

Actions

PETRONAS has a three-pronged strategy to ensure that EOR techniques are deployed in Malaysia to extract more oil from the nation's oil fields. Firstly, PETRONAS, where necessary, will review the production sharing contract (PSC) terms and introduce new petroleum arrangements to ensure that the right economic incentives are employed to implement EOR techniques. Such arrangements provide for agreed legal and financial terms for the exploration and production of oil, and could take the form of production sharing contracts, concession agreements, or other arrangements as appropriate to the specific context and needs of the parties involved. Secondly, PETRONAS will ensure that companies with specialised EOR expertise are aware of the opportunities in Malaysia and are attracted to operate here. Thirdly, PETRONAS will use its role as the industry regulator to ensure that the most innovative methods and technologies are being disseminated and deployed to reduce capital and operating costs.

Impact

It is estimated that EOR implementation in Malaysia will add approximately 166,000 barrels per day of oil production in 2020 versus the base case without the EPP measures being in place. The total investment needed to achieve this is approximately RM68.6 billion and the contribution to GNI is RM16.6 billion, which makes up for the GNI that would have been lost due to declining production if enhanced oil recovery were not deployed.

EPP 2: Developing Small Fields through Innovative Solutions

Rationale

A significant proportion of Malaysia's remaining resources lay in fields with less than 30 million barrels of recoverable oil. Developing these fields in an economically attractive manner is often challenging, as they need the same expensive infrastructure as large fields, while the expected revenue streams are smaller due to the smaller reserve sizes.

Actions

To make the most of these small fields, PETRONAS will work with the industry on three fronts. Firstly, PETRONAS, where necessary, will review the PSC terms and introduce new petroleum agreements to ensure that operators of these small fields receive enough economic incentives so that they find sanctioning investments in small field developments attractive versus their cost of capital and versus other opportunities available to them in Malaysia and abroad. Secondly, PETRONAS will attract E&P operators that specialise in small fields. These operators typically have a development and operating approach that is specifically adapted to the challenges of these types of fields. Thirdly, PETRONAS will facilitate collaboration between players to allow sharing of facilities and other synergistic measures to improve the economics of small field development.

Impact

Adjusting the development framework for small fields will increase Malaysia's oil production by approximately 55,500 barrels per day in 2020 versus the base case. The total investment needed to achieve this is approximately RM13.3 billion and the contribution to GNI is RM5.5 billion, which makes up for the GNI that would have been lost due to declining production if small field development were not deployed.

EPP 3: Intensifying Exploration Activities

Rationale

Sustaining Malaysia's position as one of Asia's large oil and gas producers will require discovery and development of remaining resources in a timely yet prudent manner. There is a significant likelihood that there are remaining resources that have not yet been discovered. However, these fields are likely to be high-risk, as the "low hanging fruits" are already in production.

Exploration involves a capital intensive sequence of activities and what reserves are discovered today are likely to take several years to develop. To arrest the decline of Malaysia's production, new and sizeable discoveries will need to be made during this decade to ensure timely development of resources. This would require more exploration activities, e.g. geological and geo-physical studies, seismic surveys, exploration well drilling, as well as enhancing the pace of conceptualisation and testing of new exploration methods.

Actions

To ensure that the necessary exploration investments are made, PETRONAS, where necessary, will (1) review the PSC terms and/or introduce new petroleum arrangements, and (2) review specific processes to expedite future exploration work.

Impact

The impact of these measures will be to sustain Malaysian oil and gas production in the long run, and hence production from any new oil and gas discoveries will need to come on-stream in a timely manner. An estimated total of RM18.4 billion investment is required for this EPP by 2020.

ENHANCING DOWNSTREAM GROWTH

Downstream, Malaysia has a substantial refinery industry, a number of large petrochemical complexes and a broad range of consumers of natural gas, including steel mills, metals manufacturers, and petrochemical plants. A major source of potential opportunity for the country going forward would be to capture value created from increasing international flows of crude oil, refined products and natural gas.

EPP 4: Building a Regional Oil Storage and Trading Hub

Rationale

Annually, an estimated 420,000 barrels of crude oil and 730,000 barrels of petroleum products are consumed daily across Asia. Petroleum product imports and exports for China, India and Southeast Asia are expected to increase by 1.8 million barrels per day from 2010 to 2020. The implications on oil storage are two-fold, (1) the continued growth in demand for energy in this region will drive a need for increased storage capacity of crude oil and refined products, (2) increased inflow crude oil from Africa and Latin America would result in longer transit times and translate into a need for larger buffer storage of crude oil.

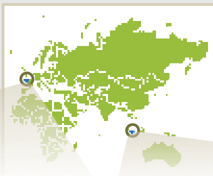
In Southeast Asia, Singapore has traditionally had a significant presence in the oil storage industry, with a total of 10 million barrels of independent storage capacity (capacity which is owned by third party operators and contracted out to oil companies, refiners and traders). In addition, by 2007 it had built a significant trading business worth more than RM1 trillion in physical oil trade and RM2 trillion in derivative trade. In the last three years it has more than doubled its independent storage capacity with the commissioning of the Universal and Helios terminals, which are already operating at capacity.

Actions

The main objective of this initiative is to build additional oil storage capacity within Malaysia. With (1) port locations on major shipping routes for crude oil and refined products; (2) close proximity to Singapore; (3) land availability; and (4) deepwater marine accessibility, Malaysia is well placed to complement Singapore in this industry. Together, Malaysia and Singapore could operate to form a hub like Amsterdam-Rotterdam-Antwerp (ARA), which complement each other in areas of refining capacity, independent storage and blending capacity as well as access to markets (*Exhibit 6-7*).

Exhibit 6-7

Malaysia can complement Singapore and create another Amsterdam-Rotterdam-Antwerp (ARA)



Key success factors	Amsterdam-Rotterdam-Antwerp (ARA)	Singapore-Malaysia
Export refining capacity	▪ Rotterdam: 1,300 kbpd ▪ Antwerp: 770 kbpd ▪ Amsterdam: negligible refining capacity[1]	▪ Singapore: 1,300 kbpd ▪ Malaysia: 560 kbpd (although it is a net importer of gasoline)
Independent storage and blending capacity	▪ Rotterdam: 28 million m^3 ▪ Capacity for Antwerp and Amsterdam is not available	▪ Singapore: 10 million m^3 with limitation in future expansion due to coastal land availability ▪ Malaysia: Negligible independent storage capacity
Access to market	▪ Amsterdam is the centre for the gasoline export trade; it imports products mainly from Europe and North Africa to blend and meet USA specification	▪ Singapore is the global centre for fuel oil trading

1 Amsterdam refinery produces only asphalt. Rotterdam includes Koch's 84 kbpd condensate splitter

SOURCE: McKinsey Global Refining Capacity database; PFC Energy; Petroleum Economist; FACTS

There are four emerging business drivers that encourage building an oil storage and trading hub in Malaysia.(1) the splitting of large crude oil and fuel cargoes from outside the region is necessary to ship smaller cargoes within the region; (2) crude oil production from regional producers needs to first be aggregated before supplying to regional refiners; (3) various refinery outputs need to first be blended to meet the diverse mix of downstream products; (4) there are arbitrage opportunities that can be exploited with physical storage, e.g. hedging forward prices through storage.

In order to create this regional oil storage and trading hub, MIDA's Logistics Department will take the lead to encourage private investments in this sector. The implementation plan includes developing solutions around the key issues faced by investors and tracking the development of the identified projects. The development of the solutions involves discussion with the key industry members on issues such as permits, incentive schemes and marketing for Malaysia as an oil storage hub.

A pilot project to build an independent deepwater oil storage terminal in Pengerang has already been initiated by a public-private partnership between Johor State Government, VOPAK and DIALOG. Detailed project planning has now been completed, and the final investment decision is pending the outcome of incentive schemes and approval processes by Government agencies.

Impact

The Pengerang independent deepwater oil storage terminal will generate RM1.6 billion GNI by 2020 through three streams. First, independent logistic players will charge storage fees, generating approximately RM0.5 billion in additional GNI. Second, the availability of storage will drive additional shipping volumes, generating an expected RM0.3 billion in GNI. Lastly, trading of crude oil and petroleum products is expected to generate an additional RM0.8 billion in GNI. The planned terminal will require private investment of RM4.8 billion and will provide a total storage capacity of 5 million cubic metres. An estimated 800 new jobs will be created from the venture, excluding any spin-off from other sectors.

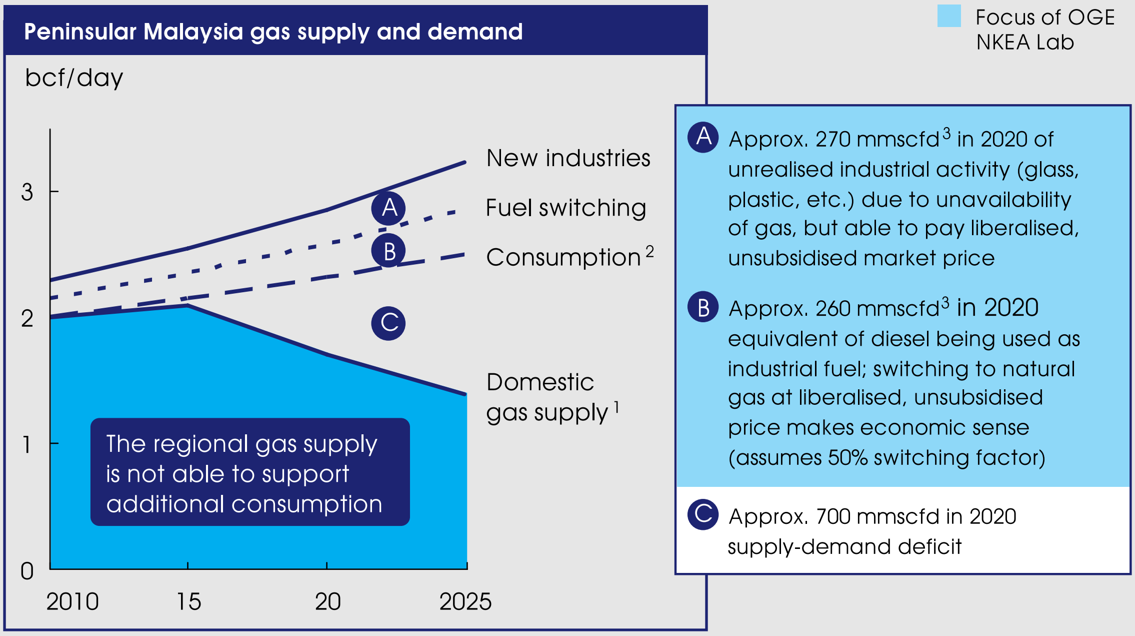
EPP 5: Unlocking Premium Gas Demand in Peninsular Malaysia

Rationale

In Peninsular Malaysia, the lack of gas supply, driven by declining domestic gas production, is cited to have resulted in the limited additional investment from new industries, e.g. glass and plastics manufacturers and semiconductor wafer manufacturers, as well as preventing current industrial diesel and LPG users from switching to more competitively priced natural gas. The alternative use of imported LNG would only be made economically viable if such gas were sold at an unregulated, or unsubsidised, market-driven, price. It is estimated that without intervention, there would be more than 500 million standard cubic feet per day (mmscfd) of additional latent gas demand by 2020; 270 mmscfd from companies that did not previously invest in Malaysia because of the lack of gas availability and 260 mmscfd from industrial users that are currently using higher-priced diesel but could switch to more competitively priced natural gas if it were made available to them (*Exhibit 6-8*).

Exhibit 6-8

About 500 mmscfd of latent high-value gas demand in Peninsular Malaysia can be served with imported LNG



1 Includes JDA and Indonesia
2 Growth is based on 2001 - 2010 gas consumption from power at 1.5%
3 Growth rate of 6% assumed on the 2010 volume based on historical GDP growth. In 2010, demand from new industries and fuel switching is 150 and 180 mmscfd respectively

SOURCE: FACTS Global Energy

The lack of gas supply is driven by declining domestic gas production. Domestic gas supply, including imports from Indonesia and the Joint Development Area with Thailand, is expected to decline at 12 percent per year in the coming decade. Furthermore, there is insufficient gas supply in the region to support additional piped gas import into Malaysia. The alternative, which is to import gas in the form of LNG, needs to take into account the fact that the current regulated price for gas in Malaysia is far below the expected market driven price of imported LNG.

Actions

In order to meet this growing latent gas demand, an LNG regasification terminal will be built to treat imported LNG. To make gas imports economically feasible, the gas will be sold at a liberalised and unsubsidised price.

The end-to-end delivery of the imported gas includes sourcing or purchasing LNG, shipping the LNG to Malaysian shores via specialised vessels, regasification terminal construction and operation, marketing and sales and distribution of the gas to the end consumer. For the first phase, which is to be commissioned by 2013, a capacity of 3.5 million tonnes of LNG per annum has been planned (actual capacity, cost and timing will be determined by PETRONAS). PETRONAS will execute all elements of the end-to-end gas delivery including partial marketing of this imported gas. MIDA will be involved in marketing the supplied gas to those customers requiring a large volume of gas (more than 2 mmscfd) with the support of PETRONAS and Gas Malaysia customers requiring smaller volumes. Required actions from various organisations have been summarised in *Exhibit 6-9*.

Exhibit 6-9

Although PETRONAS and MIDA will drive the EPP, actions from various organisations are required

Organisation	Actions required
Economic Planning Unit	Approve sale of imported gas (from LNG) at liberalised and unsubsidised price
MIDA	Market the new source of imported gas to new industries
Energy Commission	Assume role of regulator

Organisation	Actions required
Ministry of Transport	Approve request for jetty licence
Ministry of Environment	Approve detailed Environmental Impact Assessment
Relevant state government	Approve land access

For the later phases of gas imports beyond that articulated here, open access to different elements of the end-to-end gas delivery will be studied by PETRONAS.

Enablers

A key enabler for this EPP is enhancing the governance of the gas market, specifically by (1) developing the gas network code (set of terms and conditions which govern the operations of a gas market), and (2) appointment of a fully independent regulator. PETRONAS will develop the gas network code with the help of the Energy Commission before the end of 2010. In order to segregate the roles of player and regulator, the Energy Commission of Malaysia should ideally assume the latter function and have the appropriate capability at least six months before the commissioning of the first phase of landing the LNG.

Impact

Unlocking this gas demand will have an estimated GNI impact of RM10.6 billion, of which RM2.4 billion will be in the Oil, Gas and Energy NKEA. It will also create 27,000 new jobs by 2020, largely in other sectors beyond oil, gas and energy. An investment of RM3.9 billion will be required to fund the construction of the fixed and floating elements of the LNG regasification terminal. The expected increase in GNI is summarised as follows:

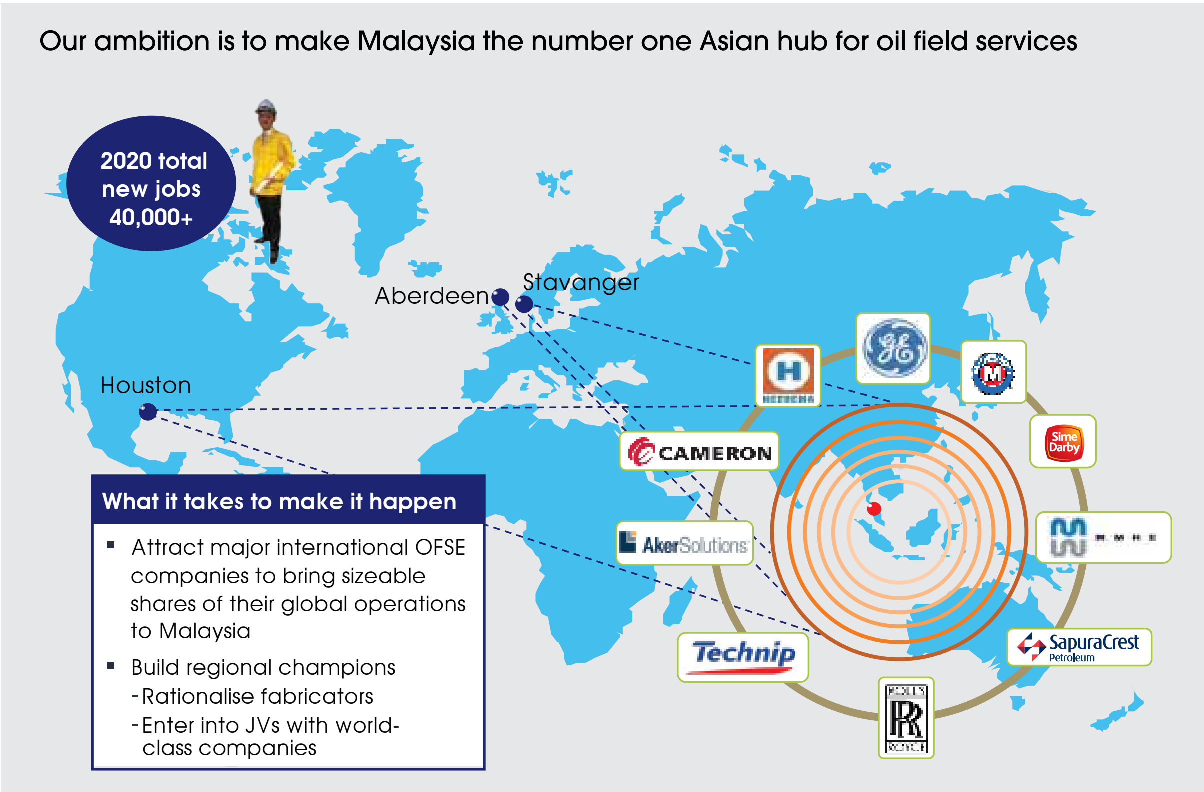
- Providing gas to companies that previously did not invest in Malaysia due to lack of gas supply would provide RM8 billion GNI increase and will create 27,000 new jobs. However this will not be included as GNI for the oil, gas and energy sector;
- Switching from diesel to natural gas will yield approximately RM1.9 billion in annual savings for Malaysian companies; and
- Operating the terminal and transmission pipelines will generate an additional RM0.6 billion in GNI to Malaysia.

MAKING MALAYSIA THE NUMBER ONE ASIAN HUB FOR OIL FIELD SERVICES

The global OFSE market is valued at RM800 billion and has undergone rapid growth of 25 percent per annum in recent years. This growth has been driven by two key factors. Firstly, high oil prices have improved industry margins, hence improving the economics for the oilfield services and equipment business. Secondly, the shift towards more exploration and production activities in geologically-complex fields has meant increased demand for OFSE. Both of these factors are expected to continue to drive growth in the Malaysian OFSE industry over the coming years.

There is significant OFSE activity in Asia and the Middle East (estimated at 20 percent of the global market), but while there are dispersed pockets of activity, there is no clear hub as is the case elsewhere in the world, e.g. Aberdeen, Houston and Stavanger. With a burgeoning domestic oil and gas industry, proximity to oil fields and a cost-competitive workforce, Malaysia is well-placed to become Asia's OFSE hub. In addition, by increasing competitive pressures in the domestic market, there is potential for Malaysian companies to first become domestic champions and then subsequently regional champions as it captures a larger share of the regional market (*Exhibit 6-10*).

Exhibit 6-10



EPP 6: Attracting Multinational Companies to Bring a Sizeable Share of their Global Operations to Malaysia

Rationale

Our ambition is to attract 10 to 20 major international companies in the OFSE industry to bring approximately 10 percent of their business operations to Malaysia. This translates to around 40 percent of their regional activities and would mean positioning Malaysia as a cost-competitive base for engineering, procurement and construction as well as a strategic base for installation activities in the Asia-Pacific region.

One key issue is that there is no existing Government body with sufficiently deep industry knowledge and expertise focused on coordinating and promoting the Malaysian OFSE industry. As a result, there is no real oversight of industry growth and development, which has meant that recent growth has been relatively unstructured.

Actions

A Government body called Oil Field Services Unit (OFSU) will be set up, tasked with the responsibility to oversee industry growth and development. OFSU would be a permanent Government body comprising 20 people, at least 10 of whom will have oil and gas industry experience. It will be fully operational within six months and will have four fundamental responsibilities:

- To make recommendations on how to restructure the domestic industry to create a more competitive environment and position the industry and its companies for growth;
- To have oversight of the domestic industry and ensure coordination between all existing, planned and potential clusters of OFSE activity;
- To create an attractive business environment for multinational companies by ensuring administrative ease and working with other Government departments to develop an attractive fiscal regime; and
- To promote the Malaysian OFSE industry and companies to overseas companies and investors.

OFSU will be supported in this role by an industry consultative council (ICC) comprising approximately 10 members from key industry associations. The ICC will meet with OFSU on a monthly basis and advise on industry requirements, specifically domestic regulation, talent development and availability, research and development and incentives.

Funding

OFSU will require only minimal funding of RM5 million a year to cover its operating expenses. However the success of this EPP is contingent on attracting foreign players to set up operations in Malaysia, which would require estimated funds totalling RM6.8 billion, composed of RM6.3 billion in private investment and RM0.5 billion in public investment. The private investment will fund the construction of factories and manufacturing plants for OFSE companies, while the public investment will fund basic infrastructure, e.g. building a dedicated berthing facility for installation companies and improving roads in activity clusters.

Impact

Underpinning OFSU's four roles would be the ambition to attract 10 to 20 major international companies in the OFSE industry so as to instigate these companies to bring approximately 10 percent of their global operations to Malaysia. If this aspiration is achieved it will have considerable impact creating over 20,000 jobs and almost RM6.1 of incremental GNI by 2020.

EPP 7: Consolidating Domestic Fabricators

Rationale

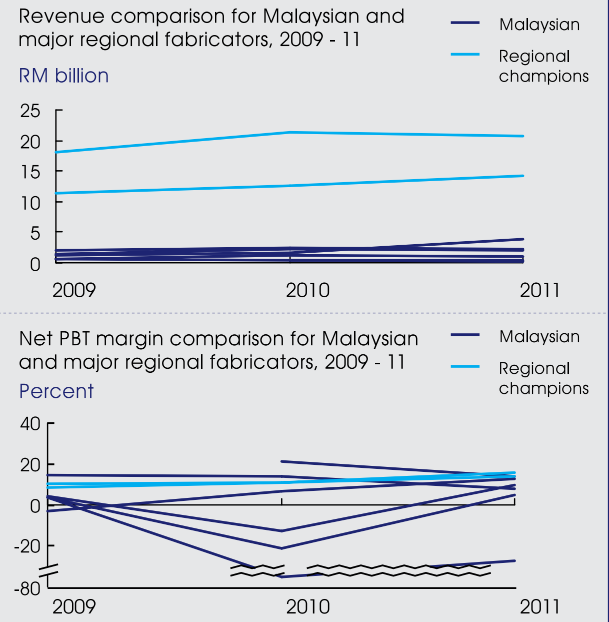
There are five major offshore structure fabricators in Malaysia, none of which has the required scale or track record to efficiently compete with major regional players (*Exhibit 6-11*). There are two key reasons. Firstly, domestic companies are not cost competitive with regional giants and thus have to work within tighter margins when bidding for international contracts. Secondly, whilst domestic work is tendered on a multi-contract basis, international work is generally put out to tender as one single contract. This means that domestic companies are less able to win and manage the main full-service contract, and if they do, they are less likely to be able to do so as efficiently or profitably.

Industry players laud that there is a need for consolidation within the industry to match the scale and efficiency of major regional players. Such belief is driven by the fact that there is presently much duplication within the industry. In addition, the majority of domestic companies have not achieved the scale required to make the most efficient use of their existing staff and assets and are less able to invest sufficiently for further development of their assets. For example, domestic companies often hire large cranes for operation in large projects because their limited size precludes purchasing them. Major regional players by contrast directly own such cranes and are better able to operate more efficiently and cheaply as a result.

Exhibit 6-11

Domestic fabricators lack scale and are not cost-competitive

Malaysian company revenues are dwarfed by those of regional champions and many are unprofitable



Malaysian fabricators accept they are yet to achieve economies of scale and become cost-competitive

Quotes from Malaysian fabricators:

"Locals need to enhance capacity to enjoy economies of scale and drive cost down

Productivity needs to be enhanced for local fabricators to become competitive

Cannot compete with China and Singapore when it comes to contracts in the Middle East

Locals must be more integrated in order to be more competitive

High import content for materials impedes cost-competitiveness"

SOURCE: PETRONAS, Syndications with domestic fabricators, Open day feedback

Actions

Consolidating the many companies operating within the industry would require PETRONAS to award licenses to only a limited number of domestic fabricators. We have spoken to a number of domestic fabricators that are open to such intervention. However, this effort must be supported by the relevant Government agencies.

Contracts will be awarded for the full range of services instead of in separate tranches, in line with the practice in other regional markets. This would enable Malaysian companies to achieve cost efficiencies and help them to develop their skills and track record across a wider range of services. It will also allow them to prove their ability to manage a full-service contract in order to support advances into the regional market.

The objective of these actions will be to consolidate domestic companies together to provide the necessary scale to compete with major regional players such as Singapore's Keppel Corporation. The target is to have domestic companies win 10 major shallow water contracts and 2 major deepwater contracts a year by 2020.

Impact

Achieving this would translate to a GNI impact of RM4.1 and the creation of 5,000 jobs. An estimated private investment of RM4.0 billion is required to pay for internal efficiency programmes such as the automation of non-destructive testing, steel-cutting and bending.

EPP 8: Developing Capabilities and Capacity through Strategic Partnerships and Joint Ventures

Rationale

At present there are considerable gaps in the domestic OFSE industry, with Malaysian companies lacking capabilities and experience particularly in engineering and installation (*Exhibit 6-12*). These capability gaps then prevent Malaysian companies from capturing certain parts of the domestic value chain, which consequently limit their ability to gain a strong share in the regional market.

Exhibit 6-12

Notably, there is significant improvement potential, particularly to encourage world class players to enter joint ventures with domestic players in key areas by the following actions; (1) further leverage our captive domestic industry, (2) grow deepwater exploration and production, and (3) increase PETRONAS's international footprint.

Actions

Under this EPP, domestic companies will be incentivised and encouraged to form joint ventures with world-class companies to build their capabilities and track records. In the short term, these joint ventures will help domestic companies capture a larger share of the domestic market, particularly in areas where much of the activity is currently performed by foreign companies, most significantly procurement and installation. In the long term, the aim will be to capture a larger proportion of the regional market through joint ventures, and later leveraging the depth and breadth of capabilities and track record developed to grow further across the regional market.

Impact

Our ambition is to gain 15 percent of the shallow water and 50 percent of the deepwater market in Asia Pacific (of which the vast majority are found in Malaysian waters) by 2020. Achieving this would mean a contribution of RM4.0 billion in GNI and job creation of some 15,000 jobs. As most of the investments made in domestic infrastructure, e.g. roads and berthing facilities are covered under other EPPs, the only additional investment of RM0.5 billion for this EPP would come from the private sector.

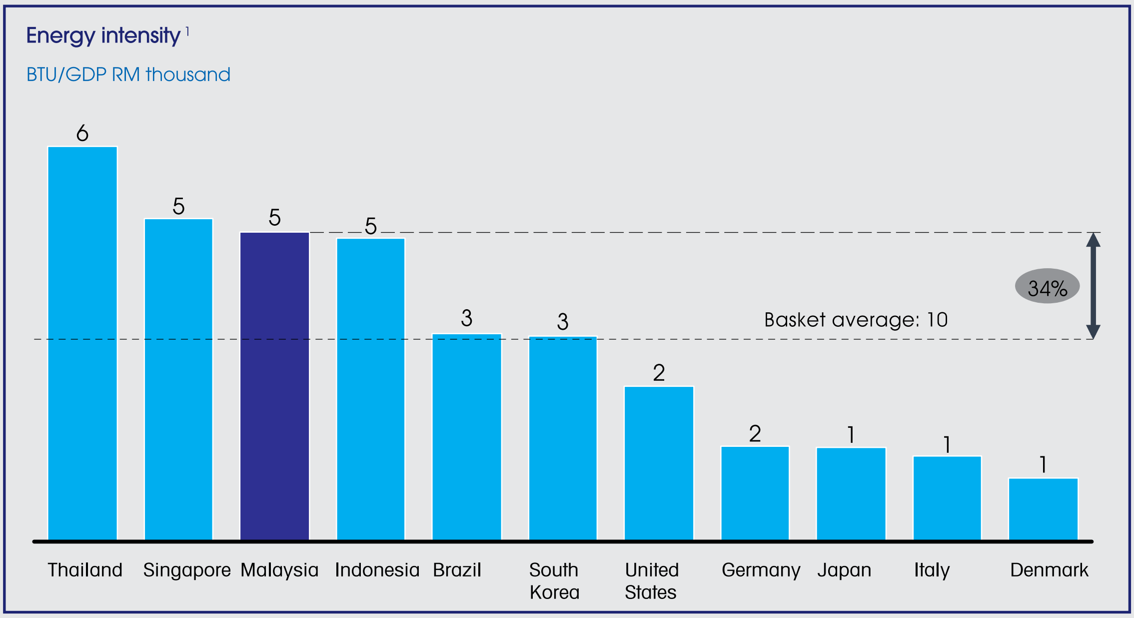
BUILDING A SUSTAINABLE ENERGY PLATFORM FOR GROWTH

In 2008, Malaysia generated a total of 109 terawatt hours of electric power, of which 91 percent was for supply to Peninsular Malaysia, 5 percent Sarawak and 4 percent Sabah. While Sarawak is blessed with the potential for 20 gigawatts of hydroelectric power, Sabah faces some challenges in meeting a 7 percent demand growth and another challenge of limited generation capacity for its east coast region. Similarly, Peninsular Malaysia faces difficulties given an expected 3.7 percent demand-growth in electric power and 95 percent dependency on depleting gas reserves and imported coal.

The overall sector will challenge to meet the Malaysia's ever growing electricity demand, especially towards the second half of the decade. This is due to a variety of factors. First, TNB expects power demand in Peninsular Malaysia to grow at 3.7 percent per year. Meeting this demand-growth means Malaysia has to plan for an additional 6 gigawatts of capacity between 2015 and 2020. Malaysia's energy consumption level, relative to the size of the population and the economy, is significantly greater than its peers as illustrated in *Exhibit 6-13*. This significant energy consumption goes hand in hand with our high growth in levels of GHG emissions, compared with peers.

Exhibit 6-13

Malaysia is more energy intensive than other countries



1 Based on 2007 data

SOURCE: International Energy Agency

Secondly, the majority of Malaysia's total power generation relies on domestic gas supply. Based on projects already online this domestic gas supply is expected to decline at 4 percent per annum in this decade – and at a higher rate after that. Thirdly, there is global pressure to lower carbon emissions, when in December 2009 YAB Prime Minister Dato' Seri Mohd Najib Tun Razak made a conditional commitment to reduce Malaysia's carbon intensity by up to 40 percent by 2020 compared with 2005 levels. To address some of these challenges, Peninsular Malaysia will undertake a three-pronged approach towards ensuring energy security in the future:

- Accelerate implementation of industry re-structuring, outlined as part of the Malaysian Electric Supply Industry (MESI) initiative;
- Pursue alternative energy sources such as hydro, nuclear power and large-scale solar; and
- Implement best practices in efficient energy use to reduce Malaysia's consumption by 10 to 15 percent versus the "business as usual" scenario and ensure that Malaysian businesses and households are able to control their energy costs.

The energy EPPs will specifically address the impending need for alternative energy sources as well as efficient energy use, while the business opportunities will capture the said MESI initiative.

EPP 9: Improving Energy Efficiency

Rationale

On average, Malaysia is 34 percent more energy-intensive than peer countries and can therefore improve on its power and fuel consumption. In fact, improving energy efficiency is a key opportunity for Malaysia: it will make our companies more competitive and reduce household electricity bills for the *rakyat*. A number of initiatives are easy to implement and can produce quick results.

Actions

We will focus on five relevant levers to improve energy efficiency in Malaysia: (1) the Government will lead by example on energy-efficiency practices and philosophy, (2) stimulate sales of energy-efficient appliances, (3) the Government will work with TNB to make co-generation economically viable, (4) regulate better insulated buildings and (5) stimulate the sale of energy-efficient vehicles.

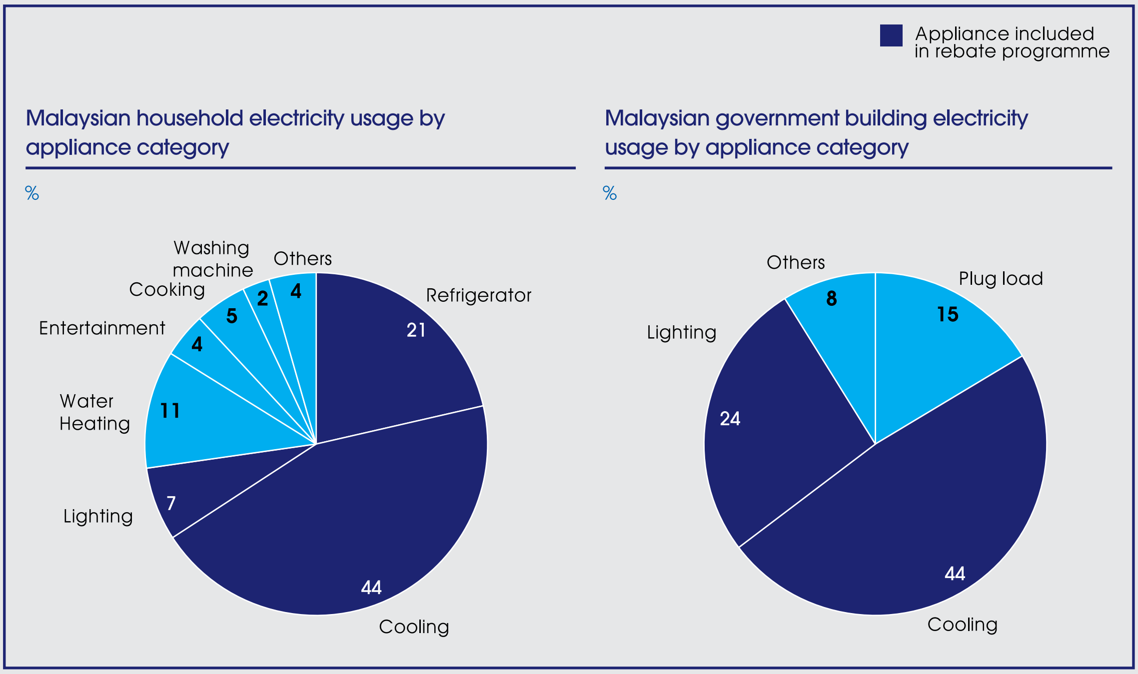
Government will lead by example on energy-efficiency practices and philosophy. This overall initiative will generate an estimated RM3.2 billion of GNI by 2020. In order to succeed, three steps are necessary. As a start, the Government will make a move to gradually rationalise the subsidy on electricity to create an incentive for both industries and consumers to adopt more energy-efficient practices. As a complement to the first step, the Government will launch large-scale education campaigns to help industries and consumers identify and apply energy-efficient practices. Last but not least, the Government will lead by example and apply energy-efficient practices in its own premises as detailed below.

In 2009, the Government's electricity bill amounted to approximately RM1.5 billion, of which 44 percent of the cost was for less than 1 percent of the Government entities. These 120 entities mainly consist of ministries, universities and hospitals, for which the Government will request for energy-efficiency plans from each of these entities in Q4 2010. This programme will be led by KeTTHA and will follow a clear process for energy-efficiency improvement. Firstly, plans will be put into place for the electricity budgets of these entities to be reduced over time. In return, they will be given allocations to invest in energy-efficient practices (light bulbs, new chillers, etc.). Each entity will nominate an Energy Efficient Champion who will be in charge of devising the entity's action plan to reduce electricity consumption. KeTTHA will mentor and monitor this group of champions in continuously achieving their targets.

Stimulate sales of energy-efficient appliances. This initiative targets the final end user through the retailers of electronic appliances and will generate up to RM5.1 billion of GNI by 2020. Consumers will receive rebates on particular appliances that account for the biggest part of household electricity bills as shown in *Exhibit 6-14*. This initiative will offer a 7 to 10 percent rebate on selected appliance models and for a limited number of units. These targeted appliances are refrigerators, air conditioners and light bulbs.

Exhibit 6-14

We will target the appliances that consume most electricity in households and government buildings



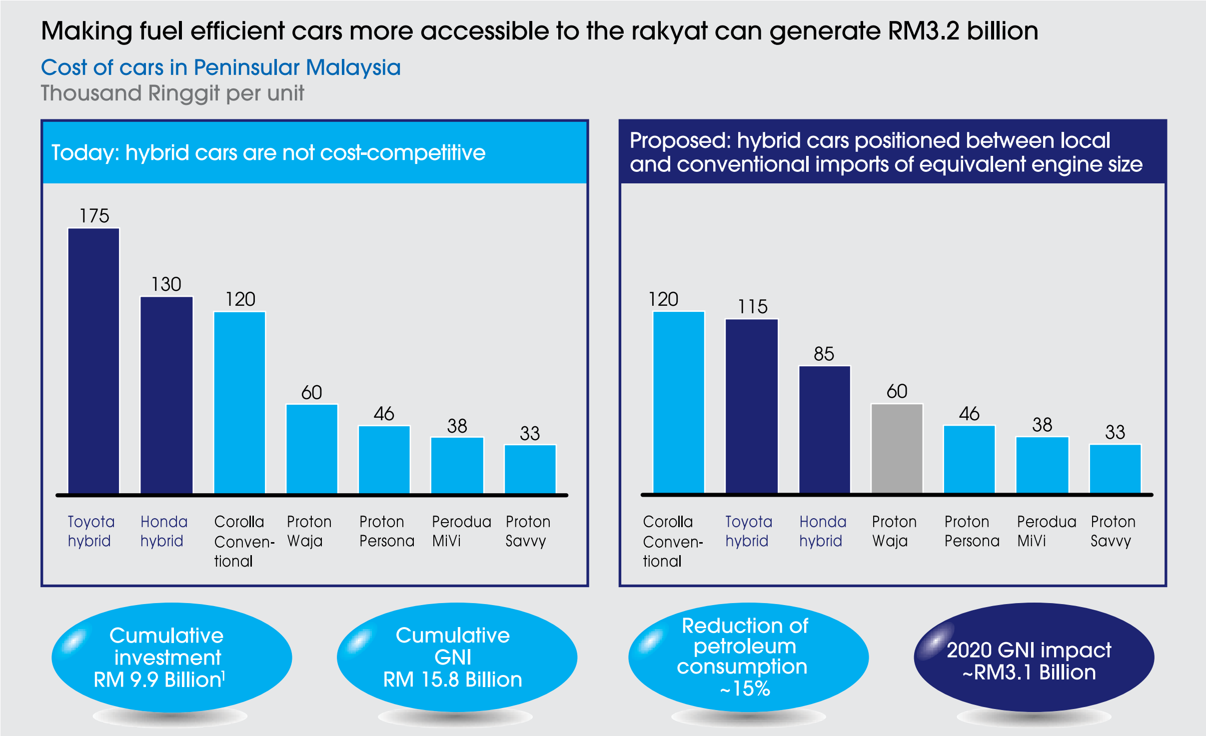
SOURCE: ST data, survey of office building 2003 - 2004

Government will work with TNB to make co-generation economically viable. This initiative is expected to generate RM1.3 billion of GNI by 2020 and will require a review of the TNB tariff on three fronts: (1) increasing the overall tariff by rationalising current subsidies to create a greater urge for more energy efficiency, (2) decreasing the stand-by tariff to encourage more users to use this option and lastly, (3) increasing the buy-back tariff to make it more attractive for industries to co-generate electricity and sell the excess energy back to TNB.

Regulate better insulation for new buildings and renovated buildings. This would bring an expected RM1.3 billion of GNI by 2020. Existing regulations on insulation of buildings are not adequate to encourage more efficient energy use, and as a result, developers are constructing properties (residential, commercial and industrial) that do not have proper insulation, thus creating a need for additional air conditioning. Going forward, better insulated properties will be ensured by (1) improving customer awareness via large-scale awareness campaigns, (2) enforcement measures through the approval process of building plans. In each, the Government will take a leadership role to ensure implementation. In time, better insulated buildings will also improve the living environment in low-cost premises where occupants cannot afford air conditioning and thus suffer heat-related stress that will lead to possible health problems.

Stimulate the sales of energy-efficient vehicles by offering rebates to encourage adoption of hybrid or electric vehicles. This will generate an expected RM3.2 billion in GNI by 2020. As illustrated in *Exhibit 6-15*, hybrid vehicles are currently still considered a luxury in Malaysia due to their lack of cost-competitiveness. The Government will promote the use of hybrid vehicles by reducing the import tax on these vehicles. As a start, the price of hybrid cars will be made more competitive so the *Rakyat* can comfortably choose hybrid cars instead of conventional imported cars. Most importantly, while this move will not undercut car prices of our local manufacturers, it will create healthy competition and urge our local manufacturers to develop hybrid or electric vehicles for the local market.

Exhibit 6-15



1 Of which 30% from public source

SOURCE: Websites of Toyota (Malaysia and USA), Honda, Proton Edar, Perodua

The key performance indicators for this EPP are: saving targets for government buildings, sale targets for energy-efficient electrical appliances, co-generation targets for electricity, implementation of an improved energy-regulatory framework and a market share target for energy-efficient cars.

Impact

This EPP will effectively require an estimated RM20.8 billion of funding. The majority of which will be from public sources used to fund import-tax rebates on energy-efficient vehicles (RM9.8 billion) and rebates for energy-efficient appliances (RM1.3 billion). The remaining total investment required to insulate buildings and develop co-generation will be RM9.6 billion and will almost entirely be funded by private sources. These levers can generate an estimated RM13.9 billion GNI by 2020.

EPP 10: Building Up Solar Power Capacity

Rationale

The renewable energy target in the Tenth Malaysia Plan is 5.5 percent of total capacity mix in 2015 (985 megawatts of generating capacity) from less than 1 percent of the energy mix today. Out of this 5.5 percent, solar power will contribute at least 65 megawatts. By year 2020, solar power is expected to contribute to a minimum of 220 megawatts, as per the target under the National Renewable Energy Policy target. Therefore, between 2015 and 2020, Peninsular Malaysia will need to build approximately 4 gigawatts of additional power capacity to meet rising demand while maintaining a healthy power reserve margin. Solar power should be considered as a viable energy alternative because of its many advantages, such as independence from fossil fuels and zero carbon gas emissions, increased energy security, high job creation potential and significant foreign direct investment (*Exhibit 6-16*). Furthermore, Malaysia has ample supply of natural sunlight which is currently not utilised to its full potential.

Actions

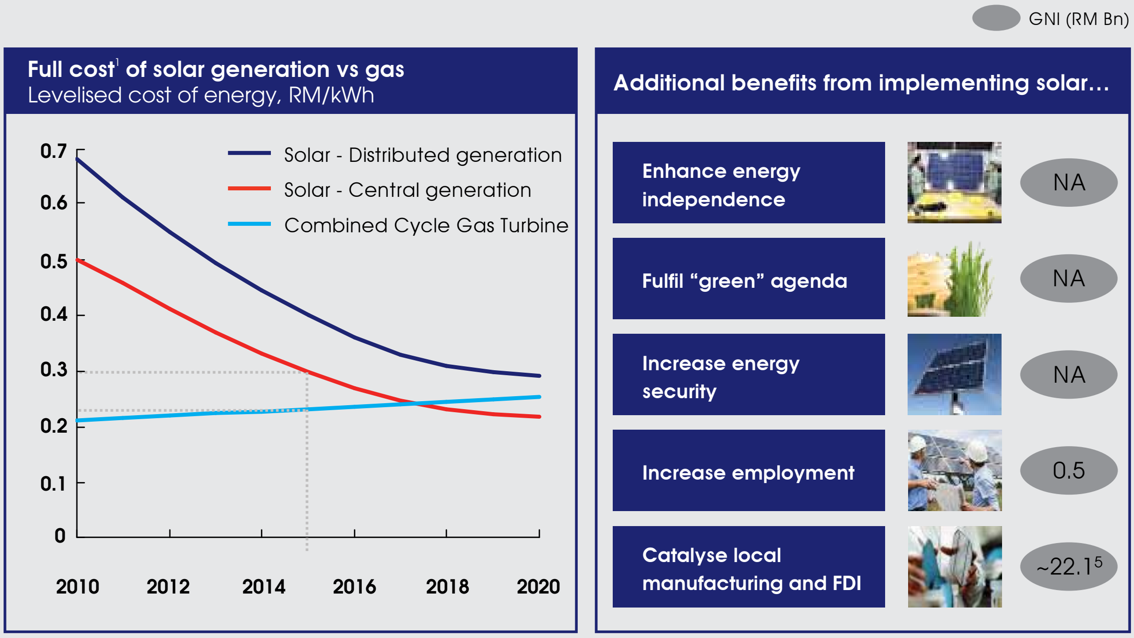
Based on analysis of the full cost of solar generation compared with the most viable alternative, combined cycle gas turbine (CCGT), centralised solar power generated by solar power plants, (as opposed to distributed solar power generated by solar panels installed on the rooftops) is expected to become an economically viable option by 2017 or 2018, as the capital cost of installing solar generation is expected to reduce by 4 to 10 percent per year. This timeline, however, will depend on a number of variables, including the rate of reduction in cost for solar power, the price of gas for power generation, and other relevant parameters.

For this EPP to succeed, three elements need to be addressed starting today. Firstly, a regulatory framework needs to be developed, both for the feed-in tariff mechanism that is due to be enacted at the end of 2010 as well as for any solar power plants that may come online once the cost of centralised solar power generation has reached parity with that of gas. Secondly, adequate business models need to be developed, including financing, public-private partnerships and the role of the Government, the incumbent generator, TNB and private operators. Finally, skills and learning need to be built in the form of small amounts of solar generation by leveraging the feed-in tariff mechanism targeted to start in January 2011.

In the event that centralised solar power achieves cost parity with gas between 2015 and 2020, there is a potential for solar generation capacity to be increased to as much as 1.3 gigawatts. KeTTHA will undertake the initiatives to set up the necessary infrastructure and ensure that the development of solar energy is undertaken in a robust but prudent manner.

Exhibit 6-16

Solar could be a good option for capacity build-up after 2015



1 Full cost, including CAPEX (LCE)
2 Assumptions for CCGT gas power generation: WACC 7.6%, CAPEX USD1000/KWe, plant efficiency 53%, gas price USD/mmbtu 8 in 2010 to 9.8 by 2020, O&M cost of 5USD/MwH load factor 85%
3 Assumptions for centrally generated solar: WACC 7.6% CAPEX 2812USD/Kw falilng at 10% until 2016, then by 8%, 6%, 4% and 3% from 2017 to 2020, O&M 1% of CAPEX, lifetime: 20 years, hours utilisation 1,300/year
4 Assumptions for distributed solar: WACC 7.6% CAPEX 3,750USD/Kw falilng at 10% until 2016, then by 8%, 6%, 4% and 3% from 2017 to 2020 O&M 2% of CAPEX, lifetime: 20 years, hours utilisation 1,300/year
5 GNI impact taken into account in the Electronics and Electrical NKEA Lab

Impact

Assuming that centralised solar power reaches cost parity with gas between 2015 and 2020, the overall GNI contribution from solar power generation in 2020 could grow to RM460 million mainly due to the creation of an additional 1,900 jobs. This would require an investment of RM5.7 billion. The GNI impact excludes additional impact of RM22 billion catalysing effect that this project would have on local manufacturing and the influx of foreign direct investment, which instead is included under the Electronics and Electrical NKEA.

EPP 11: Deploying Nuclear Energy for Power Generation

Rationale

Malaysia is exploring the option of deploying nuclear energy in order to meet future demand and diversify the energy mix for Peninsular Malaysia. A Nuclear Power Development Steering Committee, headed by the Ministry of Energy, Green Technology and Water, was set up in June 2009 to plan and coordinate the preparatory efforts towards deploying nuclear energy for electricity generation. The committee has been tasked to conduct various studies towards preparing a Nuclear Power Infrastructure Development Plan (NPIDP), which is targetted to be ready by 2013. Prior to conducting these necessary studies, a nuclear power pre-feasibility study and initial site selection study has already been undertaken.

Actions

The Steering Committee is studying the possibility of delivering a twin-unit nuclear power plant with a total capacity of 2 gigawatts, with the first unit in operation by 2021. The plan under development lays out a development timeline of 11 to 12 years from pre-project to commissioning. The plan presents a positive case for nuclear energy in Malaysia (*Exhibit 6-17*). Firstly, if Malaysia developed nuclear energy, it would be cost-competitive, supplying the cheapest source of energy. Secondly, nuclear power is a cleaner energy than coal and gas (0 grams of carbon dioxide equivalent per kilowatt hour vs approximately 800 and 400 grams respectively).

Funding

Building the twin unit nuclear plant is expected to require a RM21.3 billion investment up to 2020.

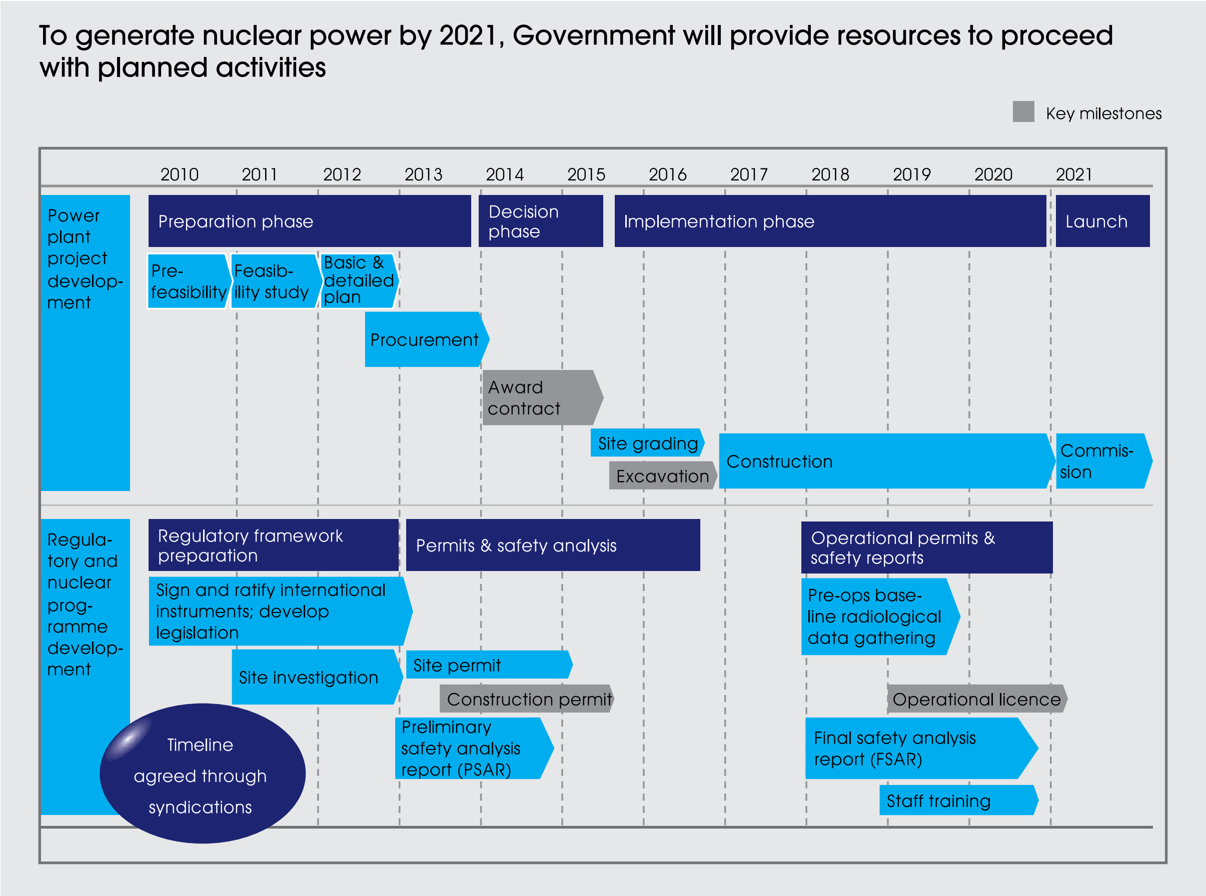
Enablers

In order to ensure prompt delivery, the project will be launched without delay and four critical path items must be addressed with highest priority. Firstly, there must be public acceptance of the project. Secondly, Malaysia must ratify the relevant international treaties. Thirdly, the Government must ensure that the correct regulatory framework is put in place. Finally, approvals for plan sites including from local populace must be obtained.

Impact

Construction of the nuclear power plants will have a temporary GNI impact in the construction sector, with GNI contribution of RM0.2 billion from the creation of 2,600 jobs. The jobs will include roles covering plant operation and maintenance, waste management and licensing and regulation. Once operational (post 2020), the two 1-gigawatt nuclear power plants will generate GNI amounting to RM1.8 billion per year from the electricity generated.

Exhibit 6-17



EPP 12: Tapping Malaysia's Hydroelectricity Potential

Rationale

Sarawak's hydroelectricity potential is virtually untapped: only 0.6 percent of the estimated 20 gigawatts of potential power capacity is currently being developed (based on the study carried out by the SAMA Consultancy in the 1980s for the state government of Sarawak). There are approximately 25 terawatt hours of latent power demand from industries operating in Sarawak, Sabah and the neighbouring countries of Brunei Darussalam and West Kalimantan, Indonesia.

Hydroelectricity has many advantages: it is a renewable energy, it helps reduce carbon dioxide emissions and it is a proven technology providing a secure, long-term supply of electricity. Brazil, Canada and Norway are examples of countries that make extensive use of hydroelectricity.

The earlier plan to export power to Peninsular Malaysia from Sarawak through under-sea high-voltage direct-cable transmission does not appear to be economically viable at the current point in time, though the situation may change. Preliminary estimates indicate that the landed cost of electricity from Sarawak hydroelectricity is more expensive than the cost of power generation using coal, nuclear or combined cycle gas turbines. This however does not take into account of the carbon emission and other environmental costs of thermal power plants. The Government may pursue its plan to transmit hydroelectricity to Peninsular Malaysia from Sarawak if these other factors are taken into deeper consideration and issues relating to under-sea cable crossing sovereign territory can be resolved.

Actions

The owner of this initiative is the state government of Sarawak and it is implemented through the Sarawak Energy Berhad (SEB) and the Regional Corridor Development Authority (RECODA). Their main roles are to plan, construct, own and operate the hydroelectricity dams, attract energy intensive industries to Sarawak, plan and construct the necessary infrastructure and utilities, as well as other services to support these industries and negotiate transmission lines connections for electricity supply with neighbouring countries.

The estimated total investment required to develop hydroelectricity dams is RM20.2 billion which will be funded by the private sector through a government-linked company. The investment is meant for the construction of five dams with a total capacity of 5 gigawatts, a transmission grid and the infrastructure needed to attract energy intensive industries to Sarawak.

Impact

This EPP will create 590 jobs and an estimated GNI potential of RM5.7 billion in Sarawak by 2020. Most of the GNI will come from energy-intensive industries operating within Sarawak, which will generate income to the state totalling RM4.5 Billion and have a further GNI multiplier effect in the region. The remaining RM1.2 billion of GNI will come from providing power to Sabah, Brunei and Kalimantan through land transmission.

BUSINESS OPPORTUNITIES

There are a number of business opportunities in the oil, gas and energy sector, which together with the baseline sector growth will provide RM61.2 billion of GNI contribution by 2020. This amount includes a RM32.0 billion increase in GNI versus the 2009 baseline GNI due to expected increases in the oil price, given relatively low oil prices in 2009. The business opportunities can be grouped into two clear themes. Firstly, there are opportunities to secure more output from the same input as current processes are improved and efficiency gains are realised. The second theme is opportunities stemming from the increased demand for energy deriving from a growing economy.

Business Opportunity 1: Process Improvements

Global benchmarks of refining and petrochemical facilities demonstrate that significant process improvements can be expected with these types of facilities over time. These improvements typically translate into efficiency gains of 0.5 percent per year representing an additional GNI contribution of RM3.4 billion. Improvement of overall processes and structure in the electricity generation sector is expected to add RM1.5 billion of GNI contribution.

Business Opportunity 2: Economic Growth

Malaysia has targetted GNI growth of 5.9 percent per annum. Achieving this economic growth is expected to raise consumption by 3 percent and will have a knock-on effect on the oil, gas and energy sector. The increased consumption will require an additional 2 gigawatts of installed capacity to be built at a cost of RM9.6 billion, creating an estimated 2,500 jobs and adding RM11.2 billion to GNI. The additional transmission and distribution of this energy will create a further RM5.6 billion GNI and require an investment of RM12.4 billion.

In the downstream sector this increased consumption will boost GNI by RM1.5 billion and create 3,200 jobs. An estimated 90 new petrol stations will also need to be built at a total cost of RM3.2 billion.

International E&P projects present a new business opportunity that is projected to generate RM5.9 billion in GNI, requiring RM79.0 billion in private investment.

COMMON ENABLERS

There are three key enablers that must be put in place to ensure the successful implementation of the 12 EPPs and the two business opportunities within the Oil, Gas and Energy NKEA. These enablers are:

- Provide effective investment support: the Government needs to ensure that investors are actively courted, investment deals are proposed and enabled and administrative processes are facilitated in oil, gas and energy related fields;

- Attract world-class expatriate talent: the Government needs to ensure that investors can bring in the required foreign talent in an efficient manner; and

- Ensure adequate supply of qualified domestic human capital: the Government needs to introduce measures to increase the supply of graduates in the next decade to staff the approximately 21,000 new jobs created at or above graduate level by 2020.

Provide Effective Investment Support

Overview

The majority of the aforementioned EPPs require at least one or more of the following four activities to first be successfully undertaken:

- Attract new domestic or foreign investors to the OGE sectors;

- Bring together multiple companies or agencies around a business arrangement or a partnership;

- Obtain federal, state or local permits to develop an economic activity; and

- Grant an economic incentive to facilitate investment.

Having an empowered authority to coordinate these activities and take a hands-on executive role with clear accountability to achieve results in this area will be a key enabler.

Actions

The investment support functions are best housed in a Government-related body that has sufficient line authority, industry expertise and accountability. The body should have the ability to compel relevant organs of state to take action in a manner consistent with the aims of the NKEA programme and with standards of good governance. To have sufficient expertise, it should be able to recruit senior talent from Government and the OGE sector to fulfil its tasks. This will require the ability, for example, to recruit industry executives at salaries that are higher than the Government's typical pay scales. Lastly, the body should be held accountable for progress in the realisation of the investment objectives.

Given time and the right resources (e.g. Government officers and industry experts of the highest calibre), this body will gain positive reputation. Of existing agencies, MIDA is the most suitable to execute these functions. It will however still need to attract individuals with the appropriate expertise and skillset from the Government and from the private sector to be successful.

To ensure that momentum is not lost, specific bodies have been identified to push forward the initiatives that fall under the oil and gas unit in the interim period before it is set up. For instance, MIDA and the ETP Unit will work together to recruit the OFSU team and coordinate CEO roundtables on how to enhance competitiveness of the domestic OFSE industry and how to bring about the consolidation of the fabrication industry. PETRONAS will support these events by putting forward a proposal for how to restructure the licensing system and potential mechanisms for industry consolidation.

Attract World-Class Expatriate Talent

Overview

The OGE sectors require relatively specialised skill sets which our *Rakyat* will need to further develop to carry out the activities targetted in this NKEA. At the present time we lack the scale of expertise required and there is therefore a need to attract highly-skilled foreign workers to work here.

Actions

Some primary functions and pre-requisites regarding attracting foreign talent are the following:

- Ease of immigration so that work and residence permits are easy to obtain and renew, without needing to create overly burdensome administrative procedures or hire an intermediary. Processing time should be short and prescribed, and applicants should be able to enquire and monitor progress of their applications;

- Tax compatibility with source country of the foreign talent to avoid double-taxation. It is important to align the Malaysian tax system with other major tax systems and eliminate such occurrences of double-taxation;

- Highly liveable cities that offer good living conditions, e.g. Greater KL/KV;

- Good international transportation connections;

- Simple to follow procedures for necessary day-to-day activities such as opening a bank or utility account and obtaining a phone number; and

- Wide and easy access to information about living in the country, e.g. via the internet or local travel bureau's abroad.

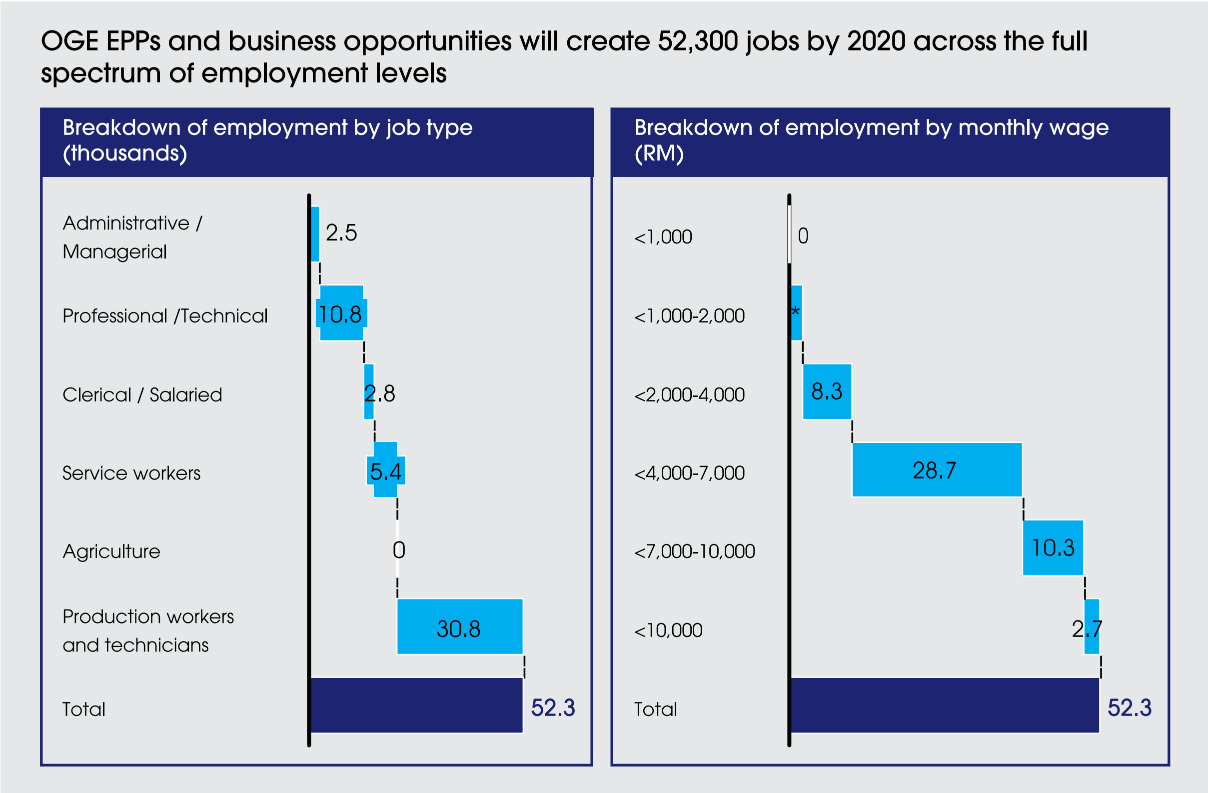
Measures to fortify Malaysia's ability to attract highly-skilled foreign workers in a number of its NKEAs are already being implemented. For instance, TalentCorp, an agency tasked with attracting foreign talent into Malaysia, is being set up.

Ensure Adequate Supply Of Qualified Domestic Human Capital

Overview

The OGE EPPs and business opportunities will generate 52,300 new jobs and thus require a supply of talent of equal amount. *Exhibit 6-18* illustrates how these jobs break down across sub-sectors and pay levels. In reality, some of these types of talent are in relatively short supply in Malaysia. An amplified effort will therefore be needed to ensure that sufficient talent is trained in order to fill the demand in the OGE NKEA.

Exhibit 6-18



Actions

In line with the concept of discipline clusters developed for the Education NKEA, it is proposed that an oil, gas and energy discipline cluster be developed in Malaysia. This cluster would be a collaborative effort between the industry leaders, leading institutions of higher education and relevant vocational training institutes. The OGE discipline cluster will be facilitated through the following measures:

- The Ministry of Higher Education (MoHE) and the Ministry of Human Resources (MoHR) will provide incentives for OGE industry players to set up training centres to meet their specific manpower requirements, and facilitate the connections between these industry players and relevant institutes of higher learning;

- Industry associations and leading players will be asked to identify the anchor institutions in Malaysia around which a virtual academy of relevant disciplines and technical skills will be built; and

- Industry associations will work with MoHE and MoHR to develop and propagate the relevant discipline standards and certifications for the OGE sectors and ensure that they meet industry requirements.

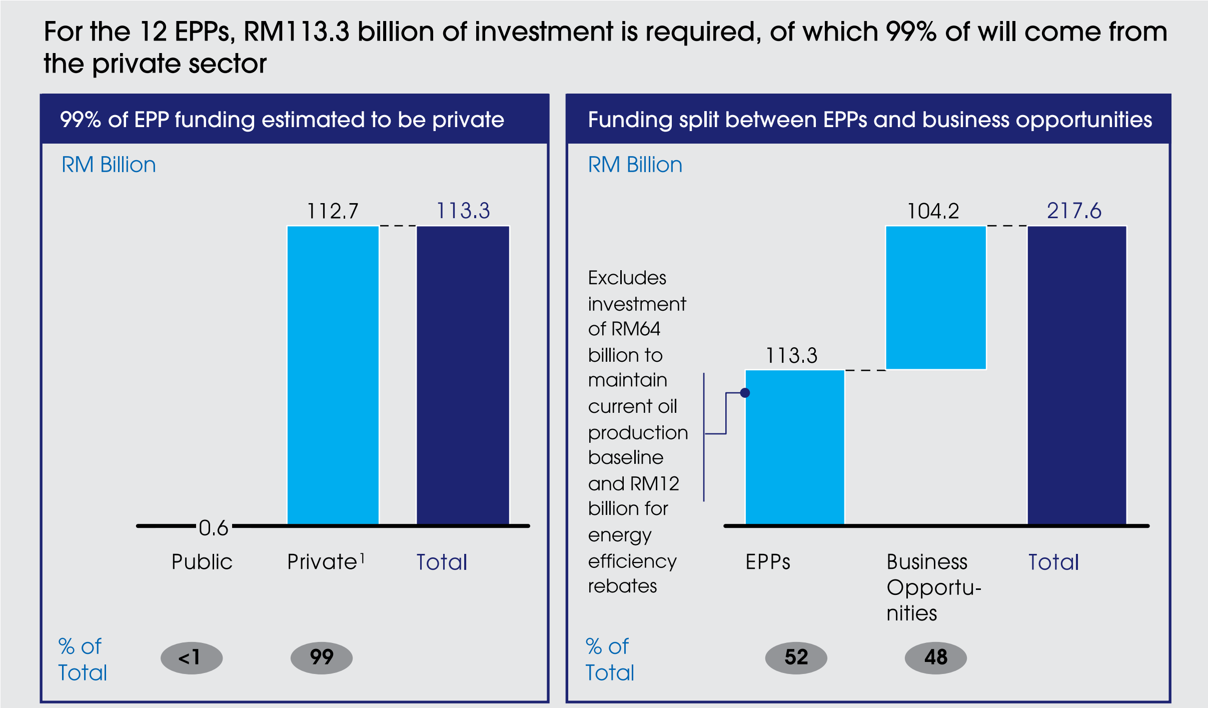
The OGE lab has worked together with the Education NKEA lab to ensure that these requirements are captured in developing the Education NKEA's plans.

FUNDING

Achieving our ambitious growth target of more than doubling the contribution from OGE by 2020 will require a significant amount of funding. As shown in *Exhibit 6-19*, in order to deliver the GNI growth targets, the EPPs will require incremental investment amounting to 113.3 billion. The total cumulative funds that will need to be invested from 2010 to 2020 thus amounts to RM217.6 billion, where RM104.2 billion of these funds (48 percent) is required for investment in business opportunities. Of this total, less than 1 percent of investment will be from the public sector and the remaining 99 percent will come from the private sector.

Most of the public funding requested is to develop a berthing facility for the OFSE hub EPP. Additionally, RM64.0 billion of private investment is required to offset the current decline in oil production, whereas a further estimated RM12.0 billion will be in the form of tax rebates for the energy-efficiency EPP. Much of the private investment will come from GLCs, primarily PETRONAS and TNB. The majority of public sector funding will be used to put in place the infrastructure to support major international OFSE companies.

Exhibit 6-19



1 Of which approx. RM147 Billion from GLCs

Funding will be spread evenly over the next 10 years, where each year's funding will range between 7 percent and 12 percent of the total NKEA funding. The 12 EPPs are expected to be core drivers of growth in OGE. In order to successfully implement these 12 EPPs, a total of RM113.3 billion (less than 1 percent public, 99 percent private) will be required cumulatively from 2011 to 2020.

In addition, a total of RM104.2 billion of private funding will be required to fund business opportunities which will deliver incremental GNI impact of RM29.2 billion by 2020. The investment will be required for:

- **International E&P projects**: RM79.0 billion investment in shares in foreign E&P projects;
- **Increased distribution and marketing:** RM3.2 billion to build 90 new petrol stations;
- **Increased electricity consumption:** RM9.6 billion investment to fund the construction of power plants generating 2 gigawatts of installed capacity; and
- **Increased electricity transmission:** RM12.4 billion investment in upgrading transmission lines and stations.

GOVERNANCE AND DELIVERY

Successful implementation of the various EPPs hinges on ownership and accountability for each of the projects. To ensure proper ownership and accountability, a dedicated owner has been identified for each of the initiatives proposed. In addition, a detailed delivery plan consisting of implementation details, key performance indicators and targets, as well as a risk and mitigation plan has been developed for each for the high impact EPPs.

Table 6-1: Overview of the agencies in charge of the various initiatives

EPP	Lead initiative owners	Other key agencies, companies and organisations
Rejuvenating existing fields through enhanced oil recovery	PETRONAS	Production sharing contracts (PSC) Contractors
Developing small fields through innovative solutions	PETRONAS	Production sharing contracts (PSC) Contractors
Intensifying exploration activities	PETRONAS	Production sharing contracts (PSC) Contractors
Building a regional oil storage and trading hub	Malaysian Industrial Development Authority (MIDA)	Project owners Ministry of Transport Ministry of Natural Resources and the Environment Ministry of Finance
Unlocking premium gas demand in Peninsular Malaysia	Malaysian Industrial Development Authority (MIDA)	PETRONAS Relevant state governments Ministry of Energy, Green technology and water (KeTTHA) Gas Malaysia Economic Planning Unit Energy Commission
Attracting MNCs to bring a sizeable share of their global operations to Malaysia	Oil Field Services Unit (OFSU)	Industry associations (e.g. MOGSC, OSFAM) PETRONAS Malaysian Industrial Development Authority (MIDA) Ministry of International Trade and Industry (MITI) Malaysia External Trade Development Corporation (MATRADE)
Consolidating the domestic fabricators	Oil Field Services Unit (OFSU)	PETRONAS Offshore Structural Fabricator Association of Malaysia (OSFAM) Malaysia External Trade Development Corporation (MATRADE)
Developing engineering, procurement and installation capabilities and capacity through strategic partnerships and joint ventures	Oil Field Services Unit (OFSU)	Industry associations (e.g. MOGSC, OSFAM) PETRONAS Malaysian Industrial Development Authority (MIDA) Ministry of International Trade and Industry (MITI) Malaysia External Trade Development Corporation (MATRADE)

Table 6-1: Overview of the agencies in charge of the various initiatives (contd)

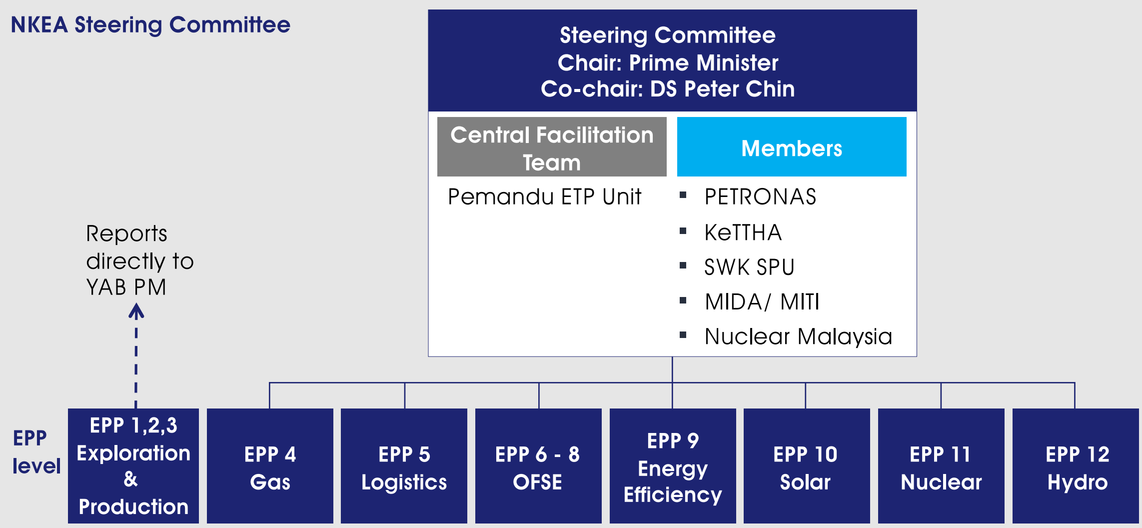
EPP	Lead initiative owners	Other key agencies, companies and organisations
Improving energy efficiency	Ministry of Energy, Green Technology and Water (KeTTHA)	Ministry of Finance (MOF) Ministry of International Trade and Industry (MITI) Ministry of Transport (MOT)
Building up solar power capacity	Ministry of Energy, Green Technology and Water (KeTTHA)	Tenaga Nasional Berhad (TNB) Energy Commission (Suruhanjaya Tenaga, ST)
Deploying nuclear energy for power generation	Ministry of Energy, Green Technology and Water (KeTTHA)	Nuclear Malaysia Energy Commission (Suruhanjaya Tenaga, ST) Tenaga Nasional Berhad (TNB) Atomic energy licensing board
Tapping Malaysia's hydroelectricity potential	Sarawak State Planning Unit (SPU)	Sarawak Energy Bhd Sarawak Ministry of Public Utilities RECODA (Sarawak Renewable Energy Corridor Development Authority) Tenaga Nasional Berhad (TNB) Ministry of Energy, Green Technology and Water (KeTTHA) Energy Commission (Suruhanjaya Tenaga, ST)

For each of the EPPs, detailed implementation plans have been developed. The owners and most of the stakeholders for each of these EPPs have given input and are aligned on the implementation plans. Given the need for both co-ordination and focus, an overall governance structure is also required. The goal is to monitor implementation and deliver on not only the 12 EPPs above, but also the broader list of business opportunities and to ensure the timely co-ordination across all stakeholders and relevant Government bodies. A Steering Committee co-chaired by YAB Prime Minister and the Minister of Energy, Green Technology and Water (KeTTHA) will continue to give direction on the implementation of the OGE recommendations.

The broader governance structure that will be put in place is summarised in *Exhibit 6-20*. It is designed to be empowered enough to drive successful execution of the EPPs, but not so intrusive that it duplicates functions of existing Government bodies and agencies. It achieves this by creating just three roles above the EPPs: a Steering Committee, a line management function to drive execution (split between PETRONAS and the ETP Unit) and a reporting and secretariat function, secured by the ETP Unit to support the Steering Committee.

Exhibit 6-20

Governance for Oil, Gas & Energy NKEA: two-tiered implementation governance structure will set direction and catalyse implementation



Note: EPP 1 to 3 will be executed by PETRONAS and PETRONAS will report to PM on a regular basis

Summary of Wholesale and Retail NKEA

• **Incremental GNI impact in 2020**	RM131.4 billion
• **Additional jobs in 2020**	52,300

- **Critical targets and milestones within 6 to 12 months**
  - LNG regasification concept (on-shoreland vs offshore or Floating Storage and Regasification unit (FSRU) finalised
  - Grant funding and private jetty licence for deepwater oil terminal pilot project in South East Johor approvals obtained
  - Local Engineering, Procurement, Construction and Installation and Commissioning firms that can bid for regional EPC contracts formed
  - Government and GLC initiative to lead by example on energy-efficiency (circular for changes in procurement and on new EE behaviours, monitoring programme for key Government buildings) launched
  - Feed-in tariff to kick-start the market for distributing solar power generated on residential roof-tops and in commercial and industrial premises commenced in 2011.

chapter 7 Financial Services

Chapter 7: Positioning Financial Services as the Bedrock of the High-income Economy

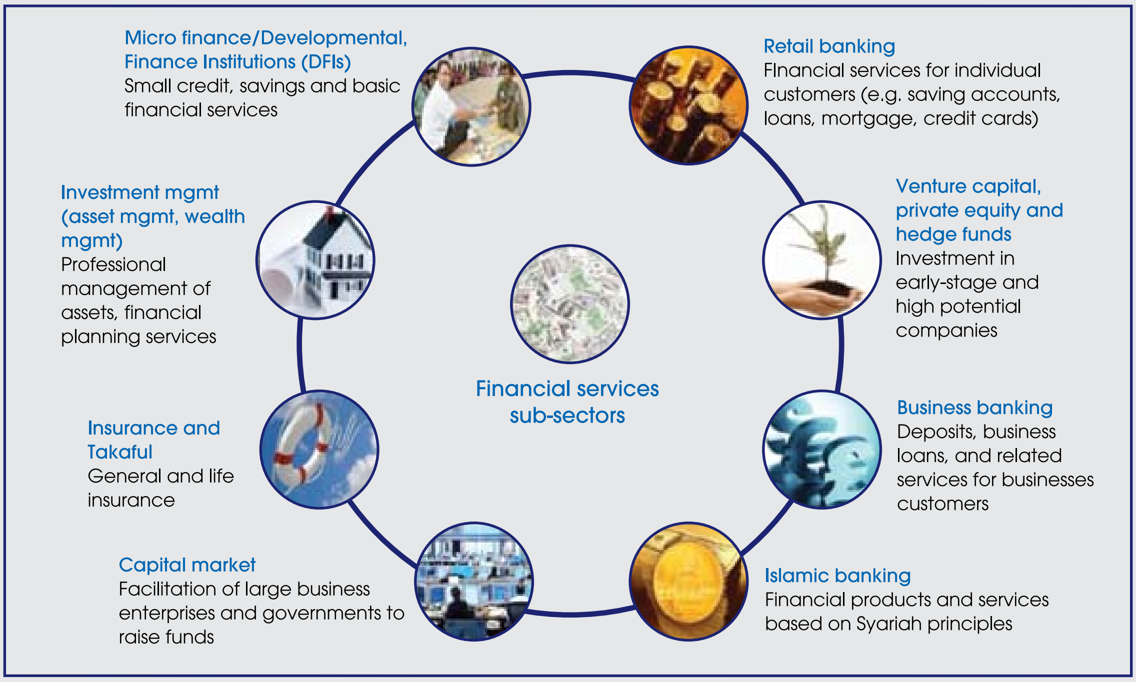
The financial services sector is the bedrock of any economy. It is a key enabler of the overall economy, providing capital (in various forms) to enable the growth of all other industries (as well as consumers) in the economy. All large successful economies require strong banks, vibrant capital markets and well-functioning financial infrastructure. The sector is also a core component of a services-based economy and a key growth engine in its own right. As demonstrated by the emergence of international financial services centres worldwide, sector growth comes from serving domestic businesses and consumers as well as tapping external markets and sources of funds.

DEFINITION OF THE FINANCIAL SERVICES NKEA

The financial services sector covers both financial institutions (banks, insurance companies, brokerages and investment management firms) and financial markets (debt and equity markets) and can be broadly divided into eight sub-sectors, as illustrated in *Exhibit 7-1*. The focus of the NKEA is on this formal financial services sector and does not include the informal financial services such as moneylenders, pawnbrokers, informal remittance channels and self-help groups.

Exhibit 7-1

Financial Services Encompass Full Range of Solutions Catering to Different Financial Needs

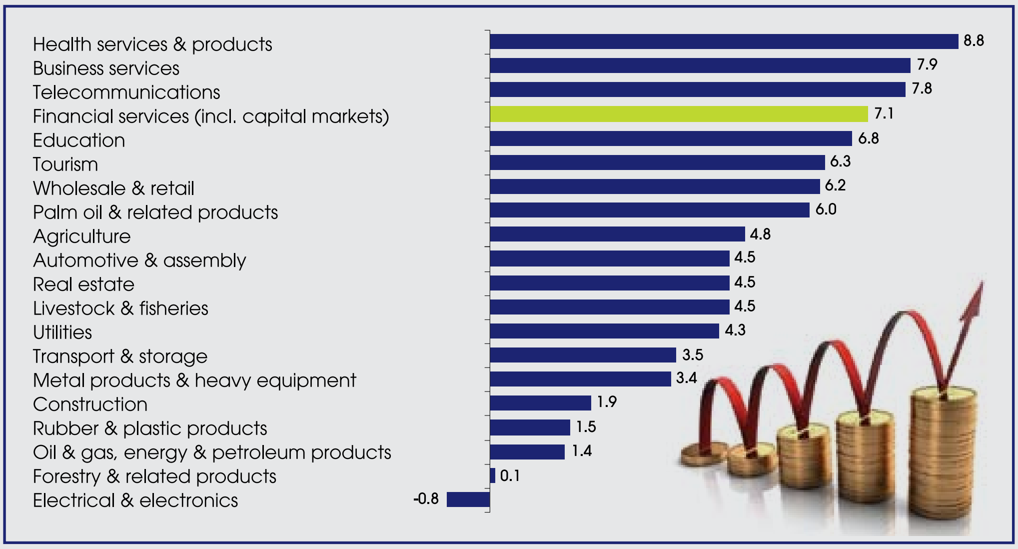


The importance of the financial services sector to the overall economy has been growing over the past decade, with the financial services sector's share of GDP growing from an average of 9.9 percent of GDP (measured in 2000 constant prices) between 2000 and 2005 to an average of 10.9 percent over the period 2006 to 2009. The financial services sector has also been one of the fastest growing sectors over the past decade *(Exhibit 7-2)*. In terms of jobs, the sector's workforce is small, accounting for around only 2 percent of national employment. However, the sector employs a pool of highly-skilled personnel. Financial services jobs have above-average wages and are inordinately valuable to an economy.

Exhibit 7-2

The Financial Services Sector has seen Robust Growth over the Past Decade

2000 - 2009 historical GDP growth rate by sector
Percent



Regulatory and supervisory oversight of the financial services sector falls with the Central Bank of Malaysia (*Bank Negara Malaysia* or BNM) and the Securities Commission (SC). BNM and SC are also entrusted with a development role to ensure the sustainable growth of the sector. The relatively healthy state of the financial services sector is largely the result of reforms spearheaded by these agencies following the Asian financial crisis in 1997 and 1998.

Pivotal to the developmental process of the financial sector were the Financial Sector Masterplan (FSMP) and Capital Markets Masterplan (CMP) issued by BNM and SC respectively in 2001. Together, the FSMP and CMP outlined a holistic set of measures that have resulted in the emergence of financial institutions that are more resilient, more competitive and better positioned to meaningfully support the economy. Both agencies are currently developing the masterplans (FSMP 2 and CMP 2) that will chart the next phase of development. The initiatives discussed in this chapter will serve as input for these masterplans and several initiatives will be further detailed in the FSMP 2 and CMP 2.

MARKET ASSESSMENT

There are many opportunities for Malaysia in the financial services sector, but also some key challenges to overcome.

Malaysia's Strengths

Following the Asian financial crisis of 1997 and 1998, Malaysia has focused on enhancing institutional capacity through consolidation and through strengthening the regulatory and supervisory framework. We have developed strong domestic institutions while progressively opening up the financial services sector to greater competition. In addition, we made concerted efforts to develop Malaysia's leadership position in Islamic finance globally.

These efforts have clearly paid off. The consolidation of 22 banks into 9 anchor banking groups has created sizeable and profitable institutions that have stayed strong throughout the recent global financial crisis.

The strong capital positions of banks, coupled with ample liquidity in the financial system, provided a buffer against the global downturn. The levels of non-performing loans held by commercial banks declined in 2009.

Debt market activities have remained strong, and Malaysia continues to be the third largest domestic currency bond market in Asia excluding Japan. In 2009, total corporate debt issuance increased 22 percent year-on-year to reach RM61 billion.

Of the total issuance volume, RM32 billion represented issuance of sukuks. In 2009, Malaysia had a dominant share in the global sukuk issuance market, accounting for 47 percent of the global market. Malaysia also has the largest Islamic fund management industry in the world in terms of number of funds, and is recognised as a centre for product innovation in the realm of Islamic finance. The growth of Islamic finance owes much to the strong legal and regulatory framework that has been established here.

Indeed, Malaysia has been recognised internationally for its regulatory environment. This coupled with other advantages such as our low-cost of living and pro-business environment, serve as strengths that we can build upon.

Overall, Malaysia's financial services sector has enhanced its domestic competitiveness and broadened its activities. However, some segments like banking are maturing. With a population of 28 million people, the domestic market lacks the necessary critical mass to further develop these segments. Going forward, there is a need to look externally for growth and to develop new engines of growth.

Challenges

Malaysia's financial services sector faces a few challenges.

Lack of scale. While the industry has gone through a phase of consolidation, some segments like investment banking and brokerage remain fragmented. Even in the commercial banking sector where consolidation has been most pronounced, many of our banks are still significantly smaller than regional powerhouses. On the capital markets side, Malaysia lacks the critical mass to attract significant levels of investment. To illustrate, Malaysia's total market capitalisation accounts for just 3.2 percent of the MSCI Asia excluding Japan index.

Lack of liquidity and diversity in the capital markets. From their heyday before the 1997 – 1998 Asian financial crises, Malaysia's capital markets have lost some of their vibrancy. Malaysia's liquidity ranking in Asia has dropped from 3rd in 1996 to 14th in 2010. There is also limited diversity in the market, be it in terms of investors, in terms of products or in terms of currency.

Low levels of financial literacy. The level of personal financial literacy today is low overall. With growing consumerism as well as changing customer expectations, there is a need to reinforce greater financial literacy to help the *Rakyat* to better manage their personal finances in line with our move to a high-income economy. Proper consumer education is needed if new growth engines, such as private pensions, wealth management and asset management, with their more complex and sophisticated products, are to take off.

Competition from other regional financial centres. We do not have to look far beyond our shores to find established financial centres that enjoy greater scale, visibility and liquidity, such as Singapore and Hong Kong. While Malaysia continues to face negative perception issues stemming from the capital control measures implemented during the Asian financial crisis, these financial centres have developed their reputations as being open and pro-business. They are magnets not only for capital but also for financial services sector talent, not least Malaysian financial services sector talent. Further, foreign investor interest is currently directed towards North Asia (although within Southeast Asia, Indonesia is beginning to attract more investor attention).

Taking the financial services sector forward will necessarily mean addressing each of these challenges. In addition, ongoing policy initiatives to address weaknesses in our economic infrastructure and to fundamentally transform how business is done will continue and in some cases be stepped up.

Opportunities

Despite these challenges, there are several demand growth drivers that represent opportunities for Malaysian financial institutions.

Rising affluence among Malaysians. As Malaysia develops into a high-income economy, the increasing affluence of its population will fuel demand for new and higher value financial activities.

Rising awareness of Islamic finance. Global Islamic financial assets currently only account for 2 percent of world GDP and are expected to continue growing at double digits for the next decade. With its leading position in Islamic finance, Malaysia is poised to benefit from increased awareness and interest in Islamic finance.

Rise of China and India. China and India are the growth engines of the world economy registering 10.5 percent and 8.2 percent real GDP growth respectively from 2005 to 2009. China and India also attracted the biggest foreign direct investment influx during the same period at RM1.99 billion (39 percent of Asia) and RM547 billion (11 percent of Asia). Malaysian companies are also investing there with Malaysian FDI in 2009 reaching RM900 million and RM237 million for China and India respectively. China is now Malaysia's second largest trading partner, while India is its twelfth largest.

Malaysian financial institutions stand to benefit from deeper business relationships between Malaysia and the two countries. Furthermore, as Chinese and Indian businesses and customers prosper, local demand for onshore and offshore financial services will provide additional expansion opportunities for financial institutions.

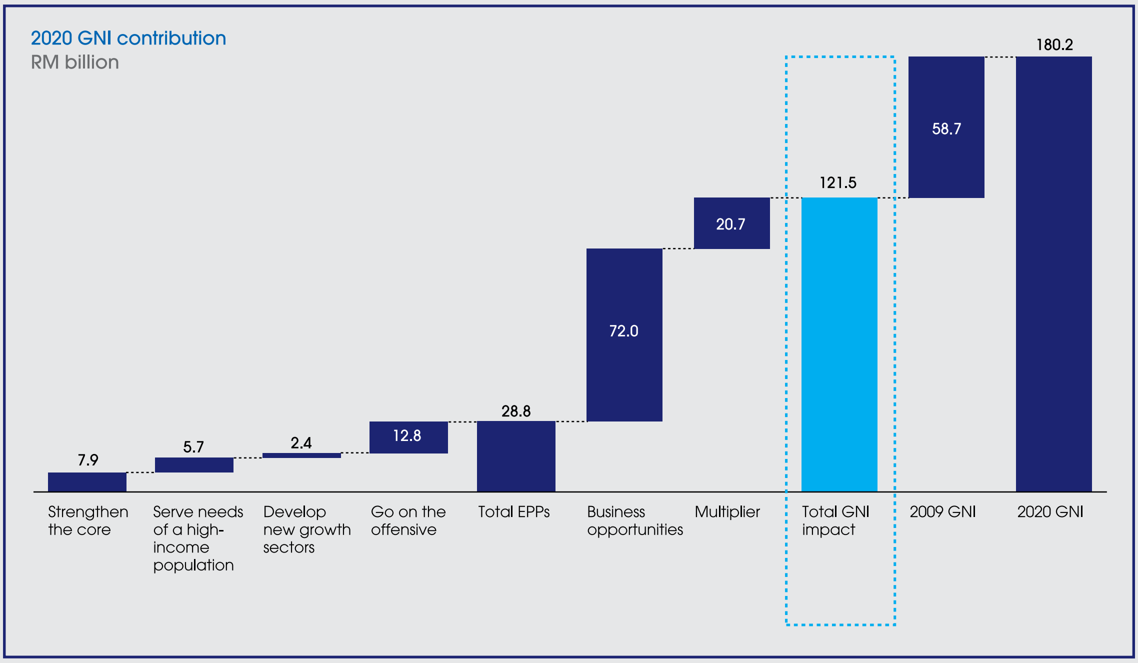
TARGETS AND ASPIRATIONS

Against this backdrop, we aim to evolve Malaysia's financial services sector to serve the needs of businesses and consumers in a high-income economy and to increase its depth and regional and global market shares in select niches.

The Financial Services NKEA is targetted to raise total GNI contribution by RM121.5 billion by 2020. Of this, RM28.8 billion is through 10 entry point projects (EPPs), RM72.0 billion from baseline growth and other initiatives and RM20.7 billion from the multiplier effect created by EPPs from other sectors. The largest source of the multiplier effect on the Financial Services NKEA is the Communications, Content and Infrastructure NKEA, which is estimated to contribute to 26 percent of the multiplier effect. This could be due, for example, to the boost in online financial transactions potentially being brought about by expansion of broadband access. In addition, through the EPPs, 45,000 jobs will be created, with 56 percent of them offering an average income of above RM4,000 per month. *(Exhibit 7-3)*. Business opportunities and baseline growth will result in a further 229,000 jobs created.

Exhibit 7-3

Ten EPPs, six business opportunities, baseline growth and multiplier effect will deliver RM180.2 billion GNI in 2020



10 EPPs Identified to Grow Incremental GNI by RM28.8 Billion

In order to achieve this vision, we have identified four strategic thrusts for the financial services sector. Aligned against each strategic thrust, we have identified a portfolio of EPPs to grow the financial services sector GNI contribution.

Strengthen the core

First and foremost, we need to ensure all facets of the industry, from our banks to our capital markets, remain healthy and vibrant and are able to effectively and efficiently support the needs of businesses and consumers.

- **EPP 1:** Revitalising Malaysia's capital markets;
- **EPP 2:** Deepening and broadening bond markets;
- **EPP 3:** Transforming or rationalising developmental finance institutions (DFIs); and
- **EPP 4:** Creating an integrated payment ecosystem.

Serve the needs of high-income population

Secondly, we must evolve the products and services that financial institutions offer to serve the changing needs of our citizens and residents as the nation migrates towards higher income status.

- **EPP 5:** Insuring most, if not all, of our population;
- **EPP 6:** Accelerating the growth of the private pension industry; and
- **EPP 7:** Spurring the growth of the nascent wealth management industry.

Develop new growth sectors

Thirdly, we need to seed new sectors for growth.

- **EPP 8:** Accelerating and sustaining a significant asset management industry.

Go on the offensive

Where we are strong, we must encourage our financial institutions to go on the offensive and tap external markets for their continued growth.

- **EPP 9:** Developing regional bank champions; and
- **EPP 10:** Becoming the indisputable global hub for Islamic finance.

Underlying all of these initiatives are industry-wide barriers that need to be addressed, some urgently and dramatically, or we will fail to deliver on any of these aspirations. These include ways to create an attractive business environment to attract international and long-term capital, the ability to attract, develop and retain talent, organising a more seamless regulatory environment, improving tax competitiveness and improving Malaysia's reputation or brand in financial services. These are discussed later in the chapter in the section titled Common Enablers for the financial services sector.

STRENGTHEN THE CORE

As a result of reforms implemented following the 1997 and 1998 Asian financial crisis, substantial progress in restructuring and strengthening the financial services industry has been made. Malaysia's financial services sector is well-regulated and well-regarded internationally and, in general, Malaysian companies and consumers are able to obtain the core financial services they need. To strengthen this core even further, we plan to increase the depth and breadth of key segments, including the capital markets, developmental finance institutions (DFI) and payments infrastructure. In each of these segments, we envision moving to a more advanced financial services industry that enables new and better ways of doing things, and raises our international competitiveness.

EPP 1: Revitalising Malaysia's Capital Markets

Rationale

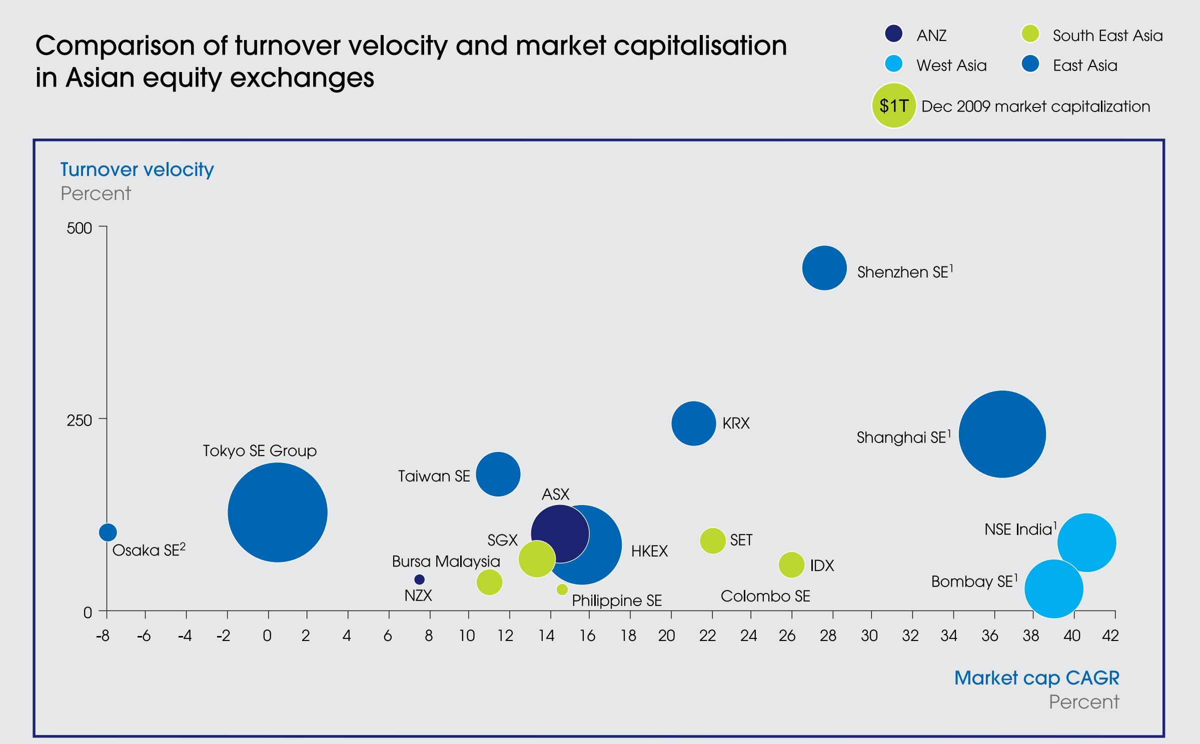
The capital market is a vital link in financial services infrastructure. A strong and vibrant capital market is needed to attract and mobilise capital, including international capital, to fund the growth of enterprises and stimulate new investment. It also has numerous spin-off benefits to other financial services segments, such as asset management, venture capital and private equity as well as ancillary services such as trust and custody services. With technology, issuers and investors are becoming increasingly global in their outlook, and exchanges are competing intensively to attract trading from one another. An exchange that fails to attract companies to list, which in turn loses investor attention, will fall into a downward spiral leading to irrelevance.

Over the last nine years, the total market capitalisation on Bursa Malaysia has grown at a rate of 10 percent per annum, while stock markets in neighbouring in Indonesia and Singapore have grown at 24 percent and 17 percent respectively. Malaysia's MSCI Asia excluding Japan weighting has shrunk to only 3.2 percent from 6 percent in 2000 *(Exhibit 7-4)*. At this scale, international fund managers can afford to disregard Bursa Malaysia.

In addition, Bursa Malaysia's liquidity has diminished, with its liquidity ranking in Asia dropping from 3rd in 1996 to 14th in 2010. Furthermore, the derivatives market is underdeveloped – only crude palm oil futures and equity futures are actively traded. Similarly, the ranges of investment instruments such as exchange traded funds (ETFs) and real estate investment trusts (REITs) (both important asset classes for a diversified investment portfolio) are quite underdeveloped with only 3 ETFs and 12 REITs listed in Malaysia as of June 2010.

Malaysia aspires to have a vibrant and liquid capital market that attracts quality listings and investors. By 2020, we expect the market capitalisation of Bursa to grow from RM1.0 trillion in 2010 to RM3.9 trillion by 2020, equivalent to a compound annual growth rate (CAGR) of 15 percent. In addition, liquidity will improve significantly, as measured by trading velocity, from 31 percent of total market capitalisation to 60 percent, in line with regional averages.

Exhibit 7-4



[1] 2002 - 09 CAGR
[2] 2005 - 09 CAGR
Note: Unless noted otherwise, Market cap CAGR is from 2000 - 09

SOURCE: WFE

Actions

Improve Bursa's scale and liquidity. The government will play a catalytic role to increase the scale of Bursa through managing its stakes in government-linked companies (GLCs). Firstly, the Ministry of Finance (MoF) will work with government-linked investment companies (GLICs) to partially sell down their stakes in listed companies (with clear targets and timelines) in order to improve the free float in the capital market. Secondly, we will take public key GLCs that remain privately held today. The listing of these strong flagship companies, particularly in oil and gas and plantations, would significantly expand the market capitalisation of Bursa and draw investor interest.

Simultaneously, GLICs will further diversify their portfolios to include greater exposure to other assets classes, such as mid-cap stocks, wider credit spectrum in fixed income securities and international investments where there are ample opportunities for value creation. This will help to catalyse trading activities while providing greater access to financing for key segments of the economy (e.g. small medium enterprises) and reducing concentration risks.

Both these measures will also promote greater discipline and transparency in the management of GLCs. In this way, GLCs will be motivated to continually enhance their core competencies and sharpen their competitive edge in venturing outside Malaysia.

Increase velocity in the market. Bursa's market velocity has decreased from 66 percent in 1996 to 31 percent in 2009 while regional averages are at approximately 60 percent. The central order book is not deep enough and large trades can incur substantial market impact costs. All this threatens the price discovery process and impairs market liquidity.

To address the imbalance between long-term and short-term players in the market, greater diversity will be encouraged such as attracting absolute return funds, liberalising day traders and encouraging stock lending. With greater diversity in trading activities, market liquidity should improve.

More volatility will be carefully allowed into the market. At 13 percent volatility, Bursa is the least volatile exchange in the region. Vibrant capital markets like Singapore, Hong Kong and Japan have volatility of 25 percent, 22 percent and 23 percent respectively. While Malaysia may have benefitted from low volatility during the global financial crisis, the current low-level volatility is resulting in low trading activities and low liquidity, impacting the overall attractiveness of the market.

Improve breadth and depth of product offerings. To attract and retain investor interest, we need to ensure a steady stream of attractive products. To provide a boost to the (REIT) industry, the MoF will work with the relevant GLCs to package their property holdings into REITs. Some of these GLCs together own over RM12 billion in properties, of which 20 to 30 percent are suitable for REITs.

We plan to appoint established professional REIT managers including tapping foreign expertise to upgrade Malaysia's professional capacity in REITs. Further, in order to boost the popularity of REITs with retail investors, we will grant individual investors a five-year exemption from withholding tax.

In addition, we will also expand the number of ETFs listed on the exchange to provide a variety of products (local and foreign, ringgit and non-ringgit) in the market. Valuecap will become a specialised regional ETF fund manager to seed the listing and cross listing of ETFs in Malaysia.

Finally, we will leverage on our commodities strength to offer more commodity derivatives, beyond crude palm oil futures and crude palm kernel oil futures, such as rubber.

Accelerate liberalisation of stock broking industry. Today, of the six capital market licensing categories (fund management, corporate finance, investment advisory, financial planning, futures broking and dealing in securities), dealing in securities is the only licence that has yet to be fully liberalised. Further liberalisation on stock broking is required to strengthen the intermediary base and allow market forces to create greater efficiencies and better returns.

Integrate with leading exchanges. Globalisation is a key trend around the world across many industries and capital markets is no exception. Organic growth alone cannot catapult Malaysia's capital market to become a leading exchange in the region. In fact the combined market capitalisation of the top four exchanges in Southeast Asia is only half of the Hong Kong Stock Exchange.

Thus, to further increase scale, visibility and liquidity, Bursa Malaysia will seek to integrate with other leading exchanges. The integration will allow Bursa Malaysia to get access to a larger demand pool as well as an intermediary base and open up a wider spectrum of product offerings. Integration efforts will leverage on existing initiatives to integrate ASEAN capital markets as envisaged in the ASEAN Economic Community Blueprint 2015 and mooted by the ASEAN Capital Markets Forum.

Actions

To support the increased vibrancy of the capital markets that will result from the above actions, a number of enablers are needed to create an environment that will ensure sustainability of the market.

Firstly, a systematic review of Bursa's IT strategy will be conducted. This strategy will include a clear path to create an end-to-end online equity market platform integrating trading, online account opening, etc. This IT strategy will also be in line with the exchange's plans to integrate with other exchanges.

Secondly, human capital will be upgraded through a greater focus on training. Special emphasis will be accorded for specialised areas such as risk management, product development and specialist traders. For these areas, we will also facilitate easier entry for foreign professionals.

Funding

This EPP will require private investments and funding of RM862.7 million.

Impact

This EPP is expected to create incremental GNI of RM3.3 billion and 9,000 additional jobs by 2020, out of which 2,000 are for managers and professionals (e.g. brokers, traders, investment bankers). There are also indirect benefits. For example, companies will have access to larger and more liquid pools of capital, risks will be diversified away from the banking sector, the growth of other industries will be spurred with exit channels for pre-IPO financing, and a more vibrant market will be created for the asset management, the wealth management and the pension fund industries.

EPP 2: Deepening and Broadening Bond Markets

Rationale

Bond markets (including sukuk) play a key role in developing the economy of any country, ensuring that companies have an alternative way to raise funds besides bank loans and equity financing.

Malaysia has one of the largest bond markets in Asia with a total outstanding bond value of around RM600 billion in 2009 compared to RM480 billion in Singapore. However, there are several issues that need to be addressed on both the demand and supply sides.

On the demand side, the market has a very narrow investor base that is highly risk averse. Most investors concentrate on high quality bonds with ratings of AA and AAA. This makes it difficult for a wider group of companies to raise funds and ultimately increases their cost of financing. In addition, there is also limited retail participation in the bond market. Finally, Malaysia's bond market is illiquid. The turnover ratio of Malaysia's private debt securities (PDS) in 2009 was only 0.24 times compared to 0.74 times for South Korea. On the supply side, there is limited participation from foreign issuers, particularly in foreign currency issuances. Issuance of high-demand long-term assets that are in high demand (especially by pension funds and insurance companies) is also limited.

Our aspiration for Malaysia to have a deep, broad and liquid bond market. We expect total outstanding (PDS) to grow from about RM270 billion in 2010 to about RM880 billion by 2020 with average yearly trading value increasing from RM64 billion in 2010 to RM618 billion by 2020 or CAGR of 23 percent.

Actions

Widen the credit spectrum of the bond market. Through the establishment of Danajamin, Malaysia's first financial guarantee insurer, in May 2009, companies with lower credit ratings have better access to the bond market. We will encourage GLICs to further diversify their portfolios by investing in A-rated fixed income instruments. In addition, we will attract and facilitate niche investors with higher risk appetites to invest in lower rated instruments.

Increase participation of foreign issuers and investors. A concerted promotional effort between SC and Malaysian Investment Banking Association will be made in order to attract Asian issuers and investors, who have already tapped the ringgit bond market, to further issue bonds or sukuk in Malaysia.

Strengthen retail participation. SC and Bursa will work with the industry to promote retail participation in the market. Currently, only high net worth individuals are able to invest directly in bonds due to a minimum transaction size of RM250,000. Developing exchange-traded bonds or lowering the threshold would allow for more participation with lower transaction sizes.

Enablers

To support these efforts, we will commit to a number of enabling measures that are pre-requisites to successfully executing on the action steps above. Firstly, in order to create a market for lower-rated bonds, MoF will review the investment mandates of GLICs to allow investment in A or BBB bonds. Secondly, for a retail-bond market, a framework and policy needs to be in place. Viable brokerage commission structures also need to be developed. Thirdly, to mitigate risks from the increased availability of lower-rated bonds, we need to strengthen the risk assessment capacity of institutional investors and CRAs through greater focus in training programmes.

Funding

This EPP will require private investments and funding of RM43.74 million.

Impact

The EPP is expected to create incremental GNI of RM183.2 million and an additional 1,400 jobs in bond markets, including 400 debt capital market bankers and bond traders and 1,000 settlement and support staff by 2020. In addition, the accessibility of funding to medium-sized companies will be improved, a broader range of investment instruments will be available and the risk assessment capability of the industry enhanced.

EPP 3: Transforming or Rationalising Developmental Finance Institutions

Rationale

DFIs were set up by government to develop certain priority sectors such as small- and medium-sized enterprises, infrastructure and agriculture as well as promote financial inclusion and achieve other developmental goals. Examples of DFIs in Malaysia are EXIM Bank, SME Bank and Bank Pembangunan Malaysia.

However, over time, the evolution of DFIs has resulted in overlaps in their activities, not only with other DFIs but also with commercial banks, which have evolved their business models to serve segments they did not previously focus on. Thus, it is now time to review the mandates and activities of DFIs with an eye to refocus and synergise or rationalise where possible, as well as to improve productivity and sustainability.

All DFIs will have clear and non-overlapping mandates and operations and carry out their developmental roles in a sustainable manner under an improved key performance indicator and performance management system. By 2020, we aspire to have non-performing loan levels lower than 6 percent and cost to income ratios of 40 percent.

Actions

Revisit DFI mandates and rationalise where possible. MoF in conjunction with the relevant ministries (e.g. Ministry of Agriculture, Ministry of International Trade and Industry and Ministry of Domestic Trade, Cooperatives and Consumerism) will review whether current operations and mandates of the DFIs are aligned to developmental needs. Where there are synergies or overlaps, every opportunity will be taken to rationalise in order to improve efficiency.

Improve operations and promote self-sustainability of DFIs. MoF will institute a performance based culture in the DFIs. Broad assessment criteria will measure DFIs on their developmental achievement, financial results, customer satisfaction and employee engagement. MoF will also continue to further strengthen management and corporate governance practices in the DFIs. In addition, governance and operations in key areas, such as risk management, product management, will be enhanced by drawing on industry best practices. Lastly, DFIs will gradually move to shared services and outsource middle and back office activities to improve productivity.

Provide value added services. DFIs will extend their offerings to include advisory or technical assistance, acting as partners to their customers. DFIs have intimate knowledge of their customers' businesses and are well-positioned to advise on key decisions. In this way, DFIs will play a role in ongoing capability development of the segments they serve.

Encourage DFIs to shift emphasis towards Islamic finance. In supporting our intent to become the global Islamic finance hub, DFIs will gradually shift towards "Islamic finance first" whenever possible. This policy will be implemented in a manner that will not prevent DFIs from fulfilling their developmental obligations.

Enhance performance management for other government developmental agencies. MoF will conduct a study on measures to enhance the operations and performance management systems of other developmental agencies such as the SME Corporation, Biotech Corporation, Multimedia Development Corporation, etc. This will promote greater accountability and improve their effectiveness.

Enablers

Executing on the above actions will require DFIs to strengthen their capabilities and capacity in risk management, industry-specific credit analysis and technical expertise or business advisory for specific industries. For this, DFIs will have to selectively attract high calibre talents and offer competitive compensation.

Funding

This EPP will require private investments and funding of RM72.0 million.

Impact

The EPP is expected to create incremental GNI of RM1.8 billion by 2020. In addition it will spur growth and job creation for other key industries through improved developmental activities.

EPP 4: Creating an Integrated Payment Ecosystem

Rationale

E-payment is a proven cheaper transaction method as compared to paper-based transactions like cheques and cash. As such, BNM together with private sectors, has launched a series of initiatives over the past 10 years to migrate towards e-payment, e.g. introduction of Internet banking, mobile banking, RENTAS system, mobile remittance, prepaid contactless micro payment card and ensuring government payment is non-cash whenever possible.

However, Malaysia today is still very much a cash-based society with 91 percent of transactions done using cash (compared to 60 percent in Hong Kong and the Netherlands). Cheques, e-money, credit cards and Internet banking account for another 1.3 percent, 4.7 percent, 1.8 percent and 0.6 percent of transactions (frequency) respectively. Other modes of payment, such as Interbank GIRO and debit cards, each account for less than 0.5 percent of transactions.

By 2020, we aspire to become a cheque-less economy and reduce dependence on cash transactions to 63 percent of transaction frequency. E-payment transactions will increase 10-fold from 1.2 billion to 12.0 billion transactions per year.

Actions

Expand merchant acceptance. BNM, in collaboration with MoF, MEPS, Touch and Go and merchant acquirers will develop a comprehensive strategy to expand merchant acceptance to achieve 1.3 million merchants by 2020. The strategy includes, but is not limited to sourcing cheaper POS terminals, providing a competitive merchant discount rate through tiered pricing and creating customer demand pull through loyalty programmes.

Drive adoption through education and selective forced adoption. Banks and payments industry players (e.g. MEPS) in collaboration with the government will step up consumer education on the benefits and safety of using e-payment to accelerate the migration process. E-payment awareness and education will be included as part of the National Financial Literacy curriculum. The government will also induce forced adoption in selective areas. For example, the MoF will credit tax returns directly into bank accounts.

Reduce usage of cheques and go cheque-less in 2020. Our vision is to become a cheque-less country by 2020. To achieve this, BNM and banks will start by educating customers on the cost of cheques to the economy (RM2.00 per transaction as compared to RM0.50 for e-payment).

MoF will gradually increase stamp duty for cheque transactions to reflect the actual cost to the economy and more importantly to discourage the use of cheques. The increase in government revenue will be used to invest in e-payment, e.g. for an e-payment education campaign and tax rebate for point-of-sale terminal investments. BNM will develop a roadmap to phase out cheques by 2020 taking into account feedback from consumers and businesses. This roadmap will be reviewed on an annual basis to incorporate refinements to specific milestones. MoF will lead the way by virtually eliminating the use of cheques for government-related payments by 2013.

Expand MEPS strategic partnership with key countries. MEPS will expand strategic partnerships with other countries. First, we will broaden the scope of existing ATM partnerships to point-of-sales and more advanced e-payment (e.g. mobile and Internet) transactions. Then, MEPS will connect with countries with a lot of cross-border inbound and outbound travellers, such as India, Australia, Philippines and Japan. Malaysians will benefit from cheaper transactions in partner countries.

Enablers

Firstly, BNM will encourage joint public and private efforts to improve awareness and education of the benefits of e-payment. Secondly, to support the expansion of merchant penetration, MoF will waive import duty and provide additional tax rebate for the importation and purchase of payment terminals and cards. Thirdly, key initiatives such as the construction of the National High Speed Broadband project to enable good and affordable telecommunication infrastructure, as well the development of a robust legal framework, will be intensified.

Funding

This EPP will require investments and funding of RM883.10 million, almost 90% percent of which will be from the private sector.

Impact

The EPP is expected to create incremental GNI of RM2.6 billion and an additional 8,000 jobs in the financial services sector including analytics, back-office processing, merchandising and clearing by 2020. Impact to the greater economy beyond the financial sector will be much larger and estimated at 1.0 to 1.5 percent of total GDP, mainly from productivity and efficiency gains. This is derived, for example, through reduced cash handling and increased mobile and internet transactions across all sectors.

SERVE THE NEEDS OF A HIGH-INCOME POPULATION

As the nation migrates towards a higher income status, the financial needs of the *Rakyat* will become more sophisticated. The *Rakyat* needs to become more financially savvy, develop good savings and investment habits, manage their debts and actively plan for their retirement needs while protecting themselves and their families from unforeseen risks. As such, it is important for our financial products and service offerings to evolve to ensure that our citizens and residents can achieve financial security for themselves and their families.

EPP 5: Insuring Most, If Not All, of Our Population

Rationale

The insurance industry plays a critical role in transferring risks away from consumers and businesses by distributing risks among large pools of customers.

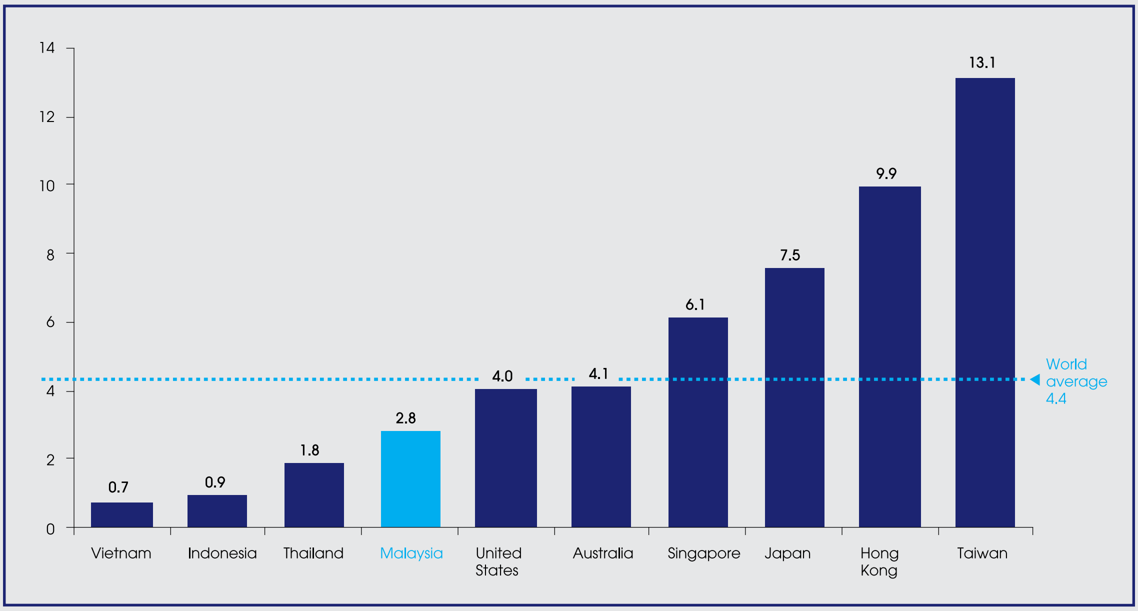
Although there is increasing acceptance of life insurance, at 2.8 percent of GDP, life insurance penetration in Malaysia is still low relative to other developed nations such as Singapore (6.1 percent) and Japan (7.5 percent) *(Exhibit 7-5)*. This is mainly attributed to a lack of disposable income among low-income earners to buy protection.

Everyone in a high-income economy deserves peace of mind from the financial security afforded by insurance. By 2020, Malaysia intends to increase its life insurance penetration to 4 percent of GDP or 75 percent of the population.

Exhibit 7-5

Insurance penetration in Malaysia of around 3% GDP remains low compared to more developed economies

Life insurance penetration
Percent of GDP



Note: Not all countries as represented in graph, but world average is based on total premiums of all countries

SOURCE: Insurance Information Institute Factbook 2010-2011

Actions

Create employee insurance scheme. An employee insurance scheme (EIS) will be launched for the benefit of low-income employees. EIS is a basic, low-premium term life insurance scheme. Enrolment in the EIS is automatic, but there will be a convenient opt-out option. Participants will also be able to opt into additional critical illness and hospitalisation benefit coverage. Premium payments will leverage on the existing infrastructure of agencies such as the Employees Provident Fund (EPF) and the Social Security Organisation (SOCSO). The key features of EIS will be clearly communicated upfront and extensive education efforts will be undertaken to educate the public on the importance of insurance.

Improve tax treatment for life insurance. Currently, a combined personal tax relief of RM6,000 is provided for EPF contributions and life insurance premiums. In addition, there is a RM3,000 relief for medical and education insurance and a RM1,000 relief for annuity products. However, for the upper middle- to high-income segments, EPF contributions often fully utilise the RM6,000 limit. Furthermore, certain segments of the population may not access the relief for medical and education insurance and annuity products.

Going forward, separate tax reliefs of RM6,000 each for EPF contributions and insurance premiums will be introduced (a net increase of RM2,000 in relief). This change provides greater flexibility for individuals to select insurance products to suit their needs. This relief covers both conventional insurance and takaful products.

Enablers

To ensure the two changes above have their desired effect, insurance awareness and understanding will be a core component of the planned National Financial Literacy Programme. BNM, EPF and industry organisations such as General Insurance Association of Malaysia (PIAM) and the Malaysian Insurance Institute will play a key role in developing the appropriate programmes.

Specific to the EIS, databases between the relevant agency appointed as the implementation vehicle and participating insurers will be integrated via a robust IT software and infrastructure to ensure seamless linkage and administration of EIS.

Funding

This EPP will require investments and funding of RM68.0 million, 65 percent of which will be from the private sector.

Impact

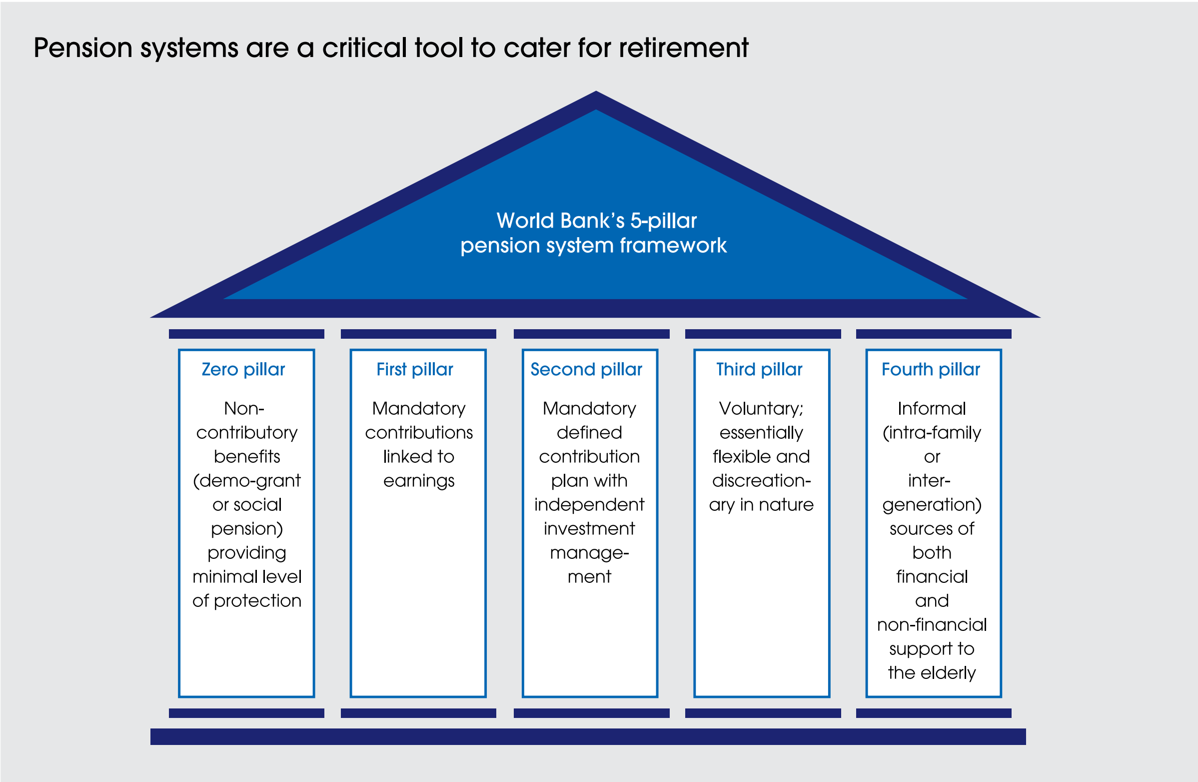
This EPP is expected to create incremental GNI of RM1.5 billion by 2020, along with 9,000 new jobs, including 6,000 insurance agents and 3,000 executive and managerial positions (such as actuaries, underwriters and claims experts). In addition this will enhance financial security for the population, especially with the reduced need for premature withdrawals from EPF savings for medical expenses, and strengthen the social safety net. More funds can also be pooled and invested into the capital markets.

EPP 6: Accelerating the Growth of the Private Pension Industry

Rationale

The need to align pension systems with demographic and socioeconomic changes and reduce fiscal pressures is driving pension reforms across the world. Many countries are adopting the World Bank multi-pillar pension system framework, which includes a voluntary pillar based on private savings and pensions schemes *(Exhibit 7-6)*.

Exhibit 7-6



SOURCE: World Bank

Malaysia's current pension system is based on a mandatory pillar, anchored on formal public pensions. The system, however, faces a number of challenges. More than 2 million working adults, including the self-employed, are not covered under EPF. Further, the majority of EPF contributors exhaust their savings within three to five years of retirement. At the same time, the ageing population is becoming a larger part of the entire population. Consequently, the need for individuals to save more for retirement has intensified.

Recognising this, a Government joint-agency task force comprising the MoF, BNM, SC and the Economic Planning Unit has been established to review the country's pension system. Efforts are underway to design the infrastructure required for the set-up of the private pension industry. These plans should be continued and, in fact, be accelerated.

Malaysia envisions having a model pension system and a vibrant private pension industry. By 2020, we expect the private pension industry to grow to RM73 billion, with more than 2.7 million participants.

Actions

Develop private pension funds to supplement public pensions. Private pension funds (PPFs) will supplement existing public pension schemes and offer non-EPF and self-employed people a way to save for retirement. Participation will be voluntary.

The value propositions of PPFs will be customised for different target segments. For working adults, the focus will be to build a desirable level of savings while for retirees, PPFs will offer protection against longevity and inflation risks and provide adequate returns during retirement. Fund participants can match their investments to their own risk preferences. Benefits such as insurance coverage or direct payment of pension income for retirement homes or nursing care will be incorporated to encourage higher participation.

The private pension fund industry will be open to high quality, well capitalised institutions, including insurance companies, asset management firms and banks. A robust legal and regulatory framework will be established to safeguard the interests of PPF participants and lay out the legal and regulatory rules that qualified PPFs must adhere to, including laws governing relationships between sponsors (employers), managers and funds. Clear guidelines on governance will cover fund governance, monitoring and reporting as well as performance disclosure and benchmarking. A modern and risk-based investment framework that will address asset allocation guidelines as well as investment restrictions such as portfolio ceilings and age-based limitations will also be put into place.

Provide incentives to rapidly build critical mass in the private pension industry. The experiences of other countries like Australia have demonstrated the use of tax incentives as a critical tool to encourage citizens to prioritise retirement savings. Similarly, we will introduce incentives to enable the new private pension industry to operate at a sustainable scale and grow into a vibrant industry.

The pension review committee is currently reviewing and finalising the proposed tax incentives. More details will be shared with the public before the end of the year, but will include tax exemption on private pension disbursements (currently applicable under approved public pension schemes such as EPF), additional tax reliefs for contributions to PPFs and tax deductibility for employer contributions to PPFs (just as EPF contributions are tax deductible for employers). The EPF Fund Management Institute framework currently applicable to unit trusts will also be expanded to allow investment in PPFs.

Improve education on importance of financial and retirement planning. A concerted, long-term financial education programme for the public will be implemented to create awareness and promote basic financial and retirement planning, as a critical element of the National Financial Literacy Programme. This will be a joint public-private sector effort involving SC, BNM and industry organisations and training providers such as Malaysian Association of Asset Managers (MAAM), LIAM, PIAM and Malaysian Insurance Institute. Key activities will include media campaigns, creation of a retirement planning handbook and tools and public training sessions or seminars on basic retirement planning.

Enablers

As highlighted above, a robust legal and regulatory framework is a critical pre-requisite to the growth of a sustainable private pension industry and will be in place by the end of 2011. The key trigger is the approval of the proposed tax incentives, which must happen within the next 12 months.

Separately, we will launch a review of the statutory retirement age. Relative to neighbouring countries and developed nations, our retirement age of 55 is low. Raising our retirement age would give our working population more time to save up for retirement while allowing them to continue contributing their services to the economy.

Funding

This EPP will require investments and funding of RM48.0 million, 50 percent of which will be from the private sector.

Impact

This EPP is expected to create incremental GNI of RM2.1 billion in the financial services sector and 2,200 jobs including fund managers, product development experts and fund operations personnel by 2020. In addition, this will contribute to the growth of the asset and wealth management industry and support a more vibrant capital market.

EPP 7: Spurring the Growth of the Nascent Wealth Management Industry

Rationale

The wealth management industry serves the mass affluent up to the ultra high net worth segments. As Malaysians become more affluent, wealth management represents an industry with excellent growth potential. However, Malaysia's wealth management industry today is at a nascent stage, and is limited mainly to mass affluent banking and financial planning. Industry growth is impeded by the lack of competitive products. For example, hedge funds, structured products and absolute return funds are not widely available. Further, there is room to reduce the time taken to approve retail investment products in Malaysia by streamlining requirements and upgrading submission standards to intermediaries. The limited talent base is also an issue. In the absence of a well-developed industry locally, Malaysians may take their wealth to be managed outside of Malaysia.

Malaysia will develop a wealth management industry that can attract back offshore Malaysian wealth as well as attract foreign wealth. The total assets under management (AuM) of the wealth management industry is expected to grow from RM17 billion to RM350 billion by 2020.

Actions

Increase range of wealth management products available. We will carefully liberalise wealth management products to allow a wider range, such as structured products, to be easily marketed in Malaysia. In addition, we will streamline the product approval process to significantly shorten time to market.

For the most sophisticated investors, we plan to move to a "register and issue" based product approval regime. This means that wealth management firms can market new products to sophisticated investors without having to get government approval for each new product. The criteria to be deemed a "sophisticated investor", currently RM3 million in total assets, has recently been put out for public consultation and the results are being reviewed by the SC. Future criteria could be based on investable assets rather than total assets.

Implement tiered returns for EPF balances above RM1 million. Today, 7,000 EPF members with balances above RM1 million have the option to withdraw the excess amount, but very few have done so to date. Moving forward, EPF will be restructured to a tiered return structure, whereby the dividends on amounts in excess of RM1 million will be capped at 2.5 percent. This will encourage wealthy individuals to withdraw the excess monies and we expect part of this will be channelled to wealth managers.

Attract top wealth management institutions. None of the global top 10 wealth management institutions have full-fledged wealth management operations in Malaysia. In order to attract them to set up operations in Malaysia and deepen the intermediary base, we must simplify licensing. As the location of operations often depends on quality of life factors, we will continue to focus on broader considerations (similar to those being undertaken by the Greater KL/KV NKEA) to make Malaysia an attractive place to work, live and play.

Carve a niche in Islamic wealth management. Syariah wealth management is a largely underserved market today that represents a unique opportunity for Malaysia, requiring specialised knowledge such as Syariah compliant wills and estate planning. To capture this opportunity, we will first build Syariah financial planning capability. Currently, Malaysia has less than 300 Syariah financial planners. This number will be increased through training and education, and the training curriculum will also be standardised. Secondly, wealth managers will exploit synergies with Islamic asset management firms to access new products.

Enablers

To support the above efforts to develop the wealth management industry, there is an urgent need to drive step-change improvement in human capital. There is a dearth of talent in the industry today even though many top private bankers in Singapore are Malaysians. The government will work with industry to train up wealth managers and product specialists. We will also ease the immigration process for the entry of foreign talent.

Funding

This EPP will require private investments and funding of RM495.5 million.

Impact

The EPP is expected to create incremental GNI of RM2.1 billion and an additional 6,000 jobs in financial services sector by 2020, out of which are 2,000 managers and professionals (including wealth managers, product specialists) and 4,000 clerical and salaried staffs.

DEVELOP NEW GROWTH SECTORS

EPP 8: Accelerating and Sustaining a Significant Asset Management Industry

Rationale

At roughy RM288 billion, Malaysia's asset management industry is relatively small. Further, only 3 percent of the funds under management are sourced from international investors. The industry is also concentrated, with the top five players accounting for over 55 percent of total AuM. However, Malaysia still has the opportunity to capture growing segments including local institutional investors, high net worth individuals and a growing niche in Islamic fund management.

The aspiration is for Malaysia to become a thriving regional asset management hub. AuM is expected to grow from current level of RM300 billion to RM1.7 trillion by 2020, representing a CAGR of 17 percent.

Actions

Stimulate the industry through outsourcing mandates. Having already established offices in regional hubs such as Singapore and Hong Kong, most leading global firms may not be planning further regional expansion. Still, it is critical to attract firms that can serve as catalysts for growth.

Currently, the GLICs are outsourcing to external fund managers at a relatively small scale compared to other major regional and global pension funds. Going forward, we will increase the total GLIC mandates to external fund managers from 5 percent to 15 percent of AuM. Each mandate must be sufficiently attractive, with RM1 to RM2 billion awarded to top fund management companies. These firms will be required to set up operations in Malaysia with at least six employees, including at least two portfolio managers, and to match foreign capital on a one-to-one basis within the first three years. Financial support may also be given, such as subsidising rents or salaries.

Further stimulate the retail market. EPF members are required to maintain a basic savings amount (ranging from RM1,000 to RM120,000 based on age). For any amount in excess, up to 20 percent can be withdrawn for investment in unit trusts. To further stimulate the retail market, members with more than RM120,000 in Account I, regardless of age, will be able to invest up to 50 percent of the excess in unit trusts. The excess can also be invested directly in ETFs.

Carve a niche in Islamic asset management. The global Islamic fund management industry is growing at 12 percent over the past six years to reach approximately RM166 billion AuM in 2009. Malaysia already has the largest number of Islamic funds in the world with 184 funds and the second largest AuM of RM18.2 billion. However, the industry still lacks scale as well as foreign investors.

Firstly, we will attract more leading funds to set up in Malaysia, leveraging on GLIC mandates. Secondly, growth of the wealth management industry will create demand. In the long run, Malaysia could be the global Islamic asset management product innovation hub, with our products sold globally through foreign banks and private banks.

Enablers

To support the efforts to accelerate the growth in the asset management industry, Malaysia will seek to become part of the Financial Action Task Force so that Malaysian fund managers are recognised globally. We will also encourage fund managers to attract foreign sourced money by exempting tax for investment income from foreign sourced funds. In addition, leveraging on Malaysia's strengths of being a resource-based economy, fund managers will be allowed to invest in commodities to broaden their asset classes. Finally, MAAM will play a greater role in driving a coordinated effort to train and develop talent.

Funding

This EPP will require private investments and funding of RM679.7 million.

Impact

The EPP is expected to create incremental GNI of RM2.4 billion and an additional 7,000 jobs by 2020, out of which 3,000 are managerial and professional positions (including fund managers, portfolio managers and analysts). In addition, this will allow for more avenues for investors to diversify risks, greater liquidity for capital markets and greater demand for ancillary services such as business process outsourcing and custodian service.

GO ON THE OFFENSIVE

EPP 9: Developing Regional Bank Champions

Rationale

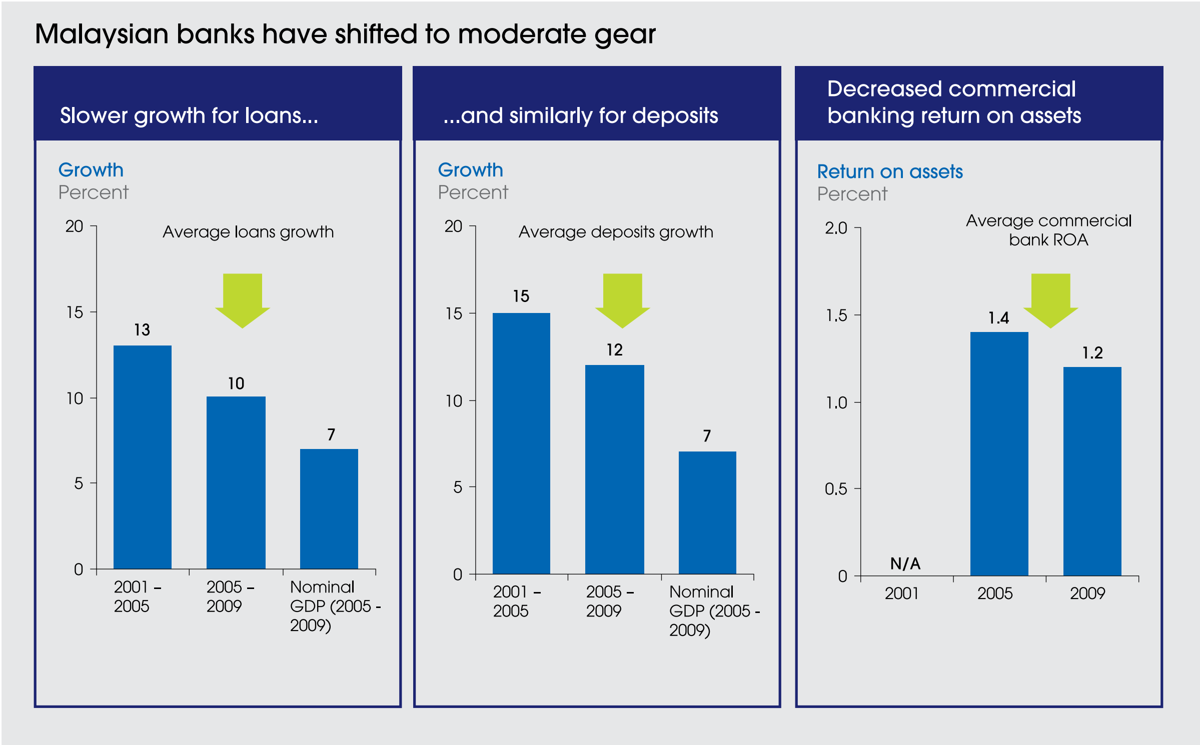
Malaysia's domestic banking sector has become a more mature market. Loan and deposit growth have slowed down from 13 percent and 15 percent respectively between 2001 and 2005 to 10 percent and 12 percent from 2005 to 2009. As a result, competition within the domestic market has intensified, contributing to a decline in ROA from 1.4 percent in 2005 to 1.2 percent in 2009 *(Exhibit 7-7)*.

In the past decade, BNM has prepared our banks and made them stronger, such as through consolidation. The number of domestic commercial banks dropped from 22 in 2000 to 9 in 2009, and the average assets per institution grew from RM16 billion to RM128 billion. In the same period, the number of foreign commercial banks increased from 12 to 15. These foreign banks have brought product innovation and knowledge to Malaysia's banking sector.

Today, Malaysian banks have begun international expansion to tap into higher growth markets, and overseas income currently accounts for 17 percent of total profits for Malaysian banks. Malaysian commercial banks have presence in 19 countries, but most of the overseas profits were derived from four key countries, i.e. Hong Kong, Indonesia, Singapore and Thailand.

Malaysian banks will increase the proportion of overseas income over total profits from 16 percent in 2009 to 27 percent by 2020 through more meaningful presence in ASEAN and international markets. Malaysian banks aspire to be among the top three banks in ASEAN by market capitalisation in 2020.

Exhibit 7-7



SOURCE: Bank Negara Malaysia

Actions

Expand internationally in a meaningful manner. The Government and BNM will assist strong Malaysian banks to establish meaningful presence in priority markets and become true regional champions, subject to prudent considerations. Banks with strong management capability and strong capital position that want to expand internationally can expect higher levels of support.

Expand beyond ASEAN. Outside of ASEAN, Greater China and South Asia are also experiencing strong growth in demand for financial services. Furthermore, a significant proportion of Malaysia outward FDI has also been invested in these markets. Expansion into these markets requires significant capital commitment. Our strong banks and GLICs will lead expansion outside ASEAN through the acquisition of banking assets when the opportunity arises.

Enablers

To support the intent to develop regional champions, the government and BNM will provide an accommodating environment, incentives and support to banks that successfully expand their international presence in a meaningful manner. Greater collaboration and best practice sharing among ASEAN regulators and financial institutions will remain on the agenda.

Funding

This EPP will require private investments and funding of RM26.4 billion.

Impact

The EPP is expected to create incremental GNI of RM5.6 billion in the financial services sector by 2020. In addition, the overall quality and innovation of products and services will increase and greater international trade and investment flows will be facilitated. There will however be a loss of some 8,500 jobs.

EPP 10: Becoming the Indisputable Global Hub for Islamic Finance

Actions

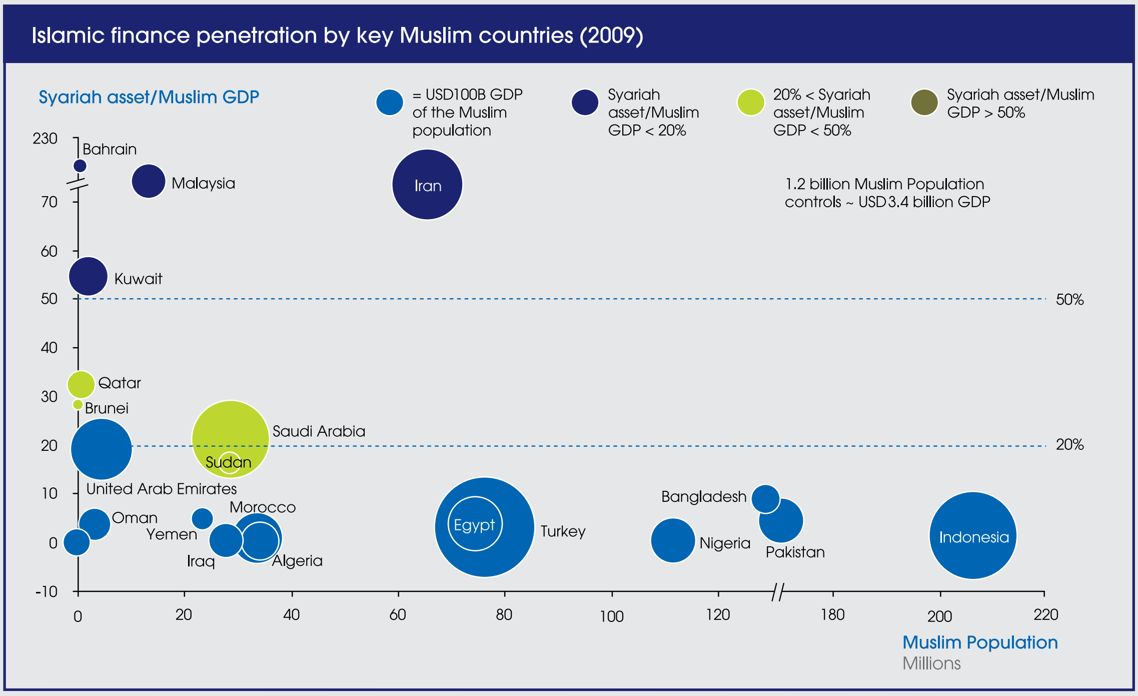
Islamic finance has emerged globally in the first decade of this century. Worldwide assets with Syariah compliance grew four times from 0.5 percent to 2.0 percent of the world economy and reached RM3.5 trillion in 2009.

Malaysia today is the world's third largest market for Syariah assets (Islamic banks, takaful, sukuk), but mostly through deep penetration in the domestic market. Many large Muslim countries (e.g. Indonesia, Pakistan, Bangladesh, Egypt) are still at an early stage of growth *(Exhibit 7-8)*. Unless Malaysia taps into these growth opportunities, Malaysia could risk losing its dominant position in Islamic finance. BNM and SC are actively championing Islamic finance and working to cement Malaysia's position.

We aspire to become the indisputable global hub for Islamic finance. Malaysia will be recognised as the intellectual centre and the capital centre for Islamic finance, and Malaysian Islamic financial institutions will have significant presence overseas. Global share of Islamic banking assets is targeted to increase from 8 percent in 2009 to 13 percent in 2020; global share of takaful contribution is targeted to increase from 11 percent in 2009 to 20 percent in 2020; and at least one Islamic financial institution is targeted to be among the global top 10 by asset size by 2020.

Exhibit 7-8

The growth trajectory is expected to continue as many large Muslim countries are still at early stages of Islamic Finance



Actions

Codify and standardise Syariah guidelines. BNM is already in the process of issuing Syariah parameters as standard documents to facilitate a comprehensive understanding of the principles and form the basis for Syariah contracts. Acceleration of this effort will help clarify understanding and ensure consistent interpretation of Syariah contracts in Malaysia, facilitate the formulation of policies and guidelines, promote innovation and enable faster product development and launch.

Drive global convergence and mutual recognition of standards. The full potential of Islamic finance will only be unleashed if global convergence and mutual recognition is achieved. Government and regulators will drive this process, including shaping the agenda of international bodies (e.g. IIFM, the Accounting and Auditing Organization for Islamic Financial Institutions, AAOIFI) to speed up their progress and expand their memberships to more countries.

Become a centre of excellence for Islamic finance research, development and education. The government, regulators, and private players have made significant investments to further Malaysia's aspirations to become a centre of intellectual excellent in Islamic finance. For example, several human capital development institutions including International Centre for Education in Islamic Finance, International Shari'ah Research Academy for Islamic Finance and the Asian Institute of Finance have already been established. We will continue to invest in cementing Malaysia's position as the centre of excellence for Islamic finance, research and education. Our priority areas going forward include:

- **Legal:** Study the potential to re-engineer the KL Regional Arbitration Centre into a competitive global arbitration centre with specific expertise in Islamic finance or to create a dedicated global Islamic finance arbitration centre and ensure our legal framework is expanded to accommodate more innovative Islamic products;

- **Human capital:** Islamic Banking and Finance Institute Malaysia will create globally recognised accreditation and certification programmes (e.g. Syariah Risk management certification); Malaysia International Islamic Financial Centre (MIFC) will expand the scholarship and research grants programme to attract international students and experts and Ministry of Education will increase the capacity and quality of Islamic finance higher education institutions with more focus on drawing foreign students; and

- **Research, development and innovation:** Leverage the International Shari'ah Research Academy for Islamic Finance ISRA to spearhead innovation in Islamic finance; Islamic financial institutions to increase their R&D budgets and MIFC to increase the prominence of awards programmes (hosted in Kuala Lumpur) to recognise innovation in Islamic finance.

Expand Islamic banking to priority markets. Malaysia's Islamic financial institutions will expand into key markets with high potential such as Indonesia, the Middle East, North Africa and the Indian sub-continent. The Government and BNM will continue to facilitate this expansion.

International expansion requires significant capital and capability. Having a Malaysian mega Islamic bank that will become a flagship will make international expansion more feasible. Furthermore, having a flagship in the global top 10 will strengthen Malaysia's claim to being the indisputedundisputed leader in Islamic finance.

Actively participate in the enhancement of global Islamic liquidity management. Malaysia will actively participate in efforts to enhance global Islamic liquidity management, which is currently impeding the growth of Islamic finance. Specific measures include:

- Bursa's Syariah compliant commodity trading platform, Bursa Suq Al Sila will tie up with platforms in key Muslim countries and extend its opening hours;

- MoF will increase use of foreign currency Islamic instruments to fund projects under the Tenth Malaysia Plan;

- Influencing the International Islamic Financial Market (IIFM) to include more countries and shape IIFM's agenda to speed up convergence in Islamic liquidity management; and

- Government to persuade other key Islamic countries to issue more foreign currency instruments to create cross-border liquidity.

Develop Islamic fund management. With RM18.2 billion AuM, Malaysia currently accounts for 10 percent of the global Islamic fund industry. However, most fund managers are still subscale with average AuM of under RM50 million. The plan to accelerate further development includes:

- Actively attracting leading international fund managers to build up operations in Malaysia by having GLICs give significantly large mandates;

- Growing the Islamic wealth management industry; and

- Positioning Malaysia as the Islamic product innovation hub with the distribution of products through reputable foreign financial institutions and private banks.

Expand takaful products overseas. Malaysia is currently the third largest takaful market globally with an 11 percent market share, most of which is domestic. Takaful is among the most undersold Islamic product accounting for only 3 percent of Islamic Syariah compliant assets globally. Malaysia will therefore transform takaful into an international business.

In the first phase, the industry will enhance the competency of the takaful workforce and develop innovative products. For example, local operators can ride on the rapid growth of medical tourism to offer medical and health takaful policies to Muslim health tourists.

In the second phase, takaful operators will focus on penetrating key untapped markets. The Government will facilitate entry into these markets through inter-governmental relationships and by offering Malaysia's expertise in the development of regulatory frameworks for takaful.

Finally, takaful operators will establish relationships with financial advisors, brokers and intermediaries to broaden distribution. For example, takaful products can be included in retirement and wealth management plans.

Strengthen Malaysian retakaful capacity. Retakaful is a vital part of the takaful industry, acting as a risk-mitigation mechanism for takaful operators by spreading risks across other institutions. As Malaysia develops to achieve global leadership in takaful, the retakaful industry must develop in tandem.

Today, local takaful operators are encouraged to protect their risk through retakaful. However, many takaful operators still depend heavily on conventional re-insurance due to limited capacity and lack of ability to provide additional technical expertise.

Efforts identified to strengthen the retakaful industry include establishing a retakaful syndicate among retakaful operators with Lloyd's of London and serving the growing needs for retakaful outside Malaysia.

Enablers

To support our ambitions to become the global Islamic finance hub, we need to ensure our leading position in human capital, infrastructure and legal framework is not eroded.

On human capital, we intend to ensure best-in-class processes to accommodate foreign talent and returning Malaysian experts, introduce standardised accreditation and certification and increase the proportion of foreign scholars on our Syariah councils and committees. On infrastructure and regulatory enablement, BNM and Islamic financial institutions will continue investing in technology and process improvements. End-to-end product approval time from idea generation until product launch will be shortened. On legal enablement, the Attorney General will allow foreign legal firms with expertise in Islamic finance to operate in Malaysia. International expertise can then be complemented with deep local expertise of Malaysian firms. Last but not the least, BNM and MIFC will continue promoting Malaysia an Islamic finance hub, highlighting our innovation and the robustness of our legal framework and infrastructure.

Funding

This EPP will require investments and funding of RM35.6 billion, almost all of it from the private sector.

Impact

The EPP is expected to create incremental GNI of RM7.2 billion and create 12,000 jobs mainly in Islamic banking activities (9,000 jobs) and retakaful (2,000 jobs) by 2020. In addition, this will raise Malaysia's standing in the international community and support the attraction of FDI.

BUSINESS OPPORTUNITIES

In addition to the 10 high impact EPPs, we also expect baseline growth via significant business opportunities in the financial services sector in the areas of commercial banking, investment banking, Islamic banking, insurance and takaful, asset management and wealth management as well as from other segments including DFIs. This will account for RM71.9 billion in incremental GNI by 2020. We also expect 229,000 additional jobs to be created by 2020, including 100,000 professional and technical positions. This growth is derived based on historical growth rates and an outlook for each segment while maintaining current margins. Funding and investments of around RM145.8 billion will be required, almost 95 percent of which will be borne by the private sector.

Business Opportunity 1: Commercial Banking

Over the next 10 years, the commercial banking segment is expected to maintain a moderate growth of 7 percent per annum. Most of the incremental GNI of RM29.6 billion in 2020 is anticipated to come from baseline growth with contribution from the following business opportunities:

- Innovation in the delivery of financial services including new business models to tap underserved segments and new branch formats including branchless banking;
- Increased financial inclusion via the national literacy programme;
- Commercial banks supporting the growth of SMEs, which will be strengthened as engines of growth and innovation under the Tenth Malaysia Plan; and
- Fast growing personal finance segment.

This business opportunity requires RM64.9 billion in funding, of which approximately RM61.2 billion will be sourced from the private sector.

Business Opportunity 2: Investment Banking

The outlook for investment banking is anticipated to remain positive with strong growth of 15 percent per annum throughout 2010 to 2015, slowing to 10 percent over 2016 to 2020. Incremental GNI impact is expected to be RM5.2 billion in 2020. Most of the GNI value is expected to be derived from baseline growth, with additional contribution from several business opportunities:

- Increase in IPOs due to a push for innovation under the Tenth Malaysia Plan;
- Integration of capital markets (e.g. exploiting the advantage of QDII status with China and mutual recognition agreements with Hong Kong and Dubai); and
- Increase in merger and acquisition activities due to expected consolidation in several key sectors.

This business opportunity requires RM10.2 billion in funding, of which approximately RM9.5 billion will be sourced from the private sector.

Business Opportunity 3: Islamic Banking

The Islamic banking segment is expected to contribute RM11.1 billion in incremental GNI for 2020. This will be supported by strong growth of 15 percent per annum from 2010 to 2015, slowing down to 12 percent over 2016 to 2020. Most of the GNI value is expected to be derived from baseline growth, with additional contribution from several business opportunities:

- Islamic pawn broking (ar-rahnu); and
- Migration of money lending business to conventional or Islamic banks following the proposed amendment to tighten the money lending business.

This business opportunity requires RM50.2 billion in funding, of which approximately RM46.9 billion will be sourced from the private sector.

Business Opportunity 4: Insurance and Takaful

This segment is expected to create incremental GNI of RM13.1 billion GNI in 2020. Industry growth for conventional insurance and reinsurance is expected to remain stable at 6 percent, whereas takaful and retakaful will register stronger growth at 20 percent over 2010 to 2014, slowing down to 15 percent over 2015 to 2020. Most of the GNI value is expected to be derived from baseline growth, with additional contributions from several business opportunities:

- Greater insurance take-up arising from Government's efforts to educate the public on financial planning and the importance of protection;
- Expected further consolidation and rationalisation will create strong institutions and platform for growth; and
- Micro insurance will become more viable with cheaper distribution models.

This business opportunity requires RM17.3 billion in funding, of which approximately RM16.5 billion will be sourced from the private sector.

Business Opportunity 5: Asset Management and Wealth Management

The asset management and wealth management (AMWM) segment is estimated to contribute RM1.9 billion in incremental GNI in 2020. This will be driven by an average 8 percent growth over 2010 to 2020. Whilst most of the GNI value is expected to be derived from baseline growth, several opportunities within the segment will be expected to give rise to GNI:

- Increase in access to funding for innovative start-ups arising from creation of a RM500 million Mudharabah Innovation Fund under the 10th Tenth Malaysian Plan;
- Outsourcing opportunities arising from the creation of the RM20 billion public-private partnership fund to support the 10th Tenth Malaysian Plan;
- Growing Malaysian wealth will require asset management and wealth management AMWM services;
- Increase in demand for unit trusts, mutual funds and wealth management services among foreign workers and returning Malaysians; and
- Growing awareness and critical mass for retail aggregators that can negotiate lower fees for unit trust products, e.g. FundSupermart.

This business opportunity requires RM1.3 billion in funding, of which approximately RM1.2 billion will be sourced from the private sector.

Business Opportunity 6: Other Segments Including DFIs

The remaining segments in the financial services sector, such as DFIs, private equity and venture capital businesses, are estimated to account for RM11.0 billion incremental GNI in 2020. Most of the GNI value is expected to be derived from baseline growth, with several business opportunities identified under the following 10th Tenth Malaysian Plan initiatives:

- Investment activities under 1Malaysia Development Berhad's RM100 million business development fund;
- Opportunities in private equity and venture capital for innovation and green financing, with a strong emphasis on projects in renewable energy, especially biofuels;
- Value chain impact to private equity and venture capital as the capital market becomes more vibrant and IPO becomes easier;
- Significant underground money lending and remittance business will move towards formal money lending and money transfer business as the economy evolves; and
- Back-office centralisation will enable financial institutions to focus on more productive and higher value-added activities.

This business opportunity requires RM1.9 billion in funding, of which approximately RM1.8 billion will be sourced from the private sector.

COMMON ENABLERS

We have identified eight enablers that will have to be put in place to ensure that the financial services sector can achieve its contribution towards propelling Malaysia to become a high-income nation.

Ensure Adequate Supply of Qualified Human Capital

Overview

Human capital is an essential enabler for the financial services sector as the industry requires highly qualified people to continue innovating and raising standards. The sector currently employs 290,000 people (2 percent of total workforce). In order to meet our aspirations, we will need 275,000 more workers.

However, there is inadequate supply of quality human capital, particularly in advanced areas like fund management, investment banking and derivative trading. Malaysian financial sector talents are wooed by higher salaries and better career prospects in regional and global financial centres. Finally, there is wide variation in the quality of workforce in the financial sector.

The relevant ministries, agencies and regulators (BNM and SC) have made marked improvements on addressing human capital issues. Most recently, the Tenth Malaysia Plan announced the creation of Malaysia Talent Corporation to spearhead Malaysia's initiative to attract the Malaysian diaspora back and to ease the entry of skilled workers.

Actions

Improve consistency in the quality of the financial services workforce. In achieving this aspiration, the regulators and the Asian Institute of Finance (AIF) will play pivotal roles.

Regulators will enhance the guidelines and direction to promote continued development of the human capital in the financial institutions. For example, they will set minimum mandatory training hours for each staff.

Asian Institute of Finance, under the guidance of the regulators, will continue to spearhead the standardisation and certification effort in the financial services sector. For example, it will formally accredit private training institutes before these institutes can provide training to the financial services workforce to ensure consistent training quality.

Bring back Malaysian experts abroad and retain talents. Firstly, Government intends to provide incentives and more importantly make sure that the incentive programme is made known through a formal channel (e.g. embassies) as well as through an informal channel (e.g. Malaysian communities).

Secondly, Malaysia Talent Corporation will maintain a national database to track Malaysian financial services experts abroad and notify them of domestic opportunities.

Thirdly, as described in EPP 8, GLICs will provide mandates to attract high profile institutions to set up sizeable operations in Malaysia. This will provide more advanced employment opportunities in the financial services sector.

Ensure foreign talents experience a seamless immigration process. Many improvements have been made in this area. Today, end-to-end work visa approval for select financial services sub-sectors can be done within four to seven days. However, most applicants still have to complete multiple forms and be present in person at least twice during the process. There is no one-stop centre for processing applications for the financial services sector, as MIDA is for the manufacturing sectors.

The Immigration Department plans to further improve this by implementing straight-through online processing for foreign talents. Immigration will also streamline the terms and conditions for securing a work visa. The requirements to stipulate the length of employment period in the contract and to re-apply for movement within the same group of companies will be waived.

Provide Legal Certainty

Overview

For the proper functioning of the financial system, a favourable legal environment and efficient judicial system is imperative. The Chief Justice has stepped up the pace of judicial reforms since 2008 and launched bold initiatives, such as the revitalisation of the Intellectual Properties Court and the establishment of the Islamic Financing Court to cater to cases relating to these specialised fields of the law, as well as the introduction of a KPI system and higher salaries for judges and the judicial commissioner. Many more reforms are underway, and the Government is committed to ensuring that judicial reforms continue at full speed.

A key element of a favourable legal environment is legal certainty, i.e. legal rules must be clear and precise. Certain recently proposed legal changes, including the requirement for repossession of a vehicle under hire purchase to require a court order, could inhibit growth of personal finance businesses or impair risk management. It is important to clarify and review these amendments.

Actions

BNM to review impact and work with Attorney General to make necessary amendments on the following items:

- Proposed credit reporting act and data protection impact to risk management practice;
- Proposed amendment to hire purchase act (e.g. repossession of a vehicle requires a court order if more than one-third of the cash price) to auto finance industry; and
- Proposed changes to the minimum limit of RM50,000 for petitions under Bankruptcy Act to the financial services sector.

PEMUDAH to revise end-to-end foreclosure process. This will reduce lengthy foreclosure processing time (e.g. no escalation to high court after two unsuccessful auctions)

Other reforms. In addition, recent initiatives to reform the judicial system since 2008 currently being pilot should be accelerated. These include the planned rollout of e-court system and the establishment of new commercial courts in Kuala Lumpur.

Synchronised Developmental Plans

Overview

Malaysian financial services overall has a strong regulatory framework. Both BNM and SC have demonstrated their abilities to balance the developmental role and the stability of financial services sector amidst the 2008 to 2009 global financial crisis.

Going forward, the financial services sector will continue to operate in an ever changing environment. Intermediaries are engaging in various spectrums of activities ranging from traditional borrowing and lending to complex capital market activities. Regulators must aspire to continue working together and ensure coordination among themselves and more importantly with the financial institutions.

Actions

In order to meet the needs of evolving market demands, regulators need to ensure that they continue to harmonise development and supervision, for example, guidelines on disclosure and approval of products will be streamlined into one consistent set of guidelines.

Enhance the Consultation Model

Overview

Close co-operation between government and industry is needed going forward. Regulators regularly consult with industry as they recognise the many benefits to:

- Tap on market practitioners' knowledge and understanding of the market to validate and, where appropriate, refine policies;
- Gain advanced knowledge from market players of any implementation issues;
- Explain and garner support for policies;
- Give more certainty to and enable affected parties to prepare for new policies; and
- Develop a reputation for openness and transparency.

Action

In the future, the currently good consultation will be made richer by making public consultation a standard procedure for any regulatory change or development plan. However, in limited cases where advance notice would adversely affect a policy's effectiveness, the requirement for public or selective consultation will be waived e.g. institution-specific or insignificant regulatory changes.

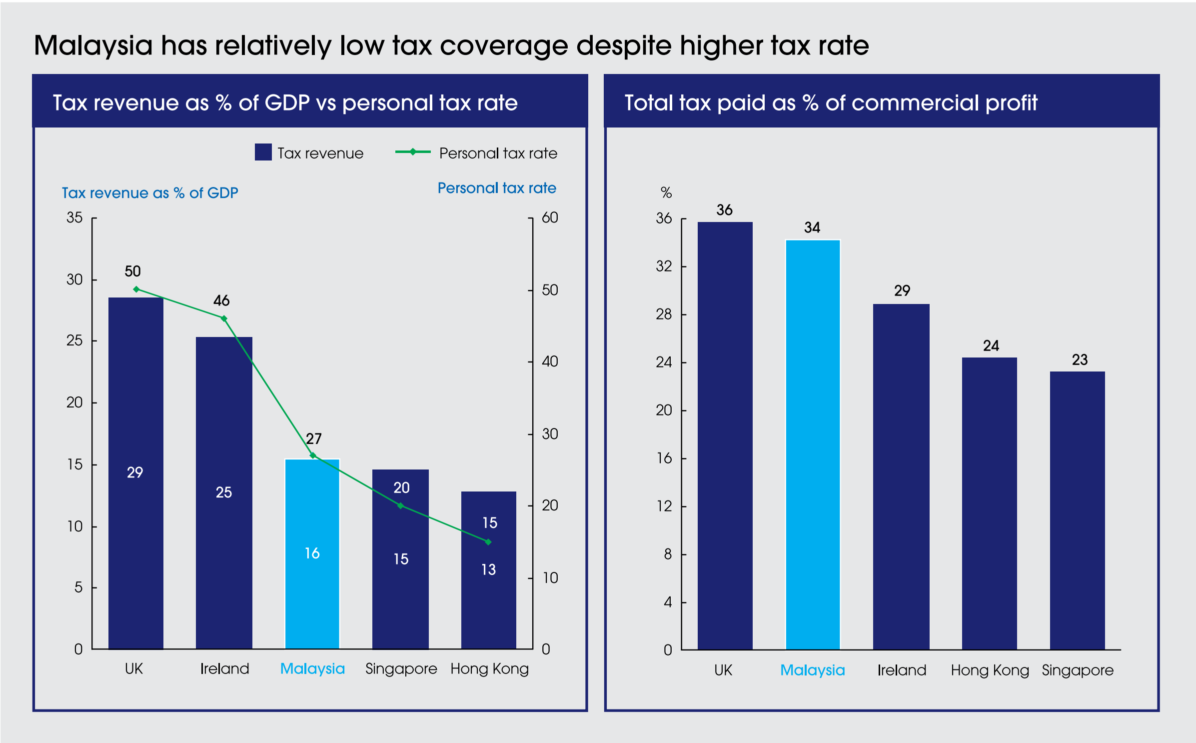
Create a Competitive Taxation Environment

Overview

A competitive tax environment is essential to attracting business operations and to attract and retain talent. In a world with increasing mobility of labour and capital, many regional financial centres like Hong Kong and Singapore have adopted low tax rate regimes. Tax incentives are also a commonly used tool to attract expertise and higher value-added services.

Compared to our regional competitors, Malaysia's personal and corporate tax rates are relatively high. Further, in spite of the higher tax rates, Malaysia's tax coverage ratio at 16 percent of GDP is relatively low *(Exhibit 7-9)*. This is largely due to a small tax base, where only an estimated 1 million people pay any income tax. The small tax base is detrimental to the development of the financial services industry as it limits our ability to use tax rates and targetted tax incentives as a competitive tool to attract investment and talent.

Exhibit 7-9



Actions

MoF intends to, over time, increase the tax coverage ratio by broadening the tax base, tackling tax avoidance and improving the integrity of the tax system. The key to doing this is pushing forward with studying the implementation of a goods and services tax, which is a fairer system of tax, as it is a broad-based consumption tax. As the tax base increases, Malaysia will have more flexibility to provide tax incentives selectively to further the country's strategic agenda and also possibility to lower the income tax rate for both individuals and businesses alike.

Coordinate a National Financial Literacy Programme

Overview

The ability of the rakyat to manage their finances will become increasingly important as we become a high-income economy. With financial products becoming more complex and sophisticated, it is important to ensure that consumers become financially competent and able to make informed and conscious financial choices.

Many developed countries (e.g. Australia, New Zealand, Singapore, and the Netherlands) have already implemented national strategies on financial literacy. Singapore launched MoneySense in 2003 to create a long-term sustainable programme to enhance the basic financial literacy of Singaporeans.

Malaysia is recognised by the World Bank as a country with a high level of financial inclusion. However, as a nation, we are not yet sufficiently financially savvy. For example, we have the highest level of household debt to GDP in Asia, at 77 percent. Our people also lack sufficient knowledge and skills to prepare for retirement. Lack of awareness also inhibits the growth of key sectors such as insurance and e-payment.

Various organisations such as Bank Negara, the SC, the Securities Industry Development Corporation, Bursa Malaysia, EPF, Permodalan Nasional Berhad (PNB) and the private sector have launched various initiatives to educate their customers to become more financially literate. These efforts need to be more focused and better coordinated to increase their effectiveness and reach.

Action

Going forward, BNM will lead the creation of a coordinated national financial literacy programme based on a public-private partnership that featured customised programmes and delivery models based on targetted community needs and wants.

Initiatives under this programme will be designed to teach Malaysians, from an early age through adulthood, financial skills covering basic money management (budgeting and savings, responsible credit, debt counselling, etc.), financial planning for long-term protection and retirement needs as well as how to make prudent investments. A cornerstone of the programme will be the integration of financial literacy into the formal school curriculum.

Launch a Concerted Marketing Campaign

Overview

Effective promotion of Malaysia's financial services strategy and value proposition as an investment destination as well as a hub for selective niches like Islamic finance is needed. Spearheaded by MIFC, efforts to promote Malaysia as a hub for Islamic finance have already helped to raise Malaysia's international profile. However, the Malaysian story is not well known and is generally undersold internationally. Further, we have not been able to dispel concerns over the capital controls implemented during the Asian Financial Crisis, even though these controls have mostly been lifted.

Action

A concerted, proactive international marketing and promotion campaign will be launched, which includes:

- Coordination across regulators and other ministries and agencies;
- Collaboration between industry and government for execution;
- Specific focus on attracting investments and creating jobs;
- Prioritised list of companies and regions to target with customised pitches; and
- Defined set of marketing and promotion actions supported by impact–based metrics that define success.

We plan to also cultivate a network of finance businesses and professionals (foreign investors or successful Malaysian businessmen abroad) to become "Malaysian ambassadors" who will be kept abreast of the latest developments in the sector and promote Malaysia abroad.

Develop the KL International Financial District

Overview

A world-class financial district does not only mean best-in-class utilities, Internet and communication infrastructure, but more importantly means a place where businesses and professionals can network and exchange ideas and opportunities.

Many global financial centres such as New York, Hong Kong, Singapore and Dubai have invested and continue to invest in upgrading and modernising the infrastructure for financial services companies. For example, Hong Kong is creating a new financial district in the Kowloon area. Similarly, Singapore is building the new Marina Bay Financial District to support its growth as a major business and financial hub in Asia. There is currently no financial district in KL. Instead, financial institutions are scattered within KL.

Action

The recently announced plans to develop the Kuala Lumpur International Financial District will be intensified. Eventually, this will allow Kuala Lumpur to attract higher calibre financial human talent to together help promote a vibrant financial services industry. This will also raise Malaysia's profile in the international arena and support the country's brand.

FUNDING

Achieving our growth targets of growing the financial services sector by three times by 2020 will require cumulative funding of RM211.1 billion over the next 10 years, of which RM65.2 billion will be for the 10 EPPs, and the balance will be to fund business opportunities and overall baseline growth *(Exhibit 7-10)*.

In terms of the sources of funding, the private and public sectors are expected to provide RM64.6 billion (99 percent) and RM0.6 billion (1 percent) of EPP funding, respectively.

In addition, several of the EPPs call for tax incentives to stimulate the growth of different sectors. In most cases, the loss in tax revenues is expected to be offset by an increase in corporate income tax from the beneficiaries of the incentives within a few years. For example, the proposed additional tax reliefs for insurance premiums in order to stimulate the insurance industry will result in lower tax revenues. However, over time, as insurance penetration increases as a result of higher insurance up-take, we will recoup the losses through taxes on the expanded income of insurance companies. It should be noted that any tax incentives to be provided to foreign entities to set up in Malaysia are not accounted for here, as Malaysia would not have earned any tax revenues from these entities if they were not present here.

Exhibit 7-10

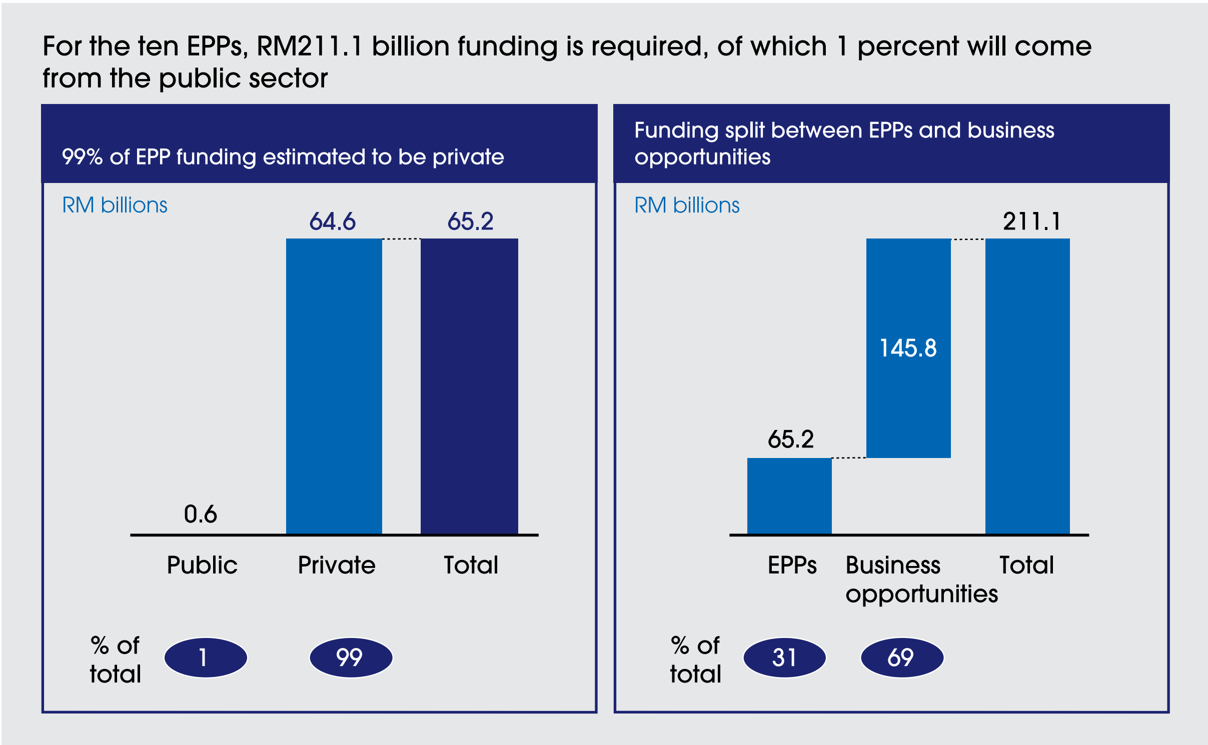


Table 7-1

EPP	Funding requirement 2011 - 2020 (RM million)	Details
Revitalising Malaysia's capital markets	862.7	Investment in new office buildings, IT system upgrade and trading infrastructure (e.g. trading platform, trading desk, Bloomberg terminals)
Deepening and broadening bond markets	43.74	Purchase of office equipment, computer and application systems
Transforming or rationalising developmental finance institutions	72.0	Capitalised on-off transformation and integration costs to enhance management and operations of DFIs
Creating an integrated payment ecosystem	883.1	In-payment infrastructure (e.g. electronic data capture system and radio-frequency identification (RFID) technology) Awareness campaigns to increase e-payment penetration
Insuring most, if not all, of our population	68.0	IT system and infrastructure for EIS Marketing and awareness campaigns to educate the public on the importance of insurance
Accelerating the growth of the private pension industry	48.0	National awareness campaigns to generate product awareness for private pensions and educate the public on financial and retirement planning
Spurring the growth of the nascent wealth management industry	495.5	Expansion of wealth management firms and creation of new entities (including purchase of office buildings, office equipment and IT system)
Accelerating and sustaining a significant asset management industry	679.7	Expansion of conventional and new Islamic asset management businesses (including purchase of office buildings, office equipment and IT system)
Developing regional banking champions	26,400	Capital injection to purchase equity stakes in target markets. Funding of related regionalisation and internationalisation activities
Becoming the indisputable global hub for Islamic finance	35,600	Funding of overseas acquisition and business expansion in target markets Set up of retakaful syndicate Investments to support Malaysia's development as an intellectual capital centre for Islamic finance (e.g. research grants, scholarships)

Funding For Business Opportunities and Baseline Growth

A cumulative total of RM145.8 billion over 2010 to 2020 will be required to fund business opportunities and baseline growth. Just 5 percent of the total funding requirement will be public investment. Details of the funding requirements are summarised in *Table 7-2*

Table 7-2

Business opportunity	Funding requirement 2011 - 2020 (RM billion)	Details of funding requirement
Commercial banking	64.9	Capital expenditure and capital injection to support business growth (mainly investment for branch expansion, IT system upgrade and maintenance and branding initiatives)
Investment banking	10.2	Investments for IT system upgrade and maintenance Branding to promote visibility of investment banking products
Islamic banking	50.2	Investments by existing companies to fund expansion of distribution network Capital expenditure to fund operations of new companies Investment in branding to promote Islamic Finance products and Malaysia's reputation as global Islamic finance leader
Insurance and takaful	17.3	Capital expenditure and capital injection to support expansion of insurance business within Malaysia and abroad Capital funding for new takaful players
Asset management and wealth management	1.2	Infrastructure investment and upgrade
Other segments including DFIs	2.0	Capital requirement and capital injection to fund financing activities of DFIs and new opportunities within PE and VC markets (e.g. innovation and green financing projects)

The total funding requirement also includes any spending required for national financial literacy programmes and relevant marketing activities to promote financial products and services nationwide.

GOVERNANCE AND DELIVERY

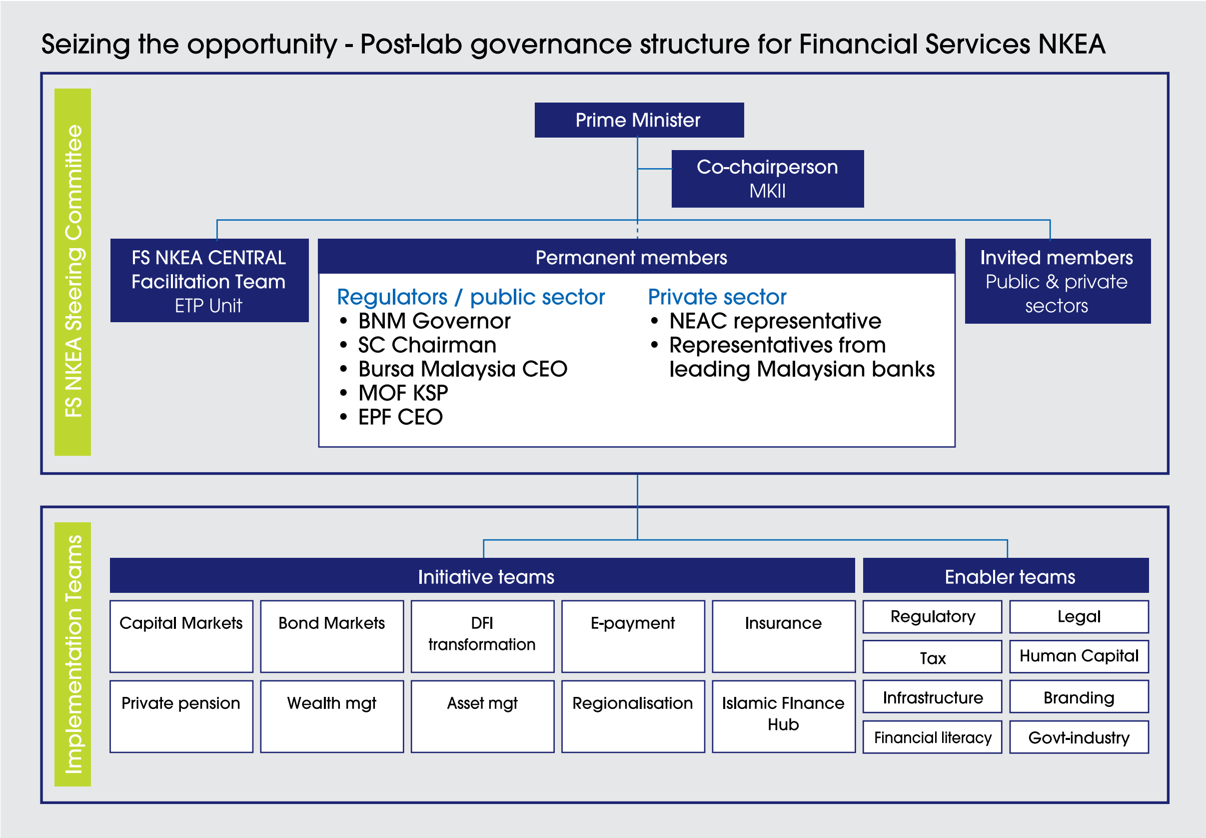
The EPPs and other opportunities outlined above are actionable immediately and tangible results are realisable within the near to mid-term. Translating these opportunities into actions must be a priority for both the financial services industry and all orders of government. It will take leadership, resources and focus, as well as a set of clear milestones that define success. *Table 7-3* shows the lead owners for each EPP and other stakeholders

Table 7-3

EPP	Lead initiative owners	Other key agencies, companies and organisations
Revitalising Malaysia's Capital Markets	Ministry of Finance Securities Commission Bursa Malaysia	Government-linked companies, government-linked investment companies, Malaysia Investment Banking Association, Association of Stockbroking Companies Malaysia
Deepening and Broadening Bond Markets	Securities Commission	Ministry of Finance, Bursa Malaysia, Employees Provident Fund, Malaysia Investment Banking Association, Danajamin
Transforming or Rationalising Developmental Finance Institutions	Ministry of Finance	Bank Negara Malaysia, developmental finance institutions, Ministry of International Trade and Industry, Ministry of Domestic Trade, Cooperative and Consumerism, Ministry of Agriculture, SME Corporation
Creating an Integrated Payment Ecosystem	Ministry of Finance Bank Negara Malaysia	Bursa Malaysia, Malaysia Electronic Payment System, Touch n Go, HOUSe, Ministry of Transport, Securities Commission, ABM
Insuring Most, If Not All, of Our Population	Bank Negara Malaysia	Ministry of Finance, Employees Provident Fund, Inland Revenue Board, Life Insurance Association of Malaysia, Private Insurance Association of Malaysia, Malaysian Takaful Association
Accelerating the Growth of the Private Pension Industry	Securities Commission	Ministry of Finance, Bank Negara Malaysia, Employees Provident Fund, Malaysian Association of Asset Managers, Life Insurance Association of Malaysia, Malaysian Takaful Association
Spurring the Growth of the Nascent Wealth Management Industry	Ministry of Finance Securities Commission Bank Negara Malaysia	Employees Provident Fund, Malaysian Association of Asset Managers, AB
Accelerating and Sustaining a Significant Asset Management Industry	Ministry of Finance Securities Commission	Bursa Malaysia, government-linked investment companies, Malaysian Association of Asset Managers
Developing Regional Banking Champions	Bank Negara Malaysia	Ministry of Finance, banks
Becoming the Indisputable Global Hub for Islamic Finance	Bank Negara Malaysia Malaysia International Islamic Financial Centre	Ministry of Finance, Securities Commission, Islamic Banking and Finance Institute Malaysia, Bursa Malaysia, Jabatan Wakaf, Zakat dan Haji (JAWHAR), Attorney General, Malaysian Takaful Association

To ensure that the EPPs are implemented according to the above timelines, a proper governance structure will be established as shown in *Exhibit 7-11*.

Exhibit 7-11



A Financial Services NKEA Steering Committee will be established. Headed by the Prime Minister and co-chaired by the Minister of Finance (II), membership will include the industry regulators and key representatives of the public and private sectors. Depending on the topics to be discussed in Steering Committee meetings, representatives from selected Government agencies, industry and private industry organisations may be invited to provide input and facilitate in issue resolution.

The Steering Committee will track the performance and progress of implementation of the EPPs, make the necessary decisions and provide direction and guidance to the execution teams. Issues escalated to the Steering Committee will also be tabled and discussed during the progress meetings. The Steering Committee will meet quarterly with the Prime Minister chairing the meetings.

The ETP Unit has the mandate of coordinating transfer of the EPPs to the respective stakeholders as well as coordinating all inter-agency collaborations. This team will provide performance management and tracking of the progress of the EPPs as well as provide analytical support to the execution teams. All materials for presentations, workshops, public engagements, etc. will also fall under the responsibility of the ETP Unit. This team will meet monthly with the execution teams.

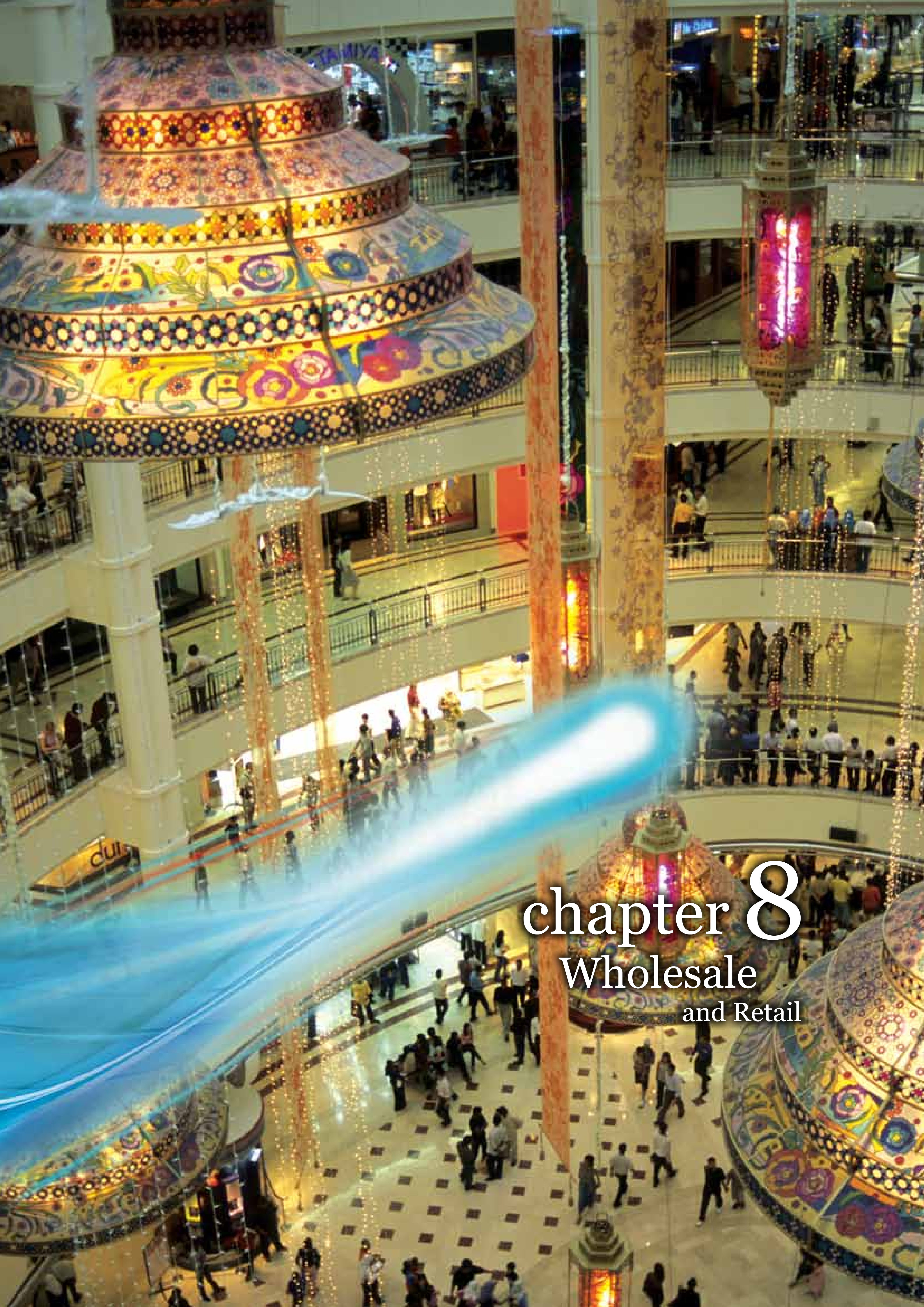
The respective ministries and agencies will implement the initiatives according to the stipulated timelines and will be led by the relevant respective heads of the appointed entities. Selected private sector players will be involved in the implementation of the initiatives. In addition, cross-agency teams will implement the broader enablers necessary to ensure the success of the NKEA as a whole.

Box 7-1

Summary of Financial Services NKEA

• **Incremental GNI impact in 2020**	RM121.5 billion
• **Additional jobs in 2020**	275,400

- **Critical targets and milestones within 6 to 12 months**
  - Assets for listing and national REIT identified
  - E-dividend launched
  - Employee Insurance Scheme Consortium set up and lead manager appointed
  - Fund managers are allowed to invest in commodities
  - Bursa suq Al-sila opening hours extended



chapter 8 Wholesale and Retail

Chapter 8: Building a More Dynamic Retail Market

"The wholesale and retail laboratory has seen unprecedented cooperation between private and public sectors. Projects identified by the lab are well-grounded and have high level of touch-points with the Rakyat. MDTCC is especially excited about the planned RM84 billion growth in GNI and the nearly 400 thousand jobs to be created over the coming 10 years. We are fully supportive of the Entry Point Projects identified by the lab and look forward to working together with the private sector to deliver the planned outcomes."

YB Dato' Sri Ismail Sabri bin Yaakob

Malaysia's wholesale and retail sector (hereafter shortened to 'Retail') is a major contributor to gross national income (GNI). It contributed about RM57 billion to GNI in 2009. The sector also contributed almost 500,000 jobs, according to the Department of Statistics. To achieve our 2020 GNI target, retail will be a key driver of domestic consumption, which in turn will lead to economic growth.

In recent years, retail seems to have gone into a decline. For instance, AT Kearney's Global Retail Development Index places the Malaysian retail sector in 17th position among 30 emerging economies in 2010, down from 10th in 2009 and 8th in 2008.

Given the importance of retail as a driver of domestic consumption, and the need to reverse the decline of the sector, we have designated it as a National Key Economic Area (NKEA) and target to more than double its GNI contribution by 2020.

DEFINITION OF THE RETAIL NKEA

The scope of the Retail NKEA covers various trade activities as defined by the Ministry of Domestic Trade, Co-operatives and Consumerism (MDTCC) in its Distributive Trade Terms. The segments and sub-segments covered include non-store retailing, i.e. vending, home shopping, Internet retailing and direct selling and in-store retailing, i.e. grocery and non-grocery retailers.

Grocery retailers include hypermarkets, supermarkets, discounters, small grocery retailers (convenience stores, forecourt retailers including chains, independent small grocers), food, drink and tobacco specialists and other grocery retailers.

Non-grocery retailers include mixed retailers (departmental stores, variety stores, mass merchandisers, warehouse clubs), specialist retailers and other non-grocery retailers. Specialist retail types include (1) health and beauty (chemists, pharmacies, drugstores, beauty specialist retailers, other healthcare specialist retailers), (2) clothing and footwear, (3) home and garden (furniture and furnishings stores, do it yourself (DIY), home improvement and garden centres), (4) electronics and appliances and (5) leisure and personal goods (booksellers and stationers, audio-visual stores, toys and games stores, sports goods stores, pet shops and superstores, other leisure and personal goods specialist retailers).

While we do address automotive workshops, we do not address vehicle and fuel retail, as issues, regulations and market structures of these sub-segments are very different from the rest of the retail sector.

MARKET ASSESSMENT

The retail landscape in Malaysia has been transformed over the past decade, with modern retail formats such as hypermarkets, supermarkets and department stores increasing in dominance over small shops owned and operated by families. More recently, the opening of large shopping malls has increased the lifestyle element of shopping in Malaysia, with retail concepts carefully chosen to appeal to specific consumer groups. In Klang Valley, Kuala Lumpur has 66 shopping malls and Selangor has 58. The total retail space in these two territories is estimated at 3.37 million square metres. Globalisation has also brought foreign players, franchises and new concepts into the Malaysian market. International retailers like IKEA and Marks & Spencer, hypermarkets like Tesco and Carrefour, and shopping mall managers like CapitaMalls have all ventured into Malaysia in the last decade.

Despite the positive trends and Government support described above, there is much room for improvement to further drive retail spending. Our annual retail expenditure per capita is RM3,154,(USD886) compared to South Korea's RM8,170 (USD2,995), Taiwan's RM11,089 (USD3,115) and Singapore's RM12,185 (USD3,423). While this disparity is partly driven by differing income levels, it also points to the need to encourage higher levels of spending by meeting rising consumer expectations. To achieve this, companies involved in retail in Malaysia will need to modernise and innovate, applying international retail best practices.

TARGETS AND ASPIRATIONS

We aim for the Retail NKEA to contribute an additional RM107.8 billion per annum to GNI by 2020, on top of the RM57.2 billion in 2009, for a total contribution of RM165.0 billion per annum to GNI by 2020.

Out of this incremental RM107.8 billion, RM40.4 billion will be contributed by 13 entry point projects (EPPs) across three themes, RM45.2 billion will result from business opportunities and baseline growth, and RM22.2 billion will result from the multiplier effect. The largest source of the multiplier effect on the Retail NKEA is the Electronics and Electrical NKEA, which is estimated to contribute to 30 percent of the multiplier effect. This could be due, for example, to increased sales of home electrical appliances produced by local manufacturers.

The Retail NKEA EPPs will also create around 370,000 new jobs over the next 10 years. Of this, 7,800 will be senior management posts, 11,600 managerial, 19,000 professional and technical, 19,000 executive, 37,000 supervisory, 18,000 clerical and the rest operational. In addition, business opportunities will create around 226,000 jobs.

The 13 EPPs, are targetted to deliver RM107.8 million GNI by 2020.

The retail EPPs are grouped along the themes of 'modernise, globalise and revolutionise'. In addition to the 13 EPPs, there are two confidential EPPs ("White Lab EPPs") that will only be discussed at a future date.

Theme 1: Modernise

This theme addresses the process and system gaps that we have observed in the way traditional retail operators manage their businesses. The traditional retail sector, especially small groceries, automotive workshops, hawkers and night market operators, lack scale and skill. We will modernise the sector by expanding the number of modern large format stores. We will also assist small operators through improvement initiatives in skills, IT and processes that will elevate their operations and customer service to a new level, in line with what one would expect in a high-income nation's retail sector.

- **EPP 1:** Increasing number of large format stores like hypermarkets, superstores and departmental stores;
- **EPP 2:** Helping small retailers to modernise via Program TUKAR;
- **EPP 3:** Modernising and amalgamating various local market formats into large-sized Pasar Komuniti;
- **EPP 4:** Increasing quality and service levels of automotive workshops; and
- **EPP 5:** Developing Makan Bazaars – large, premium, professionally-managed food centres.

Theme 2: Globalise

This theme seeks to push the retail sector in Malaysia to intensify exports of its skills and products. Our retail malls are among the best in Asia and our mall operators have more than 35 years' experience in developing exciting and consumer-oriented shopping experiences. We now want to bring such capabilities to other cities in Asia, e.g. in Vietnam and China. Similarly we want to provide global exposure to our small and medium enterprises (SMEs) through a common virtual retail platform called virtual mall. We are also proposing the acquisition of foreign retail brands .

- **EPP 6:** Developing 1Malaysia Malls, operated by Malaysian players, in emerging markets like Vietnam and China;

- **EPP 7:** Developing a virtual mall; and

- **EPP 8:** Facilitating local companies to acquire stakes in foreign retail businesses.

Theme 3: Revolutionise

This theme encompasses the idea of "breaking new ground" through the deployment of concepts, skills and experience that hitherto have not been tapped fully by the Malaysian retail sector.

- **EPP 9:** Removing import duties on all finished goods (except automotives and so-called 'sin products', e.g. tobacco);

- **EPP 10:** Setting up wellness resorts;

- **EPP 11:** Organising unified Malaysia sales;

- **EPP 12:** Intensifying transformation of Kuala Lumpur International Airport KLIA into a retail hub; and

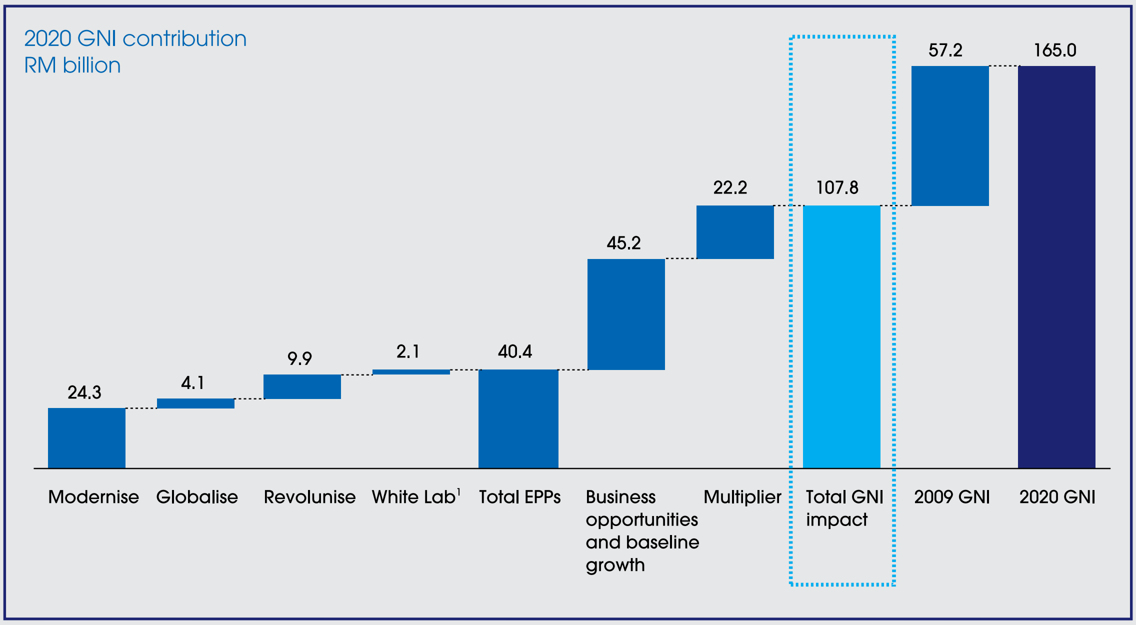
- **EPP 13:** Developing big box boulevards.

In addition to the 13 EPPs, there are two confidential EPPs ("White Lab EPPs") that will only be discussed at a future date.

The GNI impact of the above EPPs are depicted in *Exhibit 8-1*.

Exhibit 8-1

13 EPPs, business opportunities, baseline growth and multiplier effect will deliver RM107.8 billion incremental GNI impact by 2020



[1] Confidential discussions between players; details unavailable

MODERNISING THE RETAIL SECTOR

Under this theme, we will strive to expand the number of large format stores in Malaysia, assist small retailers to modernise, develop large-sized Pasar Komuniti, increase quality and service levels of automotive workshops and develop Makan Bazaars.

EPP 1: Increasing Number of Large Format Stores

Rationale

The Malaysian retail market has seen significant growth of hypermarkets, superstores and departmental stores since the large format retail sub-sector was liberalised in 1995. To date we have 121 hypermarkets, 113 superstores and 133 departmental stores run by local and foreign players, e.g. Tesco, Carrefour, Giant, Mydin, Econsave, AEON and The Store.

The development of hypermarkets, superstores and departmental stores is a natural progression towards modern trade. The growth of these formats brings quality, product availability, choice, product cost reduction, new retailing technology and skills to the sector.

Our research indicate that the presence of these outlets promotes competitiveness and drives down prices as well as creates jobs.

We have identified business opportunities that would see the sub-sector growing to match the current state in high-income economies such as South Korea and Taiwan and in more developed countries such as the UK and France.

Uniquely in the region and among other benchmarked countries (e.g. Australia, the UK), Malaysia has the highest share of foreign grocery retailers (28 percent of the market), indicating that our policies have been liberalised to enable internationally competitive retailers to carry out business here.

Actions

The EPP calls for the setting up of 61 hyperstores (i.e. stores of 5,000 square metres and larger), 163 superstores (i.e. stores of 3,000 to 5,000 square metres) and 356 supermarkets within departmental stores (i.e. supermarkets of 2,000 to 3,000 square metres) within the next 10 years. These numbers will result in 50 percent more floor space than that of today's current base of 1.4 million square metres. This expansion will be implemented by both local and foreign retailers.

The development of new large format outlets will be monitored carefully by federal and local authorities to achieve a balance between modernity and convenience and the sustainability of the small retailers. Decisions shall be made on the basis of demand assessments that look into the needs, economic capability and population base of the residents against the assessment of retail space supply and the store size.

To mitigate any potential effects on small retailers, we will support the modernisation of the small retailers as a separate EPP (EPP 2 – Program Tukar).

Enablers

To assist local players to grow in the large format segment, we will provide support to local major retailers, e.g. Mydin, Econsave, through allocation of funding in the form of commercial loans, asset buy-outs and leasing or as an equity partner via Government-linked investment companies (GLICs). For instance, GLICs like the Employees' Provident Fund (EPF) and Tabung Haji are in talks to help fund or co-invest with local large format retailers in expanding the number of their stores. Selected GLICs will also study opportunities to build and lease facilities to local large format retailers.

Such assistance and cooperation will always be made on a commercially-sound basis.

Funding

This EPP will require RM17.4 billion of private funding and investments.

Impact

The full deployment of the planned hypermarkets, superstores and supermarkets will deliver RM8.5 billion in GNI annually and create 68,600 jobs.

EPP 2: Modernising via the Small Retailer Transformation Programme (TUKAR)

Rationale

The small retailer transformation programme *(or Program Transformasi Kedai Runcit, Program TUKAR)*, is focused on assisting small retailers to modernise and remain competitive. It involves the upgrading of at least 10 percent of the estimated 50,000 small retailers currently in business.

Small retailers face a number of business and demographic trends that are affecting their revenue and in many cases their existence. For instance in Johor, market research conducted by Universiti Teknologi Malaysia (UTM) revealed that some small retailers face closure due to modern retailers (e.g. large-format operators) setting up shop in their vicinity.

The modernisation of small retailers can improve sales by up to 30 percent, as shown in a pilot project done at two local stores. Increased sales result from attracting more customers, and customers spending more in the revamped stores that now offer a comfortable, modern, well-lit and clean environment, similar to that of the large-format stores. This environment augments the small retailers' advantage of being able to offer convenience by being located in the neighbourhood.

Actions

Selected large-format retailers will support small retailers by helping them to improve their appearance and layout, including more attractive product racks, enhanced lighting and a point-of-sales system (POS) that manages product inflows and outflows. Further, store owners will receive retail management training in their own stores and receive ongoing guidance from large retailers. We are targetting 2,000 stores for full deployment and another 5,000 for selective partial deployment to suit commercial requirements and viability.

In return, participating major retailers will benefit either from charging a consultancy fee or by developing a relationship with the small store, which could potentially lead to wholesale supply arrangements between the two parties.

At present, local retail companies such as Mydin, Berjaya Retail and Econsave have agreed to champion this EPP in principle. We are in discussions with other key local retailers to join this programme.

Enablers

MDTCC will make soft loans available to store owners looking to modernise their outlets.

Funding

This EPP will involve RM5.2 billion of private funding and investments.

Impact

The EPP will result in an additional RM5.6 billion GNI annually by 2020 and create 512,500 jobs.

EPP 3: Developing Pasar Komuniti

Rationale

This EPP will transform various markets such as Pasar Tani (farmers' markets), Pasar Malam (night markets), Pasar Minggu and Pasar Tamu (both weekly markets) into one called Pasar Komuniti. Currently the above markets face infrastructural challenges. They operate at various temporary locations (e.g. playing fields, car parks, roadsides) that often contribute to cluttered and unhygienic conditions. The Pasar Komuniti initiative is an effort to coordinate the various markets and amalgamate them in locations where conditions are conducive (e.g. better drainage, frequent cleaning, conducive ambience).

Similar to Program TUKAR, a more appealing environment will help attract more customers to the market and increase their willingness to spend.

Actions

We will place various markets under one roof – a Pasar Komuniti – that has proper amenities and is monitored by relevant government agencies. The Federal Agriculture Marketing Authority (FAMA) is leading the setting up of the Pasar Komuniti with regards to site identification, refurbishment, discussions with market traders, etc.

Enablers

We will assist traders in the Pasar Komuniti to modernise, either through helping them to obtain loans at reduced interest rates, providing funding or negotiating lower vehicle licence fees or stall licence rates.

Funding

This EPP will involve around RM15.5 billion of private funding and investments.

Impact

The proposed Pasar Komuniti initiative will result in an additional RM8.8 billion GNI annually and create 141,000 jobs by 2020.

EPP 4: Transforming Automotive Workshops

Rationale

Currently, there are few policies or regulations governing the approximately 18,000 automotive workshops in Malaysia. Without regulations, there are large variations in the quality and service levels provided in this sector. There is also a perception of a lack of transparency in the services the workshops provide and in the charges they levy on customers. And as there is no structure governing the skill levels of the mechanics or technicians, there is also a variation in skill levels. As such, the ability of this sector to absorb and assimilate the latest technological advancements is limited.

With the large number of Malaysian vehicles (13.7 million) and its owners spending an estimated RM10 billion on maintenance every year on their vehicles, there is a significant demand for automotive workshops. Workshops that provide better service quality, coupled with transparency of charges, could encourage higher spending by vehicle owners through, for instance, more regular servicing, purchase of premium service packages and sales of peripherals (e.g. leather seats, tinted windows).

Actions

The industry will improve the standards of its members through self regulation. The Federation of Automotive Workshop Owners Association of Malaysia (FAWOAM) and/or any equivalent party(s) will maintain a centralised database and website, categorising and grading workshops according to service levels and licensing the industry workforce (mechanics and technicians) through continuous competency development programmes. Workshops will be classified into platinum, gold and silver grades according to a set of criteria.

Enablers

MDTCC will assist workshop owners to transform their businesses by helping them to obtain loans at reduced interest rates and tax allowances for imported modern workshop equipment. To raise the overall quality of goods sold, we will enforce quality control over imported spare parts based on sampling at entry points throughout Malaysia.

Funding

This EPP will involve private funding and an investment of RM1.4 billion.

Impact

By modernising the sector, we expect an additional RM1.1 billion of GNI contribution annually and the creation of 9,100 jobs by 2020.

EPP 5: Developing Makan Bazaars

Rationale

As a multiracial country, Malaysia's food is well-known around the world for its diversity. The food service industry is quite fragmented ranging from the low-end street hawkers to the middle-market chain restaurants and up to the high-end fine dining restaurants. The challenge is to create more outlets where the quality and hygiene of the food are assured.

The Makan Bazaar EPP stems from this aspiration of developing one-stop food centres where diners can find and sample the best of Malaysian and international food. The concept focuses on setting a high standard of professional management with the long-term goal of nurturing and improving the standard of street hawkers in the industry.

Actions

The EPP aims to create iconic food outlets that combine the best street hawkers at one large premium food centre supported by other established food outlets such as family restaurants, quick-service restaurants, cafes, bars and fine dining restaurants.

The food centre will also provide attractions like sensory gardens, games and events arena and playgrounds, as well as having retail outlets like convenience stores and newsagents.

Each Makan Bazaar will be approximately 9,000 square metres in size, with a seating capacity of around 3,500 people.

A total of 10 Makan Bazaar outlets will be built within the next 10 years in major cities in Malaysia. The venture will be privately managed, and Wesria Food Sdn Bhd has offered to champion selected Makan Bazaars and/or any equivalent party(s), from the conceptual study and design stage, right up to construction, hawker search and day-to-day management.

Enablers

Local authorities and councils will assist in securing strategic locations and land. Further assistance via micro financing will also be made available to the street hawkers who want to upgrade and modernise their businesses.

Funding

This EPP will involve investments and funding of RM270 million, almost 90 percent of which will be from the private sector.

Impact

The EPP will result in an additional RM230 million GNI annually and 4,200 new jobs by 2020.

GLOBALISING THE RETAIL SECTOR

Under this theme, we will develop 1Malaysia Malls, create virtual malls and facilitate local players to acquire stakes in foreign retail companies.

EPP 6: Developing 1Malaysia Malls

Rationale

Malaysia is one of the leading nations in Asia in terms of retail mall development and management skills. This project calls for the export of this skill in the region by having Malaysian mall operators develop malls and provide business space for Malaysian retailers in the target cities. The first two target markets are Vietnam and China as many cities in these markets are still underexposed to large shopping malls.

Malaysian developers are ready and willing to carry out such investments provided they receive full support from the Malaysian Government in obtaining collective approvals and licences and in negotiating regulations and other operating requirements in the targetted locations.

Apart from export-based GNI, 1Malaysia Mall is a means of expanding the market for home-grown retail brands, foods and beverages and Malaysian expertise in mall management. This EPP will also position Malaysia as the country of choice for foreign brands to base their regional headquarters given the potential for quick expansion into other markets via 1Malaysia Mall. Malaysian retailers have already expanded abroad, e.g. Parkson has department stores in China and Vietnam and is targetting more in Ho Chi Minh City and Hanoi.

Actions

The proposed projects would see the development of more than 20 shopping malls similar to Sunway Pyramid, 1 Utama, or Mid Valley Megamall at selected locations in Vietnam and China. These malls will be populated by at least 50 percent Malaysian retailers who are already doing business in Malaysia giving Malaysian retailers an excellent opportunity to expand their brands and capitalise on the emerging markets of Vietnam and China.

In Vietnam, we will develop five malls in Ho Chi Minh, three in Hanoi, one in Hai Pong and one in Can Tho. In China, we will develop 11 malls in cities like Harbin and Shenyang.

Potential champions (e.g. Sunway Group, KLCC Holdings Bhd, Desa Park City, SP Setia, Ireka) have expressed interest and discussions are ongoing to finalise their requirements.

Enablers

Two major enablers would contribute to smooth implementation. The first would be MDTCC and the Ministry of International Trade and Industry partnering to negotiate for 10 prime locations (of 2.5 to 12 hectares each) and gain approval of all relevant development licences for the physical malls, umbrella retail licenses for all Malaysian retailers in these malls, work permits for Malaysian management and supervisory personnel and liberal policies in the repatriation of profits. The second is the role EXIM Bank will play in providing export financing and country risk management services to the Malaysian investors.

Funding

This EPP will involve RM7.4 billion of funding and investments, almost entirely from the private sector.

Impact

The proposed 1Malaysia Mall projects will result in an additional RM2.2 billion GNI annually and create more than 3,800 management and professional jobs for Malaysians to manage the overseas locations by 2020. These malls and jobs will contribute towards GNI on the assumption that earnings are repatriated to Malaysia.

EPP 7: Developing a Virtual Mall

Rationale

The Internet retail business in Malaysia in 2009 was valued at RM4.2 billion by Euromonitor. Market trends in high-income countries indicate that the sale of goods and services over the Internet increase with higher disposable income and better broadband services. Retail sales over the Internet in the United Kingdom for example, accounted for roughly 7 percent of total retail sales (compared to around 4 percent in Malaysia), according to Euromonitor. Given that Malaysia could achieve the same share of retail business, Internet sales could potentially reach RM12 billion in 2020.

Three elements support the rationale for developing a virtual mall in Malaysia. Firstly, the lack of a local virtual retail mall similar to mymall.co.uk and hypermarket virtual malls in the UK points to a market opportunity. Secondly, e-commerce platforms such as Telekom Malaysia's business-to-business mybizpoint has already made the basic infrastructure and bandwidth available for the implementation of the proposed virtual mall. Thirdly, the growing affluence and the larger young population in 2020 (54 percent of Malaysia's population will be under the age of 30 according to the World Bank) can ideally be served by Internet retail, as they will be IT savvy and have high demand for online services.

The proposed virtual mall would be an online replication of a brick and mortar hypermarket. Its main focus is to develop and enable our local small- and medium-sized retailers in distributing their products online. However, large retailers will also be invited to participate in the virtual mall.

Actions

A local information communications technology company, Teras Teknologi and or any equivalent party(s), will commence development of an e-platform on an open concept basis, allowing any retail operator to join. A new company will then be set up to facilitate and manage the operation of the virtual mall. The nature of business for the proposed new company will include the sourcing of IT services and infrastructure as well as other relevant applications covering human resources and payroll, inventory management and enterprise resource planning.

The new company will recruit around 500 staff and train them in IT, online marketing and logistics management. Processes and systems related to online ordering and order fulfilment will be developed to manage the expected high trading volume.

The virtual mall is expected to be fully implemented in 2012. Recruitment of participating SMEs and retailers will commence in 2011.

Enablers

For the virtual mall to be successful, we will continue to improve broadband access and quality of service throughout Malaysia. More details of our actions to improve broadband can be found in the Communications Content and Infrastructure NKEA.

Funding

This EPP will involve incremental private investment and funding of around RM1.3 billion.

Impact

The proposed EPP will result in an additional RM820 billion GNI annually and create 6,600 jobs by 2020.

EPP 8: Facilitating Local Businesses to Acquire Stakes in Foreign Retail Businesses

Rationale

Accelerated sector development requires plans that go beyond organic growth. In light of this, local retailers have identified stakes in two foreign hypermarkets as potential acquisition targets. Executing these acquisitions will deliver impact to GNI by retaining a portion of the foreign hypermarkets' profits in Malaysia.

Stakes in two major businesses are available for acquisition. Purchase of this equity by a Government-linked company, similar to the stake that Sime Darby has in Tesco, is being studied. Discussion with local retailers also indicate that they are interested in taking over these businesses, but they are cautious, mainly due to the acquisition cost and more importantly uncertainty arising from their lack of experience in M&A based growth.

Actions

Interested parties are already speaking to funds and banks on the next steps. As part of the overall plan to have a balance between foreign and local retailers, the local retailers will be provided with facilitation and funding options to execute the purchases. One model being studied is where GLICs and local retailers become equity partners in a new holding company that would purchase shares in the foreign retailers.

Enablers

Equity and debt funding from local fund managers and extensive support from investment banks are required to make this EPP happen, and MDTCC will provide active facilitation to achieve this outcome.

Funding

This EPP will involve around RM3.0 billion of private funding and investments.

Impact

This EPP will deliver around RM1.0 billion GNI annually by 2020 and generate 400 jobs.

REVOLUTIONISE THE RETAIL SECTOR

Under this theme, we will remove import duties on selected products, set up wellness resorts, organise unified Malaysia sales, intensify the transformation of Kuala Lumpur International Airport (KLIA) into a retail hub and develop big box boulevards.

EPP 9: Making Malaysia Duty Free

Rationale

Price reductions, especially for goods that are considered to be non-essential or for luxury items that have high elasticity and pent-up demand, will result in a rise in spending. This will, in turn, result in GNI impact.

We will exempt selected retail products from duty by the end of 2010. Automotive goods and products like tobacco and alcohol will not be made exempt. Of the selected products, 20 percent are already duty free and, in compliance with Malaysia's obligations under the ASEAN Free Trade Area agreement, many more will become either low duty (5 percent) or duty free.

Actions

Government will remove selected import duties by the end of 2010. MDTCC and the Ministry of Tourism, together with trade associations, will create awareness of this policy change locally and internationally.

Funding

This EPP will involve private investment of around RM6.7 billion. There is no public expenditure expected, as the loss of duty revenues are expected to be covered by additional corporation and business taxes arising due to increased sales revenues.

Impact

The proposed duty free plan will result in an additional RM3.3 billion GNI annually and create 31,100 jobs in the retail sector (net of Tourism NKEA) by 2020.

EPP 10: Setting Up Wellness Resorts

Rationale

Internationally, more than 50 countries have identified medical tourism to be a key source of foreign exchange and have decided to adopt this sub-sector as a focus area for development. The global market is worth more than RM230 billion and is growing at 25 percent per annum. Closer to home, in Thailand, the Bumrungrad Hospital in Bangkok received and treated 150,000 patients in 2009.

The Malaysian medical tourism market was worth RM288 million in 2009, according to the Ministry of Health. We received 340,000 patients in 2009, out of whom about 60 percent were received in Penang. Our local industry is growing at 35 percent per annum, driven in large part by low cost (relative to the USA and Europe), the large number of modern private health institutions and increasing air links via low-cost airlines.

The proposed wellness centres would see the development of fully integrated wellness malls that provide all aspects of aesthetic treatments and enhancements complete with supporting retailing outlets. This EPP includes only the retail expenditure impact of wellness resorts (e.g. purchase of spa products and services); revenues from medical services are considered under the Health NKEA.

Actions

Wellness resorts will be established in strategic locations, currently identified to be Penang (leveraging its already vibrant health tourism market), Banjaran Spa in Ipoh (where a private investor is already building a spa) and Bandar Utama (where a developer already has a lifestyle retirement village in its plans). Wellness centres would enhance these existing locations and markets by incorporating full-featured retail outlets.

Investments in wellness resorts will be borne by these same developers. Selected high brand-value retailers from the Malaysian retail industry would be invited to set up shop at these locations. Along with these, the resort would offer accommodation in the form of hotels, low-density apartments, etc.

The marketing effort by the developers is expected to deliver 500,000 foreign tourists annually. In addition to this, they aim to attract about 30,000 Malaysian customers per year as well.

Enabler

We are studying the potential of accelerating visa processing for the target market segment and promoting the setting up and delivery of medical insurance schemes to cover pre- and post-treatment professional liability issues. We are also studying options to give medical practitioners more mobility so they can work within the wellness resorts.

From the private sector side, investment to enhance customer information systems and follow-up data will be undertaken.

The Malaysian Medical Association and the Ministry of Health will review current medical regulations that limit the entry of foreign medical practitioners and the adoption of advanced medical practices.

We will also target for halal certification from the relevant authorities for the resorts to attract Muslim segments of the target market.

Funding

This EPP will require private investments and funding of around RM1.7 billion.

Impact

The proposed wellness resorts will result in an additional RM2.7 billion GNI annually by 2020 and create nearly 212,500 jobs in the retail sector.

EPP 11: Organising Unified Malaysia Sales

Rationale

Tourism Malaysia currently organises three main annual sales events. There are opportunities to build more awareness of the sales and involve more retailers across all industries, e.g. food and beverages.

Actions

MDTCC and Tourism Malaysia will coordinate retailers from all sectors of the economy in annual unified Malaysia sales.

Funding

This EPP will involve investments and funding of around RM4.7 billion, of which almost all will come from the private sector.

Impact

Our assessment shows that the Unified Malaysia Sales will deliver an incremental RM1.8 billion GNI annually and create 14,300 jobs by 2020.

EPP 12: Transforming KLIA into a Retail Hub

Rationale

In 2009, KLIA served as a gateway to 29.7 million passengers and an entry point to 54 international flights flying to 101 international destinations. The retail potential of KLIA has not been fully capitalised due to limited offerings and space constraints, especially at the present low-cost carrier terminal. Having a large land bank and supported by the new KLIA2 and KLIA Aeropolis master plan, Malaysia Airports Holdings Berhad (MAHB) plans to turn KLIA into a commercial and retail hub.

Actions

MAHB will create a retail hub as a spin-off from the development of KLIA2, with 55,000 square metres of additional retail space in addition to the new retail space of 43,000 square metres in the new KLIA2. This could contribute to making KLIA an attractive shopping destination not only to airline passengers but also to residents within the vicinity of the airport.

Enablers

Three major enablers will facilitate implementation. The Government will need to amend the tenure of the land lease (for the proposed site of the retail hub expansion). We will also convert the permitted land usage from agriculture to commercial use. The third enabler is to allow transit passengers to visit these retail areas with temporary passes.

Funding

This EPP will involve incremental private investment and funding of around RM840 million.

Impact

The proposed development will result in additional RM960 billion GNI annually by 2020 and create potential employment of 7,700 jobs.

EPP 13: Developing Big Box Boulevards

Rationale

The presence of integrated large-scale retailers and factory outlets concentrated in single locations are common in Europe and the USA. In Malaysia, it is more common to have stand-alone retailers focused on specific retail categories such as furniture warehouses and hypermarkets. Our surveys found that retailers and private sector property developers concur that demand for large-scale retail experience is growing. This is driven by growing awareness amongst Malaysian overseas students, expatriates and increasing numbers of tourists who expect to shop at a single location that provides a retail destination experience.

Existing developments experienced long lead times for regulatory approvals, infrastructure development, marketing and operational readiness. For example, the Nilai 3 wholesale-retail hub took over 10 years to develop into a mid-sized retail box, still far from the desired size of a big box boulevard.

This EPP will see the development of very large, integrated retail outlets for various categories of retailers (e.g. food court, boutique stores, hypermarkets), concentrated within a single location referred to as a big box boulevard (BBB). We have identified Nusajaya as a strategic location to develop Malaysia's first BBB, which will comprise 10 to 12 large-scale retail stores within a single site.

Actions

BBBs will be developed comprising an integrated retail experience, anchored by several category stores, e.g. hypermarkets, furniture superstores, digital products and electronics equipment malls as well as toy and sporting goods stores, large automotive showrooms, textile centres, garden and hardware superstores. The total built-up retail space will be around 26 hectares. The BBB will be supported by food and beverage outlets, convenience stores, liquor and tobacco retailers.

BBBs will be presented as a single, unified development project to the various Ministries and regulatory bodies for approvals to reduce duplication and avoid unnecessary delays. MDTCC will champion and facilitate approvals across agencies, ministries and local authorities.

A special purpose delivery vehicle (SPDV) will be established to support the MDTCC and land developer to coordinate developments and act as an interface with the various BBB retailers. Essentially, this SPDV is the heart of a public-private partnership that will coordinate all integrated infrastructure developments and facilitate regulatory approvals, marketing and other enabling activities. The SPDV will do this through a project management office that interfaces between the various parties; its performance will be measured by specific KPIs and timelines.

Nusajaya has been chosen to be the location of the first project because of:

- An enthusiastic master developer (UEM Land) with aligned commercial goals;
- A suitable site of 400 acres with appropriate zoning and planning permission, and reasonably mature infrastructure such as roads, power and connectivity;
- A sizeable potential market of around 7 million people (including Singapore); and
- A significant amount of interest expressed by retailers to participate.

Other BBB locations (e.g. Nilai or Penang) are identified as business opportunities at this stage as they are subject to further assessment with relevant third parties.

Enablers

Lead parties. The private sector will take the lead with UEM Land as the master developer, which will be supported by major retailers. SPDV will help coordinate commercial agreements, including memos of understanding, tenancy and joint-venture documentation.

Government support and facilitation: This will involve providing infrastructure (e.g. roads, power stations, water, cleared land), intensifying progress on mass rapid transit and/or light rail transit extensions for Nusajaya, and applying incentives already announced for Iskandar Malaysia region (i.e. tax breaks, flexibility to hire foreign workers and funding through soft loans).

Funding

Approximately RM1.7 billion of funding and investments will be required from 2011 to 2013 to develop 10 to 12 big box boulevards. Almost the entire amount of the funding will come from the private sector.

Impact

BBBs will result in an additional RM1.2 billion GNI annually by 2020 and create 9,600 jobs by 2020.

BUSINESS OPPORTUNITIES

Business opportunities and baseline growth are expected to contribute RM45.2 billion to GNI, and create around 226,000 additional jobs. This growth will be driven by three distinct economic drivers. The first is higher retail expenditure per capita due to increased GNI per household by 2020. Secondly, urbanisation will also contribute, as the migration from rural to urban areas creates higher demand for goods and services, including higher value-added products. Lastly, population increase will also result in demand for more goods and services.

RM187.6 billion of private sector funding and investments will be required to capitalise on the business opportunities.

COMMON ENABLERS

Across the 13 EPPs and the business opportunities, some common enablers will be put in place to make it easier for retailers to do business, and at the same time increase the level of competition and choice for customers. These enablers are in the areas of access to finance, sector liberalisation, infrastructure and human capital.

Ease Access to Finance

The ability to obtain and manage financing is critical to enable small retailers to modernise and larger ones to expand. Examples of the types of assistance required by retailers are: increasing awareness of financing schemes, making accessibility easier and improving financial management skills.

Increasing awareness of financing schemes. Many local retailers say that they lack awareness of financial sources available to them. To make information more available, BNM, MDTCC and SME Corp will develop a centralised information database on financing for retail businesses. They will also go on nationwide roadshows to disseminate financing information.

Making accessibility easier. Small local retailers find it difficult to obtain financing as they are generally high-risk and lack loan collateral. To overcome this, BNM will partner with local financial institutions to put in place a credit guarantee scheme and set up joint funds to assist small businesses. BNM will also help small businesses explore alternative modes of financing, e.g. venture capital and private equity.

Improving financial management skills. Small retailers lack the skills and experience in managing the finance disbursed to them. To help them improve their financial knowledge, we will make it mandatory for retailers to attend financial management courses before loans or grants are disbursed to them.

Liberalise Retail Sector

We will take further actions to make the retail sector more competitive. Two important measures are opening restricted markets and making set-up and expansion requirements easier.

Opening restricted markets. Markets for certain retail products (e.g. selected agricultural and food items) are still restricted to a few suppliers and approved permit (AP) holders. We will study the potential of freeing up these markets and allowing free import and export flows. To ensure quality, we will step up inspections at entry points across the country.

Streamlining set-up and expansion requirements. Currently, to start a retail operation, businesses need to apply for a series of licences from different bodies (e.g. from local authorities, Ministry of Health, MDTCC, Electricity Commission, Health and Safety Department). In addition, there is potential to shorten the time they wait in getting their premise structures approved (e.g. by local authorities and the Fire Department). We will simplify the start-up process by reducing the number of licences required, designing a one-stop application process, expediting the implementation of e-licensing and allowing one-time licence renewal applications for all branches of an individual retail company. We will also reduce approval times for premise structures to one month from around three months currently.

Upgrade Transportation Infrastructure

Infrastructure upgrades are also required for the transportation of the expected larger volume of goods and the expected larger number of customers to the retail outlets. Examples of improvements are increasing efficiency of cross-border logistics, improving facilities at entry points and improving public transport.

Increasing efficiency of cross-border logistics. Some wholesalers still report difficulties and delays in moving goods into and out of Malaysia. We will continue to work with relevant industry associations (e.g. freight forwarders) to resolve outstanding issues (e.g. relating to handling, forms processing and inspections at points of entry and exit). For instance, we are studying automation and other process improvements to speed up the clearance of goods at ports to a maximum of 24 hours from around 72 hours currently.

Improving facilities at entry points. There are opportunities to improve facilities at ports, airports and road border crossings. We will study these opportunities and act on them, e.g. by creating more storage capacity for perishable goods.

Improving public transport. We will improve connectivity, efficiency and quality of public transport (e.g. buses, light rail transit) to make it easier and more attractive for customers to visit retail centres. These will be part of our ongoing efforts in the Urban Public Transport National Key Results Area under the Government Transformation Programme and also initiatives under the Greater Kuala Lumpur NKEA (e.g. building a mass rapid transit system).

Grow Human Capital

To fill the number of jobs that the Retail NKEA will create, we will ensure a sufficient talent pool with retail skills, knowledge and experience. Some of our initiatives towards this are increasing the number of graduates in retail studies and tapping alternative sources of workers.

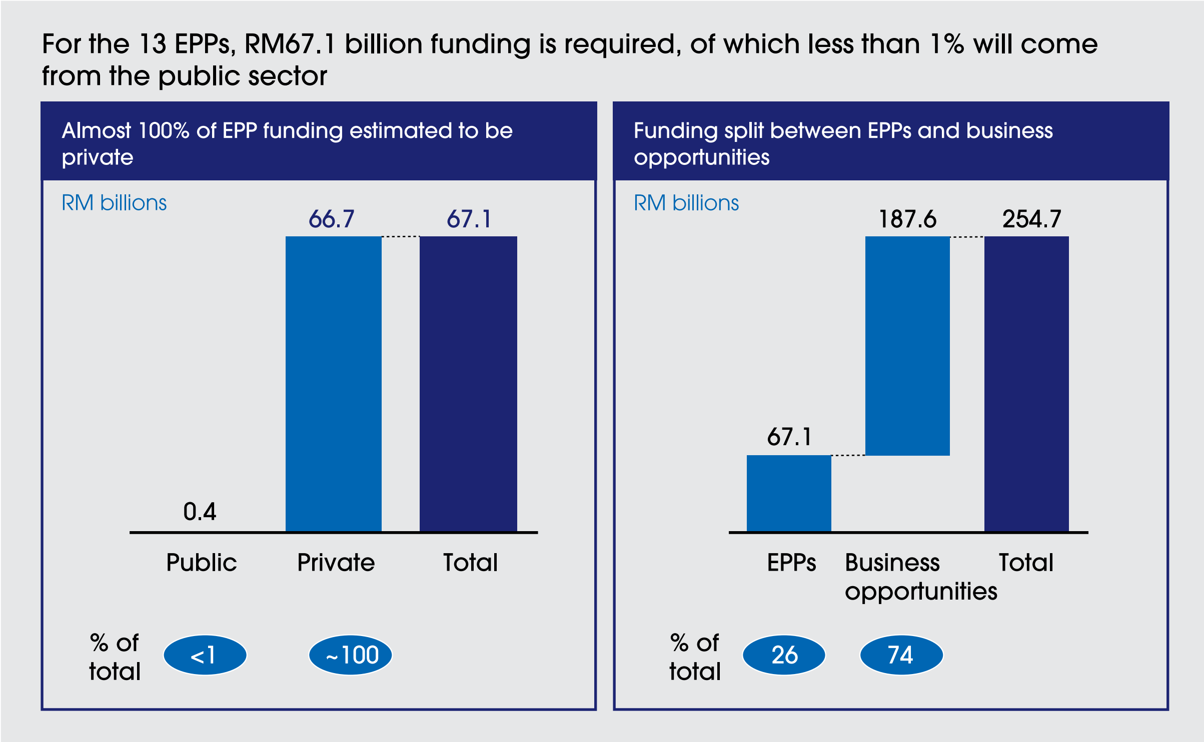
Increasing number of graduates in retail studies. We need to increase the availability of qualified workers to fill the expected increase in the number of management and professional roles. The MOHE will partner with public and private institutions of higher learning as well as retail industry representatives to deliver more retail-focused modules and courses (e.g. sales and marketing, logistics management, retail operations management).

Tapping alternative sources of workers. We will also need to increase the availability of frontline staff to support the expected increase in the number of retail outlets. Hence, we will encourage greater participation in the workforce by groups such as homemakers, spouses of foreign workers, senior citizens and students. We are studying ways to do this, such as making childcare facilities mandatory at shopping malls and allowing foreign students at local universities to work part-time.

FUNDING

The total funding requirement for EPPs amounts to RM67.1 billion *(Exhibit 8-2)*, of which nearly all will be funded by the private sector.

Exhibit 8-2



GOVERNANCE AND DELIVERY

The governance structure is divided into three levels *(Exhibit 8-3)*. The first level is strategic guidance and problem resolution, with quarterly meetings with the Prime Minister. In between, the Lead Minister (MDTCC) and a Steering Committee (with both public and private sector representatives) will provide overall guidance to the implementing team (i.e. the Delivery Management Office, DMO) with formal interactions occurring every month and more regularly when the situation requires it.

The second level is about monitoring and reporting. This is undertaken by the DMO, comprising full-time MDTCC staff. The DMO will meet fortnightly with EPP owners *(Table 8-1)* and report project progress and outstanding issues to the Economic Transformation Programme Unit and the Lead Minister.

The third level consists of specific project teams who have taken the task of delivering the EPPs. These teams, one for each EPP, will report project progress to the DMO on a weekly basis.

Exhibit 8-3

Governance for Wholesale and Retail NKEA

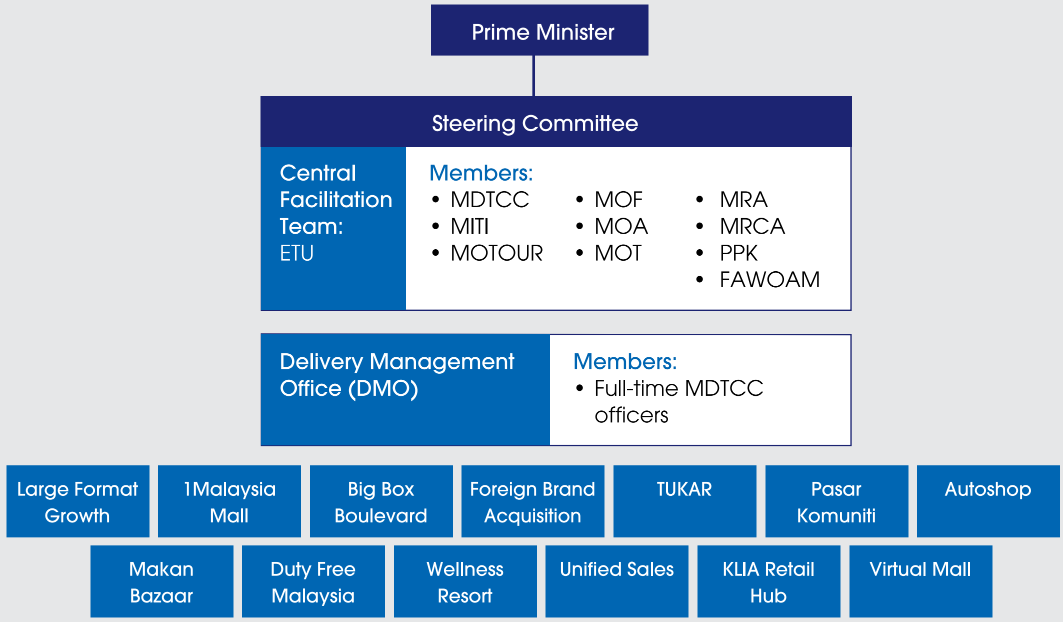


Table 8-1

EPP	Lead initiative owner	Other key agencies companies and organisation
Increasing Number of Large Format Stores like Hypermarkets, Superstores and Departmental Stores	Ministry of Domestic Trade, Co-operatives and Consumerism	
Helping Small Retailers to Modernise via Program TUKAR	Ministry of Domestic Trade, Co-operatives and Consumerism	
Modernising and Amalgamating Various Local Market Formats into Large-Sized Pasar Komuniti	Ministry of Domestic Trade, Co-operatives and Consumerism	Ministry of Agriculture Federal Agriculture Marketing Authority
Increasing Quality and Service Levels of Automotive Workshops	Ministry of Domestic Trade, Co-operatives and Consumerism	
Developing Makan Bazaars – Large, Premium, Professionally Managed Food Centres	Ministry of Domestic Trade, Co-operatives and Consumerism	Ministry of Housing and Local Government
Developing 1Malaysia Malls, Operated by Malaysian Players, in Emerging Markets Like Vietnam and China	Ministry of Domestic Trade, Co-operatives and Consumerism	Ministry of International Trade and Industry
Developing a Virtual Mall	Ministry of Domestic Trade, Co-operatives and Consumerism	Malaysian Administrative Modernisation and Management Planning Unit
Facilitating Local Companies to Acquire Stakes in Foreign Retail Companies	Ministry of Domestic Trade, Co-operatives and Consumerism	
Removing Import Duties on all Retail Products (Except Automotives and Sin Products, e.g. Tobacco)	Ministry of Domestic Trade, Co-operatives and Consumerism	Ministry of Finance
Setting Up Wellness Resorts	Ministry of Domestic Trade, Co-operatives and Consumerism	
Organising Unified Malaysia Sales	Ministry of Domestic Trade, Co-operatives and Consumerism	Ministry of Tourism
Intensifying Transformation of Kuala Lumpur International Airport into a Retail Hub	Ministry of Domestic Trade, Co-operatives and Consumerism	Ministry of Transport
Developing Big Box Boulevards	Ministry of Domestic Trade, Co-operatives and Consumerism	

Box 8-1

Summary of Wholesale and Retail NKEA

• **Incremental GNI impact in 2020**	RM107.8 billion
• **Additional jobs in 2020**	595,400

- **Critical targets and milestones within 6 to 12 months**
  - 100 small retailers modernised under TUKAR
  - 5 hyperstores and 13 superstores set up
  - Import duties on selected retail products abolished
  - 50 Pasar Komuniti operational
  - Unified Malaysia sale launched
  - 500 automotive workshops modernised
  - One Makan Bazaar operational


chapter 9
Palm Oil

Chapter 9: Deepening Malaysia's Palm Oil Advantage

"Malaysia has a competitive advantage in the palm oil industry, as it has over 100 years of experience and a strong market leadership in terms of productivity and R&D. The Malaysian palm oil industry is also the fourth largest contributor to the Malaysian Gross National Income (GNI). We have thus set an ambitious GNI contribution target of RM178.0 billion in 2020 against the present GNI contribution of RM52.7 billion for the palm oil industry. At the same time we will ensure that all our efforts to achieve this target are in line with the concept of "inclusiveness" and "sustainability". With the private sector's involvement in identifying the initiatives presented in this Chapter, I am confident that the target will be achieved. My Ministry and I are fully committed and accountable to ensure that all the initiatives are implemented with the support of all stakeholders in the palm oil industry."

YB Tan Sri Bernard Giluk Dompok

Malaysia's palm oil industry is the fourth largest contributor to the national economy and currently accounts for RM1,889 (8 percent) of the national GNI per capita. The industry spans the entire value chain from plantations to downstream activities. Its development is mainly private sector-driven and is still heavily skewed towards upstream activities, namely production of fresh fruit bunches (FFB) in plantations, processing of FFBs in mills and palm kernel crushing and palm oil refining activities. While Government support is primarily targetted at promoting downstream activities and supporting independent smallholders, the core focus of the Palm Oil National Key Economic Area (NKEA) is to reinforce the leading role of the private sector in steering the palm oil industry.

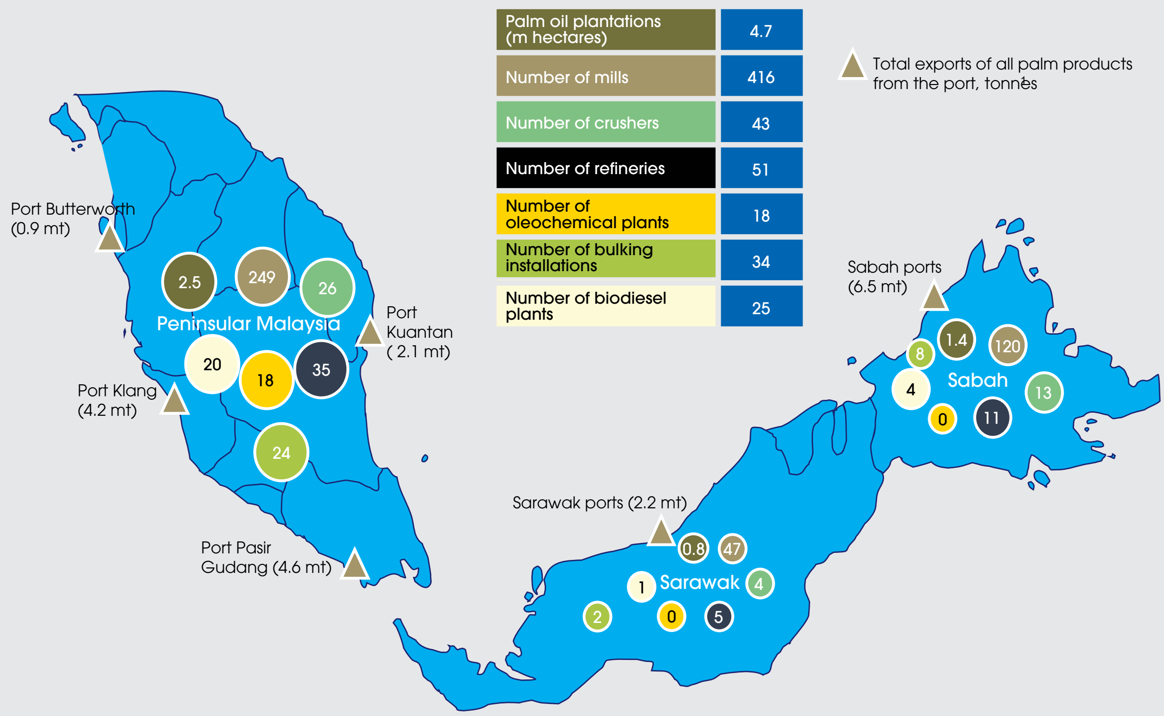
DEFINITION OF THE PALM OIL NKEA

The palm oil industry in Malaysia is organised around four segments. The plantations segment includes seed nursery, planting, harvesting, collecting and milling. The second segment includes refining, bulking and trading activities. The remaining two downstream segments are non-food downstream as well as food- and health-based downstream.

As of 2009, Malaysia has 4.7 million hectares of oil palm plantations, 416 mills, 43 crushers, 51 refineries, 18 oleochemical plants and 25 biodiesel plants, with the geographical spread illustrated in *Exhibit 9-1*. The industry is dominated by large plantation companies (private- and government-linked companies) which hold 60 percent of total plantation land, with a growing level of integration along the value chain. However, there is a significant share of palm oil plantation area under the ownership of organised smallholders and independent smallholders, which still account for 28 percent and 12 percent of the total area respectively.

Exhibit 9-1

Malaysia's palm oil industry spans the entire value chain from plantations to oleochemical and biodiesel plants



[1] Other Peninsular Malaysia ports: 1.9 tonnes

The palm oil industry is forecasted to grow by 7.1 percent over the next 10 years, driven by the following factors:

- Further gains in average productivity of FFB yield, which is currently at 21 tonnes per hectare per year, and of the oil extraction rate (OER), which is currently at 20.5 percent;

- New plantation expansion of Malaysian companies abroad due to land limitations in Malaysia. There is currently a total of 6.6 million hectares of land for agricultural use in Malaysia, of which 4.7 million hectares (71 percent of total) is used for oil palm plantations; and

- The venture of large plantation companies into high potential downstream activities such as processed food, biodiesel, second generation biofuel, and oleochemicals (chemicals derived from palm oil such as fatty acids, fatty alcohol, soap noodles, methyl ester and glycerine).

Productivity gains in the palm oil industry have a significant impact on GNI growth. The growth potential in both FFB yield and OER is significant due to the high level of variation in performance between large, medium, small plantations and smallholders as well as mills across Malaysia. Evidence collected from high performing plantation companies suggest that best practices are in place and can be shared to bridge the gaps resulting in higher yields and OER across the nation.

With 4.7 million hectares already in use for oil palm cultivation in Malaysia, the potential for further national expansion is limited. The expansion potential is estimated at a maximum of 1.3 million additional hectares of which 75 percent or 1 million hectares is located in Sarawak. Given this situation, large Malaysian companies are redirecting their efforts and resources towards international expansion. As of 2009, Malaysian companies own about 25 percent of total palm oil plantations in Indonesia. Although Indonesia remains the natural choice for the expansion of Malaysian plantations, some companies have recently shown interest in other parts of Asia as well as Africa and South America.

At the moment, Malaysia has yet to capture the full potential of existing downstream opportunities. As an illustration of this untapped downstream potential, for exports as of 2009, only 18.5 percent of Malaysia's palm oil output is exported as downstream products as opposed to 81.5 percent exported as upstream products either in crude form (e.g. palm oil, palm kernel oil and palm kernel cake) or processed form (e.g. crude palm olein, Refined Bleached Deodorised-RBD palm oil, RBD palm olein, RBD palm stearin and palm fatty acid distillate). The clear identification of high potential downstream applications and commitment of companies in the industry to further integrate and invest resources in downstream segments or in research and development (R&D) is important to ensure the sustainability of the industry going forward.

MARKET ASSESSMENT

Oil palm is one of the main drivers of Malaysia's agriculture sector, accounting for 71 percent of its national agricultural land bank. The industry's history spans across more than 100 years during which it has achieved tremendous success. Building on a series of core advantages, the industry will remain a major contributor to the Malaysian economy over the next 10 years.

Firstly, the palm oil industry holds two core advantages over other substitutes:

- **Rising relative demand versus substitutes**
  The global demand for oil and fats, such as palm oil, soyabean oil, sunflower oil and rapeseed oil rose sharply at an average growth rate of 7 percent over the past ten years, driven by increasing global population, rising per capita incomes and changing dietary habits. Comparatively, over the same period, palm oil demand alone has grown at a 10 percent rate with the highest growth coming from Russia (22 percent), the USA (21 percent), China (16 percent) and Europe (9 percent); and

- **High oil yield per hectare versus substitutes**
  Oil palm produces 4 to 5 tonnes of oil per hectare which is 8 to 10 times higher than other oil seeds such as rapeseed and soyabean.

Secondly, within the palm oil industry, Malaysian palm oil has three major strengths compared to competing global producers:

- **National FFB yield levels**
  Malaysia has amongst the highest average palm oil yields at about 21 tonnes per hectare per year. Its most direct competitor, Indonesia, holds a national average yield of 19 tonnes per hectare per year;

- **Excellent plant breeding activities**
  Malaysia is recognised worldwide for the quality of its planting material thanks to its 20 world-class seed producers and annual production capacity of 87 million seeds and its leading R&D activities such as research into the oil palm genome, tissue culture and biotechnology; and

- **Conducive regulatory environment:**
  Malaysia's palm oil industry is regulated by Malaysian Palm Oil Board (MPOB), which awards licences across the value chain from seed producers to export of palm oil as well as developing policies, guidelines and practices to help monitor and assist the industry.

Despite these developments, the industry is facing a series of hurdles, which threaten the country's standing as a competitive global palm oil producer. These hurdles include:

- **Limited land bank**
  Malaysia can only count on a maximum potential increase of 28 percent of its oil palm plantation area, and mostly on hilly or peat terrains. As a result, Malaysia has been gradually losing its global production market share to Indonesia. Indonesia overtook Malaysia in crude palm oil (CPO) production market share in 2009 and now holds 46 percent of the global production market share compared to Malaysia's 41 percent. Indonesia's high growth of new oil palm plantations coupled with its lower average cost of production has directly impacted Malaysia's market share in key export markets such as India, Pakistan and China;

- **Limited scope of mechanisation**
  With 369,000 foreign workers employed in plantations, the oil palm industry is still heavily dependent on foreign labour for harvesting, general upkeep and maintenance. Although mechanisation has been gradually introduced over the years, it has yet to replace the high labour requirements in the upstream sector. Wherever it is introduced, mechanisation must meet the stringent criteria reducing labour costs, increasing productivity and improving product quality. For this reason, one of the key challenges of the plantation segment is to scale up its level of mechanisation;

- **Threat to plant protection**
  Pests and diseases such as Ganoderma Basal Stem Rot, are increasingly becoming a threat to the industry. Although research relating to the biology, early detection and control of such disease has been undertaken, a long-term sustainable, cost-efficient and effective solution is still not available;

- **Reliance on upstream**
  The palm oil industry is still heavily skewed towards the upstream segment, which in 2009 generated 87 percent of the industry's GNI. Companies in the industry have been slow to move downstream, where high value-add is still to be captured, in any significant number;

- **Impediments to market access**
  Countries are using both tariff- and non-tariff barriers to restrict market access to protect their local oils and fats industry. The Renewable Energy Directive adopted by the European Union, which imposes strict regulations on carbon emissions distorting the palm oil commodity price, is an example of such a barrier; and

- **Environmental and sustainability concerns**
  A continued slew of anti-palm oil campaigns highlighting its carbon footprint or raising health concerns, launched by environmental and consumer advocacy groups in Europe and the USA, have generated an increasing unwarranted negative perception of palm oil. Such campaigns include that launched by the American soyabean lobby group claiming that palm oil saturated fat raises blood cholesterol levels, leading to heart disease.

TARGETS AND ASPIRATIONS

We aim to raise the industry's GNI contribution from a current RM52.7 billion to RM178.0 billion by 2020. We plan to bridge this GNI gap through the implementation of eight core entry point projects (EPP) spanning across the palm oil value chain (see *Exhibit 9-2*) to capture the fast-growing global demand for palm oil, which registered a growth rate of 10 percent between 2000 and 2009. The EPPs will generate RM47.1 billion in GNI impact in 2020, and the business opportunities will add another RM74.6 billion (inclusive of baseline growth of RM17.0 billion). The incremental GNI also includes RM3.6 billion from the multiplier effect created by EPPs from other sectors. The largest source of the multiplier effect on the Palm Oil NKEA is from the Wholesale and Retail as well as the Electrical and Electronics NKEAs. This includes benefits such as increased retail activity reflecting increased demand for palm oil and palm oil-based products.

With the implementation of the EPPs, the average salary of 161,000 low-income independent smallholders will significantly improve by 47 percent in 2020. In addition, we will reduce our dependence on foreign labour by 15 to 20 percent as a result of major gains in worker productivity in plantations. These EPPs will also create 41,600 new local jobs upstream and 81,800 additional jobs downstream, of which 40 percent will be high-skilled jobs earning an average monthly income of RM6,000. Additionally, we will reduce 110,000 upstream foreign workers.

8 EPPs Identified to Grow Incremental GNI of RM47.1 billion

In order to achieve this vision, we have identified two strategic thrusts for the palm oil industry. Aligned against each strategic thrust, we have identified a portfolio of EPPs to grow the industry's GNI contribution.

Upstream productivity and sustainability

Five EPPs will focus on improving upstream productivity generating an incremental GNI of RM33.1 billion in 2020. The implementation of these EPPs will transform Malaysia's oil palm industry, resulting in significant productivity improvement (from 21 to 26.2 tonnes per hectare per year). These EPPs are:

- **EPP 1**: Accelerating the replanting of oil palm;
- **EPP 2**: Improving fresh fruit bunch yield;
- **EPP 3**: Improving worker productivity;
- **EPP 4**: Increasing the oil extraction rate; and
- **EPP 5**: Developing biogas at palm oil mills.

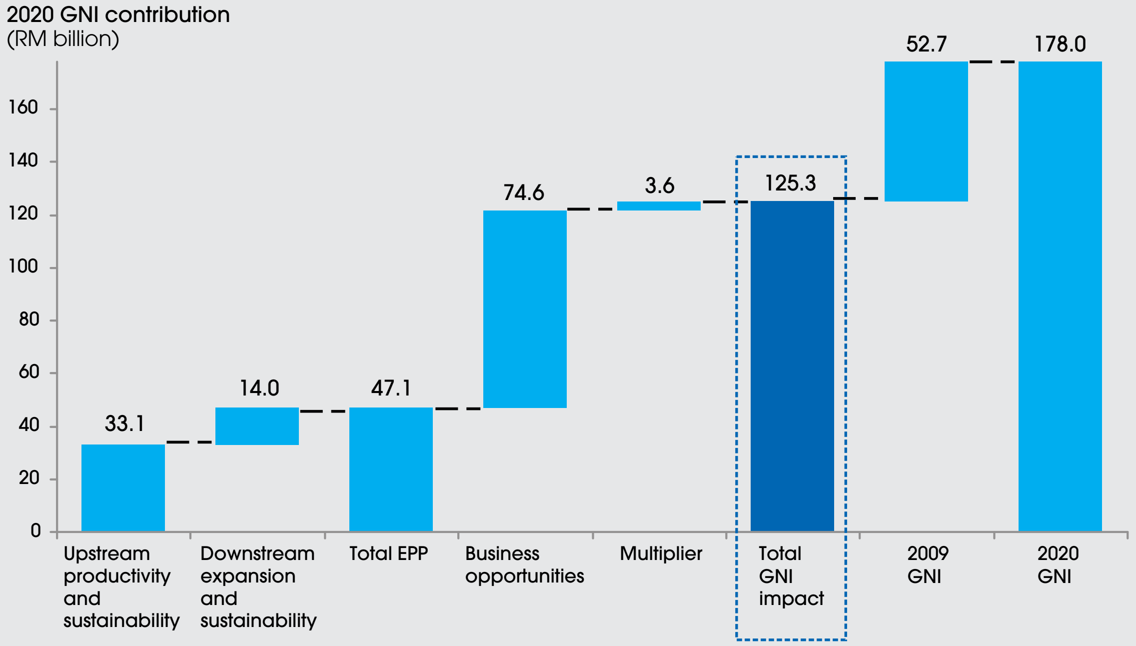
Downstream expansion and sustainability

The three EPPs focusing on downstream expansion are targetted to generate an incremental GNI of RM14.0 billion by 2020. These initiatives will involve coordinating public-private R&D efforts with a strong commercialisation focus. As a result we are expecting a rising income from downstream products, which will constitute at least 25 percent of total palm oil income. These EPPs are:

- **EPP 6**: Developing oleo derivatives;
- **EPP 7**: Commercialising second generation biofuels; and
- **EPP 8**: Expediting growth in food- and health-based downstream segments.

Exhibit 9-2

Eight EPPs, three business opportunities, baseline growth and multiplier effect will deliver RM125.3 billion incremental GNI impact by 2020



UPSTREAM PRODUCTIVITY AND SUSTAINABILITY

Upstream, the industry will undertake five key EPPs with high GNI and sustainability potential to secure the availability of high quality FFB for the growing downstream segments and ensure that both smallholders and plantations reap the fruits of the segment's future growth.

EPP 1: Accelerating the Replanting of Oil Palm

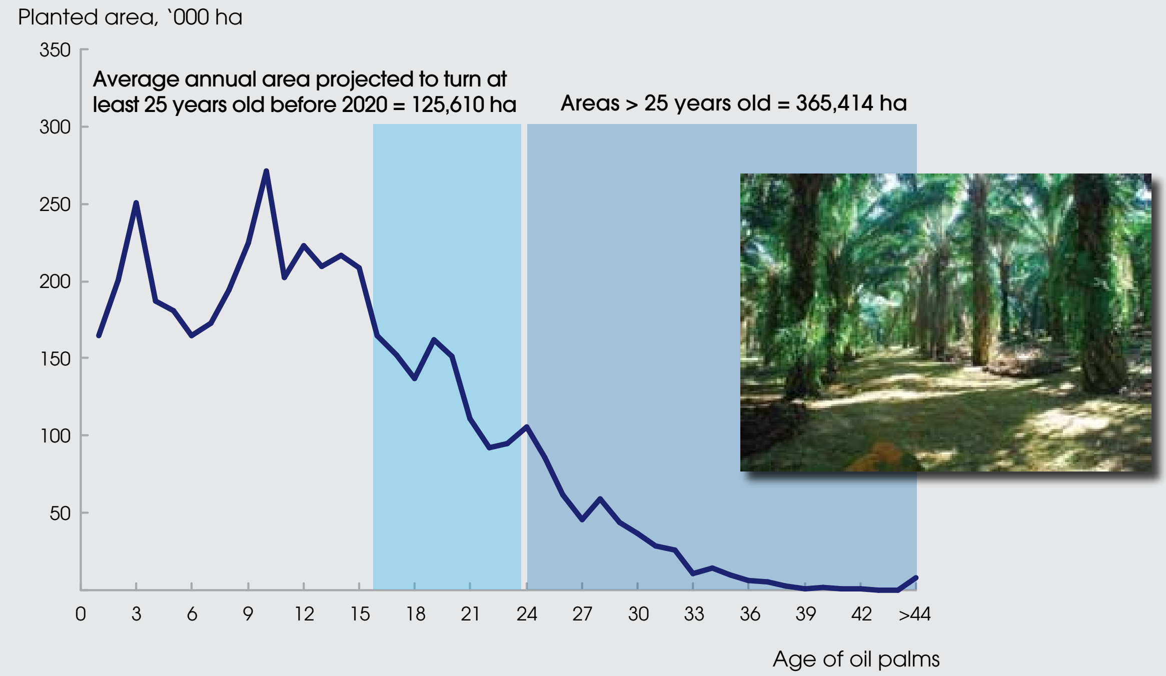
Rationale

Smallholders are reluctant to replant after the 25-year maturity period to avoid short-term losses of income, as it takes three years for palms to mature before the first harvest. The situation worsens when CPO prices are high as even plantation companies are then inclined to delay replanting to take advantage of the short-term revenue potential. As a result, Malaysia holds a backlog of 365,414 hectares of palm oil trees aged above 25 years (*Exhibit 9-3*), which normally have a lower yield. If replanting is not accelerated, it will take 14 years to clear the backlog. It is critical to clear the backlog now as each year an average of 125,610 hectares of trees become due for replanting.

Exhibit 9-3

Over 365,000 hectares of oil palm plantations have trees over 25 years old, which have lower yield will bring down the national average

Age profile of oil palm planted area



Actions

The main objective of this initiative is to replant 100 percent of the 365,414-hectare backlog of low-yielding palm oil trees older than 25 years within three years to help increase the average yield to 26 tonnes per hectare per year by 2020.

To clear the backlog, MPOB will carry out the following actions: It will implement a binding replanting policy for smallholders and plantations. Secondly, it will provide financial support targetted at independent smallholders. Thirdly, it will make available quality planting materials (seeds, clonal material, seedlings, ramets) for replanting activity, and finally MPOB will set up an implementation task force to manage all replanting activities.

Smallholders account for 230,211 hectares or 63 percent of the total backlog in Malaysia, while plantations hold the remaining 135,203 hectares. To ensure replanting is accelerated, MPOB will impose the following criteria for the binding replanting policy:

- Independent smallholders will not be allowed to keep palms older than 25 years that yielded less than 10 tonnes per hectare per year for the past three years;

- Organised smallholders will not be allowed to keep palms older than 25 years old that yielded less than 13 tonnes per hectare per year for the past three years; and

- Plantation owners will not be allowed to exceed 5 percent of their total Malaysian oil palm land area for palms older than 25 years old that yielded less than 16 tonnes per hectare per year for the past three years.

To further support independent smallholders in replanting activities, we will continue the one-off replanting payment of RM6,000 per hectare and monthly payments of RM500 per household for two years to independent smallholders holding 2.5 hectares or less. The replanting activities of organised smallholders will be managed by their respective government agencies (FELDA, FELCRA, RISDA, SALCRA, etc.) under existing schemes.

The current capacity of 87 million seeds per year exceeds the national requirement of 52 million seeds yearly. MPOB's focus will be to monitor the quality of planting materials, particularly for smallholders through the licensing of all nursery operators (about 20 percent are currently unlicensed).

MPOB will establish a replanting implementation task force focusing on independent smallholders, organised smallholders and plantation companies. The members of the taskforce will comprise MPOB, the National Association of Smallholders (NASH), all relevant government agencies (FELDA, FELCRA, RISDA, SALCRA, etc.), Malaysian Palm Oil Association (MPOA), Malaysian Estate Owners Association (MEOA), East Malaysia Planters Association (EMPA), Sarawak Oil Palm Plantation Owners Association (SOPPOA) and other associations representing plantation companies. This taskforce will meet on a quarterly basis to review the progress of replanting activities and formulate measures to solve issues encountered.

Upon clearing this backlog, MPOB will continue to monitor closely the national oil palm age profile.

Funding

This initiative requires RM1.0 billion in public funding in the form of direct incentives to independent smallholders to compensate for the loss of revenue and extra expenses incurred due to the mandated replanting activities.

In addition, this replanting initiative will require RM3.4 billion in private and GLC investment from plantation companies and their contractors in the form of felling and chipping equipment, terracing and drainage equipment, field-planting equipment, roads and bridges maintenance equipment. Both public and private funding will take place during the backlog clearing period from the first quarter of 2011 to the last quarter of 2013.

Impact

This EPP will generate an additional GNI contribution of RM4.6 billion in 2020.

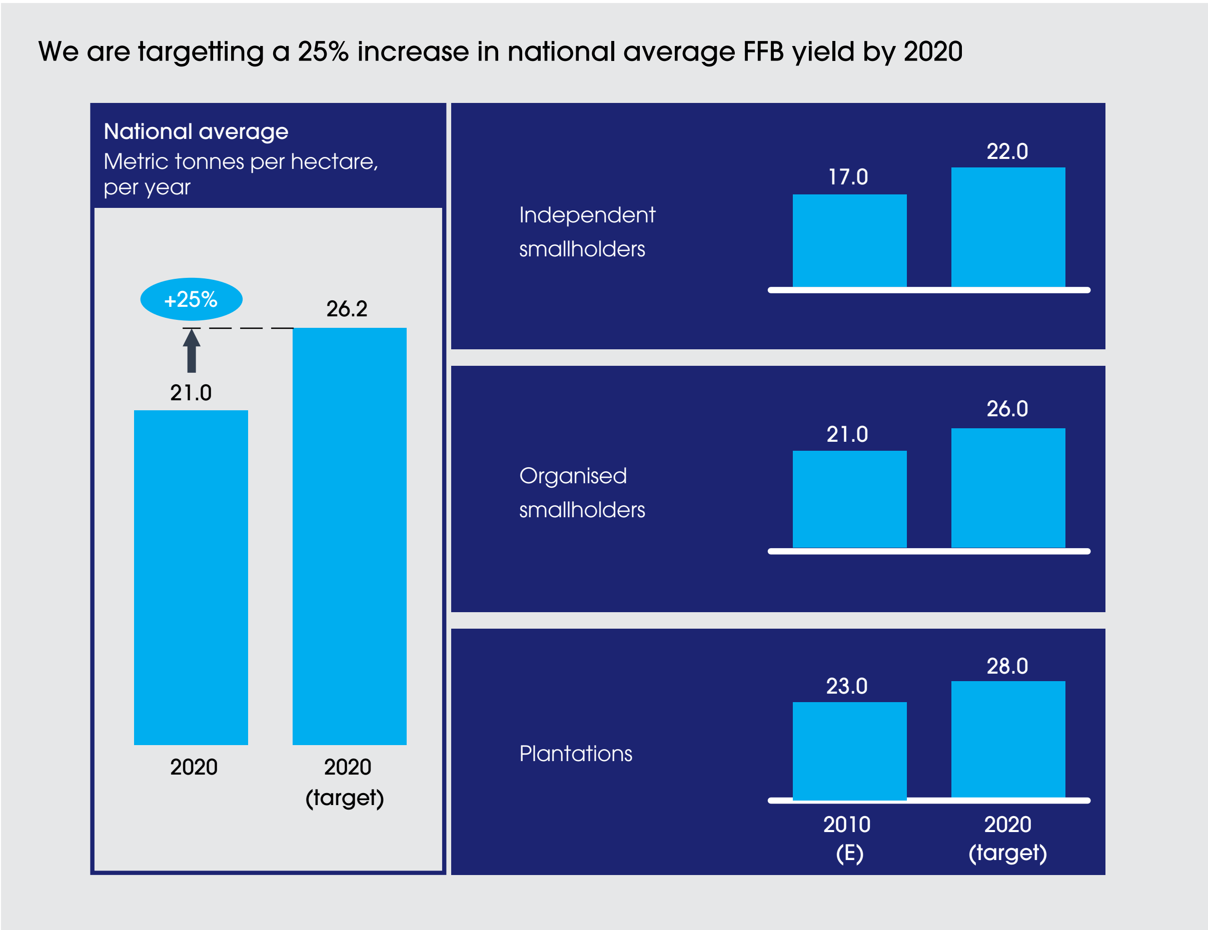
EPP 2: Improving Fresh Fruit Bunch Yield

Rationale

There are 161,000 independent smallholders in Malaysia. With 600,000 hectares, they account for 12.8 percent of the Malaysian palm oil plantation area and generate lower FFB yield (17 tonnes per hectare per year). Their limited average plot size (3.9 hectares per family) and lack of exposure to best practices are the major factors directly impacting yields.

Best practices, such as the Codes of Practice (COP) developed by MPOB and other industry guidelines and references, are not fully implemented by all plantations. This has further caused the average national FFB yield to stagnate.

Exhibit 9-4



Actions
This EPP will entail the implementation of four key activities:

- Recruiting 493 TUNAS (extension service) officers to improve the ratio from the current 1 officer to 950 smallholders (or 1:3,800 hectares) to a 1:250 smallholders (or 1:1,000 hectares) ratio. This will ensure better extension services to the smallholders by TUNAS officers;

- Clustering all 161,000 independent smallholders around their nearest mill into organised cooperatives across Malaysia;

- Mandating one of the reference industry best practices for all plantations, organised smallholders and cooperatives of independent smallholders; and

- Implementing a yearly ranking of cooperatives and smallholders to identify and replicate best practices.

Independent smallholders are scattered geographically, disorganised and highly dependent on middlemen to channel their FFBs to mills. TUNAS officers will cluster smallholders around their nearest mills into 134 cooperatives (1,200 smallholders per cooperative). The cooperatives will extend support services, act as purchasing agents of key inputs, assist in negotiating long-term contracts with the mill, monitor yields as well as FFB quality and facilitate administrative services. By 2013, all smallholders will be required by law to join a cooperative managed by at least one TUNAS officer. The cooperative system is expected to increase independent smallholder yields to 22 tonnes per hectare per year by 2020.

Most large Malaysian oil palm plantations are applying at least one of the reference good agricultural practices consistently (e.g MPOB Codes of Practices, Malaysian Standard of Good Agricultural Practices developed by SIRIM, Roundtable for Sustainable Palm Oil Practices). This has resulted in very good yields of an average 25 tonnes per hectare per year for the top 15 plantations. However, some smaller plantations reported yields below 21 tonnes per hectare per year. As such we will make it mandatory for all plantations, organised smallholders and cooperatives of independent smallholders to implement at least one of the three reference best practices or company best practices on par or better than MPOB's COP.

Finally, MPOB will carry out and publish annually a ranking of smallholders by average FFB yield within each cooperative and a national ranking of all cooperatives by average FFB yield. This will help MPOB to identify best practices and extend its services to the lowest performers. MPOB will also reward and recognise the top 10 performers among smallholders in each cooperative as well as the top 10 performing cooperatives nationally.

Funding
The FFB yield improvements will be applied to the new oil palm plantation area in Malaysia of about 1.3 million hectares. This implies development costs for the new areas in the form of capital investment in new land to convert the land to oil palm. This investment will be made entirely by private plantation companies and GLCs. The estimated land conversion cost is RM8,500 per hectare (excluding general and administration costs). In nominal terms, this translates into a total investment of RM10.0 billion over 10 years.

Impact
We estimate that in 2020 this initiative will generate RM10.2 billion of incremental GNI, create an additional 1,600 jobs and improve the annual income of 161,000 independent smallholders by 47 percent.

EPP 3: Improving Worker Productivity

Rationale

Malaysia is currently experiencing a shortage of skilled and unskilled labour in plantations estimated at 20 percent of the total industry workforce. This is due in part to the demanding nature of the work in estates and the growing number of attractive alternative job opportunities in other industries.

The lack of mechanisation options in plantations creates an over reliance on manual labour for all key activities: land preparation, nurseries, planting, fertilising, field upkeep and maintenance, harvesting, collection and transportation. As a result, Malaysian oil palm plantations are heavily dependent on foreign workers (currently estimated at 80 percent of total industry workforce). These foreign workers remit an average of 60 percent of their incomes back to their home countries. This has a direct negative impact on the GNI of the industry.

Actions

This EPP requires implementation of innovative techniques to increase the average productivity of harvesting and collecting process. As a result of this initiative we will also address the issue of remittance outflows by directly reducing the potential number of foreign workers required by 110,000 by year 2020.

To address the shortage of labour, we have identified three core activities (*Exhibit 9-5*) focusing on improving worker productivity:

- Scaling up the production and promoting the use of Cantas™, a motorised harvesting pole to improve harvesting productivity;

- Promoting usage of the 'diamond' sharpening tool to improve harvesting productivity; and

- Switching from manual collection to buffalo-assisted collection to improve FFB collection productivity, where mechanisation is not feasible.

Exhibit 9-5

Three techniques will improve the productivity of harvesting and collecting

Harvesting

From manual harvesting pole (1.5 tonnes/worker/day)...

... to motorised harvesting pole (Cantas™) (2.8 tonnes/worker/day)

Tool sharpening

From traditional sharpening tool (sharpen everyday) ...

...to 'diamond' sharpening tool (sharpen once every 5 days)

FFB collection

From manual collection...

... to buffalo assisted collection (average 40% increase in productivity)

Pictures courtesy of the Malaysian Palm Oil Board and Genting Plantation Berhad

Cantas™ is a motorised harvesting pole that can reduce the cutting time of FFB and can prune trees below 15 feet (5 metres), which account for 30 percent of oil palm trees (1.4 million hectares out of 4.7 million hectares). This will increase worker productivity by an estimated 85 percent. MPOB will ensure the production of Cantas™ is scaled up from the current 5,000 units per year to 20,000 units per year by 2020, and the unit price is reduced from the current RM5,000 per unit to a maximum of RM2,500 in order to encourage widespread usage. MPOB will also need to ensure that the durability of the pole and after-sales services of the suppliers meet the requirements of the industry.

The 'diamond' sharpening tool enables harvesters to increase their productivity by an estimated 40 percent due to faster and less frequent sharpening of sickles and chisels. MPOB will promote the usage of the sharpening tool and advise plantation owners and smallholders to provide sufficient lead time to the supplier. This will ensure the availability of the required 30,000 units by 2012.

Malaysia is still relying on manual labour for an estimated 75 percent of its FFB collection, which requires one worker for every 15 hectares. The remaining collection is done mostly through a mini tractor grabber, which costs RM60,000 per unit. This grabber has a five-year lifetime and requires only one worker for every 25 hectares. The usage of buffalo-assisted collection also gives the same ratio as the grabber, but costs only about RM5,000 per buffalo. This method is suitable for an estimated area of 700,000 hectares. MPOB will promote the usage of buffalo-assisted collection where suitable. The Veterinary Department (DVS) will ensure sufficient supply to meet the demand of about 32,000 buffaloes by 2015 either through importing buffaloes or launching local breeding programmes.

Funding

This EPP will not require any public funding, as it will rely on RM765 million of funding from private and GLC plantation companies as well as smallholders of more than 10-year tenure. This private funding will be targetted at three major activities: (1) the progressive acquisition of Cantas™ equipment by plantations and smallholders to replace manual harvesting poles, (estimated at RM525 million); (2) the purchase by plantations and smallholders of 'diamond' sharpening tools to improve harvesting productivity (estimated at RM74 million); and (3) the import or breeding of 32,000 buffaloes over 10 years to implement buffalo-assisted collection across Malaysia (estimated at RM166 million).

Impact

In 2020, this EPP will generate an estimated RM1.7 billion in GNI and create 28,000 local jobs (in addition to reducing 110,000 foreign workers).

EPP 4: Increasing the Oil Extraction Rate

Rationale

The national OER has not made significant improvements over the past years, and averaged 20.5 percent in 2009. This is because the performance of smallholders and independent millers has not been as high as that of plantations, due to inconsistent quality of FFBs delivered to the mills as well as the inefficiency of some old mills that have not upgraded their machinery.

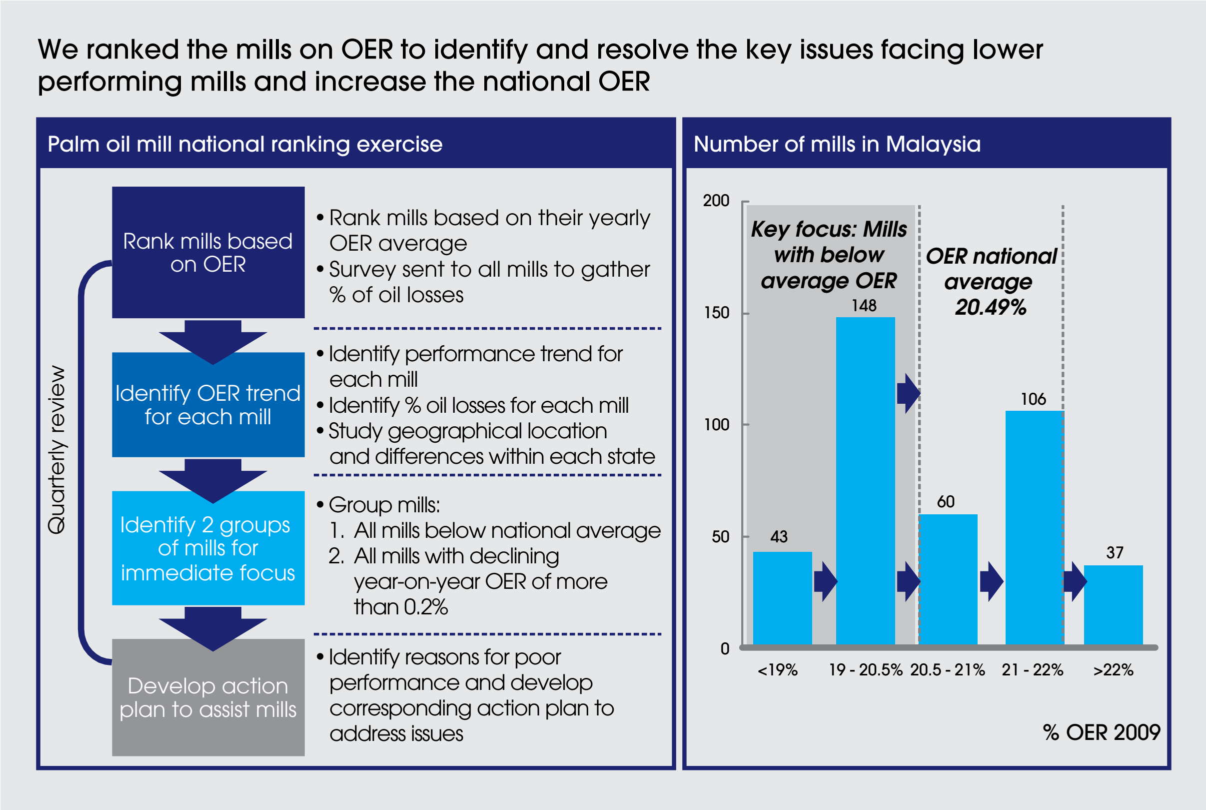
Actions

The objective of the EPP is to increase OER from the current 20.5 percent in 2009 to 23 percent by 2020 by implementing strict quality-control parameters at the mills and improve overall mill efficiency.

Through a ranking exercise, we have identified the performance of each palm oil mill across Malaysia. We will focus on improving the OER of mills that have an OER below the national average and those that recorded an OER drop of more than 0.2 percent from 2008 to 2009.

Based on the results of the ranking exercise, MPOB will redeploy enforcement officers to mills that have recorded an OER lower than the national average, as shown in *Exhibit 9-6*. These officers will monitor the FFB acceptance process by the mills so that bunches rejected by any mill do not get accepted by another. MPOB will recruit additional enforcement officers to be deployed at other mills which are above the national average but have recorded a decline of 0.2 percent in OER year-on-year, if required. At the same time, FFB dealers will be required to recruit at least one MPOB certified grader to ensure the quality of FFB delivered. Payment of bunches will be paid strictly according to the quality received to ensure a better supply of FFB.

Exhibit 9-6



In addition, older mills will be expected to improve efficiency by upgrading their machinery to reduce FFB oil loss by an additional 0.5 percent. The mills will need to improve the consistency of steam supply and maintain stable temperature throughout the processing activities. This will be done through automation and the installation of larger capacity boilers. The installation of new pressing and cracking equipment such as the empty fruit bunch (EFB) screw press, Rolek nut crackers and the four-stage winnowing system will improve both the quality and recovery of oil and kernel losses.

As a result of the upgrading and installation of new machinery at the mills, better quality palm kernel will be delivered to the kernel crushing plant. The palm kernel OER will be improved by reducing the dirt and shell content in palm kernel by an additional 2 percent, and reducing the moisture content in palm kernel from the current average of 7 percent to 5 percent. Moreover, the quality of the palm kernel expeller (PKE) will also improve by reducing the dirt and shell content to a maximum of 12 percent. This will allow the PKE to be also sold as feedstock to poultry farms.

Funding

The OER improvement EPP does not require any public funding. The RM3.0 billion private investment provided by independent millers and large integrated plantation companies will be targetted at upgrading equipment in palm oil mills across Malaysia. These equipment include sterilisation process equipment, screw presses, bunch crushers, Rolek nut crackers, clarifier systems, boilers and turbines.

Impact

This EPP will generate an additional RM13.7 billion in GNI and create 10,000 local jobs mostly due to the opening of 84 new mills to meet increased supply of FFB in 2020.

EPP 5: Developing Biogas at Palm Oil Mills

Rationale

When FFB is processed, palm oil mill effluent waste (POME) is generated. In order to reduce the impact to the environment, the POME is treated before being discharged. It consists of several steps including cooling, oil removal, anaerobic and aerobic treatment (to reduce Biochemical Oxygen Demand (BOD) and Chemical Oxygen Demand (COD) to a level acceptable for irrigation or land application). The anaerobic decay of organic matter inside the ponds is accompanied by the production of biogas containing methane (which is a principal component of natural gas) that is released into the atmosphere.

This methane gas released during the milling process has given the palm oil industry a negative image due to its high potential for global warming where it is over 20 times more effective in trapping heat in the atmosphere than carbon dioxide over a 100-year period. As methane gas could be captured to generate electricity, mills can benefit from this new revenue source as well as from the carbon credit programme offered under the United Nations Framework for Climate Change Convention (UNFCCC). As of today, only 12 mills in Malaysia have embarked on the development of biogas plants.

Actions

The objective of this initiative is to ensure that mills capture methane gas to generate electricity for supply to the national grid or for their own use. Mills should start developing biogas plants immediately to capture additional income from the incentives offered by the Clean Development Mechanism (CDM) programme before it expires in 2012.

Biogas plants will be developed at the 500 mills over the next 10 years. Of these, 250 mills will target to supply electricity to the national grid by 2020. Another 233 mills will capture biogas to be used as fuel for their own boilers. The balance of 17 mills will use the methane gas for both options. The development of biogas plants will also enable mills to gain another revenue source from the sale of palm kernel shells, previously burnt as fuel.

To accelerate the development of biogas plants, the electricity tariff for Renewable Energy Power Purchasing Agreement (REPPA) must be increased from the current RM0.21 per kilowatt hour to RM0.35 per kilowatt hour. To assist independent millers in funding the development of their biogas plants, an existing Green Technology Fund set up by the Ministry of Energy, Green Technology and Water is available.

Funding

This EPP will be wholly funded by independent millers and plantation companies with a total estimated cost of RM2.8 billion. The investment will be targetted at three major areas for the construction and operation of biogas plants: building gas flaring facilities (worth RM1.7 billion), investing in connection of mills to the grid (worth RM845 million) and investing in gas burners (worth RM259 million).

Impact

This EPP will generate an estimated RM2.9 billion in GNI in 2020 while creating 2,000 jobs and not requiring any incremental Government funding.

DOWNSTREAM EXPANSION AND SUSTAINABILITY

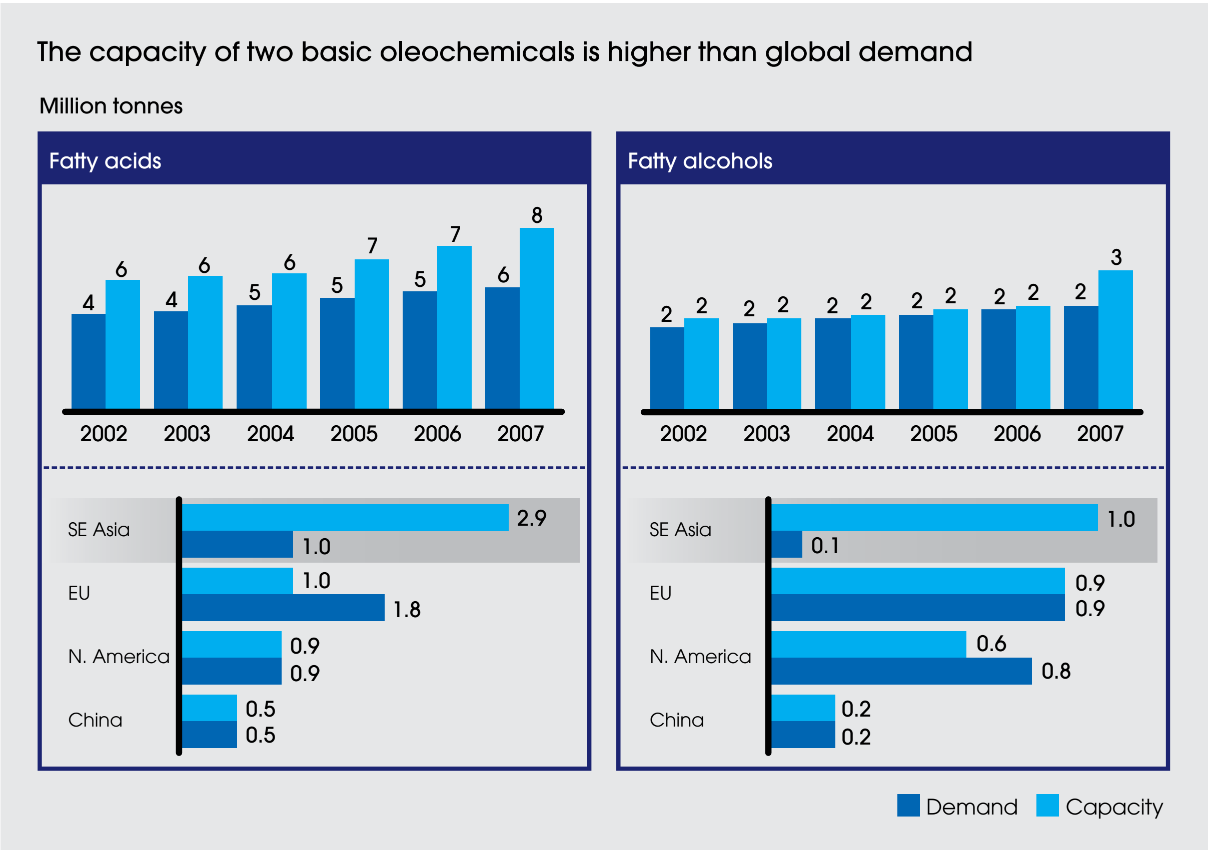
The industry will accelerate the shift of its activities from upstream to downstream, investing both in food- based and non food-based segments. The growth of downstream activities will be driven by a strong focus on finished segments that generate high value, including oleo derivatives and selected food- and health-based products, and sustainable activities such as bio oil.

EPP 6: Developing Oleo Derivatives

Rationale

Malaysia's palm oil non-food downstream segment is focused on basic oleochemical products: fatty acids, fatty alcohols, methyl esters and glycerine. These chemicals are consumed in a wide range of industries. Basic oleochemicals constitute 99 percent of the palm oil non-food downstream production, while the remaining 1 percent is contributed by oleo derivatives that are developed from basic oleochemicals and used in consumer products like soaps, detergents and cosmetics. However, the capacity for two basic oleochemicals, i.e. fatty acids and fatty alcohols, is much higher than global demand, and this gap is not expected to reduce significantly in the near future, as shown in *Exhibit 9-7*. The issue is further compounded by the fact that these have lower profit margins (7 percent on average) compared to high-value oleo derivatives (20 percent on average).

Exhibit 9-7



Actions

The main objective of this initiative is to shift national production from basic oleochemicals to higher value oleo derivatives from the current 1 percent share to a forecasted 40 percent by 2020. This will be achieved by focusing on five key products: agrochemicals, surfactants, bio lubricants, bio polyols and glycerol derivatives.

By 2020, Malaysia is expected to capture 14 percent of the global demand for these products, at a value of RM25 billion.

This EPP will be implemented with five key activities:

- Supporting local oleo derivative companies to expand domestic production;
- Incentivising local companies to set up plants through joint ventures abroad;
- Helping major oleochemical companies to lead investments in recommended product segments;
- Exploiting synergies with petrochemical companies; and
- Encouraging foreign investors to set up factories or enter into joint ventures in Malaysia.

Moving ahead, public and private R&D must be focused on high value oleo derivatives. MPOB and Malaysian Palm Oil Council (MPOC) will support local oleo derivative development through the setup of pre-commercialisation investment and technology acquisition funds and through the provision of global market knowledge and research support. To support local companies to set up joint ventures abroad, we will provide tax incentives for foreign acquisitions. Moreover, MPOC and Malaysian Industrial Development Authority (MIDA) will provide key market knowledge and enhance collaboration with investors, technology providers and key research centres in universities abroad. The key oleochemical companies in Malaysia will expand their investments in the recommended oleo derivative products, and increase their revenue share from derivatives over the next 10 years. The Malaysian oleochemical industry will also exploit synergies with petrochemical companies by sharing key raw materials for oleo derivatives and hence spreading the necessary investments across the two industries. To attract foreign investors to set up their plants in Malaysia, MIDA and local government authorities will aggressively promote five proposed oleo hubs, which will each have a centralised utility facility to support the plants.

Funding

This EPP requires public funding of RM508 million and tax incentives of RM84 million to create the following:

- A pre-commercialisation investment fund to finance pre-commercialisation plants for the target product segments, estimated at RM226 million over 10 years;
- A technology acquisition fund of RM282 million, dedicated to assist Malaysian oleochemical companies to acquire new technologies from abroad; and
- A foreign acquisition tax incentive to encourage existing companies to expand overseas, which is expected to cost RM84 million over 10 years.

Additionally, this initiative will rely on RM10.2 billion of private investment dedicated to the construction of 84 oleo derivative plants for the five products over the next 10 years.

Impact

In 2020, this EPP will generate an additional RM5.8 billion in GNI and create 5,900 local jobs.

EPP 7: Commercialising Second Generation Biofuels

Rationale

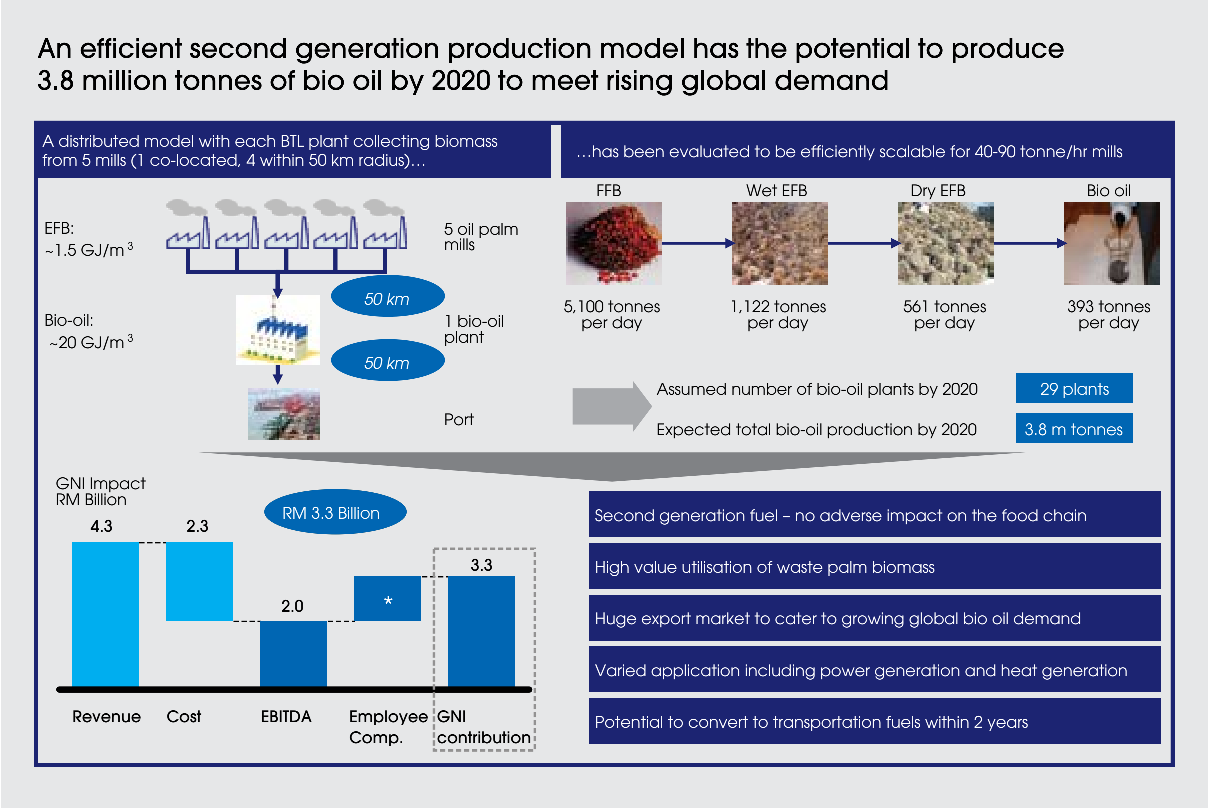
In 2009 alone, the industry generated over 60 million tonnes of oil palm biomass in the form of empty fruit bunches, tree fronds and trunks. The biomass potential especially for EFB is significantly underutilised and the industry norm of burning (to produce bunch ash fertiliser), composting and mulching is not the best use of these resources from either an economic or an environmental perspective.

Actions

The objective of this EPP is to fast track the commercialisation of second generation bio-fuels to leverage the biomass generated in the industry. Based on current technological progress, the production of bio oil using biomass-to-liquid technology is one of the best possible high-value utilisations of biomass generated at mills and is ready for immediate commercialisation. Bio oil can be used for generating electricity by co-firing with coal in power plants, for firing boilers and for combustion in diesel engines. Bio oil also offers the potential of becoming the new crude oil. As the technology becomes available in the next few years, bio oil can be converted into green transportation fuels like green diesel, green gasoline or green jet fuel in existing petroleum refineries or through standalone conversion systems linked to the bio oil plants.

There are two private sector companies in Malaysia that are close to commercialising an efficient second generation bio oil production technology, as shown in *Exhibit 9-8*. In their business model, the companies will set up 29 bio oil plants across Malaysia by 2020, which will have the potential of producing 3.8 million tonnes of bio oil. These private companies will enter into joint ventures with plantation companies and establish bio oil plants co-located with selected palm oil mills to start production by 2012. The bio oil will then be supplied for power generation as well as for export to countries showing rising demand. These companies will have to negotiate with plantation companies in order to ensure a sufficient and continuous supply of EFB for use as the basic raw material.

Exhibit 9-8



The companies will further commercialise the technology for conversion of bio oil to transportation fuels by 2014. They will then use the technology for existing petroleum refineries or with stand-alone systems linked to the bio oil plants and supply bio oil for conversion into green transportation fuels namely green diesel, green gasoline and green jet fuel.

Funding

This EPP will not require any public funding and will entirely rely on RM3.2 billion worth of private investment over the next 10 years. These investments will be targetted at building 29 bio oil plants and sourcing EFB as raw material.

Impact

In 2020, this EPP will generate RM3.3 billion in additional GNI and create 1,000 local jobs.

EPP 8: Expediting Growth in Food and Health-based Downstream Segment

Rationale

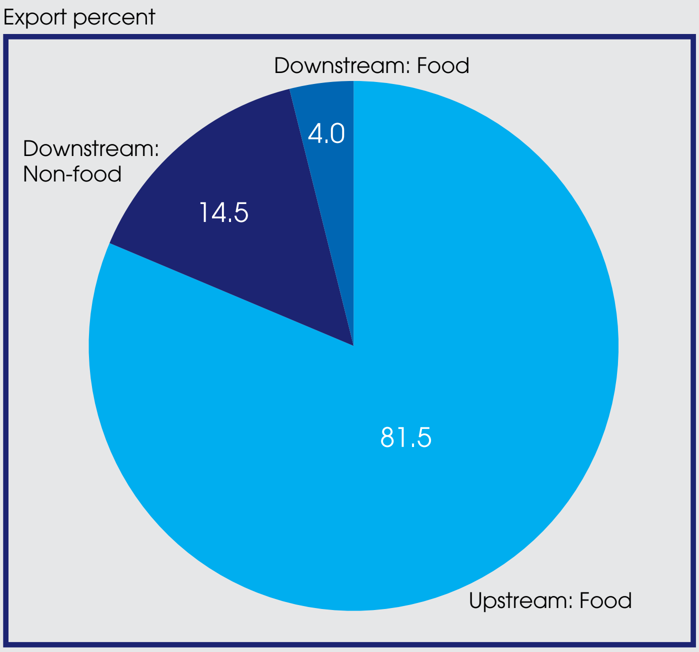
Plantation companies have traditionally viewed upstream activities as their core business. Their established expertise in upstream activities and lack of marketing expertise and technical know-how in the food and health-based segment have rendered their decision to venture into this segment more challenging. The export value of upstream products represents 81.5 percent of total palm oil exports while non-food downstream products account for 14.5 percent and food- and health-based downstream products constitute only 4.0 percent (*Exhibit 9-9*).

The few large plantation companies that have ventured downstream often play the role of silent partner, with minimal involvement in the day-to-day running of the operations, which prevents significant knowledge transfer. Furthermore, some SMEs that have ventured downstream have competitive products but often lack expertise in product-packaging and marketing or scale to compete globally.

The palm oil industry must move towards downstream activities (e.g. halal products, biscuits, ice cream, tocotrienols, carotenoids and phenolics) to balance the current reliance on upstream and overcome the land constraints on future growth in upstream.

Exhibit 9-9

Upstream versus downstream exports



Actions

To accelerate the growth in the food- and health-based downstream segment, we will provide tax incentives for Malaysian companies to acquire foreign food companies with proven product and market success. The Malaysian companies must manage the acquired companies in a hands-on manner to ensure transfer of knowledge in R&D, product development, branding and marketing expertise.

Major plantation companies are strongly encouraged to venture into or expand their downstream finished product activities through an anchor company model where they will contract out or outsource the manufacturing of their production to selected local small- and medium-sized enterprises (SMEs). As anchor companies, these major plantations companies will undertake product research, brand development and market penetration while the selected SMEs will focus primarily on product manufacturing. For a start, Sime Darby and Felda will take the lead in this initiative.

Companies in the industry and SMEs seeking to expand globally can apply for a grant offered by MPOC, namely Programme for Rebuilding and Improving Malaysian Export (PRIME), to help them in their export promotion activities. To support this shift to downstream activities, MPOB will have to improve its engagement with the plantations industry and better align its R&D activities with market demand and the demands of the plantation industry. The performance of its commercialisation activities will be measured based on the number of products actually commercialised i.e. where a newly developed product is finally purchased by the intended end user.

Funding

This EPP will require public funding (RM1.4 billion over 10 years) in the form of an interest-rate-incentive scheme, where up to 2 percent of the interest rate of commercial loans taken from local banks will be borne by the Government upon meeting strict criteria for food- and health-based downstream expansion. A foreign acquisition tax incentive will also be provided (RM2.3 billion over 10 years) and an advertising and promotion tax deduction given, targetted at downstream products promotion (RM240 million over 10 years). The private sector will invest RM23.4 billion to finance foreign acquisitions and to build 291 new plants, upgrade the existing facilities of SMEs and develop themselves into anchor companies for SMEs.

Impact

In 2020, this EPP will generate RM4.9 billion in additional GNI and create 74,900 local high skilled jobs.

BUSINESS OPPORTUNITIES

Over the next 10 years, Malaysia will also be driven by the natural growth of the palm oil industry, captured in three business opportunities worth RM57.6 billion by 2020. In addition, a yearly 2.8 percent inflation rate over 10 years, estimated at RM17.0 billion is captured based on the GNI generated by palm oil in 2009. This will translate into a total of RM74.6 billion worth of business opportunities in 2020.

Business Opportunity 1: Expansion of Existing Upstream Activities

The first focus area is the expansion of existing upstream activities, which is expected to generate RM44.8 billion of GNI by 2020. This growth will be driven by two major factors: expansion of Malaysian plantations abroad and organic growth in yield levels.

Malaysian companies currently hold an estimated 1.3 million hectares of palm oil plantations abroad, including over 1 million hectares in Indonesia. As acreage expansion in Malaysia is slowing down (3.3 percent yearly from 2000 to 2009 versus 2.5 percent expected from 2010 to 2020) due to the scarcity of arable land, Malaysian companies are expected to invest more aggressively in plantations abroad. By 2020, Malaysian plantations will have an additional 2 million hectares in Indonesia, other parts of Southeast Asia and Western Africa. This will translate into an additional GNI contribution of RM17.6 billion by 2020 and will require a total private investment of RM17.6 billion over the next 10 years.

Organic growth in yield levels will be the key to drive upstream developments. Planting material will improve due to wider utilisation of quality clonal material, hybrid seeds, bi-clonal and semi-clonal seeds and better crop recovery through marginal improvement in collecting practices. As a result, plantations and organised smallholders will gradually increase their productivity. This will generate an additional GNI contribution of RM27.2 billion by 2020. Hence, the total GNI expected contribution from this business opportunity in 2020 is RM44.8 billion.

Business Opportunity 2: Development of Existing Downstream Activities

Malaysia is a major global basic oleochemical player, producing 2.8 million tonnes of the total annual global production of 12.2 million tonnes. Growth in the non-food segment will be driven by the expansion of basic oleochemicals. Palm feedstock availability, lower operating costs and increasing regional demand are expected to further shift production to Southeast Asia in the future. The food segment, though much smaller, will expand due to rising consumer demand for packaged foods. The funding requirement for this business opportunity is RM46.9 billion, which will come entirely from the private sector. The downstream investment plans of leading companies will generate an incremental GNI contribution of RM11.2 billion by 2020 while creating an additional 26,500 jobs.

Business Opportunity 3: Development of National Biodiesel Activities

There are 25 biodiesel plants in the country with a total capacity of 2.6 million tonnes. However, current production is a mere 228,000 tonnes, almost all of which is exported. There is negligible local consumption, as the production cost of biodiesel is much higher than the retail diesel pump price; a Government subsidy of 19.6 sen per litre is needed to compensate the producers in order for them to break even. Globally, countries are taking active steps to implement mandatory biodiesel usage, driven by Government incentives ranging from RM1.20 to RM2.50 per litre. The incremental GNI for this opportunity is expected to come from the introduction of mandatory 5 percent biodiesel blend with petroleum diesel (B5) usage in Malaysia from 2011, an expected further increase to 10 percent biodiesel blend with petroleum diesel (B10) and export growth.

This business opportunity will translate into an additional GNI of RM1.6 billion by 2020 and create an additional 2,100 jobs. Apart from the economic benefits, this opportunity will further bolster Malaysia's commitment to reduce greenhouse gas emissions in the coming decade.

COMMON ENABLERS

The upstream activities of palm oil are very labour intensive and are thus largely dependent on the availability and productivity of workers. To improve the average annual plantation yield to 26.2 tonnes per hectare will require the harvesting of over 5 million hectares of mature trees by 2020; assuming harvester productivity of 1.5 tonnes per hectare, the industry will require 289,000 workers. There are currently 187,000 harvesters in the country and hence, the industry would have required a net addition of 102,000 harvesters to meet the targets if there was no replacement in mechanisation or increase in worker productivity.

In February 2010, both public and private sector participants were convened in a palm industry labour workshop conducted by MPOB to address the issues, performance and sustainability of labour in the industry. The workshop focused on: (1) reducing the dependency on foreign labour by attracting local workers to the industry; and (2) identifying methods to increase the adoption of mechanisation in the oil palm sector. The workshop recommended that companies improve amenities and working conditions to attract local labour and also intensify development and adoption of mechanisation. The recommendations included incentives from the Government for companies to hire local workers. Several actions were identified for immediate implementation by various stakeholders and a monitoring mechanism put in place to track progress.

At present the palm oil industry is heavily skewed towards upstream and there is a large gap of knowledge and expertise in the food and non-food downstream segments. With the proposed eight EPPs, 80,000 new skilled jobs will be created in the downstream sector by 2020. Specific enablers required to prepare for the forthcoming requirements are:

- Increase the number of university courses and graduates in the areas of chemical engineering, bio-engineering, food science, food technology, nutrition and health, agricultural science, agricultural engineering and agricultural business management as well as economics, finance and marketing, product R&D and product design. The estimated number of graduates needed by the industry over the next 10 years is: 18,000 diploma holders, 55,000 undergraduates, 6,000 Master degree holders and 1,000 PhDs;

- Extend the existing Brain Gain Malaysia incentive programme to Malaysian food scientists and technologists, fast-moving consumer goods marketing specialists, industrial chemical engineers and bio-engineers from leading global food and non-food downstream companies living abroad; and

- Companies in the industry and Government departments and agencies such as MPOB and MPOC must play a key role in collecting information such as business intelligence, product intelligence, competitive intelligence and development of product sciences and technology to stay ahead of the industry.

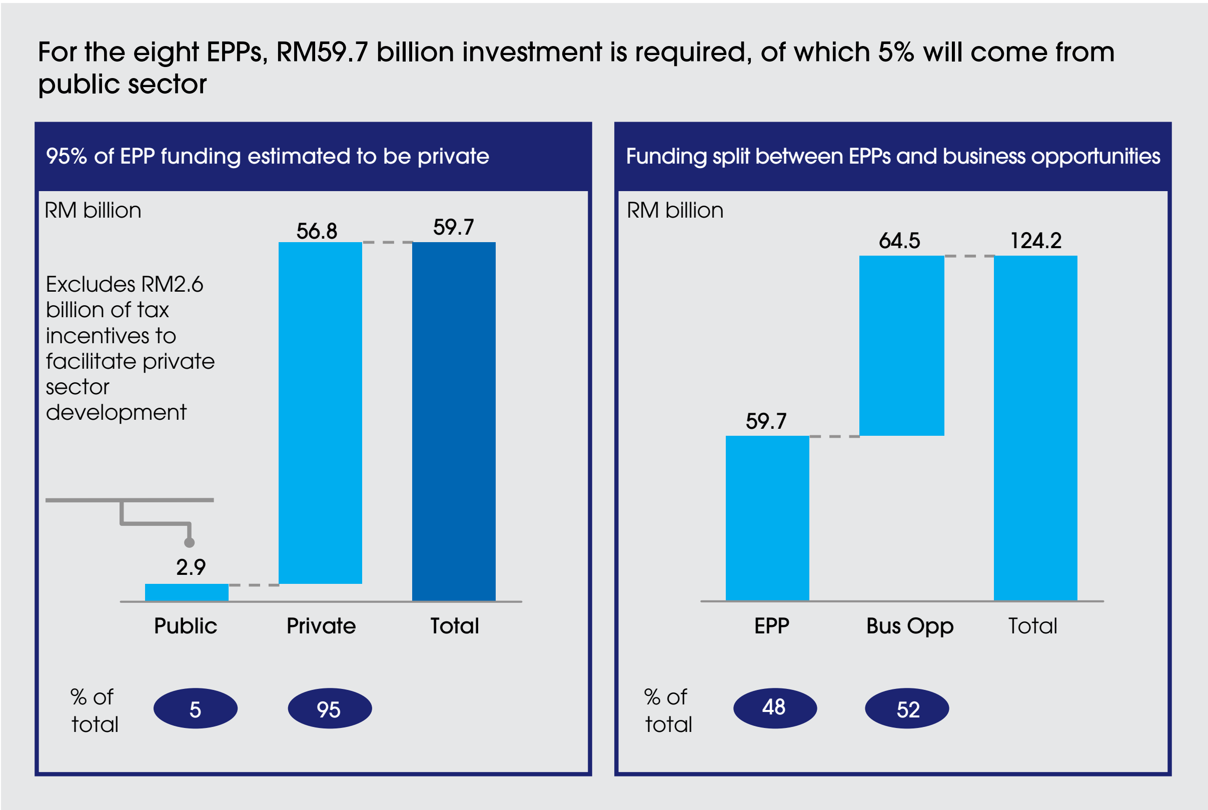
FUNDING

The palm oil industry's future developments will be led mainly by the private sector, banking on the financial and operational strength of large plantation companies. The eight EPP initiatives identified will require an estimated cumulative funding of RM59.7 billion over the next 10 years, of which RM56.8 billion (or 95 percent) will be financed by the private sector, as shown in *Exhibit 9-10*. Total public funding in the form of Government capital expenditure for all EPPs amounts to RM2.9 billion over 10 years. An additional RM2.6 billion is required in the form of tax incentives to promote private sector development.

The funding requirement for business opportunities amounts to RM64.5 billion, which will come entirely from the private sector. The funding will be for the expansion of the upstream activities, including investment in plantations abroad as well as developing further downstream activities such as oleochemicals and food segment.

The total funding requirement for the Palm Oil NKEA amounts to RM124.2 billion by 2020.

Exhibit 9-10



GOVERNANCE AND DELIVERY

Successful implementation of the EPPs and business opportunities hinges on ownership and accountability. To ensure proper ownership and accountability, a dedicated owner has been identified for each initiative. In addition, a detailed delivery plan consisting of implementation details, timelines, key performance indicators and targets as well as a risk and mitigation plan has been developed for each of the EPPs. An overview of the agencies in charge of the various initiatives is shown in *Table 9-1*.

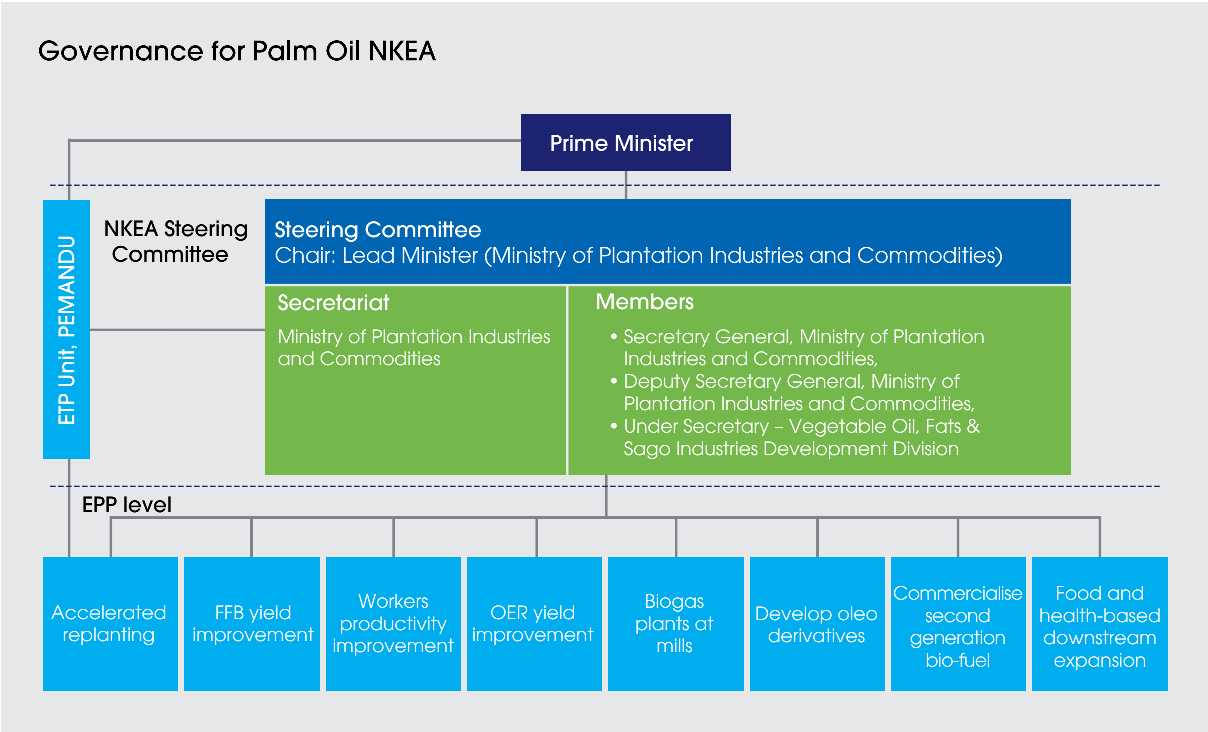
Table 9-1

EPP	Lead initiative owner	Other stakeholders
Accelerating the replanting of oil palm	Director General of MPOB	Plantation companies, Smallholders
Improving fresh fruit bunch yield	Director General of MPOB	Plantation companies, Smallholders
Improving worker productivity	Director General of MPOB	Department of Veterinary Services, Cantas manufacturers, Diamond sharpener, manufacturers/importers, Buffalo importers, Plantation companies
Increasing the oil extraction rate	Director General of MPOB	Plantation companies, Independent millers and crushers
Developing biogas at palm oil mills	Director General of MPOB	Plantation companies, Independent millers
Developing oleo derivatives	Heads of Downstream activities of Sime Darby, IOI, KLK and Felda	Malaysian Palm Oil Board, Ministry of International Trade and Industry (MITI), MIDA, MPOC
Commercialising second generation biofuels;	Premium Renewable Energy Sdn. Bhd. Genting Berhad	Plantation companies
Expediting growth in food and health-based downstream segments	Director General of MPOB	MITI, MIDA, Plantation companies

Effective Governance Model

To ensure effective implementation of the EPPs and a seamless transition between planning and execution, a governance model has been established. A Palm Oil NKEA Secretariat will be set up and based at the Ministry of Plantation Industries and Commodities. It will work together with the ETP Unit in close collaboration with EPP owners to undertake delivery including implementation issues guided by the key-performance indicators and delivery schedule. The Palm Oil NKEA Secretariat will be staffed by dedicated personnel that will monitor each EPP closely on a weekly basis and report back to the Palm Oil NKEA steering committee. The Steering Committee will be chaired by the Minister of Plantation Industries and Commodities.

Exhibit 9-11



Summary of Palm Oil NKEA	
• **Incremental GNI impact in 2020**	RM125.3 billion
• **Additional jobs in 2020**[1]	41,600

- **Critical targets and milestones within 6 to 12 months**
  - Policy to ensure mandatory replanting for plantations and smallholders and enforcement of Codes of Practice (COP, MSGAP, RSPO, company best practice) is implemented
  - Ensure that Cantas™ can be produced at unit price of a maximum of RM2,500 and reach a production capacity of 20,000 units per year by 2015
  - Ensure that the selection of local importers and suppliers of buffaloes to plantations and smallholders in Malaysia is completed
  - All MPOB grading officers are deployed in poor performing mills
  - Best biogas plant technology providers are identified and 30 biogas plant projects at mills across Malaysia are initiated
  - Oleo derivative technology acquisition fund, pre commercialisation investment fund and foreign acquisition tax incentive will be set up
  - First commercial bio oil plant to begin construction

1 This includes the reduction of 110,000 foreign workers in the NKEA, hence effectively 151,600 local jobs are expected to be created

Special Focus: The Rubber Industry

Malaysia's rubber industry contributed RM18.5 billion to National GNI in 2009 (excluding contribution from rubberwood at RM7.11 billion). The industry spans the entire value chain from upstream plantations to downstream manufacturing activities. Rubber can be said to be Malaysia's second main commodity crop after oil palm, as Malaysia is the world's third largest natural rubber producing country behind Indonesia and Thailand and has a solid presence downstream as it produces much of the global production of rubber gloves. In moving towards the year 2020, there are however many inherent challenges that our rubber industry is facing and needs to therefore overcome. To this end, we recognise that the rubber industry will primarily need to adopt effective strategies to meet global challenges and take advantage of opportunities to remain competitive. As such, the rubber industry is given special focus under the ETP with a target growth rate of at least 6 percent per annum towards 2020.

DEFINITION OF THE RUBBER INDUSTRY

In 2009, the total agricultural land use in Malaysia was 6.6 million hectares. Rubber accounts for 1.02 million hectares of agriculture land use in Malaysia (about 78 percent of all rubber-planted area is in Peninsular Malaysia) with an annual natural rubber production of 857,000 tonnes. The vast majority, or 94 percent (0.96 million hectares) of this area is held by 414,430 independent and organised smallholders with an average planted area of just 2.3 hectares. The productivity gap between such smallholders and plantation companies operating at scale is significant at 1.44 tonnes per hectare per year versus 1.61 tonnes per hectare per year respectively. For comparison, Malaysia's overall average productivity was 1.45 tonnes per hectare per year in 2009.

Downstream, there are 348 rubber-product manufacturing companies in Malaysia (year 2009). These include 125 latex product manufacturers, 154 general rubber goods manufacturers, 31 industrial rubber goods manufacturers, 17 footwear and component manufacturers, 11 tyre manufacturers and 10 inner tube manufacturers. We are the world's largest producer of rubber gloves accounting for 63 percent of the 150 billion rubber gloves produced worldwide (year 2009 statistics). We are also present in the global tyre market, albeit with a relatively small role, accounting for only 1 percent of the global market for tyres today.

MARKET ASSESSMENT

The global demand for rubber has increased at a compound annual growth rate of 1.8 percent in the past 10 years, fuelled by growth in the demand for natural rubber. Today, China is Malaysia's largest export market for natural rubber and accounts for more than a quarter of all Malaysia's natural rubber exports. Overall, Malaysia's rubber exports have increased by a compound annual growth rate of 12 percent over this past decade, with the highest growth rate recorded by the industrial rubber goods segment growing at a compound growth rate of 39.7 percent annually.

Even though the market outlook for the global rubber industry is particularly good, the Malaysian rubber industry is facing challenges that will constrain the growth of the industry in a significant manner:

- **Declining area for rubber**: Although demand globally has grown, Malaysia's rubber plantation area has been gradually declining at a compound annual growth rate of negative 2.9 percent over the last 10 years. This is largely due to the conversion of rubber land to other crops and for other economic activities.

- **Low productivity**: Productivity remains low due to existence of old and low-yielding clones, planting of non-recommended clones and low adoption of latest latex harvesting technologies and mechanisation;

- **Excess processing capacity**: A raw material shortage by processing factories has resulted in increases in excess production capacity and a drop in productivity;

- **Shortage of labour**: High turnover of labour as well as difficulties in attracting local labour has resulted in a labour shortage; and

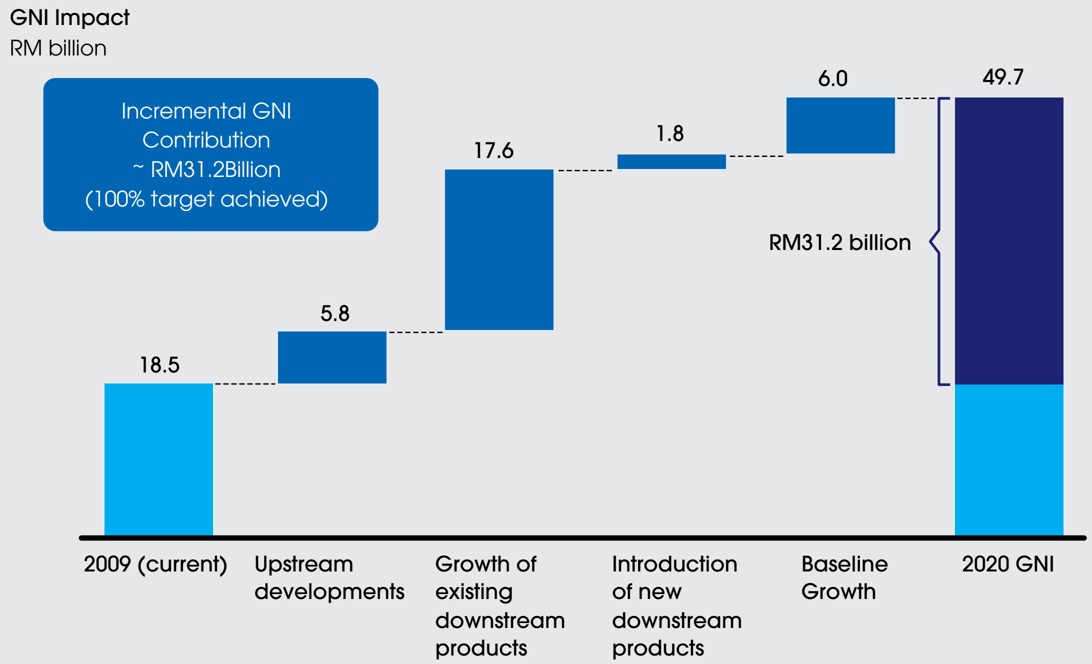
- **Inadequate supply of natural gas for rubber products industry**: Currently, there is an inadequate supply of natural gas for the expansion of the rubber glove and rubber latex industry.

TARGETS AND ASPIRATIONS

We aim to increase the current RM18.5 billion GNI contribution of the rubber industry to RM49.7 billion by 2020 (*Exhibit 9-12*) to help drive Malaysia towards a high-income economy. We plan to bridge this GNI gap through the implementation of three projects. The bulk of the GNI value generation (56 percent) will come from the growth of existing downstream products worth RM17.6 billion in 2020 with an expected baseline growth of RM6.0 billion over the next 10 years.

Exhibit 9-12

The Malaysian Rubber Board identified three projects which we estimate will bring an incremental GNI of RM31.2 billion by 2020



3 projects Identified to Grow Incremental GNI of RM31.2 billion

We have identified three projects to overcome the challenges to growth by stabilising the rubber area and improving yield, accelerating growth of yield and introducing new rubber products.

Project 1: Stabilising the Rubber Area and Improving Yield

Maintain rubber plantation area in Malaysia at around 1 million hectares by:

- Identifying zone of 1 million hectares for rubber in Peninsular Malaysia (700,000 hectares), Sarawak (200,000 hectares) and Sabah (100,000 hectares);

- Increasing area replanted annually from 20,000 hectares to 40,000 hectares;

- Exploiting land suitable for cultivation in Sabah and Sarawak at a rate of 10,000 hectares per year;

- Expanding rubber plantations in Sabah and Sarawak by 20,000 hectares per year; and

- Converting 80 percent of marginal and idle land to rubber plantations by 2020.

Increase average yield through:

- Exploiting high yielding and suitable clones to reach yield of 1.8 tonnes per hectare per year; exploit seasons to tap on 85 percent of possible tapping days; and plant more densely to reach 550 stands (trees) per hectare;

- Ensuring that the output of high-yielding clones is suitable for the downstream segment and use them 100 percent in replanting and new planting by 2015; and

- Reducing foreign labour dependence by 5 percent per year.

Project 2: Accelerating Growth of Downstream Products

Grow Standard Malaysian Rubber (SMR) and latex product revenues by 7 percent over the next 10 years by increasing latex concentrate production to reach 300,000 tonnes per year by 2020.

Grow tyre revenues by 10 percent over the next 10 years by:

- Recycling used tyres so that there is a reduction of disposable types by 10 percent per year; and
- Increasing tyre production by 10 percent per year.

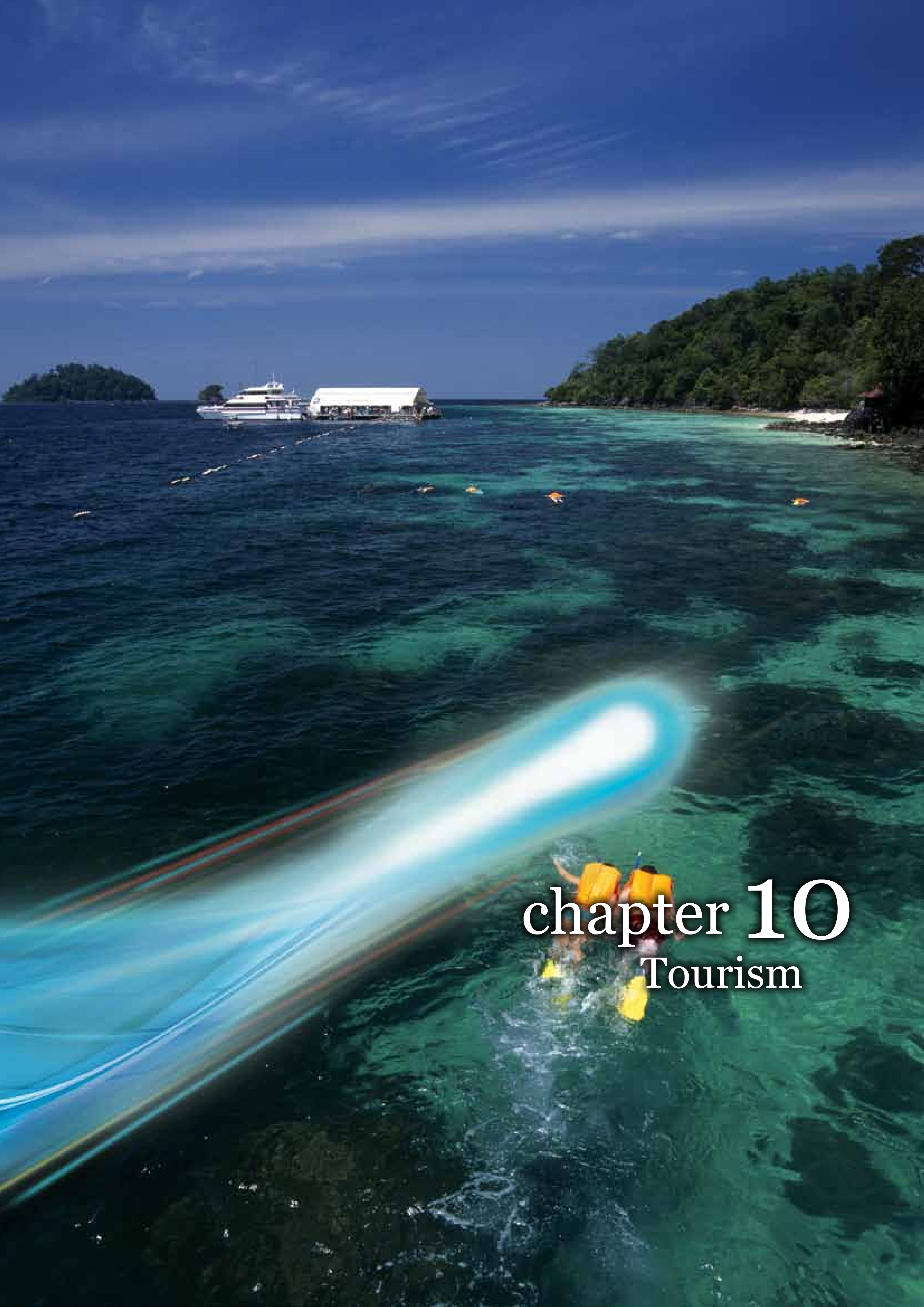
Grow other product revenues by 6 percent over the next 10 years through:

- Increasing production of specialty rubber and value-added products to 300,000 tonnes;
- Reducing processing cost by 30 percent;
- Increasing global market share of all types of rubber gloves by 10 percent annually; and
- Increasing local worker participation by 5 percent per year.

Project 3: Introducing New Rubber Products

Generate new revenues at a growth rate of 7 percent per year through the introduction of new products, i.e. diversify and expand dry rubber products to increase export revenue to RM5 billion by 2020.

The implementation of these projects will transform the Malaysian rubber industry landscape by ensuring rubber remains a key crop contributing to Malaysia's aspiration for a high-income economy by 2020.



chapter 10
Tourism

Chapter 10: Revving Up the Tourism Industry

"The tourism sector will continue to be in the forefront of Malaysia's economic development. This sustainable and high-yield sector will continue to drive Malaysia's economy, providing income and job opportunities to the Rakyat.

Malaysia has a strong global tourism position today. We are the 9th most visited country in the world and we receive RM1 billion receipts per week from foreign visitors. Realising the advantage and strong position we possess in the tourism industry globally, the Government is committed to further develop this sector together with the private sector for the benefit of the Rakyat.

We have set sight on the target of 2020:36:168. That is in the year 2020, Malaysia will receive 36 million tourist arrivals and RM168 billion tourist receipts. This would mean the industry will grow by 3 times and tourism will contribute RM3 billion receipts per week to the country in 2020. This strategic ambition will be achieved through the 12 initiatives proposed under the Tourism National Key Economic Areas (NKEA).

As the Minister of Tourism, I look forward to the successful delivery and implementation of the Tourism NKEA. I seek the support of all Malaysians to work together with the Ministry of Tourism to ensure the success of this important national agenda."

YB Dato' Sri Dr. Ng Yen Yen

Malaysia is recognised globally as one of the leading tourism destinations, ranking in the top 10 in arrivals and top 15 in global receipts. The tourism industry is also an important contributor to our economy, generating RM36.9 billion in gross national income (GNI) in 2009. This makes tourism the fifth largest industry in our economy after Oil, Gas and Energy, Financial Services, Wholesale and Retail, and Palm Oil. By 2020, the tourism industry will contribute RM103.6 billion in GNI, with arrivals increasing from 24 million in 2009 to 36 million in 2020.

DEFINITION OF THE TOURISM NKEA

Tourism refers to both leisure and business tourism and includes the following subsectors: accommodation, shopping, tourism products (i.e. eco-tourism, cruise tourism and other related activities such as spa and wellness) and food and beverage as well as inbound and domestic transportation.

Two key tourism subsectors – education tourism and medical tourism – are not included in this NKEA, as they are addressed in other NKEA Labs[1].

MARKET ASSESSMENT

Malaysia has a solid starting position to propel itself into a key tourism destination. The industry is already large (RM53 billion in receipts in 2009), has been consistently fast growing (14 percent per annum for the past ten years and 12 percent growth per annum from 2004 to 2009) and has a strong global competitive position. This good foundation can be leveraged to enhance the sector's contribution to our economy.

Globally, there are several megatrends that affect the tourism industry. Megatrends represent inexorable growth, cut across industries and are structural shifts that will be relevant to the business world in the next five to ten years. The four megatrends that are both relevant and important for the future of our tourism industry are:

- **Trading up and trading down:** This refers to consumers selectively spending above or below their income level for selected goods. A consumer may choose to splurge on one item, while deciding to economise on others. An example of this behaviour would be a consumer who flies on a budget airline to Malaysia to reduce cost, but then stays in a five-star resort to enjoy an exclusive luxury experience;

- **Creation of global elite:** This refers to the increasing number of high-income or high net worth consumers around the globe. This group is characterised by having homogenous demands and has high expectations about product and service quality. For example, a very wealthy Mumbai resident is likely to have many more similarities with a wealthy New Yorker than a middle-class Mumbai resident. With the number of wealthy individuals increasing across all key Malaysian tourism source markets, the importance of offering high-end products and high service levels is growing ever greater;

- **Faster pace of life:** This refers to the increased stress levels and reduced time for leisure that has accompanied urbanisation of the workforce around the world. Urban consumers are increasingly interested in frequent short escapes from their busy lives to relieve stress. These include spa and wellness getaways and short holiday tourism experiences. The effect of this megatrend is seen worldwide, especially in developed countries, through increased numbers of leisure departures per person and shorter lengths of stay; and

- **Rise of China, India and new market leaders:** This refers to the increasing economic importance of the BRIC (Brazil, Russia, India and China) and Middle East (ME) countries. These countries are currently under-represented in global tourism departures and expenditures, both in proportion to population and economic contribution. However, as these economies continue to grow, consumer disposable income will increase, which will lead to more people who can afford to travel. Malaysia has already penetrated well into the Middle East segment, but can look into increasing its penetration into other growth markets.

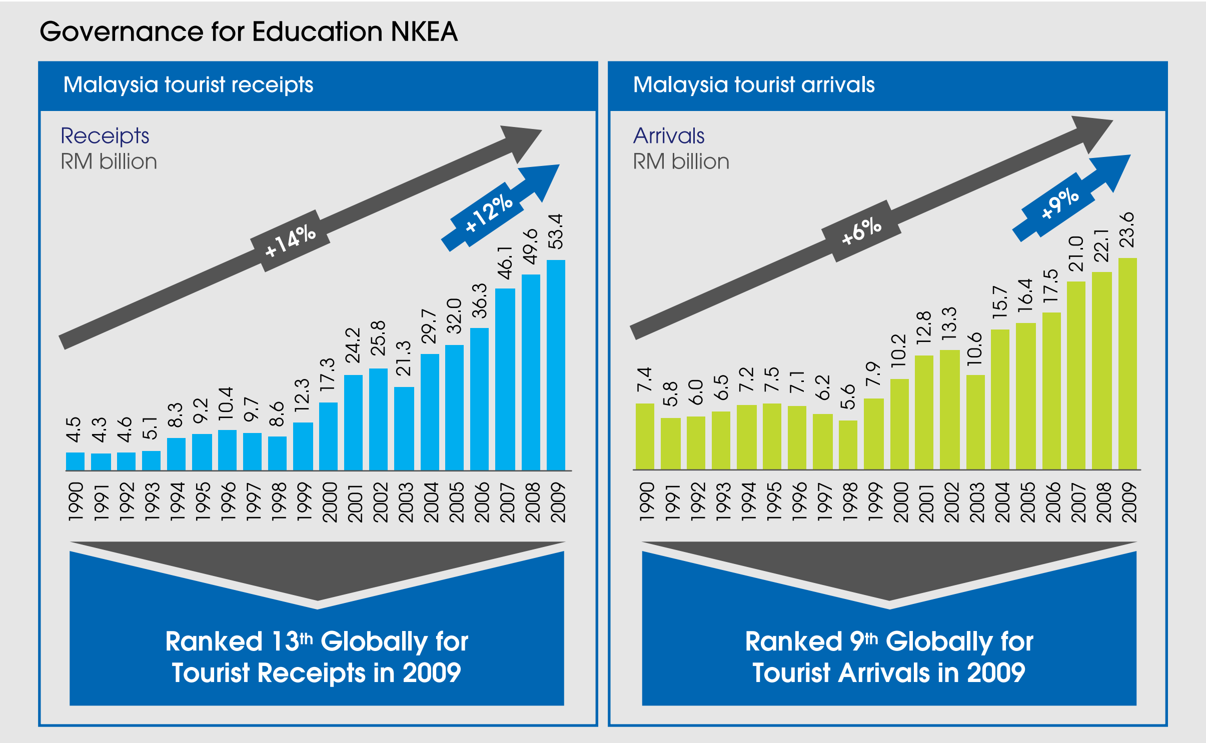
[1] *Medical or health tourism refers to any activity related to the provision of healthcare services such as cosmetic surgery or other forms of medical procedures and is covered under the Healthcare NKEA. This also includes areas such as assisted living that require the provision of licensed doctors and nurses. Other areas such as wellness and spa fall under the scope of the Tourism NKEA. Education tourism refers to activities related to targetting and attracting foreign students to study in Malaysia and falls under the Education NKEA. However, the visiting friends and relatives segment of this group falls in the scope of the Tourism NKEA.*

Status of Malaysia's Tourism Industry

Over the past two decades we have managed to increase our international arrivals from 7.4 million in 1990 to approximately 16 million in 2004 and to approximately 24 million in 2009.

Exhibit 10-1 illustrates Malaysia's global tourism ranking in terms of tourist receipts and tourist arrivals. The tourism sector has grown from RM30 billion in 2004 to RM53 billion in 2009 – a growth of 1.8 times (or 12 percent per annum from 2004 to 2009) placing Malaysia 13th in terms of global tourist receipts. Only a few countries have been able to sustain double-digit growth over such a long period of time, including Egypt, China and South Africa.

Exhibit 10-1



SOURCE: Tourism Malaysia, UNWTO

Growing the Tourism Sector would Increase the Per Capita Incomes of its Large Employment Base

The tourism industry currently employs a significant number of workers – an estimated 14 percent of our total workforce. Currently however, the average salary within the sector is relatively low compared with other large sectors of the our economy. For instance, Malaysians working in hotels and restaurants make on average RM1,084 per month compared to RM2,114 in financial services and RM2,621 in oil, gas and energy sector.

Malaysia also faces a skills drain issue, where locals who choose to enter the hospitality industry are enticed by better income prospects in markets abroad such as Singapore, Hong Kong and Macau. For instance, the opening of the integrated resorts in Singapore has attracted a large number of Malaysians to seek employment opportunities there.

Why Business as Usual is Not Enough

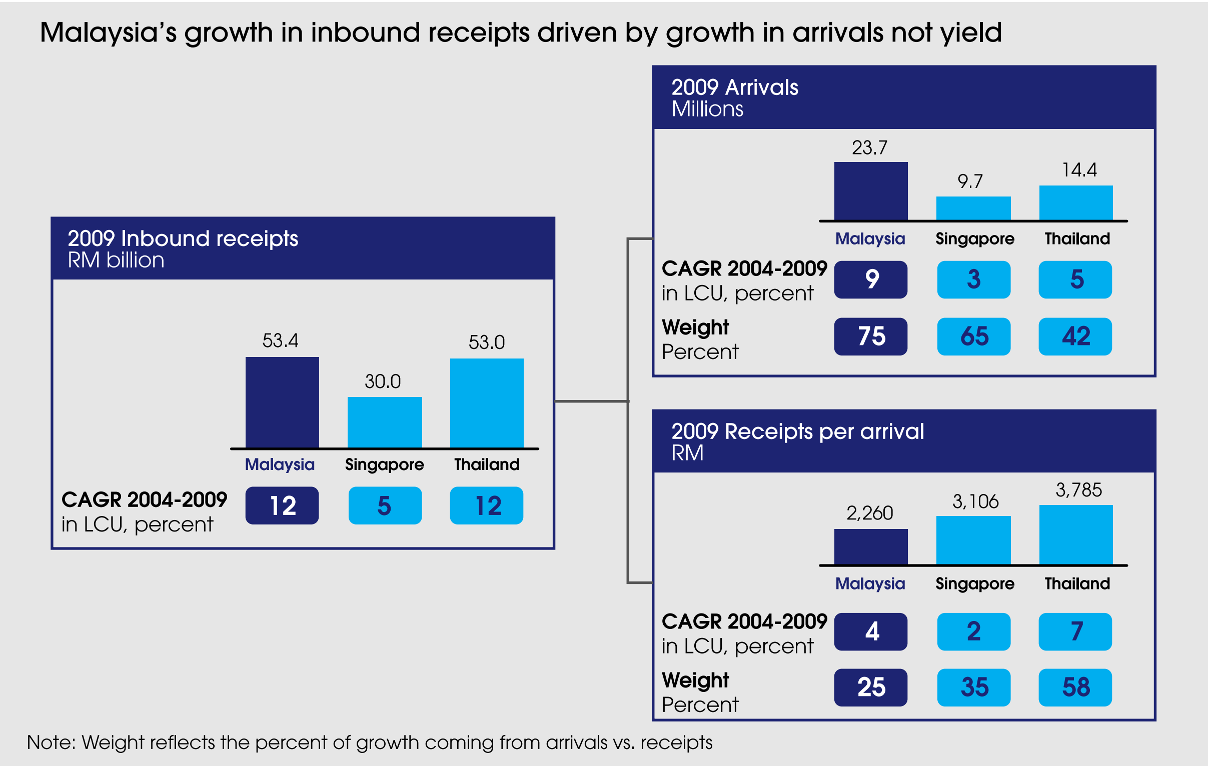
Despite the industry's strong historical growth of 14 percent over the last decade and 12 percent over the last five years, it has predominantly been dependent on growth in the number of arrivals rather than on yield per tourist. If this trend were to continue, Malaysia would have to depend on mass tourism arrivals, especially from its neighbouring countries (Singapore, Brunei, Thailand, and Indonesia) given their higher frequency of visits. Mass tourism brings with it two separate concerns. The first is a high dependence on a few neighbouring countries for low yield tourists. The second is Malaysia's capacity to accommodate a higher number of tourists before compromising on the quality of its offerings.

Malaysia Today – High Arrivals, Low Yield

Malaysia's growth in tourism is predominantly reliant on growth of arrivals rather than yield. As shown in *Exhibit 10-2*, 75 percent of Malaysia's growth has been due to the increase of tourist arrivals compared to only 25 percent growth from yield. In comparison, Singapore and Thailand have grown in a more balanced manner. In Singapore, whereby 65 percent of Singapore's growth was driven by tourist arrivals while 35 percent of growth was attributed to yield. Thailand had the reverse situation, where 42 percent of growth was due to tourist arrivals and 58 percent was due to yields, indicating that it is attracting higher spending tourists.

Out of the 24 million tourist arrivals into Malaysia in 2009, 78 percent came from short-haul markets especially from neighbouring countries, 15 percent from medium-haul markets and 7 percent from long-haul markets (2009). In comparison, 43 percent of arrivals in Singapore were from the medium-haul markets, while 36 percent of arrivals in Thailand were from the long-haul markets[2].

Exhibit 10-2



SOURCE : Immigration Department of Malaysia, DOS, EIU, Boston Consulting Group

[2] *Short-haul: Indonesia, Philippines, Vietnam; Medium-haul: China, India, Saudi Arabia, UAE, Japan, South Korea, Australia; Long-haul: UK, France, Germany, Netherlands, Russia*

The yield per tourist in Malaysia is also relatively low at RM2,260 compared to RM3,106 in Singapore and RM3,785 in Thailand (*Exhibit 10-2*). The reasons for this include:

- **Lower average length of stay:** Long-haul tourists currently spend 10 nights in Malaysia versus 14 nights in Thailand;
- **Lower spend per day:** Tourists to Malaysia currently have a lower spend per day versus Thailand for all inbound markets (with the exception of Saudi Arabia and UAE); and
- **Dependence on arrivals from short-haul markets:** Malaysia is highly dependent on tourists from the short-haul markets who spend less in Malaysia versus their average spend in other neighbouring destinations.

Going forward, it is more sustainable for Malaysia to shift its focus on growing yield per tourist rather than to rely heavily on growth in tourist arrivals. To attract the higher yield segment, we will need to both improve and upgrade tourist offerings and services, and also enhance connectivity to key priority markets.

TARGETS AND ASPIRATIONS

The tourism industry will contribute RM103.6 billion in GNI by 2020. This will require the sector to nearly triple GNI contribution from its starting position of RM36.9 billion in 2009. To achieve this ambitious growth target, the tourism industry will need to achieve:

- **Tourist Arrivals:** From 24 million in 2009 to 36 million by 2020 (1.5 times growth);
- **Yield (receipts per arrival):** From RM2,260 in 2009 to RM4,675 by 2020 (two times growth); and
- **Tourist Receipts:** From RM53 billion in 2009 to RM168 billion by 2020 (3.2 times growth)

As an outcome of this, Malaysia will be able to achieve:

- **Income per capita:** Increase in income per capita above the current average of RM10,843 will also attract and retain high quality workers through higher pay and clear career paths for workers in the industry; and
- **Higher employment:** 497,200 additional tourism jobs in the tourism sector by 2020. This represents a 30 percent increase from 2009. The total workforce will however grow at a lower rate compared to tourism receipts due to an anticipated rise in productivity ensuing from attracting and retaining a better quality workforce as well as upgrading the skills of the current workforce.

12 EPPs to Deliver RM66.7 Billion Incremental GNI

Twelve entry point projects (EPPs) have been identified across five themes to enhance our tourism yields. In addition, we have identified three business opportunities which will materialise due to the expected growth in the industry. As described in *Exhibit 10-3*, these 12 EPPs and three business opportunities together with organic sector growth will stimulate tourism growth from RM36.9 billion in GNI today to RM103.6 billion in GNI by 2020.

The RM103.6 billion GNI contribution includes RM9.7 billion of GNI from the multiplier effect created by EPPs from other sectors. The largest sources of this multiplier effect are NKEAs including Electronics and Electrical and also Palm Oil, which are anticipated to bring benefits from professionals working in Malaysia, who will provide stimulus to restaurants, hotels and the broader tourism sector.

The 12 entry point projects (EPPs) are segmented in five broad themes that cater to different segments of tourists ranging from the avid shopper to the nature lover and the business traveller, as well as families on vacation. The five themes and 12 high-impact projects identified are:

Theme 1: Affordable Luxury

- **EPP 1:** Positioning Malaysia as a duty-free shopping destination for tourist goods;
- **EPP 2:** Designating Kuala Lumpur City Centre-Bukit Bintang area as a vibrant shopping precinct; and
- **EPP 3:** Establishing three new premium outlets in Malaysia.

Theme 2: Nature Adventure

- **EPP 4:** Establishing Malaysia as a global biodiversity hub.

Theme 3: Family Fun

- **EPP 5:** Developing an eco-nature integrated resort in Sabah; and
- **EPP 6:** Creating a Straits Riviera.

Theme 4: Events, Entertainment, Spa and Sports

- **EPP 7:** Targetting more international events;
- **EPP 8:** Establishing dedicated entertainment zones;
- **EPP 9a:** Developing local expertise and better regulating the spa industry; and
- **EPP 9b:** Expanding sports tourism offerings in Malaysia beyond hosting events.

Theme 5: Business Tourism

- **EPP 10:** Establishing Malaysia as a leading business tourism destination.

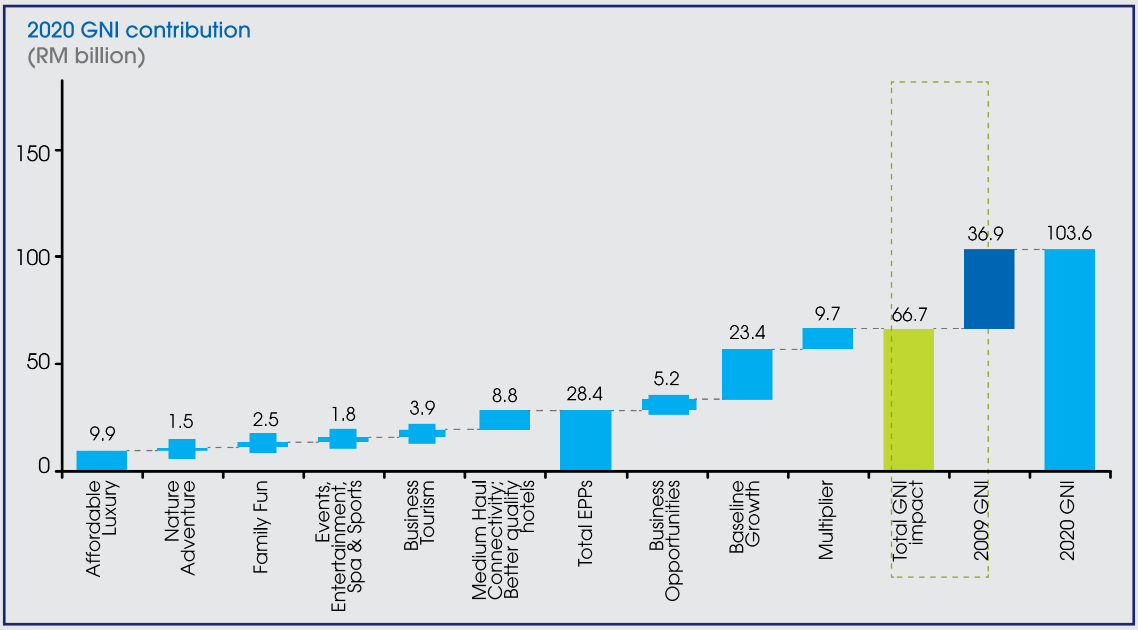
Cross-theme projects: Medium-haul connectivity; Better quality hotels

- **EPP 11:** Enhancing connectivity to priority medium-haul markets; and
- **EPP 12:** Improving rates, mix and quality of hotels.

[3] *Average wage for workers in hotel and restaurant sector*

Exhibit 10-3

12 EPPs, 3 business opportunities, baseline growth and multiplier effect will deliver RM66.7 billion incremental GNI impact by 2020



AFFORDABLE LUXURY

Shopping currently accounts for 28 percent of total tourism receipts, compared to 35 percent in Singapore and 57 percent in Hong Kong. Tourists spend less on shopping because products are priced higher and also due to the limited selection of goods. This lower volume of sales in Malaysia translates into a lack of scale resulting in a vicious cycle. One of the ways to address this is to position Malaysia as a shopping destination.

With this strategy, we aim to grow shopping receipts from 28 percent in 2009 to 35 percent by 2020. This will also increase average tourist shopping expenditure from RM631 to RM1,636 by 2020. To achieve this aspiration, we will undertake the following three EPPs, which together will generate RM9.9 billion in GNI and an additional 80,340 jobs.

EPP 1: Positioning Malaysia as a Duty-Free Shopping Destination for Tourist Goods

Rationale

The higher prices in Malaysia of imported retail products, such as apparel, shoes and handbags, as compared to Singapore and Hong Kong, are in part due to the import taxes imposed on these products. Furthermore, due to the lack of economies of scale, many high street and luxury brands have chosen not to enter Malaysia thereby limiting the latest available product range.

Actions

Exempt products popular with tourists from import duties. By positioning Malaysia as a duty-free haven, it is envisioned that our prices will be more competitive in the region, attracting tourists to shop more and in turn leading to an increase in sales. To achieve this, a crucial first step will be to expand the category of duty free products to include those that have high tourist spend, with duty exemption granted on an automatic basis. The categories of goods proposed for exemption based on the Customs Tariff codes are: cosmetics and perfume (Section 33), leather goods (Section 42), textiles, apparel and clothing (Sections 61-63), footwear (Section 64), headgear (Section 65), jewellery, excluding coins (Section 71), electrical goods (Section 85) and toys (Section 95).

These products constitute the main purchases of tourists in Malaysia with textiles, clothes and handbags (leather goods) being the top categories of tourist spending. This proposal will allow us to market Malaysia as a duty-free shopping destination.

While it is recognised that Government revenues from import taxes will be reduced as a result of this duty exemption, this can be offset by the additional yield from corporate taxes. The estimated loss of Government revenue will be approximately RM630 million while the incremental corporate taxes collected by 2020 are expected to be RM780 million.

Help local manufacturers compete. An area of concern arising from this duty exemption is the impact on local manufacturers. Clear mitigation plans will be put in place to enable domestic manufacturers to compete in this more liberalised market. These include:

- **Fiscal incentives:** Provide financial assistance to automate and upgrade manufacturing equipment;

- **Non-fiscal incentives:** Provide training to enable local manufacturers to move up the value chain (e.g. establish a training centre for shoe manufacturers); assist local manufacturers to develop their own brands and connect them with international brands to develop higher value products; and

- **Local product collaboration:** Shopping complexes and local manufacturers should work together to promote local products.

The Ministry of Tourism will work with the Ministry of International Trade and Industry on the deadline and implementation of this EPP.

Funding

There are no direct investment requirements for this EPP. However, there will be an estimated RM630 million loss in Government revenues with the removal of import duties. This loss in Government revenue would be netted off by the increase in corporate tax revenues.

Impact

The impact of this EPP is estimated at RM7.8 billion which will come from increase in spend on shopping by foreign tourists coming to Malaysia (from 28 percent of receipts in 2009 to 35 percent by 2020). Total jobs that will be created are estimated at 64,000.

EPP 2: Designating KLCC–Bukit Bintang Area as a Vibrant Shopping Precinct

Rationale

Key shopping areas in Kuala Lumpur are relatively stand-alone locations, with little collaboration or connectivity between them. This has resulted in a lack of vibrancy in each shopping area, poor traffic flows, almost non-existent pedestrian connectivity, poor streetscape and overall lower yield on tourism-related assets (i.e. hotel rates and retail rental).

Actions

Connect major shopping centres into a precinct. We will designate Kuala Lumpur City Centre (KLCC)–Bukit Bintang area as a premier shopping precinct in Malaysia. Seamless connectivity between these shopping malls and hotels in the area, both in terms of pedestrian walkways and public transportation, will be developed. Pedestrian walkways will link the following areas:

- KLCC Convention Centre to the KL Pavilion shopping centre's Raja Chulan bridge;
- KL Pavilion shopping centre across Jalan Bukit Bintang to the Fahrenheit 88 shopping centre;
- Fahrenheit 88 shopping centre to the Lot 10 shopping centre;
- Sungei Wang Plaza to Berjaya Times Square shopping centre's Jalan Imbi bridge in Jalan Imbi; and
- Sungei Wang Plaza to Jalan Bukit Bintang-Jalan Pudu intersection.

By linking these areas, Malaysia would be able to market a shopping precinct similar to Orchard Road in Singapore or Causeway Bay in Hong Kong. Year-round events, such as shopping festivals, culinary festivals and festive light-ups will be organised to improve the vibrancy of the area and enhance Malaysia's position as a shopping destination.

Establish a KLCC-Bukit Bintang Tourism Council. The Council will manage, promote and develop the precinct. The terms of reference of the Council are:

- Improve the business environment of KLCC–Bukit Bintang, through the organisation of events, business development, promotions and marketing;
- Assist in the promotion and management of KLCC–Bukit Bintang's activities and other public-related issues (e.g. coordinate with relevant authorities on permits for organisation of events, security and general cleanliness of the precinct); and
- Promote the precinct as Malaysia's shop, eat, play and stay destination.

The Council will be funded by the Government with contributions from property owners and the private sector. Its members will include representatives from the Ministry of Tourism, Dewan Bandaraya Kuala Lumpur (DBKL) as well as property owners within the precinct.

As DBKL already has plans to enhance connectivity in this precinct, alignment between DBKL and property owners within the precinct is crucial. The Ministry of Tourism will establish the KLCC-Bukit Bintang Tourism Council. Together with the Ministry of Tourism, the Council will plan and organise events within the precinct as well as promote the precinct.

Funding

Total cumulative public investment for this EPP will be RM132 million which compromises RM75 million in capital expenditure (to construct pedestrian walkways to enhance connectivity in the precinct) and RM57 million in operating expenditure (to support promotion and marketing activities in the precinct).

Impact

This EPP is expected to contribute RM1.2 billion by 2020 which will be driven by higher tourist volume into the precinct and increased retail spend, food and beverage sales and higher hotel occupancy rates. The total number of jobs that will be created is estimated to be 14,500.

EPP 3: Establishing Three Premium Outlets in Malaysia

Rationale

Currently, premium outlets in Asia are found only in Japan and Korea. These outlets offer heavily discounted luxury items that include out of season or new luxury products for market testing.

Actions

Establishing premium outlets in Malaysia will support Malaysia's tourism aspiration as a top shopping destination which will complement the current multiple retail offerings the country already has.

Ideally, the outlets should be located in areas that meet three criteria. Firstly the location should be a popular tourism destination with a high captive market. Typically, outlets should be located within a one-hour driving distance from key tourism sites and have a large domestic captive market to support sales. Secondly, the location should have a good network of connectivity and be easily accessible by air and road. Lastly, the outlet should complement the current site offerings.

Based on these criteria, we will establish the premium outlets in three locations:

- Iskandar Malaysia: To cater to both the domestic market and tourists and day visitors from Singapore and Indonesia;
- Sepang: To cater to tourists (including transit passengers) from Kuala Lumpur International Airport and the Low Cost Carrier Terminal; and
- Penang: To cater to the large volume of tourists in Penang as well as to tap Indonesian tourists who are en route to Thailand for shopping.

The first premium outlet in Iskandar Malaysia is currently being developed by the private sector and is scheduled to be operational by 2013. As this effort is highly dependent on the private sector, the Government's role is primarily to encourage and facilitate the implementation of this EPP. MIDA will identify potential local and foreign investors to establish premium outlets, especially on a joint venture-basis with local private sector investors by December 2012.

Funding

The total investment required for this EPP is estimated at RM355 million which will be used to construct the three proposed premium outlets. This investment is expected to be fully private-sector funded.

Impact

The estimated impact from this EPP is RM875 million. This was calculated based on the impact of similar premium outlets operating in the region such as Korea and Japan. Total jobs that will be created are estimated at 1,500.

NATURE ADVENTURE

Malaysia is blessed with an abundance of biodiversity, ranking 12th globally in terms of mega-biodiversity[4]. However, Malaysia is at a risk of losing this priceless natural asset if conservation initiatives are not taken to protect it.

Malaysia currently faces negative perceptions internationally due to logging activities in rainforests and the perceived destruction of Orang Utan habitats for palm oil plantations[5]. Leatherback turtles are also virtually extinct in Malaysia due to irresponsible tourism, including allowing tourists to use flash photography and flashlights[6]. There have also been numerous complaints regarding poor planning of accommodation which do not take into account the carrying capacity of environmentally-sensitive ecotourism sites, resulting in overcrowding, congestion and problems of sewage and waste disposal. These in turn cause tourist discomfort and impacts overall satisfaction.

These problems stem from the fact that there are too many authorities and agencies involved in managing natural sites and limited coordination in managing sites sustainably.

Nevertheless, there is tremendous potential for ecotourism if it is well managed according to the principles of long-term sustainability. Currently, about 10 percent of total tourist arrivals into Malaysia are ecotourism-related. However, the packages sold to these tourists are not sold at a premium that reflects the true value of our precious natural resources and heritage. Therefore, there is potential to increase the yield per tourist which will also ensure that the development of ecotourism sites takes into account the limit to their carrying capacity.

Moving forward, Malaysia aims to become one of the best presenters of biodiversity in the world. We target to have a recognised network of different biodiversity sites of international calibre, which will be developed or rehabilitated and allow for tourist participation in rehabilitation ecotourism activities.

4 *Based on a report from the Convention on Biological Diversity. Biodiversity refers to variation of life forms within an eco system, be it flora or fauna.*
5 *BBC News*
6 *World Wildlife Fund*

EPP 4: Establishing Malaysia as a Global Biodiversity Hub

Actions

The Global Biodiversity Hub (GBH) will be an accreditation body overseen by a Board of Management, drawn from key stakeholder groups, to establish the desired standards of excellence in the management and presentation of key ecotourism sites. The key functions of the Board will be to accredit and monitor each site to ensure the sustainability of ecotourism development and activities and assist with the promotion and marketing of accredited sites.

The objective of the GBH is to attract international attention to Malaysia's outstanding biodiversity and promote responsible tourism and foster sustainable management of Malaysia's natural areas.

On the ground, the GBH will comprise a network of natural areas that showcase the biodiversity of Malaysia's rainforests, freshwater habitats and marine environments and their associated flora and fauna.

Sites will be managed by their individual management bodies. A GBH site that submits itself for accreditation and is designated as a GBH site must maintain the expected level of excellence or risk losing accreditation.

Ensuring Governance and Accountability

To ensure that the quality of all ecotourism sites in Malaysia is well preserved, Tourism Malaysia will only promote GBH sites from 2015 onwards. Since only international calibre sites will be accredited, Malaysia can expect to obtain higher yields from tourists to these key sites.

On its part, the GBH will deliver on three main imperatives:

- Develop Malaysia as one of the world's premium ecotourism destinations;
- Ensure standards of excellence in product packaging, service delivery and sustainable use; and
- Empower rural communities to help them move up the value chain.

The Malaysian Rainforest Discovery Centre and the Malaysian Marine Discovery Centre will act as showcases for Malaysia's biodiversity offerings. Similar to the concept of a zoo, the Malaysian Rainforest Discovery Centre will be developed as a joint zoological and botanical garden using the open zoo concept. Likewise the Malaysian Marine Discovery Centre will showcase Malaysia's marine offerings to the masses. It is recommended that the Aquaria KLCC be leveraged for this purpose.

While the Discovery Centres will cater to mass tourists, they will also promote live sites around Malaysia to visitors who want to experience these flora and fauna in the wild.

The Ministry of Natural Resources and Environment (NRE) and the Ministry of Tourism will work together to set up a interim GBH Board of Management. Representatives for the interim board will comprise representatives from both the Federal and State Governments as well as the private sector, academia and non-governmental organisations. Following a one-year interim period, a formal GBH Board of Management will be appointed; it will be managed as a non-government body, with Federal and State government representatives participating in a Policy Oversight Committee to ensure that policies of the GBH Board are in line with national objectives as illustrated in *Exhibit 10-4*.

Exhibit 10-4

GBH Board of Management – Interim and formal

Interim GBH Board of Management

Chairman
- 2 Co-chairs: NRE and Ministry of Tourism

Federal Government
- 1 representative: Tourism Malaysia
- 2 representatives: EPU and PEMANDU
- 1 representative: Ministry of Rural Development

State Government
- 1 representative: Sabah (Tourism)
- 1 representative: Sarawak (Tourism)

Academia
- 2 representatives

NGOs
- 2 representatives
- Private Sector
- 3 representatives

Other experts
- Including representatives from UNESCO and others

Formal GBH Board of Management

GBH Board of Management

Chairman
- 1 representative: Not from Federal or State Government

NGOs
- 3 representatives

Academia
- 3 representatives

Private Sector
- 3 representatives: Nominated by privately-owned GBH sites

Other experts
- Including representatives from UNESCO and others

Policy Oversight Committee

- NRE (Chair)
- 1 representative: Ministry of Tourism
- 1 representative: Sabah (Tourism)
- 1 representative: Sarawak (Tourism)
- 1 representative: National Biodiversity Council
- 1 representative: Tourism Malaysia

Funding

Total funding required is estimated at RM896 million over ten years (2010-2020) which will be used to construct the new Rainforest Discovery Centre and upgrade and improve sites identified to be part of the GBH. The bulk of this funding – RM640 million – will come from the private sector, while the remaining RM256 million will be provided by the Government.

Impact

Total GNI impact of this EPP is RM1.5 billion and 2,900 jobs will be created.

FAMILY FUN

The Family Fun theme primarily targets the rapidly growing middle-class populations of India, China and the Middle East, which represent about 48 percent of global population but only 13 percent of global tourism departures. The middle-class represents 67 percent of all leisure travellers from India, 46 percent from China and 47 percent from Saudi Arabia. Departures from this segment grew at an average rate of 11 percent per annum from 1995 to 2008 versus 2 percent for the rest of the world.

From a competitive perspective, there is no clear leading family destination within Southeast Asia. Thailand has a clear position as a destination offering beaches, entertainment and value for money, while Singapore has largely positioned itself as a business and higher-end tourism destination and has only recently started to focus on the family segment with the development of Resorts World Sentosa in Singapore. Thus, Malaysia should take steps to capture a bigger share of the family market segment. However, to do so Malaysia needs to increase the availability of world-class family bonding activities and tourism products. Two high potential projects have been identified to cater to families: integrated resorts and cruise tourism.

EPP 5: Developing an Eco-nature Integrated Resort in Sabah

Rationale

The development of integrated resorts (IRs) has recently gained momentum, for instance in Singapore (Marina Bay Sands, Resorts World Sentosa), Bahamas (Atlantis) and Dubai (The Palm). Singapore's opening of Resorts World Sentosa in February 2010, which doubled its tourist arrivals (including a 46 percent increase in arrivals from Malaysia), illustrates the significant tourism potential of such large-scale tourism developments. IRs can be catalysts for economic development and have a significant impact on GNI, as evidenced by the opening of the Atlantis IR in Bahamas.

Actions

To differentiate and leverage on our strengths, Malaysia will develop an Eco-nature Integrated Resort in Sabah. As illustrated in *Exhibit 10-5*, it will be a showcase of green development, with energy-efficient buildings, renewable energy, recycling and electric transportation, as well as displaying Sabah's rich biodiversity, through a mangrove education centre. It will leverage on Malaysia's competitive advantages in ecotourism and biodiversity, with attractions such as a river and rainforest safari, nature lodges, a mangrove centre and a discovery cove. In addition, the IR will feature world-class events, duty-free shopping, a water theme park, a world-class golf course and waterfront villas.

A private investor has already been identified for this EPP and the company has the land, financial resources and industry expertise to develop the IR.

The Ministry of Tourism will oversee the implementation of this EPP. The investor will work with the Sabah State Government and related Federal agencies to obtain the necessary approvals before the end of 2011. Based on this timeline, the first phase of the IR could be operational by 2013.

Funding

Total investment is expected to be RM6.7 billion which will also include upgrading existing utilities and infrastructure and undertaking flood mitigation measures within the proposed site. The bulk of this funding – RM6.1 billion – will be provided by the private sector, while the remainder will be provided by the Government.

Impact

Overall, the GNI impact is expected to be RM707 million with 7,700 jobs created by 2020.

Exhibit 10-5

Selected integrated resort features

EPP 6: Creating a Straits Riviera Cruise Playground

Rationale

The global cruise industry looks to Asia as a major growth engine, with cruise passenger arrivals growing twice as fast (7 percent per annum) as international tourist arrivals (3 percent per annum) from 1990 to 2008. Almost 50 percent of cruise passengers are high-yield international travellers.

In Southeast Asia, the industry is dominated by Singapore. Many global cruise itineraries today bypass Malaysia's ports, mainly due to the lack of terminal infrastructure, quality shore excursion tourism products and services that meet the requirements of the cruise operators.

Actions

To realise this potential, Malaysia will develop the Straits Riviera cruise playground. It will be anchored by five purpose-built world-class integrated cruise terminals in Penang, Sepang, Malacca, Tanjung Pelepas and Kota Kinabalu complemented by nine secondary ports. This will help establish a compelling cruise experience and exploit existing coastal destinations. The vision is modelled after the French Riviera cruise experience, which consists of the key ports of Nice, Cannes, Monte Carlo and St. Tropez and is supported by other popular secondary ports like Golfe-Juan and Villefranche.

To ensure the success of the Straits Riviera, the Ministry of Transport, together with the Ministry of Tourism, will develop a National Passenger Sea Ports and Cruise Tourism Implementation Blueprint, which will articulate the vision and policy for cruise industry development in Malaysia until 2020. This Blueprint will take into account the infrastructure development and improvement plans for each key cruise terminal and port and make recommendations to reinforce the themed-based cruise circuits as well as community-based infrastructure, perimeter attractions and connectivity. This Blueprint will be developed by mid-2011. In parallel, a Straits Riviera Council will be set up under the guidance of the Ministry of Transport and the Ministry of Tourism. Findings from the Blueprint will indicate the feasibility and suitability of the ports identified for this project. The cruise terminals will be operational on a phased basis from 2013 onwards.

The main tasks of the Straits Riviera Council include charting the direction for the country's cruise industry, coordinating marketing efforts to attract cruise liners to establish home ports at each of the main cruise terminals as well as strategies for inter-port routes, a fly-cruise network and a greater Indo-Asian alliance to attract cruise ships to the region. This private sector-led Council will be the interface with other departmental authorities and the singular voice for the cruise industry in Malaysia in reinforcing the Government's commitment to effectively implement the Cruise Tourism National Blueprint. The Council will consist of representatives from the major ports, industry stakeholders that equitably represent interests and concerns for the betterment of the cruise industry and community, supported by the relevant Government bodies.

Each cruise terminal will serve as a catalyst for waterfront and urban renewal, with the development of adjacent waterfront retail and residential areas and accompanying renewal of tourism sites at each port city to encourage shore excursions.

A consortium of private investors has been identified and is prepared to provide the requisite funding subject to obtaining the required Government facilitation and approvals. This consortium has experience in developing cruise terminals in Southeast Asia and has a vision of transforming Malaysia into a leading cruise playground for Asia.

Funding

Total investment required will be RM2.7 billion which will be needed to enhance infrastructure at the five proposed sites. The bulk of the funding – RM2.5 billion – will be provided by the private sector while the remainder will be provided by the Government. Funds will also be used to enhance road and rail connectivity to the proposed sites.

Impact

Overall, the GNI impact is expected to be RM1.8 billion with 9,700 jobs created by 2020.

EVENTS, ENTERTAINMENT, SPA AND SPORTS

Today, Malaysia lags neighbours such as Thailand, Singapore and Indonesia in the magnitude and variety of events hosted, as well as in our nightlife offerings. We have also not fully leveraged international events as key attractions for tourists.

Hosting more international events and promoting a vibrant nightlife in Malaysia is necessary to attract tourists and will provide a boost to the tourism industry.

EPP 7: Targetting More International Events

Rationale

Moving forward, we aim to increase the number of tourist arrivals for international events by 3.6 times, from 70,000 in 2009 to 250,000 by 2020. In order to achieve this target, we will need to develop or attract three to four major international events and enhance the events already hosted in Malaysia.

Actions

To achieve this ambition, we will establish a dedicated events body for Malaysia to identify and bid for more major international events, repackage F1 and MotoGP and other existing major international events, and amend the Central Agency Committee for Application for Filming and Foreign Artists Presentation (*Agensi Pusat Permohonan Penggambaran Filem dan Persembahan Artis Luar Negara* or PUSPAL) guidelines for international events and introduce performance ratings for concerts.

Establish a Dedicated Events Body for Malaysia. Using successful benchmarks from Scotland, Australia and New Zealand, the establishment of a dedicated events body is critical to attracting and hosting large international events. This body will identify, assess and bid to secure major international events but will not operate the events. However, sufficient funding is crucial given the competitive nature of bidding for such events.

This dedicated events body will be established under MyCEB with the responsibility to (1) identify new major international events for Malaysia by attracting reputable international events and developing home grown international events; (2) synergise and develop a cluster of events around major international events; and (3) evaluate the impact of major international events hosted.

This body will develop the overall business and operational plan and is expected to be fully operational by mid-2011.

Repackage F1 and MotoGP with better collaboration between the private and public sector. Malaysia was the regional pioneer in motorsport events, which began with the hosting of the MotoGP in 1990 and subsequently the F1 in 1999. However, there has been a decline in foreign interest in these events in Malaysia. The number of foreign spectators for the F1 has declined, from approximately 53,000 foreign spectators in 2006 to approximately 23,000 in 2009, driven partially by intensive competition from similar events in the region. Malaysia will need to enhance and revitalise both the F1 and MotoGP events that will appeal to more international spectators.

The event organiser of F1 and MotoGP, Sepang International Circuit (SIC) will work closely with various key tourism sectors to develop attractive pre- and post-event tour packages and to strengthen international sales and promotion channels. Tourism Malaysia, with its wide international marketing representation, will leverage its channels to promote F1 and MotoGP under Malaysia's national Calendar of Events. This EPP is expected to extend the average stay of tourists for F1 events from four days to nine days by 2020.

In addition, the SIC will work together with the dedicated events body (under MyCEB), the Ministry of Tourism, DBKL, the Selangor State Government and other event organisers to develop a cluster of exciting events around the F1 and MotoGP. The SIC will target key events in the adjacent weeks of the F1 or MotoGP events such as high profile conferences, such as Invest Malaysia and the Forbes CEO Conference.

Amend PUSPAL guidelines for international events and introduce ratings for concert performances. From Q4 2010, events with international performers that fulfil the minimum criteria of (1) A-rated based on the Billboard top 100 in the past five years; (2) attract 2,500 spectators per event; and (3) have performed in three international venues, will be exempt from the current PUSPAL guidelines and will instead be subject to more flexible guidelines that will support the development of international events in Malaysia. Organisers of international events will rate the performances according to the suitability of such performances for the younger age-groups i.e. "G: General" or "18+: 18 years old and above". In addition, changes to withholding tax and immigration requirements will be considered to ensure Malaysia becomes a more competitive events destination.

In order to amend the PUSPAL guidelines as proposed, the PUSPAL committee will syndicate with other relevant agencies involved (local councils, Immigration Department, and the Ministry of Finance). The Ministry of Tourism will monitor and track the implementation process.

Funding

Total cumulative investment required will be RM467 million, all of which will be provided by the Government.

Impact

Overall GNI impact will be RM427 million and 8,000 jobs will be created.

EPP 8: Establishing Dedicated Entertainment Zones

Actions

We aim to enhance nightlight, as selected nightlife entertainment areas are expected to stimulate revenue growth from RM600 million to RM1.8 billion by 2020. To achieve this ambition spur the development of the industry, regulations relating to entertainment will be liberalised by:

- Clearly demarcating dedicated entertainment zones to minimise any adverse impact on local residents as such areas are set up mainly to cater to foreign visitors.

- Allowing an extension of operating hours for entertainment outlets;

- Relaxing restrictions on the ratio of local to foreign artistes specified in the current PUSPAL guidelines; and

- Extending the validity of working visas of foreign artistes and crews based on the type of performance (e.g. one-off shows, bands with long-term contracts or long-term production shows).

The selection criteria to determine an entertainment zone requires it to:

- Fulfill sound-proofing requirements as defined by the local authority's building codes;

- Achieve minimum scale of an average 1,000 visitors per night in one entertainment zone;

- Ensure adequate accessibility and transport accessibility (e.g. parking spaces, taxis and other forms of transportation);

- Provide adequate patrols by police or private security firms to ensure public safety in the surrounding area; and

- Be located in a non-residential area or at a minimum of 100 meters from residential and religious areas.

Five cities have been identified as potential locations for dedicated entertainment zones: Greater Kuala Lumpur/Klang Valley, Genting Highlands, Penang, Langkawi and Kota Kinabalu.

As Kuala Lumpur will attract more expatriates, a vibrant entertainment industry will be an integral part of its liveability. The existing entertainment zones are not sufficient to cater to the expected growth given the average weekend occupancy rate of the city's night clubs is 85 to 90 percent.

In syndication with the Greater KL/KV NKEA, it was agreed that the potential location for a new entertainment zone will be the area surrounding Central Market. This area will be designed to attract tourists with 24-hour facilities, adequate public safety, transportation and infrastructure, and yet it will remain segregated from residential and religious areas. The establishment of a new entertainment zone will be administered by the Master Plan Department of DBKL. DBKL will work together with relevant bodies to attract private nightclub operators to invest in the gazetted entertainment zone. The Licensing Department of DBKL will facilitate the issuance of the licenses for these nightclubs to start operations in the dedicated entertainment zones.

Funding

Total funding requirements will be RM276 million which will be fully private-sector funded.

Impact

Six new nightclubs, each with a capacity to cater to at least 900 club visitors per weekend night are targetted to start operations by early 2012. Two nightclubs will commence operations in 2013 and 2014 respectively. By 2014 there will be at least 10 nightclubs in the new entertainment zone. The expected impact of this will be RM0.7 billion in GNI and approximately 5,614 jobs by 2020.

EPP 9a: Developing Local Expertise and Better Regulating the Spa Industry

Rationale

Malaysia's spa industry has experienced the fastest growth in the region for the past five years, even though its consumer base has been predominantly domestic (55 to 60 percent). Our spa industry is expected to reach RM830 million by 2020, mainly driven by increasing tourist arrivals of 1.5 times. However, skills requirement and service delivery remain the most pressing issues hindering potential growth. We have only a limited supply of workers and training facilities to create an appropriate talent pool, especially for local spa therapists. Immigration policies to attract foreign spa therapists are very stringent, given the current freeze on hiring foreign semi-skilled workers since 2008. In addition, the spa industry is currently unregulated and the quality of customer services varies widely between establishments.

Actions

In order to address the shortage of skills, the private sector will take the lead to develop three centres of excellence (CoEs) as training centres to produce local therapists in the spa industry. Three potential locations have been identified based on proximity to spa establishments: Greater Kuala Lumpur/Klang Valley, Johor and Sabah. The first CoE is expected to begin operations by the beginning of 2012 to train 500 therapists annually. During the first three years of establishment, these CoEs will train local spa therapists. Once fully operational, the three CoEs will be able to produce 1,500 local therapists annually. With this increase in local supply, the aim is that by 2018, the ratio of local to foreign therapists will be 70:30.

By mid-2011, the Spa and Wellness National Council shall be established with the role of providing accreditations and ratings for spa and wellness outlets to ensure service delivery and consistency. The Council will also be a self-funded private independent body with Board Members from the Ministry of Tourism, the Ministry of Health, the Ministry of Housing and Local Government, and the private sector (from spa outlets, hotels and resorts associations and spa academies). Accreditation criteria and classifications of spa outlets shall be developed by the Council. By the end of 2012, 20 percent of the total spa outlets shall be accredited and endorsed by the Council.

Funding

Total funding requirement for this initiative will be RM23 million which will be used to fund the establishment of the three Centres of Excellence and the establishment of the proposed Spa and Wellness National Council.

Impact

The total GNI impact of this initiative is expected to be RM0.4 billion and will create approximately 3,500 new jobs.

EPP 9b: Expanding Sports Tourism Offerings in Malaysia Beyond Hosting Events

Rationale

To date, Malaysia has generally focused on large-scale sporting events, from hosting the Commonwealth Games in 1998, to the Monsoon Cup, Le Tour de Langkawi and the F1 as a way to raise interest in the country's sports offerings. However, Malaysia can improve its GNI from sports tourism by developing and enhancing general sports offerings, particularly golf tourism.

Actions

The development of golf courses in Malaysia has predominantly been as a complement to property development rather than as a tourism product in itself. However Malaysia's golf tourism offerings can be enhanced by repackaging products to target the high-yield segment. Malaysia can focus on developing the golf tourism business by addressing three areas: (1) increase promotions and marketing of golf tourism by leveraging on existing offerings such as the international golf events held each year ; (2) establish a Golf Tourism Task Force to bring the golf tourism industry together to plan and execute joint promotions and marketing efforts; and (3) provide tax exemption for selected items that are large-cost components for golf courses, e.g. fertilisers and buggies.

The private sector needs to work together with the Ministry of Tourism to set up a Golf Tourism Task Force and to ensure a cohesive national plan to develop and propel golf tourism as a key product to attract high yield tourists. The Task Force is to be set up by 2011 with clear strategic planning on future promotional and marketing plans for golf tourism, especially in conjunction with large-scale international events.

Funding

Total investment requirement will be RM1.4 million for marketing and promotion of sports tourism.

Impact

Through these improvements and continuous push for sports tourism, Malaysia can look to gain approximately RM0.3 billion in GNI by 2020 and create 2,100 jobs.

BUSINESS TOURISM

The business tourism segment currently represents only a small part of our tourism industry and accounted for 5 percent of total arrivals and an estimated 19 percent of receipts in 2009. In comparison, business tourism accounts for 30 percent of tourist arrivals and 40 percent of receipts in Singapore. We believe there is potential to further grow this segment in Malaysia.

Business tourism is an attractive segment to develop given that:

- Delegates to business events spend up to three times more than non-business tourists;
- Up to 60 percent of delegates eventually return as regular tourists; and
- Yields high return on Government investment, i.e. 111 times return per Ringgit of Government investment.

EPP 10: Establishing Malaysia as a Leading Business Tourism Destination

Rationale

We aim to grow the share of arrivals for business tourism from five percent (of total tourist arrivals into Malaysia) in 2009 to eight percent by 2020 which translates to a growth from 1.2 million business tourists today to 2.9 million by 2020.

Actions

Provide support and allocate funding through MyCEB. An effective and properly-funded convention and exhibition bureau is critical to ensure Malaysia is able to successfully grow its business tourism. The need for adequate funding is important given the competitive nature of bidding for business tourism events. Funding is required for the entire process: from preparing the bid document to supporting due diligence during the selection process, providing subsidies to defer costs during the event itself and finally to supporting post-event activities.

In light of this, we will allocate RM50 million per annum over the next two years and over time raise this to RM100 million per year by 2020 to support the growth of business tourism in Malaysia.

Dedicate two to three iconic "shell sites" to host business tourism events. Iconic shell sites are an important feature of any leading business tourism destination. Typically these are sites where gala dinners or cultural shows are held for large business events (more than 3,000 to 4,000 delegates). Currently there are no such sites in Kuala Lumpur that can cater for large business tourism events. Taman Tasik Titiwangsa is the only site used regularly. In comparison, cities such as Singapore and Bangkok have several iconic sites such as the Old Parliament House in Singapore and the Rose Garden and Royal Palace in Bangkok. In order to strengthen business tourism, we will identify at least two sites that are suitable for the purpose of hosting gala events.

In addition to these two key recommendations, it is also important to note that full Government support will be given to ensure the success of this initiative.

Funding

Total funding required will be RM800 million which will be provided by the Government for subvention support and to fund the operational and marketing expenditure of MyCEB.

Impact

The expected impact of this by 2020 will be RM3.9 billion in incremental GNI and 16,700 additional jobs.

MEDIUM-HAUL CONNECTIVITY AND BETTER HOTELS

We have identified two cross-theme projects that will support delivery of the other projects: enhancing connectivity to priority medium-haul markets and improving the rates, mix and quality of our hotels.

EPP 11: Enhancing Connectivity to Priority Medium-Haul Markets

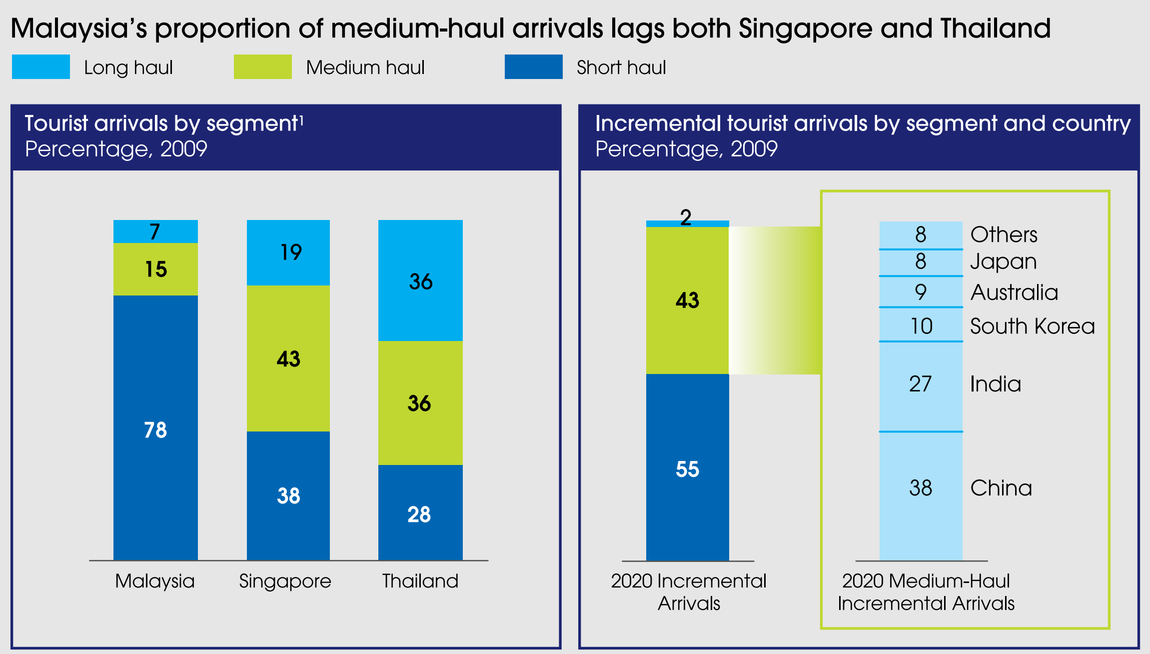
Rationale

Tourists from the medium-haul markets contribute 53 percent higher yields than tourists from short-haul markets. Medium-haul markets also have the highest forecasted growth from 2010 to 2020 of 8 percent (versus 3 percent for short-haul and 2 percent for long-haul). However, as shown in *Exhibit 10-6*, Malaysia's proportion of medium-haul tourist arrivals is only 15 percent compared to 43 percent for Singapore and 36 percent for Thailand. A key reason for this difference is the significant gap in medium-haul flights. In 2010 Malaysia had 579 medium-haul flights per week, compared to 928 for Thailand and 1,010 for Singapore. This gap is critical as we expect 43 percent of incremental arrivals in 2020 to come from medium-haul markets (*Exhibit 10-6*).

Actions

To address this gap, we will focus on increasing frequencies to 10 priority cities and developing an air-rights allocation framework to facilitate efficient development of these key routes.

Exhibit 10-6



1 Short-haul major countries: Indonesia, Philippines, Vietnam; Medium-haul major tourist countries: China, India, Saudi Arabia, UAE, Japan, South Korea, Australia; Long-haul major tourist countries: UK, France, Germany, Netherlands, Russia

SOURCE : Tourism Malaysia, Tourism Authority of Thailand, Singapore Tourism Board

Increase flight frequencies and air rights to 10 priority cities. Australia, China, India, Japan, South Korea and Taiwan are expected to contribute over 90 percent of incremental tourist arrivals from medium-haul countries by 2020. It is thus critical to focus on the key cities within these six countries where there is a significant connectivity gap today, namely: Beijing, Delhi, Melbourne, Mumbai, Osaka, Seoul, Shanghai, Sydney, Taipei and Tokyo. Compared to Singapore and Thailand, Malaysia has a double-digit flight frequency gap to most of these cities. The increase in flight frequencies to address this gap and meet 2020 tourist arrivals will be achieved through focused capacity increases from our local airlines and targetted efforts by Malaysia Airports Holding Berhad (MAHB) to attract more airlines from these countries to either start operating or increase existing flight frequencies to Malaysia. In parallel, the Ministry of Transport will focus efforts on increasing air rights to the countries that currently have restricted air rights (primarily Australia, India and Japan).

Develop an air rights allocation framework. A transparent and liberalised air rights allocation framework will enable our local airlines to plan and launch additional flights to priority cities in a more efficient manner after additional air rights have been negotiated. Specifically, the Ministry of Transport will identify immediate action steps to enhance connectivity for Malaysia to Sydney and Osaka as well as other priority medium-haul cities namely Shanghai, Beijing, Mumbai, Delhi, Melbourne, Seoul, Tokyo and Taipei that have already been given approval by the Ministry for operations by both MAS and AirAsia X. The Ministry of Transport will facilitate the development of an air-rights allocation framework with inputs from local airlines and other relevant stakeholders. This will include the application process as well as the allocation criteria. Once approved, the airlines will be briefed on the new framework. Such a framework will be critical for further development of both Malaysia's tourism and the airline industries.

Funding

Total funding will be RM84.4 billion which will be used to fund purchase of aircraft, undertake expansion of airport capacity and to fund marketing efforts in targetted countries. The bulk of this funding – RM83.3 billion will be provided by the private sector – while the remainder will be provided by the Government.

Impact

Overall, the GNI impact is expected to be RM3.3 billion with 13,400 jobs expected to be created by 2020. Furthermore, the impact of medium-haul connectivity goes beyond its GNI and jobs impact as this is a crucial enabler to deliver on all the other EPPs.

EPP 12: Improving Rates, Mix and Quality of Hotels

Rationale

Hotels represent a critical part of the tourism industry. In order to achieve our goal of attracting high yield tourists, we need to ensure Malaysia has the right mix and quality of hotels. Relative to our regional peers, Malaysia today has a lower mix of five-star hotels (i.e. 5 percent in Malaysia versus 13 percent and 14 percent in Singapore and Thailand respectively). In moving towards our ambition of growing tourist receipts by three times and tourist arrivals by 1.5 times, we will need more investments (to first upgrade and subsequently to increase supply) into our four- and five-star hotels as well as to ensure higher quality of service.

We need to enable our hoteliers to generate sufficient returns to encourage re-investment into the sector as well as attract higher quality staff. A key impediment to this today is our relatively low hotel rates (RM320 per night for a five-star hotel in Malaysia versus RM766 in Singapore).

Actions

Link rating of four- and five-star hotels to a target average room rate. From 2013, a minimum room rate will be set for four- and five-star hotels. This move is to encourage the hotel industry as a whole to increase their rates to close our gap versus peers in the region. This increase is meant to ensure hotels are able to provide a higher quality of service (through attracting and retaining better quality staff) and to encourage more investment into the four- and five-star hotel segments.

Adjust MIDA incentive to encourage investment into more four- and five-star hotels. In order to encourage hotels to upgrade and refurbish their assets, we will extend the Investment Tax Allowance (ITA) to include four- and five-star hotels with foreign ownership. In addition, we will also allow ITA for new construction as well as new purchase of four- and five-star hotels across Malaysia. Currently this incentive is open given to one-, two- and three-star hotels across Malaysia and four- and five-star hotels in selected states. The ITA for refurbishment of hotels will also to be increased from three times per company to five times for each property regardless of ownership.

Following preliminary discussions with MIDA, the Ministry of Tourism will champion and push through the request for ITA expansion.

Funding

Total funding required will be RM39.9 billion which is needed to construct the estimated incremental rooms required by 2020. The bulk of this funding – RM38.7 billion – will be provided by the private sector while the remaining amount will be provided by the Government.

Impact

The impact expected from this EPP is significant with a GNI contribution of RM5.5 billion and 64,000 additional jobs. This will be achieved by the increase in the number of four- and five-star hotels to meet the projected supply and the higher hotel rates for the industry as a whole.

BUSINESS OPPORTUNITIES

In addition to the 12 high-impact EPPs, we have also identified three business opportunities which will support the growth of the tourism industry. The three business opportunities are focused on (1) food and beverage outlets; (2) local transportation; and (3) tour operators.

Business Opportunity 1: Food and Beverage Outlets

Food and beverages represents one of the core components of tourist spend. Given the increase in arrivals as well as the shift towards high-yield tourists, there is an opportunity to increase GNI from food and beverage outlets by RM3.6 billion in 2020. This will be achieved through an increase in the number of food and beverage outlets which will be driven by additional demand arising from growth in the number of tourist arrivals. We estimate the food and beverage segments will require approximately RM1.4 billion in capital expenditure. An estimated 9,600 job opportunities will also be generated due to this business opportunity, though these will predominantly be positions for lower-wage service workers given the nature of the industry.

Business Opportunity 2: Local Transportation

Tourists spend about 10 percent of total expenditure (about RM230 per visit) on local transportation. A significant portion of that is spent on taxis, which has contributed to the 5 percent growth in the number of taxis from 2007 to 2009. Additional taxis to support further growth will be required not only in the Klang Valley, but also in the other tourism clusters in the North (Penang), South (Melaka and Johor), Sabah (Kota Kinabalu) and Sarawak (Kuching), that are being developed through EPPs such as the Integrated Resort and Cruise Tourism. Specific EPPs, such as the Global Biodiversity Hub, which promote development of tourism sites away from traditional city centres, will also increase the need for local transportation and taxis.

Overall, the GNI impact is expected to be RM0.7 billion with 45,000 jobs generated by 2020. Total capital expenditure required is estimated to be RM1.2 billion.

Business Opportunity 3: Tour Operator Segment

Given the increase in arrivals, there is an opportunity to increase GNI from the tour operator segment by RM0.9 billion in 2020. This will be accomplished through an increase in the number of travel agents, an improvement in the productivity of travel agents and an increase in the number of tour guides to serve more inbound tourists to Malaysia. Additional capital expenditure of RM1.1 billion will be required and it is expected that this will generate 7,450 additional jobs, including 2,300 additional tour guides.

Baseline Growth

In addition to the three business opportunities, we also expect baseline growth to 2020 to account for RM23.4 billion in GNI. This level of growth is based on the assumption that Malaysia is able to maintain its market share of tourist arrivals from the different source markets and to grow the yield per tourist at the rate of inflation of 2.8 percent per annum until 2020. In addition, we also expect the numerous projects currently being planned or in the construction phase (i.e. tourism development in Iskandar Malaysia and projects undertaken by Khazanah Nasional Berhad) to further contribute to this baseline growth. We expect an estimated 221,000 additional jobs by 2020 from baseline growth.

COMMON ENABLERS

There are several common enablers that will have to be put in place to ensure successful implementation of the EPPs, business opportunities and baseline growth. These enablers are:

- **Increase and Focus Marketing:** Ensure that we have the right level of marketing support in the priority markets;
- **Rollout of Visa Facilitation Services:** Ensure that tourists from our target markets (e.g. India and China) are not subject to overly strict visa procedures;
- **Ensure an Adequate Supply of Qualified Human Capital:** Introduce measures to address issues pertaining to the supply and quality of workforce in the tourism industry; and
- **Improve the Tourism Environment:** Improve offerings and accessibility for key tourism enablers (such as taxi services), access to funding and regulations as well as improving the service quality of front-line staff.

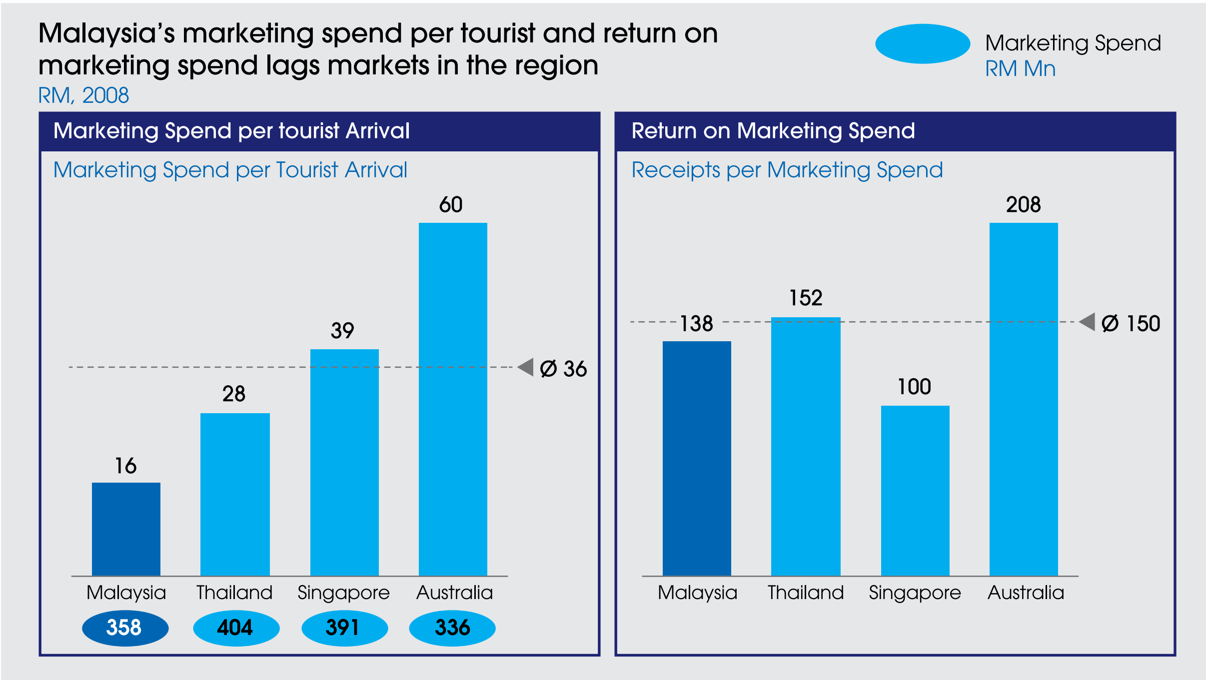
Increase and Focus Marketing

Overview

Marketing is an important enabler for achieving our 2020 tourism targets for tourist arrivals and receipts. In particular, an increased marketing spend leads to increased arrivals and receipts, as evidenced by a 0.76 correlation of marketing spend with receipts and a 0.85 correlation with tourist arrivals. Malaysia has done well thus far in this regard, largely due to its focused and sustained destination marketing campaign “Malaysia, Truly Asia”, which has been Malaysia’s tourism tagline since 1999. This campaign has won numerous global awards and served as a case study for marketing gurus such as Al Reis, Jack Trout and Paul Temporal.

Despite these numerous awards, there is room for further improvement. Malaysia's marketing spend per tourist arrival of RM16 was lower than RM28 for Thailand, RM39 for Singapore and RM60 for Australia (*Exhibit 10-7*). This translates to a return on marketing investment of RM138, which is higher than Singapore (RM100), but lower than Thailand (RM152) and Australia (RM198). Furthermore, campaign budgets are overly focused on long-haul markets. This will need to be aligned with the medium-haul markets from where the majority of our tourist arrivals are expected in 2020. Finally, coordination between all relevant overseas offices of Tourism Malaysia, MAS, Air Asia, and others will need to be further improved especially given the limited resources of each organisation.

Exhibit 10-7



SOURCE : Tourism Malaysia, Singapore Tourism Board, Tourism Authority of Thailand, Tourism Australia

Actions

Learn from best practices. To achieve best-in-class marketing returns of 300 times by 2020, Malaysia can learn from the best practices of national tourism organisations such as Tourism Australia.

Realign marketing budgets and human resources to priority medium-haul markets. This will require focused marketing and promotion efforts in the targeted medium-haul markets.

Increase marketing expenditure. Marketing expenditure will be increased from RM386 million in 2008 to RM550 million by 2020, to achieve tourism arrival and receipts targets.

Plan for two "Visit Malaysia Year" Campaigns in 2012 and 2017. "Visit Malaysia Year" campaigns allow us to showcase new products and boost tourism arrivals and receipts. The potential impact can be seen from the Visit Malaysia Year 2007, where the growth in receipts doubled from 14 percent to 27 percent and the growth of arrivals tripled from 6 percent to 20 percent.

Establish a Marketing Task Force. The objectives of the Task Force will be to develop five-year marketing strategies and annual marketing plans, including coordinating marketing activities and resources especially for priority source markets. The Task Force will be chaired by Tourism Malaysia, with the participation of related industry players including those from the airlines, hotels, tour agencies and State tourism organisations. This governance structure will be cascaded down to the country level, where each priority market will set up a similar task force, to pool resources and jointly implement marketing efforts, so that overall marketing activities are more focussed at both the national planning level and at the source country execution level.

Rollout of Visa Facilitation Services Overview

Visa requirements can either facilitate or hinder segments of tourism development, from leisure tourists, to business travellers to entertainers. According to the World Economic Forum's Travel and Tourism Competitiveness Report for 2009, Malaysia was ranked first out of 133 countries for visa requirements.

With the abolishment of the Visa on Arrival (VOA) facility to tourists from eight countries with effect from 16 August 2010, it is vital to put in place measures to enhance the service delivery of visa issuance. Among the affected countries, China and India represent the biggest tourist markets. Tourist arrivals from China increased by 7.4 percent to surpass the target of 1 million in 2009 while India recorded an increase of 7.1 percent with 589,838 tourists in 2009. Measures to ease the process of visa applications and approvals in China and India are, therefore, urgently needed to sustain the growth of tourist arrivals.

Actions

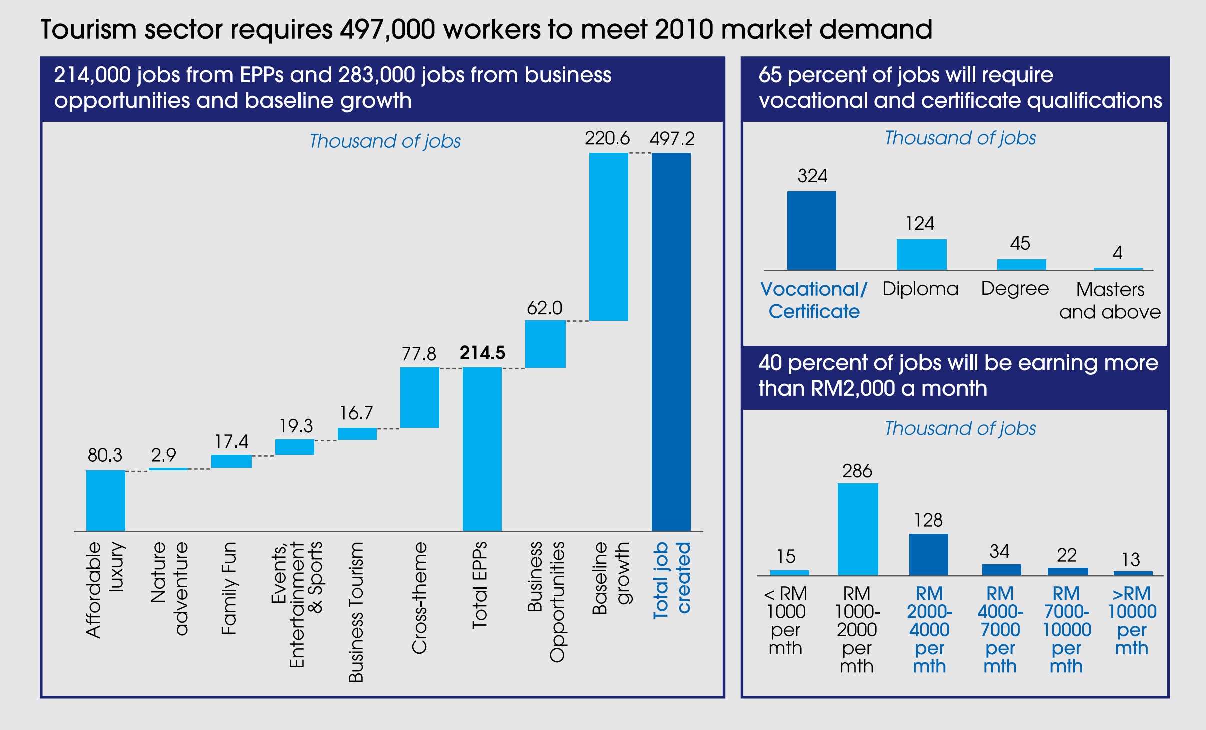
Rollout of the Visa Facilitation Services (VFS) in China and India. Currently, the VFS are being implemented in Mumbai and Hyderabad in India on a pilot project basis. VFS involve the outsourcing of the administrative function of the visa application process. It offers a more extensive outreach, has higher efficiency and provides greater convenience to tourists. In this regard, efforts will be undertaken to rollout the VFS in China and India to attract more tourists to Malaysia.

Ensure an Adequate Supply of Qualified Human Capital

Overview

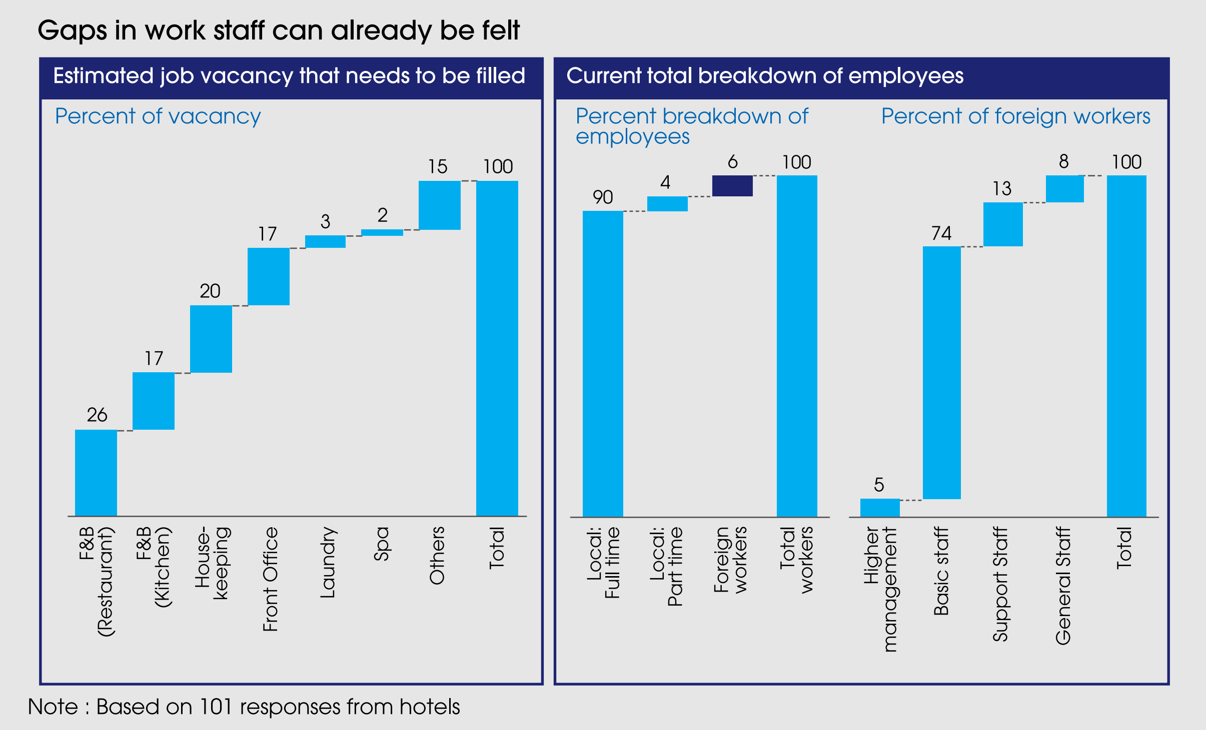
A strong pool of qualified human capital is critical to the success of our tourism sector. To meet our ambitious growth plan, the tourism industry will need approximately 497,000 additional workers from now until 2020. As shown in *Exhibit 10-8*, the industry will require approximately 215,000 workers to meet the demands of the 12 EPPs and a further 282,000 workers for the three business opportunities and baseline growth. In terms of breakdown by qualifications, 65 percent of this incremental workforce will need to have a vocational or certificate qualification, 25 percent will need to have a diploma, while the remaining 10 percent will need to have a degree or post-graduate qualification (*Exhibit 10-8*).

Exhibit 10-8



There are two specific challenges with this. The first challenge is to ensure that we have a sufficient supply of the required human capital. Currently, the tourism sector faces a shortage of local talent as not enough Malaysians are entering the sector, especially at the level of non-managerial positions. A survey conducted by the Ministry of Human Resources (MoHR) shows that the gaps for hotels are especially for workers in the food and beverages segment, front-line as well as housekeeping staff (*Exhibit 10-9*). The survey also shows that these positions are predominantly filled by foreign workers, who make up 6 percent of the hotel industry workforce.

Exhibit 10-9



SOURCE: Bahagian Perancangan dan Penyelidikan, Jabatan Tenaga Manusia

However, the hotel industry faces restrictions when hiring foreigners, especially for front-line positions. Malaysia also faces the challenge of obtaining local staff that can cater to the language requirements of non-English-speaking tourists.

The second challenge the industry faces is in attracting a quality workforce. The tourism sector is often seen as an employer of last resort, often due to the relatively low average salary in the sector versus other industries in Malaysia.

Actions

In the short term, it is imperative to ensure the right talent is leveraged to improve the industry's overall offerings. Foreign students can help fill language gaps at the front line for identified source markets. In the long term, it is recommended that sufficient rank and file employees as well as other front line staff be sourced through proper industry-led training, which is being implemented in the short term.

Foreign students pursuing hospitality or tourism-related courses should be allowed to work up to 20 hours a week. In the short term it is extremely important to allow more flexibility to source foreign talent to work in the hospitality industry as they would be able to cater to the markets we will be targetting. Foreign students in the hospitality industry would be an ideal talent pool to tap into, as they are well-versed on the needs of the industry and will most likely be bilingual.

Hotels should be allowed to hire foreign staff on an annual contractual basis with unlimited renewals. Qualified foreign talent especially those who are experienced should not be discriminated against as it is imperative to ensure Malaysia is able to deliver the service levels expected to attract high-yielding tourists. If we are unable to deliver on the service levels, these tourists may choose not to return to Malaysia.

In the medium term, specific schools can be identified to focus more on tourism and thus develop a healthy pipeline of talent to join the tourism industry. The Ministry of Education together with the Ministry of Tourism will help identify specific schools (e.g. schools on islands and highlands) to develop curriculums focused on career paths in tourism. These curriculums will also be geared towards foreign language learning.

Improve the Tourism Environment

Overview

It is imperative that tourists be given a continuously positive experience from arrival through to departure to ensure they leave Malaysia with pleasant memories, which may result in repeat visits and positive word-of-mouth to friends and family. There are many aspects to the tourism environment that can be improved, ranging from taxi services, overall information access, funding access for private entrepreneurs, safety and maintenance of tourism products and infrastructure.

It is imperative that the Ministry of Tourism works with all the related agencies, industry players and other stakeholders to provide the enabling environment for the industry to flourish and for Malaysia to become a key tourism country. The Ministry of Tourism should also look at continuous development of tourism campaigns such as “Think Tourism Act Tourism” to promote awareness amongst Malaysians that tourism is a key industry for the country.

Malaysia continues to face challenges in providing quality service offerings for tourists. Complaints remain about the state of taxis and lack of meter usage. Issues of frontline staff not being able to deliver quality service or not being able to speak the language of the tourists are also prevalent. We also need to enhance the professionalism and creativity of the industry. It is also important that tourism products and infrastructure are well-maintained to ensure the comfort, safety and security of tourists.

The private sector also faces challenges in sourcing funds to develop tourism products. Currently there are two funds dedicated specifically to tourism: the Tourism Infrastructure Fund and the Special Tourism Fund. Even though these funds were developed for the private sector, companies sometimes have difficulty in accessing these funds due to equity ownership conditions imposed on these funds or lack of familiarity among banks about lending to tourism-related companies. As a result, not all projects endorsed by the Ministry of Tourism are approved by banks. Retail banks may not fully understand or appreciate the nature of tourism products and services which may not be fully collateralised. There is a need for tourism-related funds to be reviewed to ensure they are in line with the needs of the tourism industry.

Actions

For Malaysia to move forward, a few enablers in the areas of taxi services, tourism upgrades, funding, crime and cleanliness can be addressed immediately.

Allow competition in the taxi services market. Taxi services can be improved by allowing competition into the market. Tourism Malaysia can develop a Memorandum of Understanding with specific taxi operators who promise to deliver minimum standards of excellence, i.e. clean and well-maintained taxis driven by English-speaking drivers. In exchange, Tourism Malaysia will promote such taxis on its website. Such a model has been adopted in some countries, such as Egypt where websites like Trip Advisor inform tourists to look for black and white chequered taxis as they guarantee meter usage. In Indonesia, the Blue Bird Taxi Company guarantees excellent service quality by ensuring meter usage and well-maintained taxis. Over the course of time, other taxi operators in Jakarta modelled themselves to compete with the Blue Bird Taxi Company, as visitors began to associate this company with quality.

Expand Malaysia's online presence. In this era of global connectivity, channels such as the Internet are imperative in helping a tourist ultimately decide on a travel destination. Malaysia can help improve its online presence by capitalising on wireless word of mouth. This can be done by sponsoring online websites or blog contests to increase buzz about Malaysia. Countries such as Singapore have successfully utilised such media by sponsoring competitions such as the Asia Pacific Blog Awards, which involved flying contestants to Singapore for a visit and having the bloggers write online about their experiences.

Ease access to funds for product and service development. Private tourism-related companies may find it difficult to access funds to help them develop their products. Moving forward there should be a review of regulations to specifically address the challenges of the tourism industry in supporting product development. Regulations pertaining to equity ownership or the need for 100 percent collateral requirements may need to be reviewed to make it easier for the industry players to access such funds. This is especially pertinent for small business operators with on-going businesses that require loans to expand.

Leverage regular police in tourist areas. Media reports on snatch thefts and other tourist-related crimes have affected Malaysia's image as a safe destination. More police officers are now seen in hot spots around the country to reduce these incidences as a result of the Crime NKRA. Police officers in tourist areas could be used to help improve the tourist experience by training them in particular languages, on service delivery to tourists and on information about tourist sites in area they patrol. These officers could wear a special badge stating that they are English- or Arabic-speaking so that tourists feel more comfortable about approaching these officers when in need. The regular presence of police officers in these areas will also help address concerns of safety and crime. The current tourist police force could be redeployed to heavy tourist traffic areas such as Bukit Bintang to ensure a safe and comfortable environment for the tourists.

Train and campaign for clean public areas. Local authorities must ensure outlets or premises (including toilets) frequented by the public are clean at all times. Companies offering cleaning services should be accredited to ensure they are able to deliver cleanliness at international levels. The private sector should fully utilise the Human Resources Development Fund (HRDF) to upgrade the skills and knowledge of existing staff. On-going campaigns, such as "Think Tourism Act Tourism" and "1Malaysia Clean 1Malaysia Green", that help to increase nationwide awareness on the importance of tourism and cleanliness should be continued and sustained.

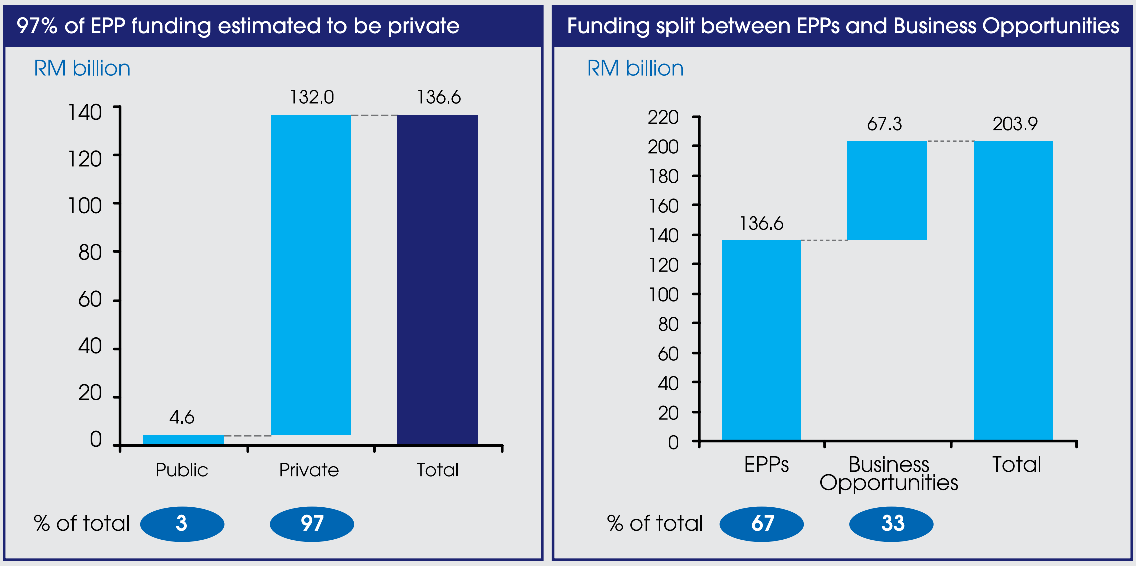
FUNDING

Achieving our ambitious growth target of tripling the tourism sector by 2020 will require a significant amount of funding. As shown in *Exhibit 10-10*, the tourism sector will require cumulative funding of RM203.9 billion from 2011 to 2020 in order to deliver incremental GNI growth of RM66.7 billion by 2020. Of this total funding, only approximately 3 percent will be public-sector funded while the remaining 97 percent will come from the private sector. We estimate that 67 percent of the total funding required (or RM136.6 billion) will be for the 12 EPPs, while the balance will be allocated for business opportunities and to support baseline growth.

Of the RM203.9 billion, the vast majority will be for capital expenditure and the remaining 0.2 percent will be specifically Government-funded operating expenses to complement private sector expenditure.

Exhibit 10-10

For the 12 EPPs, RM136.6 billion of funding is required, of which 3% will come from public sector



The expectation that the private sector will contribute 97 percent of the total represents a significant shift in both the scale of funding going into the tourism sector and also the public-private funding mix. For instance, between 2006 and 2008 the level of private investment tracked by MIDA into the tourism sector averaged RM1.9 billion per year. Achieving the growth ambition for the tourism sector will require investment levels almost 10 times the figure quoted by MIDA averaging RM20 billion annually from 2011 to 2020.

RM136.6 Billion for the 12 Entry Point Projects

The 12 EPPs are expected to be catalytic projects that will jump-start and drive the growth of the tourism sector. In order to successfully implement these 12 EPPs, a cumulative total of RM136.6 billion (3 percent public, 97 percent private) will be required from 2011 to 2020. The breakdown by theme is:

- **Affordable luxury:** RM0.5 billion to fund investments (such as public covered walkways) and execute events within the KL/KV shopping precinct and to develop three premium outlets in Malaysia;
- **Nature adventure:** RM0.9 billion to identify and analyse the proposed Rainforest Discovery Centre and fund upgrading activities at sites selected to be part of the Global Biodiversity Hub;
- **Family fun:** RM9.4 billion to construct the integrated resort (i.e. hotels, business tourism facilities (convention centre), retail facility, theme parks) and implement the Straits Riviera project;
- **Events, entertainment, spa and sports:** RM0.8 billion to position Malaysia as a leading events destination, fund bid entries to attract high profile events to Malaysia and upgrade and sustain motorsport events in Malaysia;

- **Business tourism:** RM0.8 billion for subvention funding and operating expenditure for MyCEB; and
- **Connectivity and Hotels:** RM124.2 billion to fund construction of required hotels and purchase of aircraft by local carriers.

Funding for Business Opportunities and Baseline Growth

A total of RM67.3 billion will be required to fund business opportunities and baseline growth, which will deliver an incremental GNI impact of RM29 billion.

For the business opportunities, a total of RM4 billion will be required for:

- **Food and Beverage Outlets:** Approximately RM1.4 billion will be required to fund the expected growth in the number of food and beverage outlets from 2010 - 2020;
- **Tour operators:** RM1.1 billion will be required for growth in the scale and number of tour operators in the country; and
- **Land transportation:** RM1.2 billion for the purchases of taxis and other land transportation required given the expected increase in the number of tourists.

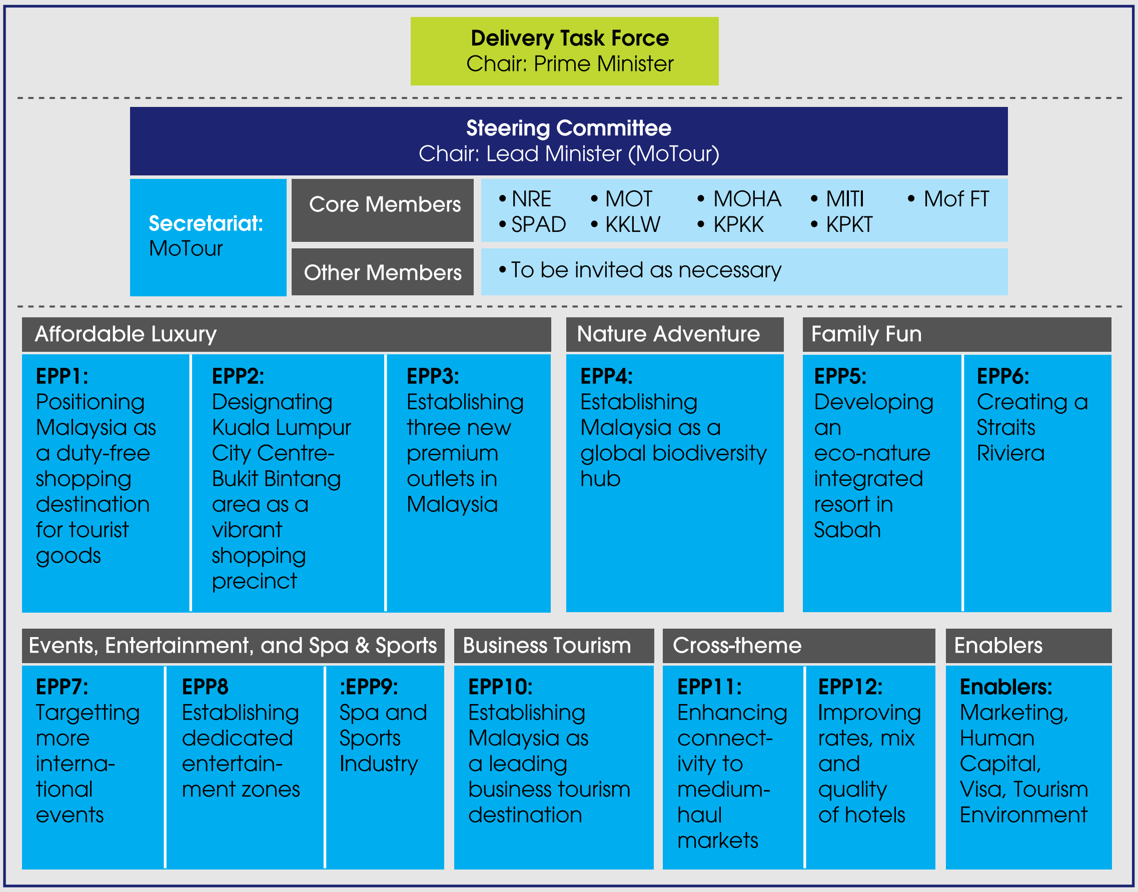
For baseline growth, a total of RM63.6 billion in investments are expected to sustain current tourism facilities and ongoing projects currently in the pipeline.

GOVERNANCE AND DELIVERY

To ensure that the EPPs are implemented according to their timelines, a proper governance structure will be established, with the Prime Minister heading the Delivery Task Force (DTF). This governance structure is shown in *Exhibit 10-11*. Meetings to update the DTF will be held quarterly.

Exhibit 10-11

Governance for the Tourism NKEA



The Minister of Tourism will act as the Lead Minister for the Tourism NKEA and chair the Steering Committee. The Steering Committee will make the necessary decisions and provide guidance to the working teams. Meetings to update the Minister on the progress of the EPPs will be conducted monthly.

The Steering Committee will consist of representatives from both the public and private sector. The public sector will be represented by key Government agencies crucial to EPP delivery, and other Government agencies may be invited when issues relating to their respective ministries arise. There will be private sector representatives for each Tourism EPP.

The Ministry of Tourism will serve as the Secretariat of the Steering Committee to oversee all matters pertaining to the NKEA and to track the performance and implementation progress of the EPPs. All materials for presentation to the Steering Committee, workshops, public engagements and related matters will also fall under the responsibility of the Secretariat.

Each EPP will be owned by a Government agency that will take the lead in ensuring its implementation. EPP team members will be drawn from both the public and private sector. Update meetings on the status of implementation will be held with respective implementing agencies fortnightly. Identification of lead owners, government agencies and private sectors involved in each EPP is detailed on the next page in *Table 10-1*.

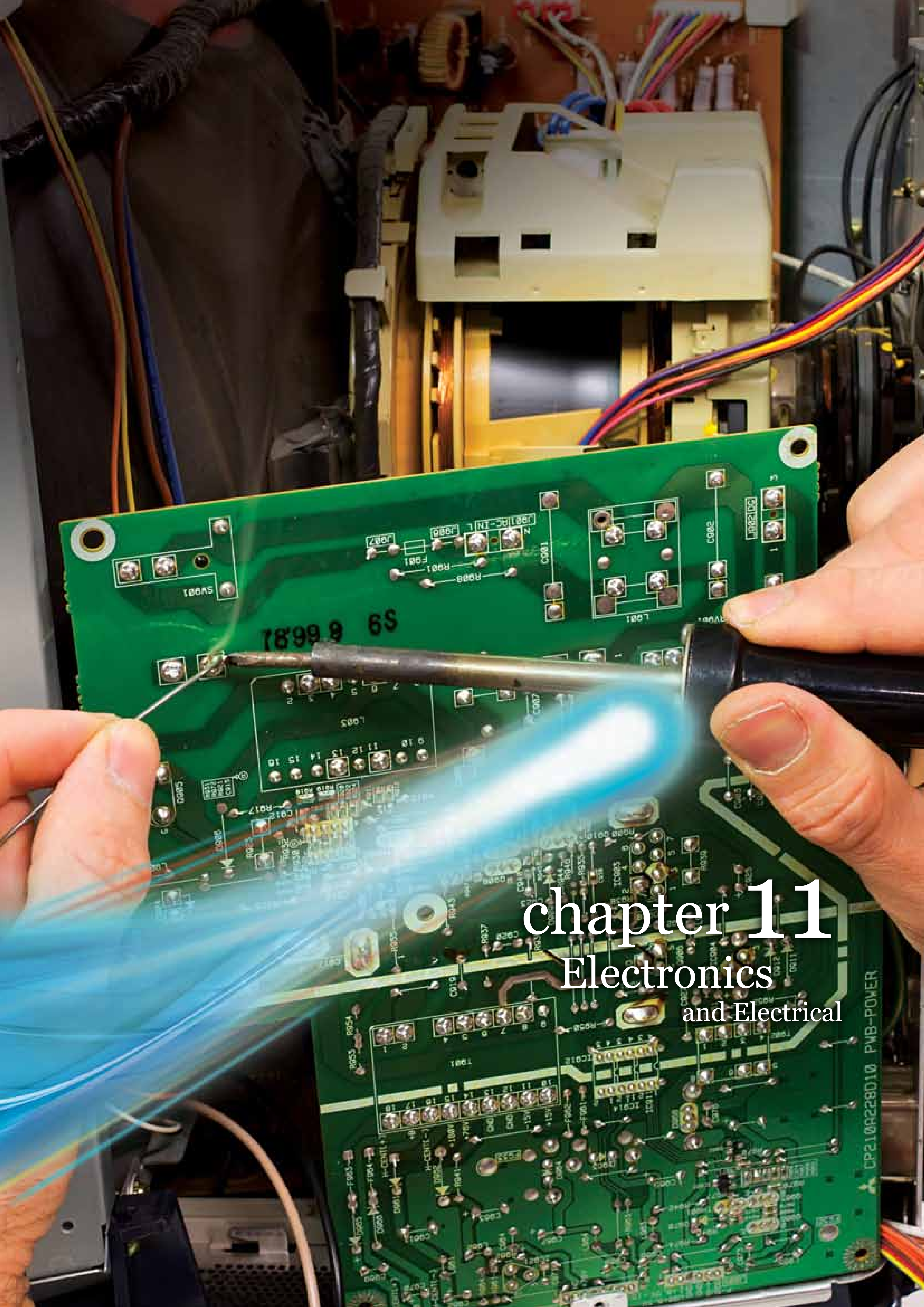
Table10-1

EPP	Lead initiative owners	Other key agencies, companies and organisations
Positioning Malaysia as a duty-free shopping destination for tourist goods	Secretary General of Ministry of Tourism	MITI (MIDA, SME Corp), MoF (Tax division, Royal Malaysian Customs), Ministry of Domestic Trade
Designating Kuala Lumpur City Centre – Bukit Bintang area as a vibrant shopping precinct	Secretary General of Ministry of Tourism	Ministry of Federal Territories and Urban Wellbeing (DBKL), Ministry of Domestic Trade, MoHA (PDRM), SPAD
Establishing three new premium outlets in Malaysia	Secretary General of Ministry of Tourism	Ministry of Domestic Trade, MITI (MIDA), Corridors (NCIA, IRDA)
Establishing Malaysia as a global biodiversity hub	Secretary General of Ministry of Natural Resource and Environment	KKLW, State agencies (Ministry of Tourism, Culture and Environment for Sabah and Sarawak), KPKT, Corridors (NCIA, IRDA, SCORE, ECER)
Developing an eco-nature integrated resort in Sabah	Secretary General of Ministry of Tourism	MITI (MIDA), State agencies (UPEN Sabah, Ministry of Tourism, Culture and Environment Sabah), Corridors (NCIA, IRDA)
Creating a Straits Riviera	Secretary General of Ministry of Tourism	Ministry of Tourism, State agencies (UPEN Penang, Selangor, Malacca, Johore and Sabah), KPKT, MOHA, Corridors (NCIA, IRDA)
Targeting more international events	Secretary General of Ministry of Transport	Ministry of Federal Territories and Urban Wellbeing (DBKL), Ministry of Information, Communication and Culture, MOHA (JIM, PDRM), MOF, Khazanah
Establishing dedicated entertainment zones	Secretary General of Ministry of Tourism	Ministry of Federal Territories and Urban Wellbeing (DBKL), KPKT, MOHA (PDRM)
Developing local expertise and better regulating the spa industry and Expanding sports tourism offerings in Malaysia beyond hosting events	Secretary General of Ministry of Tourism	Ministry of Youth and Sports, MOHR, MOHA (JIM), MOH, Corridors (IRDA, NCIA)
Establishing Malaysia as a leading business tourism destination	Secretary General of Ministry of Tourism	Ministry of Federal Terrorities and Urban Wellbeing (DBKL), MOHA (JIM), Corridors (NCIA)
Enhancing connectivity to priority medium-haul markets	Secretary General of Ministry of Transport	Ministry of Tourism, SPAD, MOHA (JIM), Corridors (NCIA, IRDA, SCORE)
Improving rates, mix and quality of hotels	Secretary General of Ministry of Tourism	MITI (MIDA), KPKT, Corridors (NCIA, IRDA, ECER, SCORE)

Summary of Tourism NKEA

• **Incremental GNI impact in 2020**	RM66.7 billion
• **Additional jobs in 2020**	497,000

- **Critical targets and milestones within 6 to 12 months**
  - Tariffs for first batch of duty-free items exempted
  - Pedestrian walkways in KLCC-Bukit Bintang Shopping area developed
  - First premium outlet operational
  - Interim Board of the Global Biodiversity Hub Board set up
  - National Passenger Sea Ports and Cruise Tourism Implementation Blueprint completed
  - Straits Riviera Council set up
  - Designation of a new Kuala Lumpur entertainment zone underway
  - Spa and Wellness National Council set up
  - Bidding for target set of business tourism events begun
  - Network expansion plans to priority cities developed by local carriers



chapter 11 Electronics and Electrical

Chapter 11: Revitalising the Electronics and Electrical Sector

"The Electronics and Electrical sector has played a critical role in the development of an industrialised Malaysian economy, and I believe will continue to contribute significantly to the country's GNI in 2020. Today, we have strong foundations and a deep base of companies. However, in the past decade, the sector has faced challenges in maintaining a strong growth trajectory. We now need to be a strategic E&E centre for leading global E&E players and domestic champions, offering high value for money and with a deep pool of talent. I am confident that the we can revitalise the sector and as the sponsor minister, I am personally committed to ensuring that the initiatives from these chapters are implemented and the ambitious GNI target is achieved."

YB Dato' Sri Mustapa B. Mohamed

"The Electronics and Electrical sector has the potential to bring highly-skilled jobs and a deep scientific and technological base to Malaysia. The sector would play a key role in building a sustainable innovation-driven Malaysian economy. This chapter sets out a clearly defined plan for doing so by deepening our capabilities across the E&E value chain in research and development, commercialisation and complex manufacturing. Upon adoption by the Government and provision of the necessary resources, I will ensure that the initiatives in this chapter are implemented and the GNI target is achieved."

YB Datuk Seri Dr. Maximus Johnity Ongkili

The Electronics and Electrical sector (E&E) is an important contributor to Malaysia's economy, which in 2009 accounted for 6 percent of Malaysia's gross national income (GNI), 522,000 jobs and 41 percent of Malaysia's total exports. Today, most global E&E leaders have operations in Malaysia, and the sector has spawned local firms such as Silterra, IRIS, Tenaga Switchgear, DSEM and Pensonic. The E&E industry has also played a major role in the development of the Northern Corridor (semiconductors and industrial electronics), Klang Valley (sophisticated services), Johor (logistics intensive E&E manufacturing) and Sarawak (developing cluster for silicon substrate manufacturing).

Malaysian E&E has a strong foundation in semiconductors and industrial electronics. Virtually every leading global firm, from Intel to Texas Instruments, has semiconductor operations in Malaysia. In industrial electronics, Agilent, the global leader in test and measurement, produces significant percent of its electronic measurement equipment in Penang, and ABB, the global leader in automation and transmission and distribution, has its regional headquarters for its expanding markets (Middle East, Southeast Asia, South Asia) in the Klang Valley. In addition, there are emerging sectors growing globally at more than 20 percent a year, such as solar photovoltaic technology (solar) and light emitting diodes (LEDs), in which Malaysia already has a strong base of companies and is poised to capture global growth in manufacturing capacity.

Nonetheless, our E&E sector faces significant challenges in maintaining growth in the face of competition from China, Taiwan, Singapore and other Asian countries. Over the last 10 years, E&E's share of Malaysian exports has declined. Furthermore, Malaysia's focus in E&E has traditionally been on assembly, the lower value-added part of the industry, while countries like Taiwan, South Korea and Singapore have captured the higher value-added activities in research and development (R&D), design and manufacturing.

We will revitalise Malaysia's E&E sector to increase GNI to RM90 billion by 2020, provide an additional 157,000 jobs (both high skilled and medium skilled) and strengthen focus on four strong regional clusters (Northern Corridor, Klang Valley, Johor, and Sabah and Sarawak). Our focus will be on attracting leading multinational companies (MNCs) and creating Malaysian champions.

DEFINITION OF THE E&E NKEA

The E&E NKEA focuses on semiconductors, home appliances and industrial electronics as well as new technologies like solar and LED. Each of the sector's four regional clusters has its unique strengths and growth opportunities, on which we will build. The Northern Corridor has the most advanced semiconductor cluster and has a growing cluster of solar and LED manufacturers. Klang Valley, due to its proximity to Kuala Lumpur, is developing as a centre for creativity and services. Johor has the advantage of lower cost labour and proximity to Singapore (with opportunities for joint investments and training), as well as the world-class Port of Tanjung Pelepas. Sarawak offers high-grade silica and low-cost renewable power and can translate these two fundamental advantages to become a global centre for silicon substrate manufacturing. Sabah will also be further developed as its extensive agricultural-based profile supports the development of wireless sensor technologies, agricultural processing equipment and diagnostics tools.

MARKET ASSESSMENT

E&E is an important contributor to Malaysia's economy with exports in the range of RM250 billion in 2008. It employs more than half a million people, many in better paid skilled positions. With about 1,900 active companies, the sector has had many success stories, especially in the fields of semiconductors and industrial electronics. Malaysia is home to many of the largest and most successful companies in the field such as Intel, Agilent and Motorola and has incubated home-grown stars like Silterra, IRIS and Pensonic. It has a good start in the fast-growing sub-sectors of solar and light emitting diodes.

Critical challenges facing the sector have made it imperative to revitalise the E&E sector. The challenges include the following:

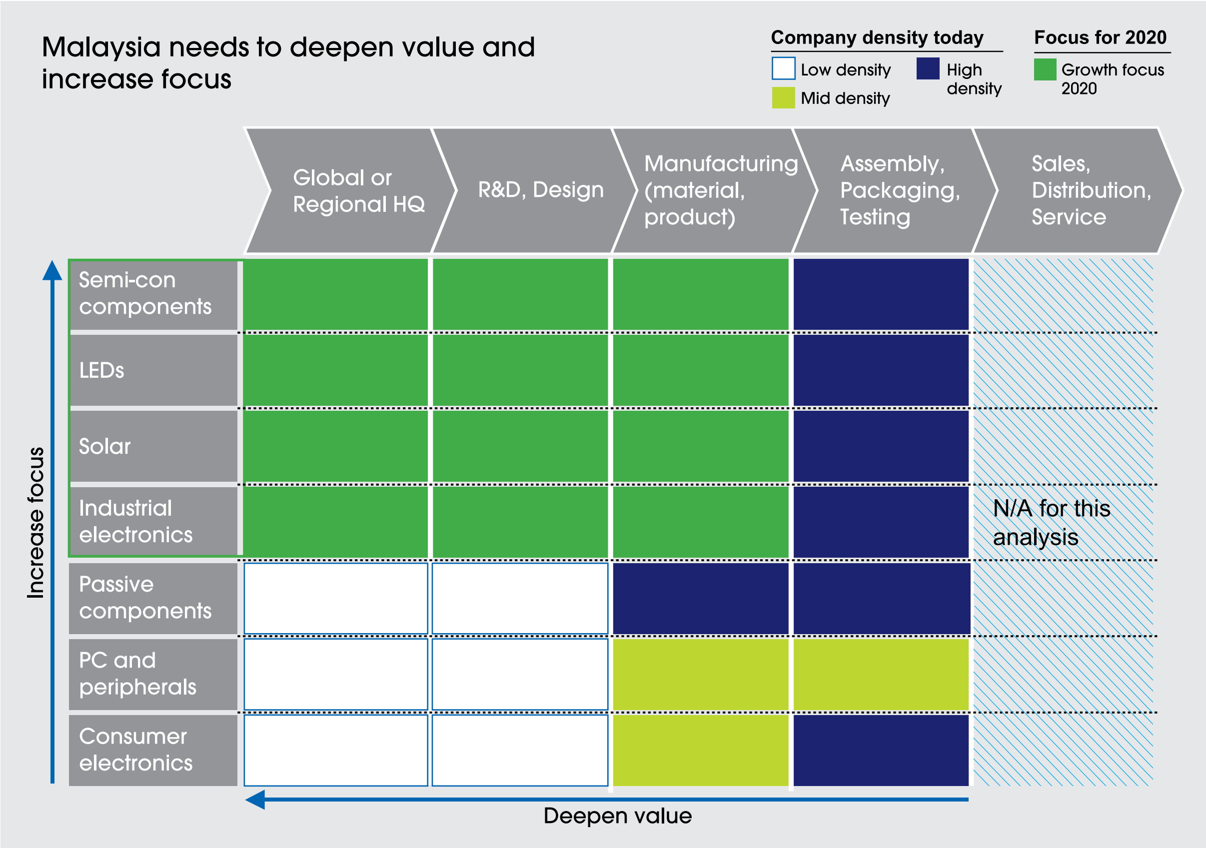
- **E&E's contribution to Malaysia's exports and its economy has been declining.** E&E's share of Malaysian exports increased dramatically during the 1970s and 1980s as Malaysia industrialised and introduced enabling policies such as free trade zones. However since 2000, E&E exports have grown more slowly than other exports (at 0.4 percent for E&E versus 7 percent for all exports), resulting in a decline in its share of exports from 59 percent in 2000 to 41 percent in 2009;

- **Malaysia's E&E sector is facing increasing competition.** China, which has emerged as the world's factory is a strong threat. A World Bank study shows the increase in export competition between Malaysia and China.[1] In 2007, 59 percent of Malaysia's exports to EU were under threat from China compared to only about 31 percent in 1990. Other emerging Asian economies such as Vietnam are fast becoming low-cost companies in the E&E industry, while at the high-end, Singapore and Taiwan compete for investments in higher-value activity;

- **Concentration of activity in assembly results in lower value added.** While Malaysia has built up significant clusters in E&E, much of the activity is in relatively low value-added assembly rather than higher value-added activities such as component manufacturing or R&D *(Exhibit 11-1)*. Even within Penang's sophisticated semiconductor cluster, most of the activities are in assembly and testing rather than higher value wafer fabrication. As a result the value added per worker of about RM70 thousand is comparable to China and only a fifth of that of Singapore;

[1] *"A comparative analysis of Malaysia's Industrial prospects and policy options", World Bank 2009*

Exhibit 11-1



- **Malaysia's capabilities in E&E are relatively unfocused across a range of sectors.** For example, we have a number of firms in so-called screwdriver PC and passive component assembly. Going forward, Malaysia should focus on sectors that are high-value and high-growth and in which it has existing strengths; and

- **Malaysia has significant room for improvement on almost all of the enablers important to industry players** *(Exhibit 11-2)*. To avoid competing directly with countries like China by moving up the value chain, we need to ensure that Malaysia offers the right operating environment, mainly in availability of talent, infrastructure and Government facilitation as well as technical ecosystem.

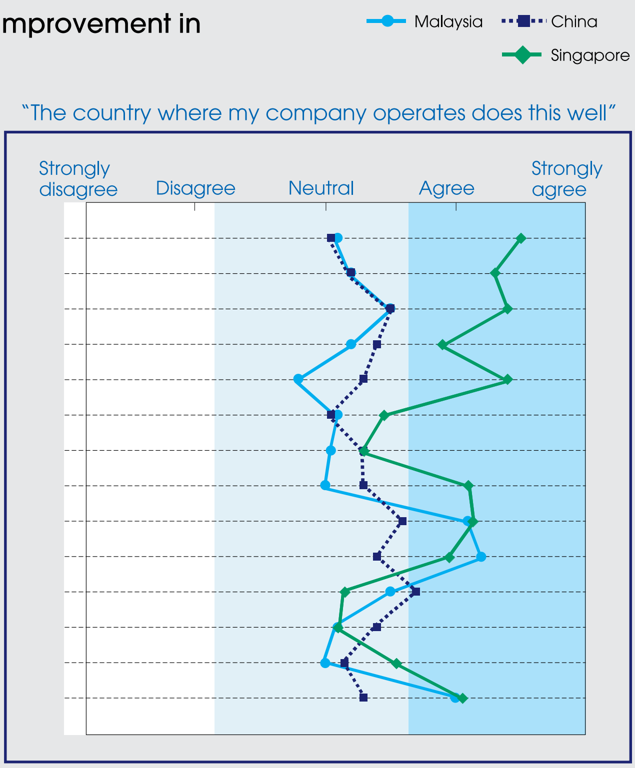
Exhibit 11-2

Survey of E&E industry shows room for improvement in Malaysia's operating environment

"This enabler is important to my company"

Enabler	Importance
Goverment regulations	4.3
Ease of dealing with goverment	4.3
Availability of electricity	4.2
Right incentives	4.1
Availability of labour	4.0
Cost of labour	4.0
Cost of utilities	4.0
Productivity of labour	3.9
Availability of water	3.9
Proximity and access to air logistics	3.9
Availability of land	3.7
Cost of land	3.7
Availability of financing	3.6
Proximity and access to sea logistics	3.6

"The country where my company operates does this well"



Note: Importance, N = 51; Satisfaction, Singapore N = 24, Malaysia N = 21, China N = 9

TARGETS AND ASPIRATIONS

Our strategy is to focus on four target sub-sectors, chosen based on attractiveness in terms of growth and size (semiconductors, LEDs, solar and industrial electronics and home appliances) and four geographic clusters (Northern Corridor, Greater Klang Valley, Johor, and Sabah and Sarawak).

15 entry point projects (EPPs), business opportunities (including multiplier effect) and baseline growth will contribute RM90.1 billion to GNI *(Exhibit 11-3)*, and 157,000 jobs by 2020.

15 EPPs, Business Opportunities and Baseline Growth to Deliver RM90.1 billion GNI by 2020

While there are 11 broad EPPs, some EPPs such as the Solar Upstream EPP span the entire value chain of the industry. To help provide a more granular level of detail on these important projects, we have articulated 15 detailed EPPs in this section. These EPPs cut across the four sub-sectors that will strengthen our capabilities across the value chain, particularly in higher value-added upstream activities:

Sector 1: Semiconductors

Semiconductors are an important part of Malaysia's E&E sector, but our efforts in this sub-sector have been typically in areas with lower value added such as test and assembly. The four EPPs follow a strategy of building on our strong foundations in the area of mature tech fabrication and expanding into advanced packaging and design of integrated circuits as well as supporting the growth of substrate manufacturers.

- **EPP 1:** Executing a smart follower strategy for mature technology fabrication;
- **EPP 2:** Developing assembly and test using advanced packaging technology;
- **EPP 3:** Developing integrated circuit design firms; and
- **EPP 4:** Supporting the growth of substrate manufacturers and related industries.

Sector 2: Solar

With a strong start in solar and solid experience in the similarly structured semiconductor industry, Malaysia has a promising future for a promising technology. By 2011, we will have the third largest solar market share in the world. A concerted effort to build broad solar production capacity coupled with our good location for the Asian market and low-cost labour force will allow us to leap into second place of a much larger industry by 2020.

- **EPP 5:** Increasing the number of silicon producers;
- **EPP 6**: Growing wafer and cell producers; and
- **EPP 7:** Increasing solar module producers.

Sector 3: Light emitting diodes

Malaysia has a strong lead in solid state lighting, one of the fastest growing segments of the light emitting diode industry. We need to move up the value chain from packing and testing to chip and application R&D by creating a cluster of international and domestic companies.

- **EPP 8:** Developing LED front-end operations;
- **EPP 9:** Expanding LED packaging and equipment; and
- **EPP 10:** Creating local solid state lighting champions.

Sector 4: Industrial electronics and home appliances

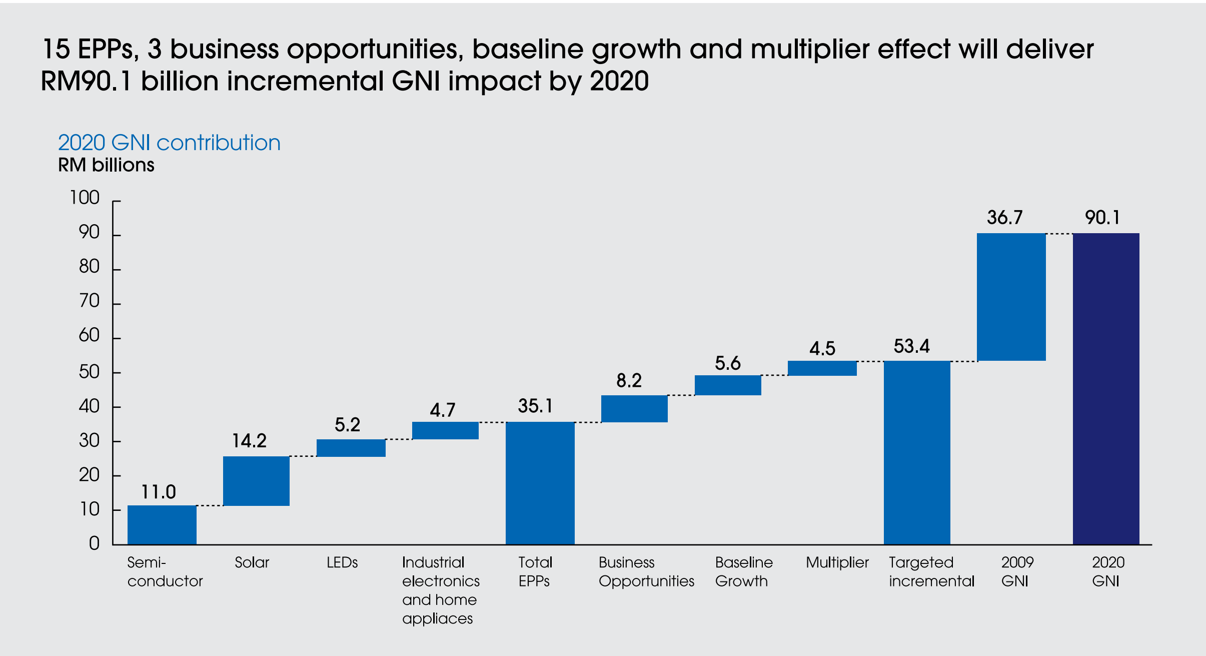
Industrial electronics comprises several sub-sectors involving the manufacturing of precision equipment used in industrial and commercial settings. Of these, the test and measurement, wireless communication, transmission and distribution and automation markets are the most attractive.

In addition, Malaysia has been successful domestically with local home appliance companies, most prominently Pensonic. The next step is to grow scale and build a strong international distribution network.

- **EPP 11:** Building a test and measurement hub;
- **EPP 12:** Expanding wireless communication and radio frequency identification (RFID);
- **EPP 13:** Growing automation equipment manufacturing;
- **EPP 14:** Building transmission and distribution companies; and
- **EPP 15:** Building a home appliance manufacturing hub and international distribution network.

The EPPs will contribute a combined RM35.1 billion to GNI by 2020. In addition, other business opportunities and baseline growth will contribute RM13.8 billion, with a further RM4.5 billion achieved from a multiplier effect from other NKEAs. The largest sources of the multiplier effect on the E&E NKEA are the Palm Oil NKEA (31 percent) and Wholesale and Retail NKEA (21 percent). This could be due, for example, to the potential increase in retail of computer and electrical products boosting production of semiconductors and LEDs. Growth in healthcare will also contribute to the multiplier with growth in medical devices.

Exhibit 11-3



SEMICONDUCTORS

These days, semiconductors are ubiquitous, providing the intelligence to power smart devices, from personal computers to cell phones. The worldwide semiconductor market is currently valued at RM812 billion (2009) and expected to grow at about 7 percent per year. The output value of semiconductors in Malaysia is around RM39 billion (2009), a global share of about 5 percent. As a large and high growth industry in which Malaysia already has a strong foundation, semiconductors are a key sector for E&E in Malaysia.

The semiconductor firms operating in Malaysia concentrate primarily on assembly and test.[2] There are relatively fewer higher value-added wafer fabrication plants[3] or R&D units resulting in lower value added per worker and lower GNI.

Our goal for the semiconductor industry is to add RM11.04 billion in incremental GNI by 2020. Our share of global semiconductor final output value will remain constant at about 5 percent, but we will deepen the concentration of high value-added activity by moving beyond semiconductor assembly to create greater value.

EPP 1: Executing a Smart Follower Strategy for Mature Technology Fabrication

Rationale

Semiconductor fabrication plants (fabs) are high value-added manufacturing plants that anchor the entire semiconductor value chain (e.g. integrated circuit (IC) design and substrate manufacturing). Instead of pursuing a leading edge strategy for wafer fabs, we will pursue a smart follower strategy in which we target the establishment of fabs that use mature technology focused on niche applications.

We focus on fabs using mature technology because the leading-edge business is capital expenditure-intensive. Apart from market leaders (such as TSMC in foundries), many leading-edge fabs often make significant losses. This is because to remain on the leading edge, fabs need to continuously invest in R&D and new equipment (e.g. RM11 to 14 billion to build a new leading-edge fab). However, a set of smaller companies that focus on selected niche technologies (e.g. analogue, power) and use mature technology (defined as 90 nanometer or larger transistor feature size) are able to earn attractive returns, such as a return on assets of about 10 percent. In addition, apart from the most demanding logic, memory, graphics and field-programmable gate array applications, mature technology fabs are competitive in a wide range of applications accounting for 65 percent of world-wide semiconductor revenue. A strategy focused on niche mature technologies avoids crippling R&D and capital expenditures and offers longer term sustainability.

In addition, refurbished equipment provides an opportunity to equip a fab at a significantly lower cost. A mature technology fab using refurbished equipment can be built for an estimated cost of only RM1.8 billion,compared to RM11 to 18 billion for a leading-edge fab. The closure of fabs in high-cost countries provides an opportunity to acquire refurbished fab assets at a low cost. Refurbished equipment currently accounts for about 11 percent of equipment sales, and the global growth rate of sales of refurbished equipment is expected to be 18 percent per annum.

[2] *Assembly and test refers to the packaging of semiconductors with electrical connectors, followed by testing*

[3] *Fabrication plants etch nanoscale transistor features onto silicon wafers*

Actions

The Malaysian Investment Development Authority (MIDA) will lead this EPP, supported by a fab consortium. A consortium has already been formed to acquire fab assets in high-cost countries and relocate the fab equipment to Malaysia. The consortium focuses on mature technology targeting specialised applications, and it has already signed a terms sheet with a foreign fab to acquire its assets and relocate the equipment. The first fab is planned to start operations in 2011, and there will be four more fabs built by 2020, which would double the number of fabs in Malaysia.

Three smaller wafer size fabs (200 millimetre) will be built first, followed by two larger wafer size fabs (300 millimetre). The timeline is to build a fab every year 2011 to 2015. MIDA and the fab consortium will work together for the success of the fabs.

Ministry of Science, Technology and Innovation (MOSTI), through Multimedia Development Corporation (MDeC), will provide technical support and advice.

Enablers

Funding for building the fab facilities is being sought, based on a build and lease strategy. MIDA is identifying suitable investors to fund this EPP.

Further, the Government will raise standards in key technology parks to meet the needs of semiconductor fabs. In general, power and water quality standards in Malaysia governing the utility providers are intended for general industrial use. The requirements for semiconductors, particularly for wafer fabs, are much more rigorous and governed by international standards such as SEMI F47-0706. Power quality challenges in the Kulim High Tech Park have affected semiconductor manufacturing operations.

Funding

The cumulative funding required from 2010 to 2020 is RM10.2 billion in private investment and RM0.1 billion in public investment.

Impact

The EPP will provide incremental GNI of RM4.2 billion and create 6,500 jobs.

EPP 2: Developing Assembly and Test Using Advanced Packaging Technology

Rationale

Despite Malaysia's large number of semiconductor assembly and test operations, only a few firms offer advanced packaging services like bumping or wafer level packaging. Malaysia is naturally positioned to extend its strong starting point as an assembly-and-test hub to become a hub for more advanced semiconductor packaging services. There is domestic demand for such advanced packaging services within Malaysia. For example, Silterra currently ships its chips to Taiwan for gold bumping. The success of the fab strategy will also drive domestic demand for more advanced packaging services.

Actions

The Northern Corridor Implementation Authority (NCIA) will lead this EPP, supported by MIDA. There are ongoing discussions with a company to bring an advanced packaging service to Malaysia, with financial assistance under negotiation with the Malaysian Government. The first bumping service in Malaysia will provide a success story that MIDA can use to attract more companies to offer more advanced packaging services (such as bumping and wafer level packaging) to be set up in Malaysia. We are targeting three companies by 2020, and hope to have all three secured by the end of 2012.

Enablers

NCIA and MIDA will provide Government support in the form of incentives (Pioneer Status incentives, Investment Tax Allowance) to pioneering groups to scale up the presence of advanced packaging lines in Malaysia.

They will also target assembly and test companies already in Malaysia to bring in advanced packaging lines.

The fab consortium and MIDA will work together to ensure the success of the fabs, as this will be an important source of demand for advanced packaging services.

Funding

The cumulative funding required from 2010 to 2020 is RM0.6 billion in private investment and RM0.3 billion in public investment, which will be in the form of incentives.

Impact

The EPP will provide incremental GNI of RM1.3 billion and create 1,300 jobs.

EPP 3: Developing Integrated Circuit Design Firms

Rationale

Malaysia has achieved some success as a design centre for ICs, with a mix of multinational IC design centres and domestic IC design companies. For example, Intel's Penang Design Centre has a history of nearly 20 years and has been involved in the design of leading-edge ICs for Intel. Nonetheless, with about 15 active IC design companies, the number in Malaysia is significantly smaller than the number in the USA, Taiwan and Europe. IC design firms require highly skilled employees who invent intellectual property (IP) and are thus aligned with Malaysia's goal of creating an innovation-driven and high income economy.

Actions

MIDA will lead this EPP, supported by NCIA, EPU, MOSTI (MDeC), Silterra and the fab consortium.

MIDA is in ongoing discussions with at least four IC design companies to set up in Malaysia, and our target is a total of 50 additional IC design companies by 2020. This would increase the number of design companies by about four-fold. In addition, we will seek to grow locally based IC design companies.

MIDA, Silterra and the fab consortium have committed to identifying and encouraging IC design companies to set up in Malaysia, which would provide a customer base for their fab services. Many of those targeted are expected to be existing customers of fabs acquired by the fab consortium. The value proposition we offer is that proximity to the fabs will provide for faster prototyping. Malaysia can also fill the niche for smaller design companies that wish to use fab services but are too small-scale to get served by large foundries such as TSMC or UMC.

MOSTI (through MDeC) will provide technical support and advice to ensure the design eco-system is established.

The target is to attract 10 IC design companies a year from 2011 to 2015, for a total of 50.

Enablers

Shared services and labs. NCIA will work to make electronic design automation tools, a prototyping lab and a test lab for certification and standards available for sharing.

NCIA and the Selangor Human Resource Development Council (SHRDC) will augment the availability of electronic design automation tools on a pay-per-use basis to increase the current low availability. This would lower the cost of starting up a local IC design company.

NCIA will facilitate the setup of a prototyping lab, so that local IC design firms can avoid the high cost of sending their prototype designs overseas for prototype production. MOSIS in the USA is a model of providing low cost fabrication services to universities and companies.

Lastly, NCIA will facilitate the establishment of a shared test lab for targeted certification and standards such as the requirement that RF chips used in the USA and Japan require FCC and Telec certification. This lab will be established under the existing NCIA Centre of Excellence (CoE) for E&E. The shared test lab would include a certification authority similar to labs in Taiwan, Japan and Australia.

Financing and incentives. EPU will enhance financial support to the Skills Development Centres (SDC) (e.g. Penang SDC, Selangor HRDC) to train talent in IC and embedded design. MIDA will provide Government incentives for multinational companies to outsource IC design to Malaysian IC design companies.

Promotion. MIDA will launch specific missions with pre-approved incentives to target IC design firms.

Infrastructure. Masterplan Batu Kawan in Penang, which is being developed, will be designated a hub for high value E&E including IC design services. More detail is provided in the Northern Corridor section.

There is also a requirement for faster and cheaper broadband services, which is critical for transmitting large IC design documents, especially in the Northern Corridor. Broadband issues are addressed by the Communications Content and Infrastructure NKEA.

Funding

The cumulative funding required from 2010 to 2020 is RM0.6 billion in private investment and RM0.3 billion in public investment.

Impact

The EPP will provide incremental GNI of RM3.2 billion and create 2,000 jobs.

EPP 4: Supporting the Growth of Substrate Manufacturers and Related Industries

Rationale

Malaysia is already a manufacturing location for leading wafer substrate manufacturers Shin Etsu and MEMC, which are number one and four in world market share respectively. The growth of the core semiconductor value chain would increase Malaysia's attractiveness as a site for substrate manufacturers. There are also adjacent industries, such as equipment and epitaxy manufacturers, that would grow as the core semiconductor value chain deepens. Together with the promotion of the growth of the core semiconductor value chain, we will also promote Malaysia as a location for adjacent industries that focus on substrates.

Sarawak is a good site for silicon wafer substrate manufacturing due to the availability of high quality silica and low cost power. The target is for one substrate plant in Sarawak by 2012 and a second plant by 2014.

Actions

MIDA will lead this EPP, supported by Sarawak Regional Economic Corridor Development Authority (RECODA). MIDA will target to bring in at least two more wafer substrate manufacturers to Malaysia, doubling the current number. Global leader manufacturers such as Sumco, Siltronic, LG-Siltron and Covalent and smaller companies will be targeted.

Enablers

We will improve the investment environment in Sarawak. For example, RECODA will expedite approvals for new substrate projects and reduce the process duration to maximum of two months. Further details follow in the key enablers Sarawak section.

MIDA will launch a targeted promotion to substrate manufacturers and other related industries to set up in Malaysia.

MOSTI will provide technical advice and support in R&D, technology platform and innovation. It will also identify basic research areas with universities and applied research areas with local and international research institutions.

Funding

The cumulative funding required from 2010 to 2020 is RM3.2 billion in private investment and RM0.2 billion in public investment.

Impact

The EPP will provide incremental GNI of RM2.6 billion and create 3,200 jobs.

Further enabling actions to support the semiconductor industry

Apart from the actions to support the EPPs above, there are enabling actions that support the semiconductor industry as a whole.

- Set up shared facilities and/or labs that can be used by the semiconductor industry for a fee, thereby lowering the cost of operations in Malaysia. Specifically, we need to set up a Board and System CoE, a Test Development CoE, a Material Science and Packing CoE, a Testing Lab for Wafers (metrology instrumentation), a Contactless Testing Lab and a Failure Analysis Lab (Public funding: RM224 million, Owner: MIMOS/EPU);

- Establish an IP block marketplace, led by the existing NCIA CoE for E&E. The availability of IP blocks can enable more complex designs to achieve faster time to market (Public funding: RM6.4 million, Owner: NCIA);

- Work with existing waste treatment companies to set up processing facilities near to industrial parks (Public funding: RM9.6 million, Owner: NCIA);

- Establish a centre for refurbishment, retrofitting and parts cleaning, which will consist of a local provider for these essential services (Public funding: RM8 million);

- Establish a semiconductor training centre to bridge the gap between the skills of fresh graduates and the requirements of the industry. (Public funding: RM8 million); and

- Encourage material suppliers (gas and specialty chemicals) to set up operations in Malaysia, which would result in cost and time savings for semiconductor firms here (Owner: MIDA).

SOLAR

The solar value chain has similar stages to the semiconductor value chain. It consists of: producing the silicon feedstock and silicon ingot; cutting the ingots into wafers; fabricating the silicon wafers into photosensitive cells; assembling complete solar modules; and the balance of systems, which refers to components other than the solar cells in a photovoltaic system such as wiring and racks. The similarity suggests that Malaysia can build on its capabilities in semiconductors to capture the global growth in the solar industry.

Due to current high costs, solar is not yet economically competitive with other energy sources like oil or coal, or even with other renewable energies like biomass or hydropower. While renewable energies now account for about 11 percent of global energy supply, solar only has a share of 0.6 percent of renewable energies and 0.01 percent of global annual energy supply.[5]

However, the solar market has grown very quickly. Between 2005 and 2010 the market grew at around 50 percent annually.[6] In 2010, the global solar market will reach 10 gigawatts in annual supply and around RM160 billion in revenues.

[5] *Source: International Energy Outlook, EPIA, EREC-Renewable Energy Scenario to 2040*

[6] *Source: International Energy Outlook, EPIA, EREC-Renewable Energy Scenario to 2040*

While solar is currently expensive, average installed system prices have dropped to about RM16.40 per watt and we expect prices to fall further to RM6.70 per watt or lower in 2020. Grid parity, when solar prices become competitive with other energy sources, is expected to be reached in some regions like Italy and California as early as 2015.

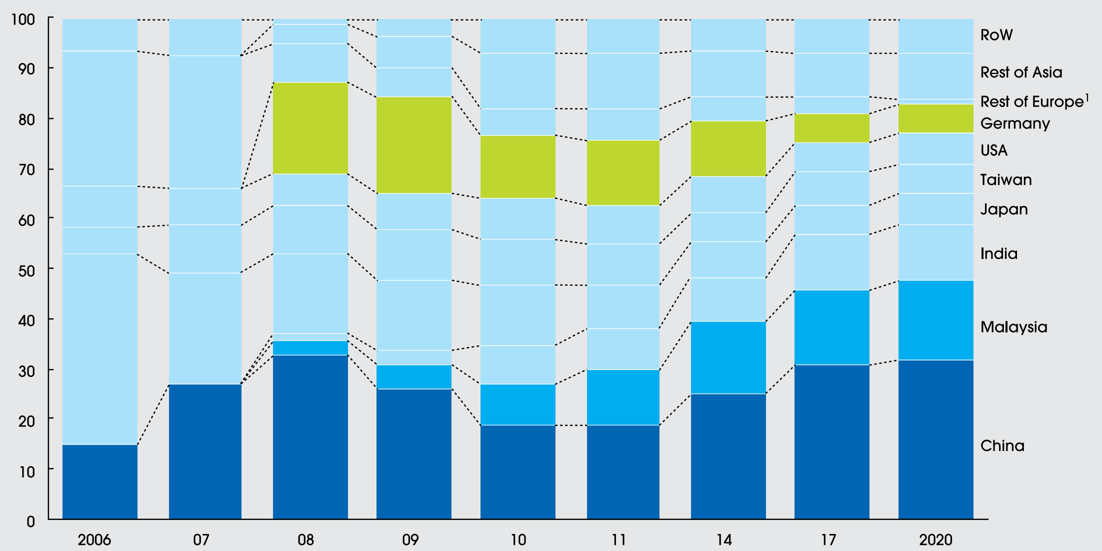
Due to the declining cost of solar, the market is forecasted to grow very rapidly at about 30 percent per year through 2015 and then at a rate of 25 percent per year until 2020. This implies an increase of 100 times in solar share by 2020, when it would account for 5 percent of renewable energies and 1 percent of global energy supply. This will translate into global cumulative installed capacity of 560 gigawatts, with annual demand of 113 gigawatts and RM918 billion of revenues in 2020. Asia will drive a significant portion of this demand and supply by 2020. This demand trend is expected to continue over the next few decades, and solar is predicted to account for as much as 25 percent of global energy supply by 2050.

Malaysia has a strong starting position in solar. After projects committed for 2011 come on stream, Malaysia will be the third largest producer of solar cells after China and Germany. We already have companies across the entire value chain, from silicon production (Tokuyama) to solar cell manufacturing (Sunpower and Q-Cell) and module assembly (Flextronics, First Solar, Solartif). Our aspiration is to increase our market share to 17 percent of the world production and reach the number two position behind China by 2020 *(Exhibit 11-4)*. This implies Malaysia needs to increase cell and wafer production capacity by 10 times and production capacity for silicon by 23 times by 2020. While ambitious this is achievable as the industry's high rate of growth provides opportunities for Malaysia to capture new production capacity, especially as production is relocated from high cost countries such as Germany.

Exhibit 11-4

Building on strong #3 position, Malaysia is aiming to become #2 in solar manufacturing by 2020

Share of solar manufacturing



[1] Rest of Europe for the years 2008 and 2007 includes Germany

SOURCE: EU Joint Research Centre PV Report '09; MBIPV Industry Handbook '09 - MBIPV; PTM report '09

EPP 5: Increasing the Number of Silicon Producers

Rationale

Manufacturers of solar silicon ingots require a steady supply of high grade silica and large amounts of reliable energy provided at reasonable prices to process raw silica. Sarawak is an ideal location as it is a source of high grade silica and offers renewable energy (e.g. hydropower) at attractive rates with guaranteed reliability. Tokuyama is constructing a solar silicon wafer manufacturing plant at the Samalaju Park in Sarawak to take advantage of the low cost of power.

Actions

MIDA will lead this EPP, supported by RECODA. MIDA, with the help of other Government agencies, will attract one or two selected major companies each year to increase the amount of silicon produced in Malaysia from 6 kilo tons today to around 170 kilo tons in 2020. We have already identified the following companies for this: Wacker Chemie, Hemlock, GCL Poly, OCI, REC, Solarworld, LDK, Suntech and E-Ton. Additionally, Malaysia will develop two domestic silicon companies. Note that semiconductor silicon substrates are similar to but higher grade than solar substrates, and can be produced by the same companies. The target for solar silicon substrates is in addition to the target set for semiconductor silicon substrate manufacturers.

MIDA will start the process of attracting silicon producers at the beginning of 2011. To take the first company as an example, the process would begin in January 2011 and the plant would start operation in January 2014. The steps to be taken are as follows:

- Solar company submits proposal to MIDA – January to December 2011;
- MIDA assesses proposal and announces decision – January to June 2012;
- MIDA organises industrial linkages and local sourcing – July 2012 to December 2013; and
- Solar company starts construction and commissioning – July 2012 to December 2013.

The targets for the domestic champions are to have the first plant operating by October 2012 and the second plant by December 2014.

Enablers

To jumpstart the substrate industry in Sarawak, we would invest in creating a domestic champion for substrate manufacturing. This would take the form of a joint venture with a leading international company to provide access to the technology.

MIDA will promote Sarawak overseas as a site for silicon producers and solar glass and provide incentives (tax incentive, power rebates) to new silicon producers with pioneer status.

MOSTI will provide technical advice and support in solar substrate R&D, technology platform and innovation. It will also identify basic research areas with universities and applied research areas in collaboration with local and international research institutions.

The Government will invest in making Bintulu an attractive, liveable city. As the nearest town to Semalaju industrial park, Bintulu is important to Sarawak's solar initiative, but its current state is a deterrent for talent. Government will also upgrade Bintulu airport to an international airport, so visitors no longer need to transit through either Kuala Lumpur or Kuching. The section on regional enablers has more detail.

To address the power needs of the industry, we will allocate priority for hydroelectric power to the solar industry rather than other energy-intensive industries like aluminium and steel.

Funding

The cumulative funding required from 2010 to 2020 is RM12.5 billion in private investment and RM1.3 billion in public investment.

Impact

The EPP will provide incremental GNI of RM3.4 billion and create 20,000 jobs.

EPP 6: Growing Wafer and Cell Producers

Rationale

The solar wafer and cell manufacturing process involves preparing the silicon to serve as photosensitive cells. Solar cell manufacturers in Malaysia today include First Solar (Northern Corridor), Sunpower (Melaka) and Q-Cell (Klang Valley). The solar cell manufacturing process has similarities with the semiconductor fabrication process, as manufacturers require sites suitable for hosting state-of-the-art equipment and clean rooms. The Northern Corridor, as the established cluster for Malaysia's semiconductor industry, provides the right environment for solar wafer and cell manufacturers. However it needs some upgrades to transportation infrastructure for a sea port and rail transport. Necessary silicon can be supplied by silicon producers established in Sarawak.

Malaysia has to increase its production capacity by 10 times from the current 2.3 gigawatts to 23 gigawatts in 2020 to reach our objective of becoming the second largest producer of solar cells globally. This will require MIDA to each year bring in one or more selected companies with cumulative capacity of 2 gigawatts for wafers and/or cells.

Actions

MIDA will lead this EPP, supported by the Penang Skills Development Centre (PSDC), SHRDC and SIRIM (the Malaysian Standards and Quality Institute).

MIDA has already confirmed additional capacity of 2 gigawatts in 2011 and more companies have announced plans to set up production facilities of an additional 1 gigawatt until 2013 in Malaysia.

The private sector will also support the growth of solar wafer and cell manufacturing. Penang Skills Development Centre and Selangor Human Resource Develop Centre in partnership with industry will introduce courses or modules in solar wafer and cell manufacturing.

MIDA will start the process of attracting wafer and cell producers at the beginning of 2011. The process is similar to that described in the silicon producers EPP.

Enablers

MIDA will promote Northern Corridor and Klang Valley as sites for wafer and cell producers and will provide incentives to pioneering wafer and cell producers.

The Ministry of Science, Technology & Innovation (MOSTI) will establish a shared solar test centre, which would provide product certifications required for each step of the solar production chain and spur innovation in the industry. This would lower the cost of establishing an operation in Malaysia to individual manufacturers. MOSTI will also establish a solar R&D lab and IP centre to research thin film and crystalline solar technology. The focus will include third generation applied research for solar PV technology as well as fourth generation basic research.

KeTTHA will provide strategic directions for local solar PV implementation. MOSTI (through SIRIM) will provide technical advice and support in solar PV R&D, technology platform and innovation.

SIRIM will also establish national standards for solar products, which would ensure safety and competitiveness of Malaysian products in the international markets.

Funding

The cumulative funding required from 2010 to 2020 is RM9.1 billion in private investment and RM1.0 billion in public investment.

Impact

The EPP will provide incremental GNI of RM7.3 billion and create 21,000 jobs.

EPP 7: Increasing Solar Module Producers

Rationale

Solar module production involves packaging the solar cells into finished modules. Module assembly operations in Malaysia today include Flextronics (Johor) and FirstSolar (Kulim, Northern Corridor). The process is relatively labour intensive so lower labour costs make a site attractive. High-quality glass is packaged with thin film solar modules, which makes access to locally produced glass important (e.g. SunBear is planning to establish a plant in Sabah, if gas supply can be assured). The finished solar modules are also relatively bulky making logistics access important.

For these reasons, Johor is an attractive location for module producers due to its relatively low labour costs and easy access to two airports (Senai and Singapore) and to the deep sea port of Tanjung Pelepas. This potentially makes Malaysia a prime location for module manufacturers targeting China, Southeast Asia, India and Australia. Johor also offers easy access to an existing testing and certification centre in Singapore. Flextronics already has a large-scale solar module assembly operation in Johor.

Actions

MIDA will lead this EPP, supported by the Iskandar Regional Development Authority (IRDA).

Our objective is for Malaysia to become a major manufacturing location for modules serving the domestic and Asian markets. Malaysia will leverage the nearby production of cells, our relatively cheap but highly qualified workforce, our experience in automation and our logistical access to the region.

MIDA will start the process of attracting module producers at the beginning of 2011. The process is similar to that described in the silicon producers EPP.

Enabler

MIDA will promote Johor as a hub for module production and provide incentives to pioneering module manufacturers. It will also attract glass producers to Johor, which are needed for thin film solar modules, as well as supporting industries such as manufacturers for glass, junction boxes, cables, ethylene-vinyl acetate and aluminium frames like Mitsui or Huber & Suhner.

We will address the challenges of making Johor attractive as a site for manufacturing in general. See details in section on regional enablers.

MIDA is already working to assure natural gas supply to glass producers interested in setting up in Malaysia. Sarawak can also develop as a site for glass manufacturing given the availability of silica as well as natural gas.

We will assess the potential for partnership with Singapore to attract solar investments spanning both Singapore and Johor. This could be in the form of a joint working committee of Singapore Economic Development Board (EDB)-MIDA-IRDA. Singapore is attempting to build up solar cell production capabilities, which would complement module production capabilities in Johor.

MOSTI will collaborate with universities to provide technical advice and support in solar module R&D, technology platform and innovation for local small and medium enterprises (SMEs).

Funding

The cumulative funding required from 2010 to 2020 is RM6.4 billion in private investment and RM0.6 billion in public investment.

Impact

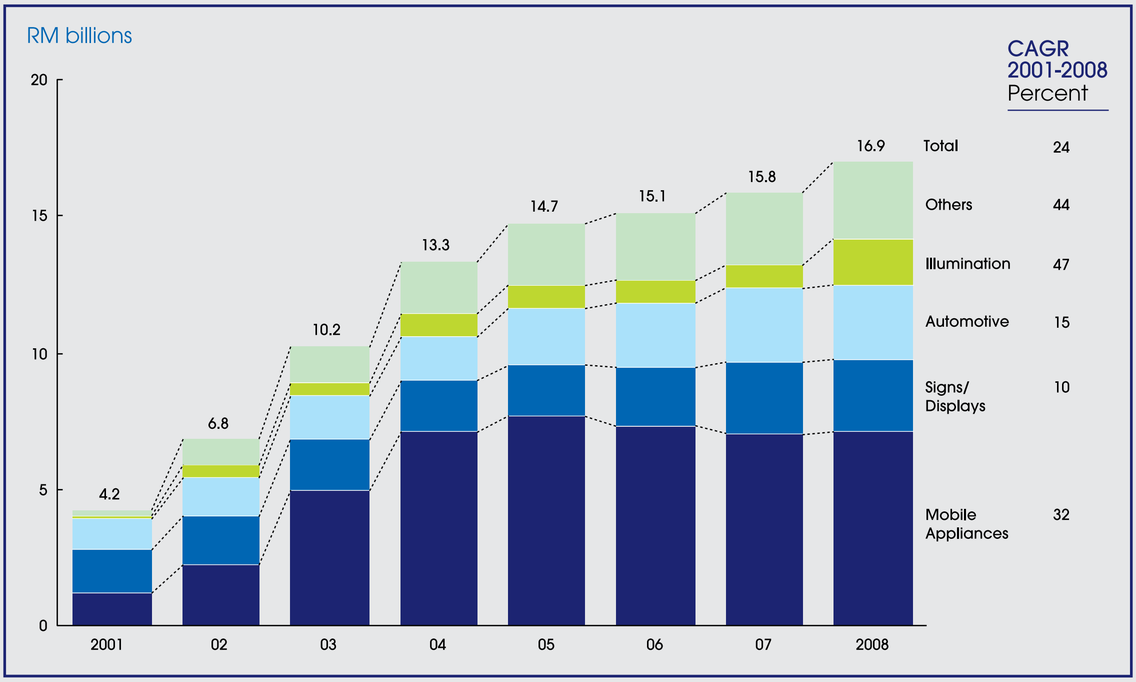
The EPP will provide incremental GNI of RM3.2 billion and create 14,000 jobs.

LIGHT EMITTING DIODES

In the last decade, the light emitting diode (LED) industry has seen annual growth of 24 percent *(Exhibit 11-5)* largely due to the growth of mobile applications. Colour screens for mobile appliances like phones and laptop computers, which both use LED backlights, have become increasingly prevalent. Going forward, LED growth is being driven by LED televisions, which use LEDs as backlighting (often called LED TVs), more mobile devices and replacement of conventional lighting as legislation from governments and environmental awareness among consumers grows.

Exhibit 11-5

Global LED demand grew by more than 20% from 2001 to 2008



NOTE: Demand count in single-chip equivalent packaged LEDs

SOURCE: Strategies Unlimited; Canaccord Adams; Capital IQ

Malaysia currently exports RM1.8 billion (2008) of LED products, which represent approximately 10 percent of the global LED market, with most of these exports in the illumination sector. LED lighting is also known as solid state lighting (SSL) due to the solid nature of the semiconductor, as compared to gas, plasma or electric filaments found in conventional lighting. SSL is one of the fastest growing sub-segments, projected to grow at 28 percent per annum over the next 10 years to a size of RM170 billion.

Malaysia has the opportunity to become the global hub for SSL. We currently enjoy strong competitive positioning in SSL as compared to the other LED sub-segments that are dominated by countries such as Taiwan. Four of the largest global SSL companies either operate in or contract a significant portion of work to companies in Malaysia. They perform a variety of operations ranging from R&D, wafer fabrication to packaging and applications. There are also a number of local companies involved in other areas of SSL lighting such as contract manufacturing, systems integration and application design as well as speciality companies focused on various heating and optical elements.

However, while Malaysia has many downstream SSL companies (e.g. in packaging and testing), we need to have more upstream companies (e.g. in chip and application R&D).

EPP 8: Developing LED Front-end Operations

Rationale

In order for Malaysia to capitalise on its position in the global SSL market, it needs to further develop the cluster by filling in missing gaps and investing in its strengths. By bringing in the missing higher-value parts of the value chain (front-end) and providing the right environment for designers of SSL products, we can make Malaysia the world's preferred location for SSL companies.

Actions

The Ministry of International Trade and Industry (MITI) and MIDA will lead this EPP, supported by MOSTI, the Penang Development Corporation and NCIA.

We will develop the SSL cluster in Malaysia by creating a thriving ecosystem for SSL companies and attracting global SSL companies to expand or start front-end operations in Malaysia. First, this involves attracting at least one major materials or substrate supplier and also one epitaxy manufacturer to complete the SSL value chain in Malaysia. This will create cluster synergies and bring in higher value-added jobs such as epitaxy engineers. Second, we need to continue to grow LED wafer fabrication production in Malaysia. There is already one wafer fabrication plant for LEDs, but we need more to fully develop this part of the cluster. Third, Malaysia's strong position as a packaging hub for SSL products needs to be aggressively enhanced and grown.

Enablers

MIDA will aggressively target front-end materials and substrate suppliers and epitaxy manufacturers (e.g. Dow Corning, Hysol) to bring one of each into Malaysia by 2014. At the same time, MIDA will attract at least one new global company to set up wafer fabrication operations here by 2015.

MIDA will increase financial support and incentives (e.g. R&D and training grants, revolving loans) for the expansion of LED companies already here.

Local contract manufacturers will be assisted by MITI and Malaysia External Trade Development Corporation (MATRADE) in reaching out to foreign lighting companies with the intent of helping local manufacturers gain a larger share of the LED outsourcing market. The objective is to help Malaysia grow its LED packaging market share by at least 15 percent annually for the next 10 years.

Import duty will be lifted by MITI on core raw materials until Malaysia-based producers of these materials are in place, which is expected by 2013. The Ministry of Finance will exempt federal taxes on domestic sales of advanced LED products that meet prescribed environmental standards.

Industry has given feedback that tariffs imposed on LED products exported from Malaysia to China are impeding the growth of Malaysia's LED industry. In a review of the ASEAN-China Free Trade Agreement, Malaysia will negotiate to remove tariffs on all LED products in any form (e.g. wafers, household lights) exported to China. The target is for revised tariff rates to take effect by December 2011.

MIDA has already started the process of attracting companies and will need to move quickly to ensure the success of this EPP. The objective is to have one substrate manufacturer and one epitaxy manufacturer open plants in Malaysia by 2014 and have at least one new wafer fabrication plant by 2015, while growing packaging by 15 percent annually.

MOSTI will provide technical advice and support in R&D, technology platform and innovation. It will also identify basic research areas with universities and applied research areas with local and international research institutions, including potential new product development (prototypes).

Funding

The cumulative funding required from 2010 to 2020 is RM3.5 billion in private investment and RM0.5 billion in public investment.

Impact

The EPP will provide incremental GNI of RM2.7 billion and create 7,300 jobs.

EPP 9: Expanding LED Packaging and Equipment

Rationale

This EPP seeks to grow the LED packaging and application design landscape, both organically and through inviting lighting MNCs to set up operations here, with a target of 15 percent growth annually for the next 10 years.

Actions

MIDA will encourage foreign MNCs with LED-related service operations to further grow their Malaysian base of services for Malaysia and the region (three of the largest global players are already here). Local companies that can fill the niche services gap required by the industry will also be developed.

Enablers

MIDA will facilitate provision of low-cost land, infrastructure and financial incentives for lighting MNCs already in Malaysia to expand capacity and also to attract new ones to set up operations.

MITI and MATRADE overseas missions will also help to promote local contract manufacturers. These missions will potentially offer tax incentives for foreign companies to utilise these services of local contract manufacturers.

MOSTI will provide technical advice and support in LED packaging R&D, technology platform and innovation.

Funding

The cumulative funding required from 2010 to 2020 is RM1.6 billion in private investment and RM0.2 billion in public investment.

Impact

The EPP will create incremental GNI of RM1.4 billion and 3,700 jobs.

EPP 10: Creating Local Solid State Lighting Champions

Rationale

The development of an SSL cluster provides a unique opportunity to develop local SSL companies into globally renowned brands. Local companies (e.g. ItraMAS, DSEM) are starting to succeed globally through innovation and should be further encouraged and assisted where possible.

Actions

MITI and MIDA will lead this EPP and be supported by MOSTI, SME Corporation, NCIA, Ministry of Higher Education (MoHE), SDCs and Ministry of Energy, Green Technology and Water (KeTTHA).

We will develop at least five Malaysian companies into regional and global brands for SSL products and/or components by 2020. The objective is to have at least one local SSL company become a globally recognised name in the SSL market every year from 2012 to 2016. We define global recognition as winning multiple awards from international SSL bodies or having annual sales volume exceeding RM178 million outside of Malaysia.

Enablers

NCIA and PSDC will facilitate the setting up of a LED certification centre by 2012 to verify the compliance of Malaysian products to global standards and increase global awareness and assurance in Malaysian LED products as well as help local companies develop their test and certification procedures.

SME Corporation will grant working capital loans to SSL companies to help them expand and research grants for them to do R&D in thermals, optics and other SSL design areas.

MOSTI will provide technical advice and support in R&D, technology platform and innovation.

MoHE and the SDCs will develop local talent via skills development and university programmes focused on key SSL areas such as thermals and optics.

The Government will automatically approve working visas for foreign talent involved in knowledge work for SSL companies (e.g. engineers and designers) to supplement the lack of local expertise for design and development of LED-related products.

The Government will need to replace the current environmental regulation enacted for energy conservation in lighting that bans incandescent lighting by 2015 with a specific directive that only SSL lighting can be utilised (rather than fluorescent lighting) by 2020. The effort for this should be led by KeTTHA with assistance from MITI.

Funding

The cumulative funding required from 2010 to 2020 is RM0.5 billion in private investment and RM0.1 billion in public investment.

Impact

The EPP will provide incremental GNI of RM1.1 billion and create 2,800 jobs.

INDUSTRIAL ELECTRONICS AND ELECTRICAL HOME APPLICANCES

Industrial electronics comprises several sub-sectors involving the manufacturing of precision equipment used in industrial and commercial settings. Of these, the test and measurement, wireless communication, transmission and distribution and automation markets are the most attractive. The overall global market size for these sub-sectors is estimated to be about RM1,070 billion, with projected annual growth of 3 to 5 percent over the next 10 years.

EPP 11: Building a Test and Measurement Hub

Rationale

Malaysia has established a very strong foundation in test and measurement. Agilent, a RM16 billion US company with approximately 25 to 30 percent global market share in electronics measurement, currently manufactures significant percentage of that equipment in Penang. The company continues to view Malaysia as a strategic manufacturing location for its business and see opportunities for expansion. Agilent uses many local suppliers and outsources a significant portion of production and some design activities to companies in Malaysia, thereby contributing to an ecosystem for test and measurement in Malaysia. Agilent's presence in Malaysia, together with the ecosystem of service providers, has made Malaysia attractive to other test and measurement companies. For example, National Instruments is in the process of building a plant in Penang after announcing plans in 2008. In addition, test and measurement knowledge is a key enabler for many other sectors, so it can be leveraged to speed up the expansion of other electronics industry sectors in Malaysia.

Actions

MIDA will lead this EPP, supported by Agilent.

Our strategy is to build a complete test and measurement hub in the Northern Corridor:

Agilent will bring the manufacturing of advanced and sophisticated measurement products to Malaysia to complement its current manufacture of electronic measurement equipment in Penang. Agilent will be able to leverage existing manufacturing capabilities and the current supply chain ecosystem.

Use the presence of Agilent and National Instruments as a selling point to attract other test and measurement companies (such as Rohde & Schwarz, Fluke, Keithley and Tektronix) and related industries, such as bioanalytics.

Grow local vendor ecosystem to serve the test and measurement multinational companies, including suppliers, contract manufacturers and design houses.

Develop talent and build technology shared services, which would make it easier for innovative local firms to succeed.

By 2011, Malaysia should attract 30 percent more investments in test and measurement from multinational companies and have five more local test and measurement design partners. By 2013, Malaysia should have two more local test and measurement design partners.

Enablers

Many countries in Asia are competing to attract the manufacturing of advanced and sophisticated measurement products. It is critical that the Government provides the necessary support to Agilent to win this business for Malaysia by granting the required incentives and support expeditiously.

We will negotiate a free trade agreement with the USA. This will put Malaysia on par with some of our neighbouring countries and increase Malaysia's competitiveness in winning business deals that require a Government Services Agreement with the USA. Without GSA status, Malaysia will become less competitive in the industrial electronics sector.

We will promote the Northern Corridor and provide necessary incentives and support to leading test and measurement companies as well as other multinational industries that can leverage on our test and measurement competency and capability.

We will also provide incentives to local design houses that serve the test and measurement Multinational companies. We should also establish a test and measurement shared services centre, which will make technology more accessible to local design houses and lower their cost of establishing operations.

Funding

The cumulative funding required from 2010 to 2020 is RM4.9 billion in private investment and RM1.0 billion in public investment.

Impact

The EPP will provide incremental GNI of RM1.4 billion and create 7,000 jobs.

EPP 12: Expanding Wireless Communication and Radio Frequency Identification (RFID)

Rationale

Wireless communications: Motorola designs and manufactures a substantial proportion of its two-way subscriber radio products in Penang. These products serve the critical communications needs of global customers. Similar to the strategy articulated for test and measurement, together with support from the Malaysian Government, Motorola's presence can become a strong base for growing local outsource design partners and Malaysia-based original design manufacturers and eventually building a complete wireless communication ecosystem. The competencies developed from more than 30 years of design and development work by Malaysian engineers in designing sophisticated products provide a core to grow local design houses. However, the cost of entry into design work for wireless communications is prohibitively high, and action needs to be taken, both by the private sector and Government, to jump-start this industry.

Radio frequency identification (RFID) uses radio waves to identify people or objects, with applications in contactless payment, asset management, trusted identification (ID) and document tracking. The current global market (2009) for RFID is RM19.9 billion and is expected to grow to RM54 billion in 2020. Malaysia was one of the world's earliest adopters of RFID technology, from toll payments (e.g. TouchNGo) to library usage (e.g. Penang State Library UHF Library). Malaysia also has local RFID success stories, such as IRIS (which pioneered the world's first electronic passport and immigration autogate) and Smartag Solutions (library and logistics).

Our strategy is to grow RFID in Malaysia by supporting the growth of local companies. The Malaysian Communications and Multimedia Commission (MCMC) is the lead agency for developing the RFID industry. The Government has already taken steps to support the growth of the RFID industry including establishing an RFID Centre of Excellence, supporting international RFID standards and creating a National RFID Roadmap. Our growth plan for RFID builds on these foundations.

Actions

For wireless communications, NCIA will lead actions needed to grow this sector, supported by MIDA and Motorola.

The EPP is to grow the ecosystem of local outsourcing service providers in two-way radios. The ecosystem will initially serve Motorola Penang, but will eventually make the Northern Corridor more attractive as a site for other wireless communication multinational companies. The ecosystem growth plan includes local design houses as well as Malaysia-based original design manufacturers (ODMs).

Motorola will work on developing the ecosystem of service providers for wireless communications. First, it is working towards a co-location model with design partners and shared services and will be the anchor tenant of a shared facility or Innoplex. It will identify possible partners from existing suppliers that are willing to upgrade their capabilities to include design capabilities. Lastly, Motorola will work together with PSDC and MIMOS to develop training programmes to build talent among the service providers.

Radio and enterprise product ODM ecosystem will be completed by 2013.

For RFID, MCMC will lead efforts to expand this sector, supported by IRIS. The EPP consists of three sub-projects in RFID applications.

Develop more trusted ID products for the export and domestic markets. IRIS is known globally for its innovation in trusted ID products including electronic passports (world's first in 1998) and multi-application smart cards. Trusted ID products provide advanced identity protection (e.g. national identification cards) and are expected to experience significant growth over the next 10 years. With the introduction by the International Civil Aviation Organization of global interoperability of electronic passports, more than 80 countries worldwide have already issued e-passports. In the next two to five years, we expect that more than 150 countries will issue e-passports. The key components in e-passports are the RFID chip and antenna. Currently IRIS has around 15 to 20 percent market share in this segment globally, and IRIS plans to further penetrate local and global markets to tap the market growth. The goal by 2015 is to export to five additional countries.

Promote RFID implementation for logistics and transportation applications in Malaysia and Asia Pacific. MCMC will target countries such as Thailand, Vietnam, Laos, China, Taiwan and various Middle East countries. Companies like Smartag, a Malaysian RFID solution company, will become pilots in the project. Smartag will actively engage in the global standard-setting process and create RFID applications based on those standards, with collaboration from selected local universities.

Use RFID technology in halal track and trace. MCMC, JAKIM (Department of Islamic Development Malaysia) and SIRIM plan to undertake an E-halal project to enhance Malaysia as the halal certification hub for the global market by using RFID to track halal end-to-end for JAKIM certification.

Our target is for Trusted ID to be exported to five more countries by 2014. Logistics and transportation RFID solutions will be deployed in South East Asia and China by 2015. JAKIM's halal certification should be accepted globally by 2015.

Enablers

For wireless communications, NCIA will establish a two-way radio shared service lab for local design firms. This would reduce their start-up costs and make Malaysia more attractive as a site for wireless communication design and outsourced services.

We will also establish an Innoplex design centre, a facility for shared design services and local design houses. Public or private funding can be in the form of a build-and-lease arrangement.

For RFID, we need to enable its use in logistics and transportation. MCMC is working with Customs to develop RFID as a tool to facilitate trade between free trade zones, free industrial zones, bonded zones and transit container yards. A proof of concept has been deployed at the Johor port, and there are plans to roll-out to other ports in Malaysia. The success of this initiative will require close coordination among Government departments, and the relevant agencies (MCMC, Customs, Immigration) to work together to implement this.

MCMC and MIDA will organise promotional activities and awareness campaigns for end-users (both consumers, Government bodies and business) on the advantages of RFID. They will also promote the Multimedia Super Corridor MSC status and selected areas as key testing and commercialisation trial sites to RFID companies.

MCMC will work with GS1 Global, which designs and implements global standards to make Malaysia the Asia centre of excellence for the electronic product code global RFID and electronic product code information service initiatives.

MATRADE, MDeC and MCMC will support and encourage local RFID companies in Government procurement and through Malaysian trade missions and embassies.

The E-halal project will require global acceptance of Malaysia's halal certification. JAKIM will promote and negotiate the acceptance of Malaysia's halal certification worldwide.

Funding

The cumulative funding required from 2010 to 2020 is RM0.7 billion in private investment.

Impact

The EPP will provide incremental GNI of RM1.8 billion (RM374 million in wireless communication and RM1.4 billion in RFID). It will also create 4,400 jobs (400 in wireless communication and 4,000 in RFID).

EPP 13: Growing Automation Equipment Manufacturing

Rationale

Automation equipment refers to equipment used to automate processes, for example, manufacturing plant automation equipment. This includes complex pieces of equipment such as robotics. The global leader in automation equipment, ABB is based in Klang Valley and uses Malaysia as its regional headquarters (ABB has Operational Headquarters Status granted by MIDA). However, ABB only assembles automation equipment in Malaysia; it does not manufacture the core components here. Given the presence of ABB and its senior management in Malaysia, the natural next step is for Malaysia to build new capabilities as an automation equipment manufacturing site.

Actions

MIDA will lead this EPP. We will promote Malaysia as a manufacturing site (not just an assembly site) to leading automation equipment manufacturers, including ABB, Siemens and Schneider.

Our target is for two more automation equipment multinational companies to manufacture in Malaysia by 2015.

Enablers

MIDA will promote Malaysia as a manufacturing site for automation equipment to leading automation equipment manufacturers such as ABB, Siemens and Schneider. We will also provide Pioneer Status incentives to automation equipment manufacturers to manufacture automation equipment in Malaysia.

Funding

The cumulative funding required from 2010 to 2020 is RM0.4 billion in private investment.

Impact

The EPP will provide incremental GNI of RM125 million and create 1,200 jobs.

EPP 14: Building Transmission and Distribution Companies

Rationale

Transmission and distribution equipment refers to equipment used in the generation, transmission and distribution of electricity. This includes switching apparatus, distribution boards, control panels, transformers and cables and conductors. The technology can be highly value-added, and substantial manufacturing of complex high voltage transmission and distribution equipment is still done in high-cost countries in Europe and Japan.

Local companies include Tenaga Switchgear (a subsidiary of Tenaga Nasional Berhad), Tamco and EPE for switching apparatus; Malaysian Transformer Manufacturing, SGB and EWT for transformers; Tenaga Cable Industries, Leader and Universal Cables for cables and conductors; and SMEs serve as sub-vendors. Multinationals including ABB, Areva and Siemens are also present in Malaysia.

However, companies generally do not manufacture (as distinct from assemble) in Malaysia. Tenaga Switchgear uses Malaysia as a base to design, assemble, sell and provide engineering applications for transmission and distribution industry in the region. ABB, Areva and Siemens are present in Malaysia but do not manufacture transmission and distribution equipment here.

Actions

MITI will lead this EPP and it will be supported by SIRIM.

We will build a cluster of transmission and distribution manufacturers in Malaysia. We aim to attract multinationals such as ABB, Siemens and Areva, as well as grow local companies such as Tenaga Switchgear, Tenaga Cable Industries and Malaysian Transformer Manufacturing. A key enabler will be the establishment of the high-power testing lab described below.

Our target is that a high-voltage test lab will be fully operational by October 2012, with the lab earning RM3 million revenue in its first year of operations and producing 10 local test specialists within a two-year period.

Enablers

A key enabler will be for SIRIM to set up a high-power testing lab to test high-value, high-voltage equipment. Transmission and distribution products need to be certified by an accredited short circuit testing liaison lab to be accepted by the international market. Most of these labs are in Europe (e.g. KEMA in Holland and CESI in Italy) forcing overseas manufacturers to conduct prototyping and testing in Europe, which is expensive (average about RM3.6 million per product). By establishing a high-voltage test lab in Malaysia, we will become a more attractive site for transmission and distribution manufacturing. The growth of local companies will be enhanced and we will be in a better position to attract manufacturing by multinationals, as the cost of new product development and turnaround time would be significantly reduced. The lab should be operated as a joint-venture between SIRIM and an internationally accredited lab such as KEMA or CESI so that the lab can be recognised as an accredited member.

MIDA will promote Malaysia as a manufacturing location to leading transmission and distribution equipment manufacturers such as ABB, Siemens, Areva and Alstom, e.g. by providing Pioneer Status and Operational Headquarters incentives to transmission and distribution equipment manufacturers.

Funding

The cumulative funding required from 2010 to 2020 is RM0.5 billion in private investment.

Impact

The EPP will provide incremental GNI of RM352 million and create 400 jobs.

EPP 15: Building an Electrical Home Appliance Manufacturing Hub and International Distribution Network

Rationale

Electrical home appliances in Malaysia are a market of RM3.6 billion with 7.1 percent growth from 2004 to 2009. Currently, there are a number of domestic home appliance companies with manufacturing expertise and local footprints, such as Pensonic, Khind, Joven and Alpha. Pensonic, based in Penang, is the biggest of these with a valuation of RM300 million and about 10 percent market share. Pensonic is proposing to expand by partnering with a few Malaysian sovereign fund partners to merge or acquire smaller scale electrical home appliance companies and build a strong international distribution network.

Actions

Pensonic will lead this EPP, supported by other investors. The first part of this project is to build a strong international market by targeting fast-growing ASEAN and Middle East markets on a multi-brand marketing platform. The expansion of sales into these high potential markets is expected to bring significant spillover growth to the Malaysian small and medium enterprise supply chain through outsourcing opportunities, which will deepen our supply chain expertise in the sector. Meanwhile, as many top Asian and European electrical home appliance brands are actively looking for outsourcing opportunities to OEMs or ODMs outside China, it is expected that a considerable portion of their production will be spun off to Malaysian manufacturers.

In order to support the sales growth from local and new international markets, the second part of the project aims to build a manufacturing hub to host the entire supply chain. The cluster will ensure sufficient and expandable plant capacity to support potential growth and will be located in a site close to transportation infrastructure, e.g. ports and railways.

The targets for the new company are to reach annual sales of RM2.2 billion and 50 percent of local sourcing by 2020.

Funding

The cumulative funding required from 2010 to 2020 is RM0.5 billion in private investment.

Impact

The EPP will provide incremental GNI of RM1.0 billion and create 18,000 jobs.

BUSINESS OPPORTUNITIES

Four of the sectors – semiconductor, solar, LED and Industrial Electronics– will also result in spillover business opportunities.

Business Opportunity 1: Semiconductors

A study of Silterra estimated that each dollar of operating expenditure spent by the semiconductor manufacturers generates about fifty cents of revenue for the supporting ecosystem, e.g. service providers to the semiconductor manufacturers, ranging from suppliers of specialty gases to equipment part cleaners. To provide a complete picture of the full benefits of building the semiconductor industry in Malaysia, we include these spinoff business opportunities in our GNI impact estimates. Spinoff business opportunities will provide incremental GNI of RM3.2 billion and create 25,000 jobs. The cumulative funding required from 2010 to 2020 is RM2.5 billion private.

Business Opportunity 2: Solar

Business opportunities in solar are based on estimates that between 15 and 20 percent of operating expenses from the solar EPP are spent on supporting industries, such as process equipment, sand mining, glass, aluminium, silane gas and wire saws. We would also work with multinational companies such as Applied Materials (equipment manufacturer) to transfer technologies to SMEs or to develop local supplier programmes. An additional RM8 billion GNI and 11,500 jobs will be created on goods and services from supporting industries. The cumulative funding required from 2010 to 2020 is RM5.8 billion in private investment and RM0.7 billion in public investment.

Business Opportunity 3: Light Emitting Diodes

Business opportunities in industrial electronics will concentrate on strengthening the supply chain and the Original Design Manufacturers (ODM) in Malaysia, especially for the RFID sector. With new RFID applications planned in the future such as contactless payment and asset tracking, more local companies and shared facilities, such as frequency simulation labs, would be set up to support the growth of the sector. We estimate the GNI impact to be RM165 million and create over 200 jobs. The cumulative funding required from 2010 to 2020 is RM6.9 million in private investment; no public funding is required.

Business Opportunity 4: Industrial Electronics

Business opportunities in industrial electronics will concentrate on strengthening the supply chain and the Original Design Manufacturers (ODM) in Malaysia, especially for the RFID sector. With new RFID applications planned in the future such as contactless payment and asset tracking, more local companies and shared facilities, such as frequency simulation labs, would be set up to support the growth of the sector. We estimate the GNI impact to be RM165 million and create over 200 jobs. The cumulative funding required from 2010 to 2020 is RM6.9 million in private investment; no public funding is required.

COMMON ENABLERS

The enablers are grouped into those specific to four key regional clusters (the Northern Corridor, Klang Valley, Johor, and Sabah and Sarawak) and more general, cross-cutting enablers. Cross-cutting enablers are grouped by Government role, talent, infrastructure and technical ecosystem. The most critical enablers are discussed below.

Enable Northern Corridor

Develop Batu Kawan into a new site for high value-added E&E activity. Batu Kawan is being redeveloped. Existing plans include a second bridge for Penang island terminating at Batu Kawan. With limited space on Penang island, Batu Kawan has the potential to be a new site for high value-added E&E activities in the region. We would take our existing plans for Batu Kawan to the next level and turn it into a highly liveable city that is attractive to high-end E&E talent, with facilities such as an InnoPlex and Centre for Engineering Excellence (described under Technical Ecosystem).

This will require public funding of RM147 million (this is on top of the funds already budgeted for the redevelopment of Batu Kawan) and private funding of RM845 million. NCIA will be the owner. The completion date is December 2015.

Grant Multimedia Super Corridor Status to all E&E firms in the whole of Northern Corridor. Multimedia Super Corridor (MSC) status provides benefits including unrestricted employment of foreign knowledge workers, exemption from local ownership requirements, easier employment of foreign talent and the right to source capital globally (providing flexibility to repatriate any amount of capital, divestment proceeds, profits and dividends, as well as to borrow in any foreign currency). While firms can apply individually for MSC status, it would make an enormous difference to offer MSC status to all E&E firms in Northern Corridor. An exception is that Pioneer Status, which is normally part of MSC status, would not be granted automatically and would still need to be applied for on a case-by-case basis. This would send a dramatic signal that Northern Corridor is ready for business and committed to taking E&E to new heights.

This will require public funding of RM4.8 million and private funding of RM1.6 million. Ministry of Finance will be the owner. The completion date is December 2011.

Enable Klang Valley

Focus manufacturing incentives in Klang Valley on high-value manufacturing. Some manufacturing sites in Klang Valley sit on prime plots of land. Since land in Klang Valley is scarce, it is important that it is put to the best use, which is generally focused on higher value-added headquarters, design and sales and service operations. Any manufacturing site needs to be for high value-added complex manufacturing, and even then it should be located near the outskirts of Klang Valley, e.g. in Selangor Science Park. Incentives given to manufacturing in Klang Valley must therefore be granted very selectively and only to very high value-added manufacturing operations. This policy will be adopted by both MIDA (which manages non-land incentives) and by the relevant state Governments (which manage land leases and incentives).

Funding is not expected to be required. MIDA and state Governments (for land related incentives) will be the owners. The policy is targeted to be approved by December 2010.

Establish Industrial Design Centre of Excellence. Klang Valley has a cluster of headquarters of local E&E brands (e.g. Khind), but local brands require assistance to build design capabilities. The Industrial Design CoE will help local E&E firms build design capabilities in end-products to help them expand abroad.

This will require public funding of RM32 million and private funding of RM32 million. MDeC will be the owner. The completion date is December 2011.

Adapt best practices in commercialisation of university technology. Commercialisation of university technology will be critical in terms of providing a technological base to capitalise on Klang Valley's potential as a headquarters for local champions. Universities in Klang Valley adopt different approaches towards commercialisation, with varying degrees of success. Some adopt a lecturer-driven approach, while others use professional technology marketing experts to lead commercialisation and partnering efforts within the industry. The latter model has been more successful. MoHE should undertake a detailed study and disseminate best-practice guidelines to encourage universities to make commercialisation more successful.

This will require public funding of RM9.6 million and private funding of RM9.6 million. MoHE will be the owner. Completion date is May 2011.

Set up a strategic data analysis and planning unit under MOSTI. Local companies lack information on technological and market trends, which impedes their growth into local champions. MOSTI will set up a strategic data analysis and planning unit to provide market reports, analyse and disseminate information to SMEs. This will be modelled after strategic planning and marketing units in multinational companies.

This will require public funding of RM6.4 million. MOSTI will be the owner. The completion date is September 2010.

Enable Johor

Deepen partnership with Singapore. Johor's proximity to Singapore makes the state uniquely positioned to prosper through a win-win partnership with Singapore. Johor can capture manufacturing activities for which costs in Singapore are too high, while Singapore benefits as the activities remain in close proximity for supporting services (e.g. financial services). To enable this partnership, MIDA would propose to Singapore EDB to form a Singapore EDB-MIDA-IRDA Joint Committee. This Joint Committee would be the main platform to coordinate E&E activities between Johor and Singapore, for example, helping facilitate E&E investors who wish to invest in both Singapore and Johor.

A key initiative under the Joint Committee would be an agreement in which the Singapore EDB would help promote selected E&E investments in Johor. For example, potential investors approaching Singapore EDB may find Singapore's costs too high for certain activities. Therefore it would be advantageous for both regions if the EDB helped to direct such investments to Johor. Note that Singapore EDB already has a similar arrangement with the Riau Islands in Indonesia. A second initiative for the Joint Committee would be to develop a programme and curriculum for training Johor workers in Singapore's network of vocational institutes. Again, this would be a win-win proposition.

It would be a win for Singapore as training would enable Johor to better position itself to capture manufacturing, which may otherwise go elsewhere and deprive Singapore of the spinoff benefits. It would also be a win for Johor as Johor's workers stand to benefit from Singapore's network of training institutes.

The owner will be MIDA. The timeline for completion will be (1) Memorandum of understanding for Singapore EDB-MIDA-IRDA Joint Committee by June 2011; (2) Memorandum of understanding for Singapore EDB promotion of investments in Johor by June 2011; and (3) Develop curriculum and launch programme for training Johor workers in Singapore vocational institutes by December 2010. Funding is not expected to be required.

Promote Johor as a manufacturing site to Singapore-based companies. MIDA has conducted promotional missions in Singapore, but the emphasis in the past has centred on encouraging Singapore companies to set up operational headquarters in Malaysia. While headquarter activity is important, manufacturing remains critical as it would provide the bulk of employment opportunities. There is an under-tapped opportunity to encourage Singapore-based companies (including multinational companies with regional headquarters in Singapore) to set up manufacturing operations in Malaysia, particularly in Johor. We are aware that the converse happens frequently in which Singapore EDB makes frequent trips to Malaysia to encourage Malaysian-based companies to expand their operations to Singapore. MIDA would target its promotional efforts to gradually encourage increasingly high value-added manufacturing to relocate from Singapore to Johor.

The owner will be MIDA. The target will be at least two missions per year beginning December 2010. Funding is not expected to be required.

Enable Sabah and Sarawak

Expedite approvals by RECODA. Feedback from the industry is that the Sarawak RECODA approvals for new projects, including necessary immigration permits, should be shortened (now typically takes about six months). We must reduce approval timeline to at most two months by March 2011. Public funding is not expected to be required.

Attract talent to Sarawak. The substrate industry requires skilled talent (e.g. materials, chemical engineers), but Sarawak is not an appealing location for talent to live. We need to encourage talent to relocate to Sarawak and will offer preferential personal income tax rates to E&E talent in Sarawak, as well as provide automatic approval for the employment of skilled foreign talent in Sarawak.

The owners will be the Ministry of Finance and the Sarawak State Government. The target for policy approval is December 2011.

Attract niche sectors to Sabah. The substantial base of agriculture and tourism-based industries in Sabah will provide an ideal platform for niche E&E applications development, e.g. wireless sensor technologies, agricultural processing equipment and diagnostics tools. This will enable Sabah to participate in the high technology segment in E&E despite its relatively low participation in mainstream component manufacturing.

The Sabah Development Corridor (SDC) will champion the attractiveness of the Sabah (in terms of infrastructure, incentives, etc).

Stimulate Growth and Streamline Government Processes

We will improve incentives and regulations, as well as streamline processes to make it easier for the private sector to deal with the Government.

Incentives and regulations

Amend MIDA's R&D incentive to delink it from capital expenditure. MIDA's current R&D incentive is based on an income tax allowance on qualifying capital expenditure. Moving forward, MIDA will adopt a model where the R&D incentive is based on a tax deduction on total R&D expenditure (not just capital expenditure).

The owner will be MIDA. Funding is not expected to be required. The target for implementation of the new incentive is March 2011.

Systematically benchmark incentives and regulations against other countries. There is a need for an ongoing systematic process to ensure that Malaysia's incentives and regulations are competitive with those of our competitors. We will establish a process comprising an annual external survey of chief executive officers that would be complemented by twice yearly benchmarking reviews. The information collected would be used by MIDA to implement best-in-class incentives, regulations and investment promotion processes.

The owner will be MIDA. The first survey would be launched by February 2011, with a target for one external survey and two benchmarking exercises per year.

Processes and organisation

Expedite import tax exemption applications. The Tax Exemption Committee (JPC) would be fully empowered to approve tax exemption applications. The target is to reduce processing time to five working days.

Tax exemptions approved by JPC will also be linked with the Customs system so that there is no need for companies to physically show the approval letter each time they import goods.

The owner will be MIDA. Public funding required is RM6.4 million. The target is for new procedures and systems to be put in place by June 2011.

Fast-track Pioneer Status application process. We will fast-track the process for normal Pioneer Status applications (the normal Pioneer Status incentive offers a 70 percent tax exemption) and also increase administrative manpower for application handling and processing. The target is to shorten the processing time to five working days.

The owner will be MIDA. The target is for the new process to be put in place by June 2011.

Adopt paperless export application and e-logistics. Malaysia would adopt an e-logistics system for paperless clearance to enable quick 24x7 clearance. The Government will invest in the required e-Gov infrastructure in three key industrial zones (Northern, Central and Southern). Performance will be tracked by average transit times (between airport and factory) as well as subjective customer perception feedback through surveys.

The owners will be MITI and Customs. Public funding required is RM16 million. The target is for new systems to be put in place by May 2011.

Combine Electronics & Electrical divisions into a single unit under MIDA. MIDA will combine Electronics & Electrical into a single division, instead of the current two divisions.

The owner will be MIDA. Funding is not expected to be required. The target is for the new organisation structure to be in place by April 2011.

Have international industry representation on the MIDA board and establish an International Advisory Council. MIDA's board comprises primarily of representatives of the Malaysian Government and local firms. As a key part of MIDA's mandate is to attract foreign direct investment, which is especially important to the growth of the E&E sector, it is important to have international representatives on MIDA's board to provide an international perspective on the requirements of foreign investors and on MIDA's performance. We will revise MIDA's board composition to have a significant 50 percentage of private sector representation, of which a substantial share will be senior multinational representatives and establish an International Advisory Council for MIDA comprising Chairmen and CEOs of leading global MNCs.

The owner will be MIDA. The target for the new Board composition and the establishment of the International Advisory Council is April 2011.

Improve Talent Availaiblity

As E&E is a talent intensive industry, the availability and quality of talent is a critical enabler. Industry feedback indicates that the lack of the right E&E talent in Malaysia has impeded the growth of the industry. We will take action to improve E&E talent availability through a plan which includes planning, formal education and training beyond formal education and coordinate closely with the Education NKEA.

Skill and headcount planning

Enhance the effectiveness of the Academia Industry Consultative Council (AICC). The AICC has recently been revitalised as a platform for coordinating between universities and the industry, and it has made E&E a key priority sector by adding robust representation from the E&E industry since October 2010.

Plan for engineering talent on a national basis. AICC and MIDA will work together to develop a supply and demand forecast for engineering talent, and the universities will respond by tailoring intake and curriculum plans. The plan will be reviewed annually.

The owner is MoHE. Funding is not expected to be required. The timeline for the first review of engineering talent requirements is January 2011.

Formal education

Lengthen and expand the industrial attachment programme. Industrial attachment programmes for undergraduates are typically three months long, which we consider too short to be effective. There are also currently limited numbers of attachment offered to undergraduates. We will remedy this challenge by: (1) Offering an incentive to companies that participate in industrial attachment programmes (e.g. matching grants for SMEs, cost estimated at RM500 per person per month targeting 1,000 persons per year); (2) AICC developing a list of participating companies and their requirements for interns to provide a consolidated view of available attachments; and (3) AICC working with universities and industry to extend the duration of attachments to six months or longer.

The owner is MoHE. Public funding required is RM32 million. The timeline for the rollout of the revamped attachment programme is March 2011.

Co-fund master and doctorate studies (Government and companies). Companies require high-calibre post-graduate talent. We estimate that about 1,000 engineers per year need post-graduate training. The cost per person is about RM10,000 per year and programmes are four years in length, so there would be 4,000 post-graduate students at any point in time. We will launch a programme in which companies and the Government co-fund the master and doctorate studies of engineers.

The owner is MoHE. Public funding required is RM384 million and private funding required is RM64 million. Note that companies would typically continue to pay employee salaries, which is not reflected in the funding indicated. The programme will be launched by January 2011.

Beyond formal education

Conduct graduate training programme to increase employability of unemployed graduates. There are 12 SDCs running the Industrial Skills Enhancement Programme (INSEP) that provides training to unemployed graduates to increase employability. The budget for the E&E INSEP programme for 2010 is estimated to be RM23 million, and the PSDC and Selangor Human Resource Development Centre (SHRDC) give significant focus to E&E, with more than 50 percent E&E INSEP courses. Industry feedback reveals that the programme has been useful and should be expanded. We will double the intake to increase the number of employable graduates and help re-skill graduates to meet industry needs. The key performance indicator will be for 90 percent of graduates from the INSEP programme to find jobs within three months.

The owners are SDCs. Public funding required is RM224 million. The launch of the expanded programme is targeted for January 2011.

Co-ordinate training needs with SDCs. MIDA will coordinate with the SDCs to develop training programmes and train personnel in advance of major investments. In doing so, MIDA will help ensure that Malaysia has the pipeline of skilled workers needed to compete as a manufacturing site. The owners are MIDA and SDCs.

Public funding required is RM6.4 million. The launch of the coordination programme is targeted for June 2011.

Expand training programmes for company employees. SDCs such as SHRDC and PSDC run well-received fast-track programmes for training new hires. To expand the scale and impact of the programme by 50 percent, the Government will co-fund the expansion of the training programme (curriculum development cost and facilities). This would have a public benefit as we will build a higher skilled workforce for Malaysia.

The owners are MIDA and the SDCs. Public funding required is RM32 million, and private funding required is RM6.4 million. The launch of the expanded programme is targeted for June 2011.

Automatically approve hiring of skilled technical expatriates in promoted E&E industries. Although the process and requirements for hiring skilled foreign talent has been liberalised, there is still room for improvement in the process for hiring skilled foreign technical expertise. We will recommend providing automatic approval to hire skilled technical expatriates in E&E industries that are on MIDA's Promoted List. In addition, we will reduce the corresponding requirements, procedures and processing time involved in obtaining approval. Processing time for new hires should be less than one month and less than two weeks for renewals.

The owners are MOHR and KDN. Funding is not expected to be required. The new policy is expected to be implemented by January 2011.

Improve Essential Infrastructure

A key component of E&E manufacturing is the high quality of essential infrastructure. We will improve infrastructure in Malaysia to make us a more attractive location for E&E firms.

Enhance standards and availability for key utilities (power, water, gas, chemicals, Internet). We will create a new national policy master plan to set and implement standards for key utilities to industrial and high technology parks. For example, the Energy Commission will develop a master plan for implementing the right power standards to support the growth of the E&E industry.

The owners are the key agencies responsible for the relevant utilities, including SPAN, Energy Commission, TNB, State Water Corps and KPKK. The public funding required is RM96 million, and the private funding required is RM80 million. The target for new standards to be established is May 2011.

Adopt flexible electricity tariffs as a competitive enabler. We will selectively offer flexible electricity tariff rates as part of a negotiated package to bring in key investments. This approach has already been adopted by some of our regional competitors (e.g. China, Vietnam) that offer negotiated rates. We currently offer negotiable tariffs rates in Sarawak and would extend this approach to the whole of Malaysia.

The owners will be TNB and MIDA. No direct funding will be required. The target for implementation of flexible tariff policy is June 2011.

Create a Technical Ecosystem

A technical ecosystem of shared service centres and labs will accelerate the rate of industry growth by lowering the cost of entry and by building a base of technical expertise. Earlier in this chapter, we detailed the shared service centre and labs linked to specific sectors and EPPs. In addition, we need an over-arching technical centre that takes a broader view of the industry.

Establish Centre for Engineering and Excellence. Khazanah has proposed establishing a Centre for Engineering and Excellence. The centre will be the platform for the private sector and academia to interact on post-graduate, post-doctoral programmes as well as to work on research-based projects, focused on demand from the private sector. It would also provide the link between fundamental research in the universities and technology specialists in the private sector. The centre will coordinate the activities of the other shared services centres and provide both industry and academia with international experts to facilitate the creation of an R&D ecosystem, through collaboration and partnership with leading institutions. As a not-for-profit foundation, the centre will ground its governance structure on the partnership between academia and industry, with industry providing the lead. It is envisaged that the centre will be the convergence point and nexus for technology development and proliferation in the E&E sector.

The owner will be Khazanah. The targeted completion date is March 2011.

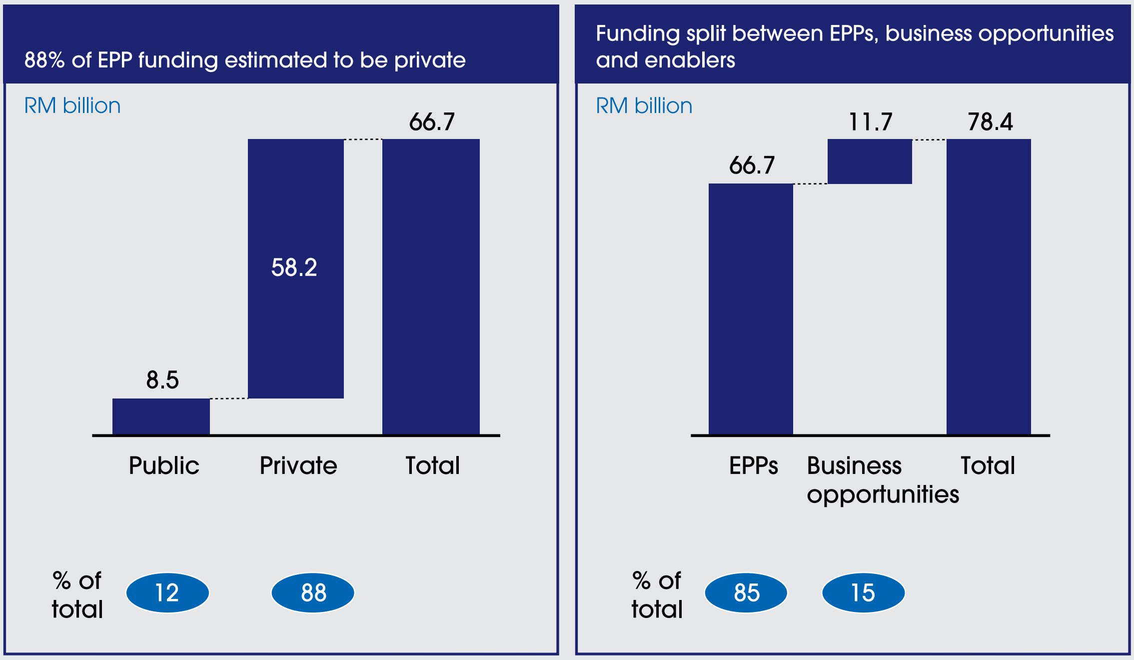
FUNDING

The total cumulative funding requirement from 2010 to 2020 is RM78.4 billion, of which 85 percent (RM66.7 billion) will be used for EPPs. Of the total funding, 60 percent will be invested from 2010 to 2013, with the remaining 40 percent invested from 2014 to 2020.

For EPPs, funding will be 88 percent private and 12 percent public *(Exhibit 11-6)*.

Exhibit 11-6

For the 15 EPPs, RM66.7 billion funding is required of which 12% will come from the public sector



Note: Cost of EPP-specific enablers included within EPP funding

GOVERNANCE AND DELIVERY

Effective delivery of EPPs and enablers will require collaboration between the public and private sector. *Table 11-1* lists the lead owners and stakeholders of the EPPs.

Table 11-1

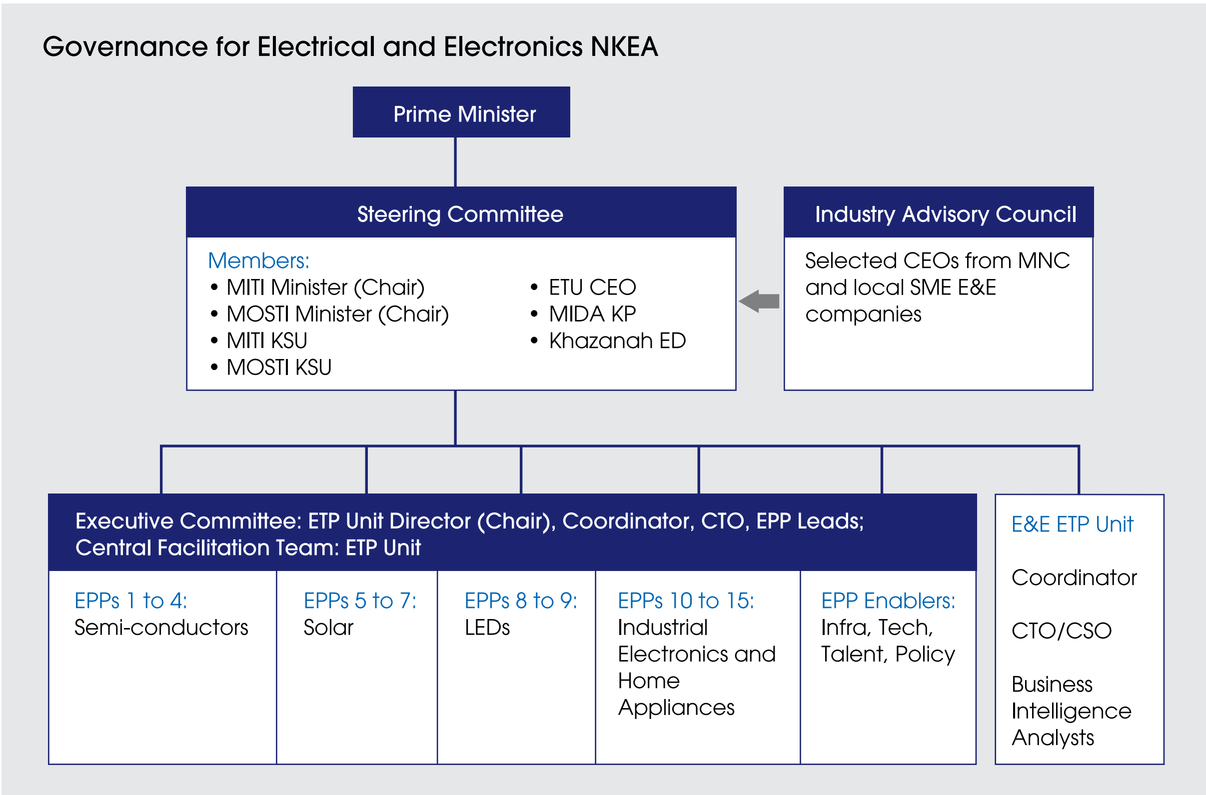
EPP	Lead initiative owner	Other
Executing a Smart Follower Strategy for Mature Technology Fabrication	Malaysian Investment Development Authority	Fab consortium
Developing Assembly and Test Using Advanced Packaging Technology	Northern Corridor Implementation Authority	Malaysian Investment Development Authority
Developing Integrated Circuit Design Firms	Malaysian Investment Development Authority	Northern Corridor Implementation Authority, Economic Planning Unit, Silterra, fab consortium
Supporting the Growth of Substrate Manufacturers And Related Industries	Malaysian Investment Development Authority	Regional Economic Corridor Development Authority
Increasing the Number of Silicon Producers	Malaysian Investment Development Authority	Regional Economic Corridor Development Authority
Growing Wafer and Cell Producers	Malaysian Investment Development Authority	Penang Skills Development Centre, Selangor Human Resource Development Council, Standards and Industrial Research Institute of Malaysia
Increasing Solar Module Producers	Malaysian Investment Development Authority	Iskandar Regional Development Authority
Developing LED Front-end Operations	Malaysian Investment Development Authority	Minstry of Science, Techology and Innovation, Penang Development Corporation, Northern Corridor Implementation Authority
Expanding LED Packaging and Equipment	Malaysian Investment Development Authority	
Creating Local SSL Solid State Lighting Champions	Malaysian Investment Development Authority	Minstry of Science, Techology and Innovation, SME Corporation, Northern Corridor Implementation Authority, Ministry of Higher Education, Skill Development Centres, Ministry of Energy, Green Technology and Water
Building a Test and Measurement Hub	Malaysian Investment Development Authority	Agilent, Northern Corridor Implementation Authority
Expanding Wireless Communication and Radio Frequency Identification (RFID): • Expanding Wireless Radio Communications Providers	Northern Corridor Implementation Authority	Malaysian Investment Development Authority, Motorola, Penang Skills Development Centre, MIMOS
• Growing Radio Frequency Identification	Malaysian Communication and Multimedia Commission	IRIS, Department of Islamic Development Malaysia, Standards and Industrial Research Institute of Malaysia, Malasyia External Trade Development Corporation, Multimedia Development Corporation, Customs
Growing Automation Equipment Manufacturing	Malaysian Investment Development Authority	
Building Transmission and Distribution Companies	Minstry of Science, Techology and Innovation	Standards and Industrial Research Institute of Malaysia
Building a Home Appliance Manufacturing Hub and International Distribution Network	Pensonic	

To ensure successful implementation, we see three imperatives:

- The Ministers of MITI and MOSTI will need to lead the effort to revitalise the Electrical & Electronic sector and bring together the multiple agencies involved;
- ETP Unit will serve as the E&E Central Facilitation Team (CFT) and facilitate the EPPs and enablers on the ground, coordinating the various initiatives and parties; and
- The private sector will need to work with the Government to push through specific EPPs and enabler projects and guide the development of the sector.

A governance structure, under the overall oversight of the Prime Minister, as depicted in *Exhibit 11-7*, will be set up to ensure that implementation timelines are met. This structure brings together both private companies and public parties on an ongoing basis.

Exhibit 11-7



The Ministers of MITI and MOSTI will need to lead the effort to revitalise the sector and bring together the multiple agencies involved. The Minister of International Trade and Industry will chair the monthly meetings of the Steering Committee with the Minister of Science, Technology and Innovation as Co-chair. The purpose of this committee will be to resolve strategic issues and update the Prime Minister every three months. Also on the Steering Committee will be the KSUs from both MITI and MOSTI as well as leading officials of other key agencies relevant to the E&E sector development, such as MIDA and Khazanah. Their representation on the Steering Committee will ensure that sector-wide and national interests are taken into account, while also providing a strong platform for ensuring the successful revitalisation of the E&E industry in Malaysia.

The CFT role will be played by the Economic Transformation Programme Unit (ETP Unit). It will need to facilitate the EPPs and enabler initiatives on the ground, coordinating the various initiatives and parties. This office will consist of the EPP focus area leaders and a small E&E central team. The EPP focus area leaders are directly responsible for the EPPs in their area (e.g. all solar-related EPPs will be under the purview of the EPP Solar Lead), and public or private sector individuals who have both the technical expertise and industry influence to help ensure its success will be seconded to the CFTETP Unit. Supporting them will be an E&E central team, whose role is to assist in coordinating all the EPPs in overlapping areas such as budget requests and state Government discussions. The E&E central team will also be continually looking for new E&E business opportunities.

An executive committee will be formed, made up of the EPP focus area leaders, the E&E central team coordinator, and an ETP Unit Director who will chair it. The Executive Committee will convene weekly to monitor progress, resolve operational issues and prepare for Steering Committee meetings.

The private sector will need to work with the Government to push through specific EPPs and enabler projects and guide the development of the sector. To align the efforts of the Government with global E&E trends, the private sector will be involved in two ways. First, an Advisory Council of CEOs comprising CEOs and MDs representing various sectors within E&E will be formed to advise the Steering Committee on the state of the industry. This Advisory Council will meet and update the Steering Committee quarterly. Second, individuals from the companies involved in specific EPPs will play an active part in the implementation teams to ensure delivery of the projects, resolve critical commercial issues and provide recommendations. These dedicated individuals will be part of the weekly ETP Unit meetings.

Box 9-1

Summary of Electronic & Electrical NKEA

• **Incremental GNI impact in 2020**	RM53.4 billion
• **Additional jobs in 2020**	157,000

- **Critical targets and milestones within 6 to 12 months**
  - One wafer fab set up
  - 4 integrated circuit design firms established
  - Multinational investment in test and measurement increased by 30 percent compared to 2010

chapter 12
Business
Services

Chapter 12: Driving High-Income Growth Through Business Services

"Our aspiration is to see Business Services become a catalyst in Malaysia's transformation into a knowledge economy. Although currently small with a GNI contribution of RM19.5 Billion in 2009, the Business services sector has a unique role to play in driving the competitiveness of a wide range of industries by offering differentiated world-class IT Outsourcing, Accounting and other related services. Services which in turn help further differentiate these industries. We intend to more than quadruple the GNI contribution of business services to bring it to RM 78.7 Billion by 2020. To achieve this we will build on Malaysia's existing strengths in IT outsourcing, MRO services and accelerate the growth in these sectors while at the same time positioning Malaysia as a regional leader in export-able differentiated high value services such as pure-play engineering design services, Green Technology and Islamic Banking Knowledge Process Outsourcing. We have also identified a set of initiatives to increase the percentage of skilled workforce in business services from 35% in 2010 to 46% by 2020 by building local capacity, attracting global talent and increasing women participation in the workforce. As Minister of Human Resources, I am committed to unleashing the potential of this sector and hope that all Malaysians will support me and my team in this endeavor"

YB Datuk Dr S Subramaniam
Minister of Human Resources

Malaysia's business services sector contributes only 2.9 percent to GNI, creating significant opportunity for growth. In other emerging economies, like China and the Philippines, the business services sector is forecast to grow by around 11 percent over the next decade[1]. In line with the target of achieving high-income status by 2020, Malaysia should aim to match or even surpass these levels. By 2020, we would like to move closer to the benchmark of developed economies like the United Kingdom, where the business services sector contributes roughly 20 percent of both GDP and employment and 14 percent of exports[2].

[1] *Global Insight*
[2] *Department for Business, Innovation and Skills, "Professional and Business services: A 2020 Vision for Growth", 2010*

DEFINITION OF THE BUSINESS SERVICES NKEA

The business services sector encompasses a large number of industries and professions, including the accountants, lawyers and tax experts that facilitate and support growth of an economy. It also includes the architects, engineers and designers that spearhead the expansion of industries as diverse as construction, aerospace and automotive. Lastly, it contains sizeable industries in their own right, including IT services and outsourcing, and future growth areas like green technology services.

MARKET ASSESSMENT

Industry Growth Drivers

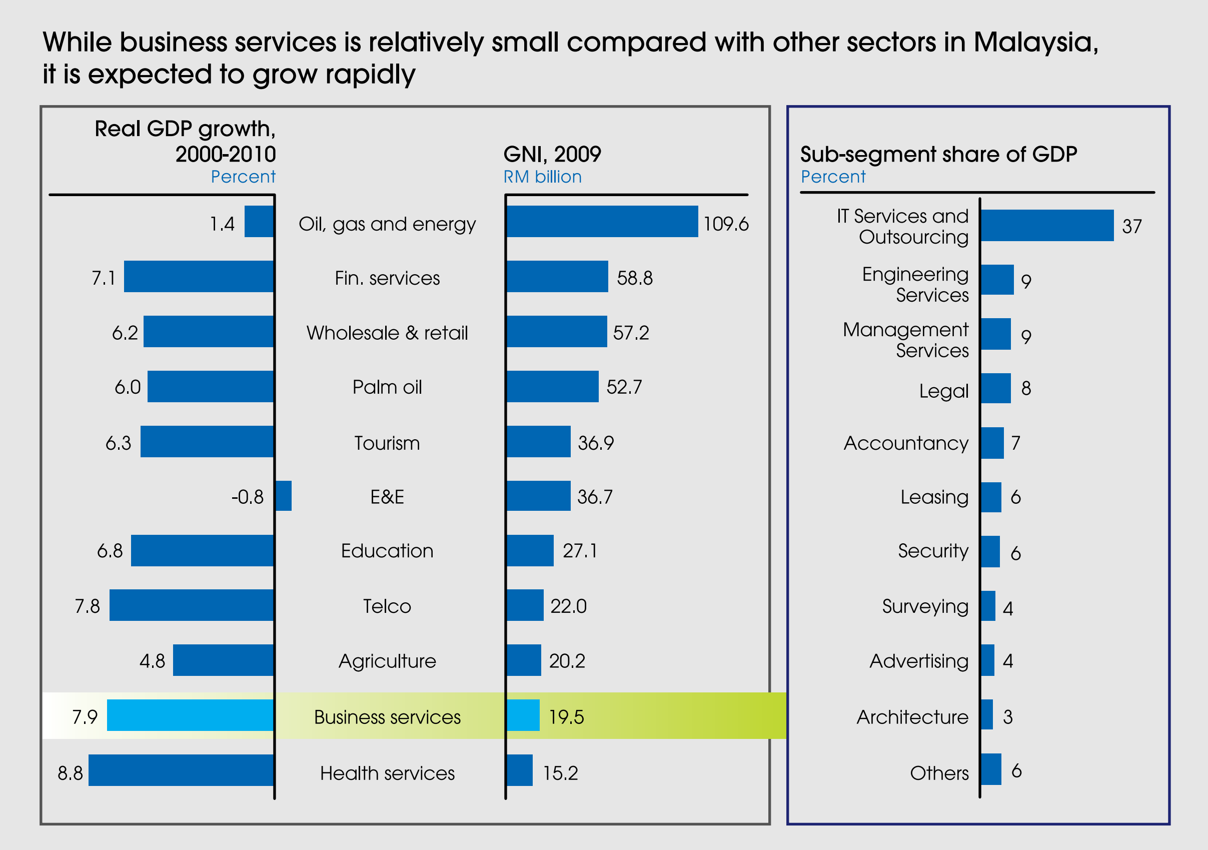
At the global level, growth in business services is driven by several key long-term trends.

- **Globalisation and outsourcing:** Organisations continue to adopt global sourcing strategies to increase efficiency by leveraging low-cost labour in emerging economies;
- **Sustainability:** Climate change and the shift towards a low-carbon economy are driving growth in a number of areas, including energy and waste management, urban planning, smart buildings and renewable energy;
- **IT-enabled services:** Advances in IT-enabled technologies will continue to spur demand for business services, such as data centres, business process outsourcing and cloud-computing services;
- **Rise of social media:** The advent of Web 2.0 and explosion of social media will create demand for services such as IT consulting, systems integration and creative services; and
- **Public sector efficiency:** In the context of a challenging economic climate, calls for greater efficiency and transparency in the public sector are increasing demand for business services across governments.

Malaysia's Business Services Sector

The business services sector in Malaysia contributed RM19.5 billion to gross national income (GNI) in 2009. While relatively small at present, the sector is growing quickly. Between 2000 and 2010, the gross domestic product (GDP) contribution of business services grew by 7.9 percent a year, making it the second fastest growing sector of our economy. Within business services, IT Services and Outsourcing is the largest sub-segment, contributing 37 percent of the sector's GNI. Engineering services, management services, legal and accountancy are also significant contributors (*Exhibit 12-1*).

Exhibit 12-1



SOURCE: PEMANDU; EPU

Challenges

The business services sector in Malaysia faces a number of challenges that are impeding growth.

- **Shortage of talent:** As the business services sector is knowledge-intensive, availability of high quality talent is critical for success. Malaysia faces multiple challenges in building and retaining a skilled workforce within the country to support the growth of business services. Malaysia has a small pool of skilled workers. For example, Malaysia has a pool of 83,000 finance and accounting professionals compared with 2.3 million in India. The small talent pool is compounded by low levels of employability. For example, just 25 percent of Malaysia's finance and accounting professionals are of sufficient quality to work for a multinational company, compared with 30 percent in the Philippines and 40 percent in the Czech Republic;

- **Bandwidth costs:** The cost of bandwidth is a critical enabler of IT-enabled business services, such as data centres and outsourcing services. Malaysia's internet bandwidth cost is higher than other regional hubs, reducing the international competitiveness of Malaysia's business services companies; and

- **No niche focus:** Many Malaysian business services companies occupy an unsustainable middle ground between low-cost providers in large emerging economies and high-value competitors in more advanced economies. The outsourcing industry is a good example of this. In 2009, the average annual salary of an IT employee in Malaysia was RM46,000, compared with RM40,000 in India and RM35,000 in the Philippines, leaving us unable to compete on cost. Yet at the same time, most Malaysian outsourcing companies lack the specialised skills and capabilities to compete in higher-value segments, such as knowledge process outsourcing (KPO), which involves work being carried out by highly-skilled staff in areas such as investment, market and legal research services.

The Case for Change

We believe a vibrant and rapidly growing business services sector will be beneficial for Malaysia for a variety of reasons.

- Business services is a high value-add sector. Business services are highly differentiated, providing a range of high-value skills and services. This allows companies within the industry to charge a premium, which translates into high wages and margins. For example, the US Bureau of Labor Statistics reports the average annual salary in the USA within business services was RM218,000 in 2009, higher than both telecommunications (RM185,000) and finance and insurance (RM182,000);

- Many business services are increasingly exportable. Rising broadband penetration has increased the exportability of IT-enabled business services, driving the emergence of industries such as offshore outsourcing . Between 2004 and 2007, the World Trade Organization reported exports of business services increased by 17 percent per year;

- Business services has a significant multiplier effect on the wider economy. Consider skilled professionals (e.g. architects, engineers, urban planners) within the green technology sector as an example. The energy efficient buildings and transportation systems they design stimulate significant demand in adjacent industries and further down the value chain, such as construction and building materials, and for devices such as smart meters; and

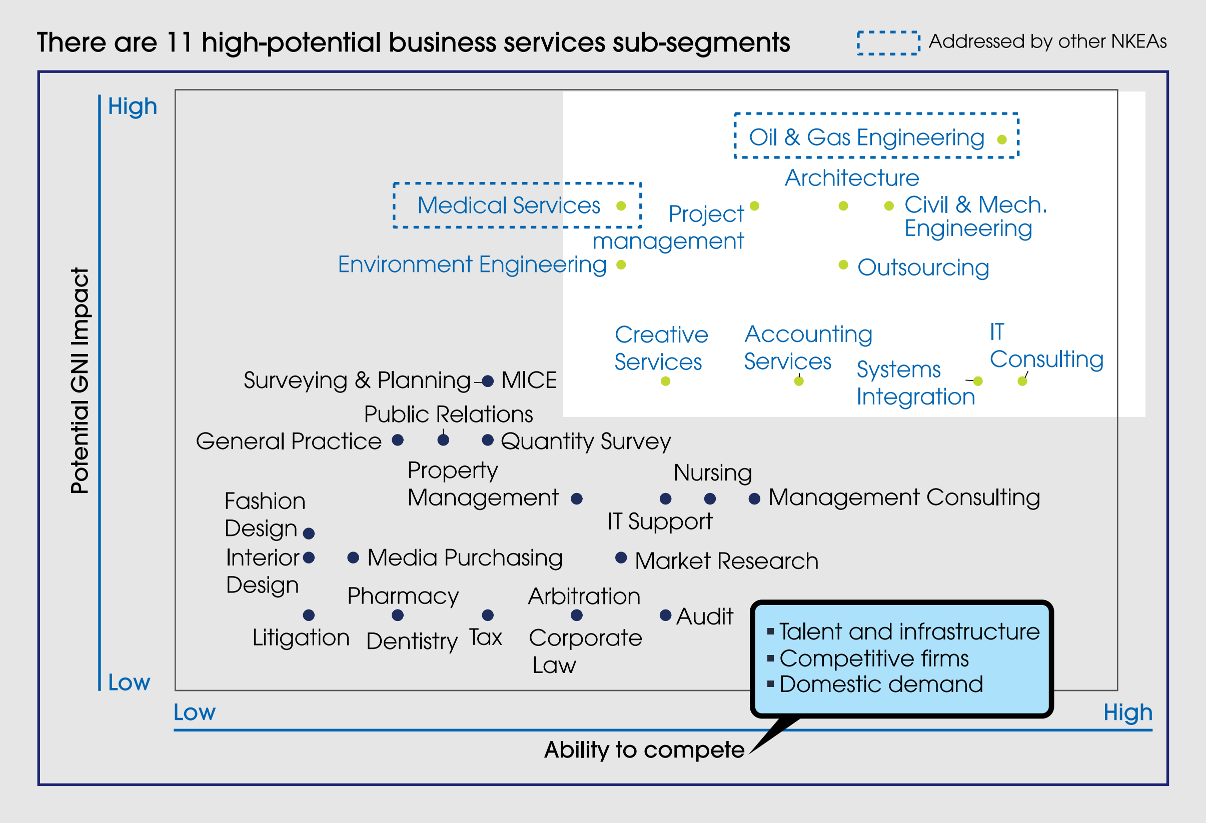
- Business services raises industry productivity. For example, business process outsourcing (BPO) helps companies increase cost efficiency and quality of service provision by using economies of scale to provide services such as payroll and accounts more efficiently. Similarly IT systems utilise technology to increase automation and efficiency.

TARGETS AND ASPIRATIONS

We aim to grow the GNI of the business services sector from RM19.5 billion in 2009 to RM78.7 billion in 2020, a total which includes EPPs, business opportunities and a sector multiplier effect.

Given the breadth of business services and the need to generate big results fast, it is important that we focus on the sub-segments that have the highest potential to raise GNI impact and those in which Malaysia's products and services are differentiated and have the ability to capture market share abroad. An analysis of potential GNI impact and Malaysia's ability to compete revealed nine high-potential sub-segments that are addressed in this NKEA and two that are addressed in other NKEAs (*Exhibit 12-2*).

Exhibit 12-2



Six EPPs to Deliver RM36.5 Billion Incremental GNI

In order to accelerate the growth of business services we have identified six entry point projects (EPPs) that span these nine high-potential sub-segments. These EPPs are categorised into two themes. First, we plan to accelerate the growth of differentiated sectors in which Malaysia has enjoyed a degree of success and in which we have the potential to be globally competitive. Secondly, we will develop future growth segments in areas that boast high potential for growth and job creation.

Theme 1: Accelerate the growth of differentiated sectors

- **EPP 1:** Growing aviation maintenance, repair and overhaul services, led by MAS Aerospace Engineering;
- **EPP 2:** Building globally-competitive outsourcers; and
- **EPP 3:** Positioning Malaysia as a world-class data centre hub.

Theme 2: Develop future growth segments

- **EPP 4:** Jump-starting a vibrant green technology industry;
- **EPP 5:** Growing large pure play engineering services; and
- **EPP 6:** Developing Malaysia as a global Islamic finance KPO hub.

Beyond the EPPs, we have also identified a series of business opportunities and enablers that will accelerate and support the growth of the sector (*Exhibit 12-3*).

Exhibit 12-3

EPPs, business opportunities and enablers will drive sector growth

Type of Initiative		Selection criteria	Initiatives
Entry Point Projects	Accelerate growth of differentiated sectors	Segments with current competitive advantage, with differentiated products and services	1. Growing MRO services, led by MAE 2. Building globally-competitive outsourcers 3. Positioning Malaysia as a world-class data centre hub
	Develop future growth segments	Segments that will drive future growth and jobs	4. Jump-starting a vibrant green technology industry 5. Growing large pure play engineering services 6. Developing Malaysia as a global Islamic finance KPO hub
Business opportunities		Projects that will support the expansion of business services	1. Multi-disciplinary practice construction firms 2. Accounting sector 3. Creative multimedia content industry
Key enablers		Enablers that are critical to accelerating growth	1. Increase skilled workforce to meet growth of Malaysia's services sector[1] 2. Reduce bandwidth costs (covered in Communications Content and Infrastructure NKEA)

1 Also considered a business opportunity

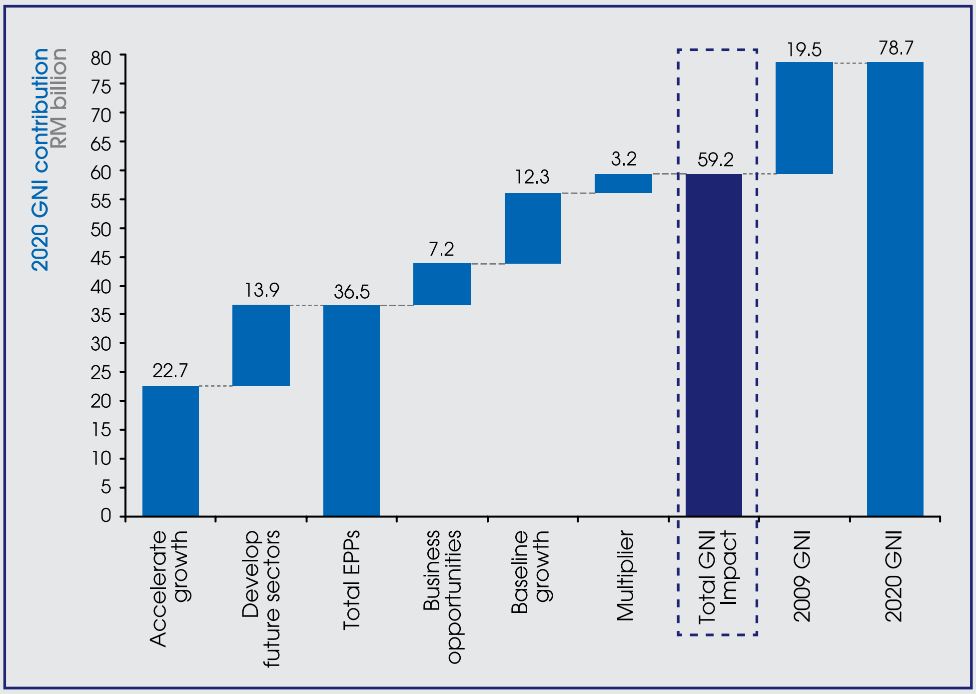
Impact

Taken together, we estimate that our EPPs and business opportunities (including common enablers and multiplier) will raise the overall GNI contribution of business services to RM78.7 billion in 2020 (*Exhibit 12-4*).

This also includes approximately RM3.2 billion of GNI from the multiplier effect created by EPPs from other sectors. The largest sources of this multiplier effect are NKEAs including Wholesale and Retail, which will in turn increase the Business Services GNI contribution. For example, it may be the case that the expansion of retailers and wholesalers will result in increased demand for professional services including accountants, lawyers, web design and programming specialists and outsourcing professionals.

Exhibit 12-4

Six EPPs, three business opportunities, baseline growth and multiplier effect in the industry will deliver RM59.2 billion incremental GNI by 2020



ACCELERATE THE GROWTH OF DIFFERENTIATED SECTORS

As a small country, Malaysia's supply of talent is dwarfed by regional giants such as China and India. For example, it is estimated that China has a total pool of 1.6 million engineers, compared with just 49,000 in Malaysia. Likewise, India has a pool of around 2.3 million finance and accounting professionals, compared with Malaysia's 83,000.

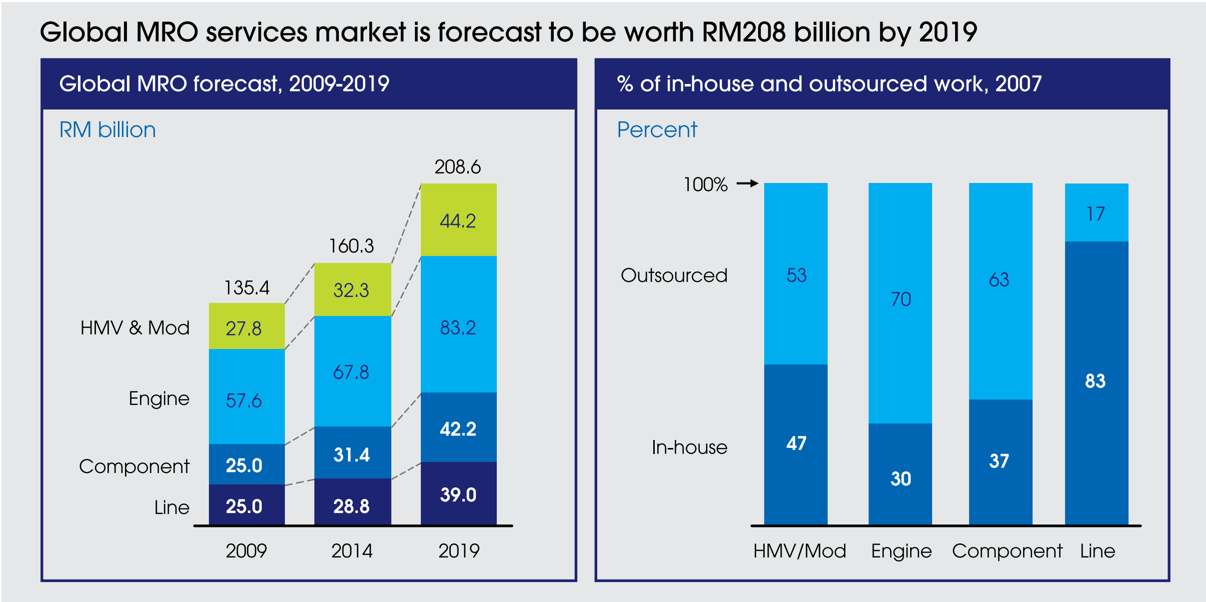
To compete, Malaysia needs to sharpen the focus of its business services sector. This means concentrating attention on the sectors in which it has an advantage and where its products and services are differentiated.

EPP 1: Growing Maintenance, Repair and Overhaul Services, Led by MAS AerospaceEngineering

Rationale

Our aspiration is to establish MAS Aerospace Engineering (MAE) as the anchor maintenance, repair and overhaul (MRO) provider in Malaysia, and in doing so, develop Malaysia into a regional MRO hub.
The global aviation MRO services industry is projected to grow at a compound annual growth rate of 4.4 percent from 2009 to 2019, and is forecast to be worth RM208 billion in 2019 (*Exhibit 12-5*).

Exhibit 12-5



SOURCE: Team, SAI Consultancy, MRO forecast, 2007

We believe that rapid regional demand – driven by the growth of major economies like India and China – coupled with an intensified focus on cost-effectiveness in the airline industry will increase demand in the regional market for MRO services.

MAE, the engineering and maintenance division of Malaysia Airlines, is well-positioned to capture this opportunity. It has been successful in offering MRO services to other airlines, and serves more than 100 global customers, including major airlines such as Lufthansa, United Airlines and Emirates. Revenues from third parties (i.e. parties other than Malaysia Airlines, whose fleet it predominantly services), increased from RM179 million in 2005 to RM384 million in 2009.

However, as a division of a major airline, MAE is currently not free to fully capitalise on this opportunity. In addition, outdated aviation policies and procedures, insufficient talent availability and the lack of a spare parts ecosystem in Malaysia are hindering the growth of the industry.

Actions

In order to build the MRO industry, Malaysia must improve industry structure and regulation, expand geographically and into higher value-added services and develop MRO-specific human capital.

Improve industry structure and regulation. While MAE already serves airlines other than Malaysian Airlines, an autonomous MAE will be free to set its own strategy, service more customers, become more responsive to customers and raise capital for expansion. Strategic partners will be invited to invest in the autonomous MAE in order to build its existing capabilities (for example in airframe maintenance) and develop strong expertise in key areas such as engine repair, avionics and components.

Another step towards creating a viable MRO industry structure will be to improve key civil aviation regulations. The Ministry of Transport will corporatise the Department of Civil Aviation (DCA) and establish a governing board comprising industry and Government, as per Malaysian Aerospace Blueprint (2003).

DCA will also replace the British Civil Aviation Regulations and update DCA practices to be on par with those enforced by the European Aviation Safety Authority (EASA). As such, DCA policies and procedures with regards to regulations, certification, approval and examinations will be replaced by EASA standards by September 2011.

Expand geographically and into higher value-added services. Malaysia Airport Holdings Bhd (MAHB) is a key partner in international airports at Hyderabad, New Delhi and the Maldives, which can be developed into strategic satellite centres to feed MRO work back to MAE's MRO facility at Subang Airport. In particular, MAE can route airframe and line maintenance work to the satellite centres and route the component and engine repair work to Subang. This operational strategy will help to expand Subang into a full-fledged engine and component repairs centre. To achieve this, MAE will engage with MAHB to build additional hangars at these foreign airports by 2011.

An effective spare parts supply chain is needed in Malaysia to offer MRO customers a comprehensive service. To address this, MAE will establish a rotable spare parts supply chain at Subang Airport by 2013, with the aim of supplying component spares to customers in the ASEAN, Indian subcontinent and Middle East markets.

Develop MRO human capital to ensure a sufficient supply of talent for the industry. MAE will develop a dedicated training facility for aviation engineering in Subang from 2010 by inviting higher education establishments to partner with it and establish campuses in Malaysia. Possible partners could be Cranfield University (UK), University Colorado (USA), University of Southern California (USA), Korea Aerospace University (South Korea) and Beihang Aerospace University (China).

We propose that the Ministry of Human Resources and DCA implement 40 hours per annum of compulsory continuous learning on critical aspects of aircraft repair by 2011, which will be required for personnel to maintain their aircraft engineer, mechanic and technician licences.

Funding

RM11.6 billion in capital expenditure will be contributed by the private sector by 2020. Almost all – RM11.5 billion – will be private sector capital used to build additional hangars in Subang, Delhi, Hyderabad, Surabaya and Jakarta, acquire more land to expand operations, set up a new rotable spare parts business unit and establish training campuses for MRO-specific human capital. The remaining funds of approximately RM61 million will be provided by the Government.

Impact

We target to build a RM13.4 billion GNI MRO industry in Malaysia, led by MAE, by 2020. In achieving these targets, we aim to create over 20,700 jobs.

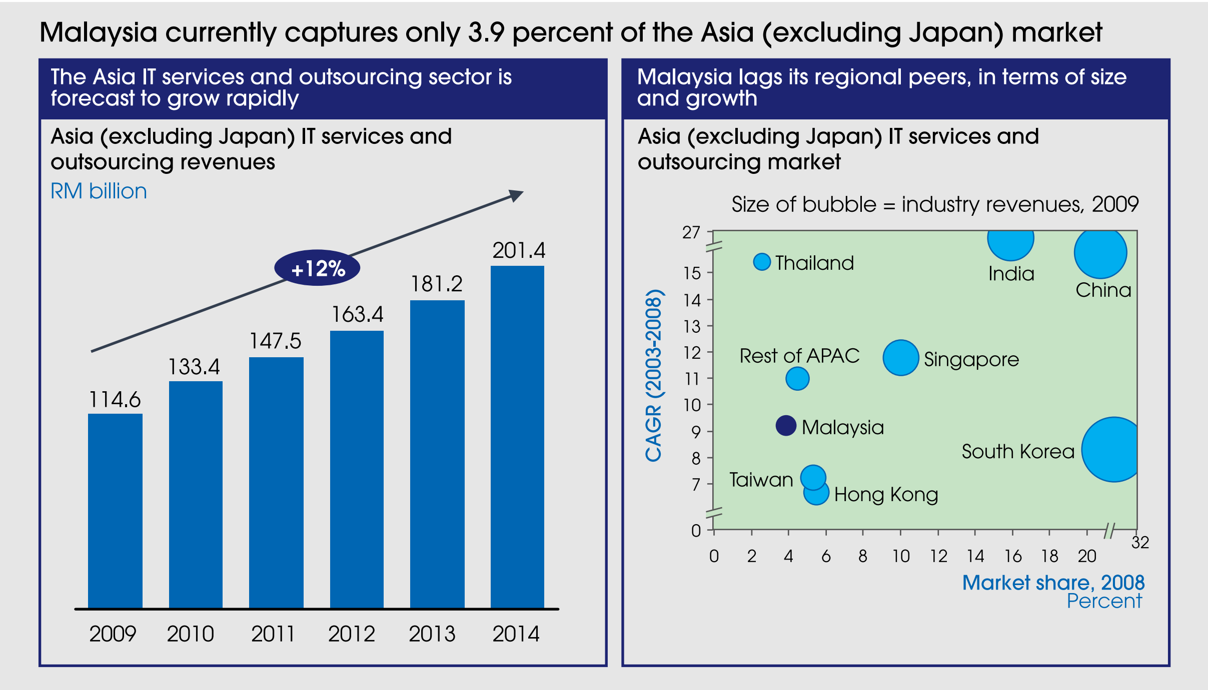
EPP 2: Building Globally Competitive Outsourcers

Rationale

The global and regional outsourcing industry is forecast to grow robustly over the next few years, with the Asia Pacific market expected to expand by 12 percent per year between 2009 and 2014. Malaysia currently captures only 3.9 percent of the Asia (excluding Japan) market, roughly RM3.5 billion per year (*Exhibit 12-6*).

Between 2003 and 2008, the Malaysian outsourcing industry grew by 9 percent, a healthy growth rate but lower than the regional average and significantly slower than regional leaders, such as India (27 percent) and China (16 percent). Malaysian outsourcing companies lag their regional peers because they are small and fragmented, lack niche focus areas, are over reliant on the domestic market and lack a credible track record.

Exhibit 12-6



SOURCE: Gartner

The most competitive outsourcing markets globally have one thing in common: they have provided the base for the emergence of globally-competitive companies within outsourcing, such as India's Infosys, TCS and Wipro. Starting from a strong domestic base, these companies achieved the scale, awareness and credibility to become the largest and most respected companies around the world.

Our aspiration is to create at least two globally-competitive outsourcing companies and, in the process put in place the policy incentives and marketing initiatives to allow smaller companies to flourish.

Actions

We will work on three fronts to achieve our aspiration. We will reach critical scale by setting up a Government-shared services centre through a public-private partnership and then use policy to grow industry leaders and encourage consolidation. Simultaneously we will work to build global awareness and ensure that customers in target markets are aware of the skills and capabilities of Malaysian outsourcers. To enhance industry capability and credibility, especially overseas, we will raise industry standards and foster greater competitiveness in order to challenge established foreign competitors.

Reach critical scale by setting up a Government shared-services centre. The Malaysian Administrative Modernisation and Management Planning Unit (MAMPU) will run pilot projects to consolidate data centres and unified messaging services (including e-mail and voicemail) across key ministries and agencies, beginning in 2011. MAMPU will also commission a Government-wide study to identify duplication across non-core business processes, with the aim of establishing a Government-shared services centre by 2012. The design and implementation of the Government-shared services centre will be overseen by a project management office based on a public-private partnership, with MAMPU as the central coordinating agency. This set of initiatives will aim to reduce Government spending on non-core IT and business processes by up to 20 percent.

Including Government-linked companies (GLCs) in this effort will be a vital step in achieving scale and credibility. The Putrajaya Committee on GLC High Performance, in conjunction with the industry association Outsourcing Malaysia (OM), will organise a roundtable discussion in 2011 between key GLC stakeholders and Malaysian outsourcing providers. OM will also publish a brochure in 2011, highlighting progress and success to date.

Government will use policy incentives to encourage consolidation. Ministry of Finance shall establish a tiered procurement framework, stipulating that outsourcing companies must be of a minimum size to bid for the largest Government outsourcing contracts (i.e. revenues greater than RM96 million). In addition, it is proposed that Malaysia Debt Ventures amend its charter to allow funding of M&A deals by 2010 and provide soft loans to cover due diligence costs.

Build global awareness. To establish a baseline and measure progress, OM will conduct an annual marketing assessment, surveying buyers in its target markets of the United States, United Kingdom and Middle East to measure brand awareness and assess the values of buyers. OM will also run a two-year marketing campaign in conjunction with the Malaysia Truly Business campaign, focusing on key print and online publications in target markets. OM will also establish annual outsourcing awards to recognise high performance and raise the industry's profile. We aim to increase brand awareness of Malaysian outsourcing companies by 50 percent by 2015.

Multimedia Development Corporation (MDec) and OM will work together to increase Malaysia's presence abroad through dedicated sales representation and trade missions. MDeC will hire eight sales representatives for three years, with the aim of doubling revenues in these markets by 2015 (four based in the US, two in the UK and two in the Middle East). OM will also run trade missions to the United States and United Kingdom in 2011 and 2012 to meet current and potential clients as well as subsidise private sector participation at key industry conferences, such as the International Association of Outsourcing Professionals Outsourcing World Summit.

Enhance capability and credibility. To increase the number of certified outsourcing professionals in Malaysia, MDeC will fund 15 to 20 percent of the cost of certification for two Malaysian outsourcing companies and 100 outsourcing professionals per year, for 10 years.

Transparency about Malaysia's outsourcing capability will aid credibility. MDeC will publish an annual ranking of Malaysian outsourcing companies. In addition, OM will ensure that all of its members participate in key international rankings, such as Neo Advisory's Global Services 100.

Funding

Of the RM2.28 billion required for this EPP, RM2.1 billion (93 percent) will come from the private sector. The remaining funding will come from the Government and will be used to roll out shared services within the public sector.

Impact

In building our own global champions and capturing market share abroad, we aim to grow outsourcing revenue from RM3.5 billion in 2009 to RM12.8 billion in 2020, contributing RM6.9 billion in additional GNI in 2020 and creating approximately 43,000 jobs.

In the process, we will (1) build two global champions based in Malaysia (each with revenue greater than RM1.5 billion); (2) certify two outsourcing companies and 100 professionals per year; (3) increase the brand awareness index score of Malaysian outsourcing companies in target markets by 50 percent by 2015; and (4) achieve a 20 to 30 percent reduction in Government and GLC spending on non-core IT and business processes.

EPP 3: Positioning Malaysia as a World-class Data Centre Hub

Rationale

Data centres (DCs) are specialised secured facilities that house sophisticated computer systems and telecommunication equipment and have become a key structural component for an enterprise's IT infrastructure ecosystem. They support the day-to-day operations of applications and data processing as well as disaster recovery. Apart from creating high-value jobs in the IT ecosystem, DCs also create a positive spill-over effect to other industries (i.e. telecommunications, IT hardware and software and construction services).

The DC industry in Asia Pacific is expected to grow by 16.3 percent annually, reaching RM10.9 billion by 2014.

We believe there is a compelling opportunity to develop a world-class DC hub in Malaysia based on the following trends:

- **Increased foreign demand.** Foreign demand results from (1) multinationals looking to consolidate regional operations in Asia Pacific to achieve economies of scale; (2) content providers setting up regional nodes in Asia Pacific to be closer to their end users; (3) cloud service providers looking to expand their user base in the region; and (4) international service providers looking to expand partnerships with local players;

- **Rising cost of doing business for current market leaders:** Whilst Hong Kong and Singapore have established themselves as ASEAN market leaders, a combination of higher wages and rising real estate costs in those countries are opening up opportunities for other countries in ASEAN; and

- **Increased domestic demand for IT outsourcing (ITO), business process outsourcing (BPO) and creative content:** DC growth is already being spurred by the local ITO, BPO and creative multimedia content industry. MDeC expects Malaysia's creative content industry to grow at an average of 11.4 percent to reach RM16 billion by 2013.

We believe Malaysia has the potential to emerge as a world-class DC hub. We define this as having a significant share of Asia Pacific's DC revenue, credible local DC service providers and a recognised capability in providing high-value managed services.

We aspire to establish Malaysia as the preferred destination for DC investors and increase the supply of DC space in Malaysia from 0.5 million square feet to 5.0 million square feet by 2020 to capitalise on the strong growth of DC revenue in Asia Pacific.

Actions

To develop Malaysia as a world-class DC hub, industry and Government will work to coordinate sales efforts. We will also improve the credibility of Malaysia as a DC hub through benchmarking services and improving privacy standards and develop human capital to capitalise on higher-value managed services and increase the number of certified companies.

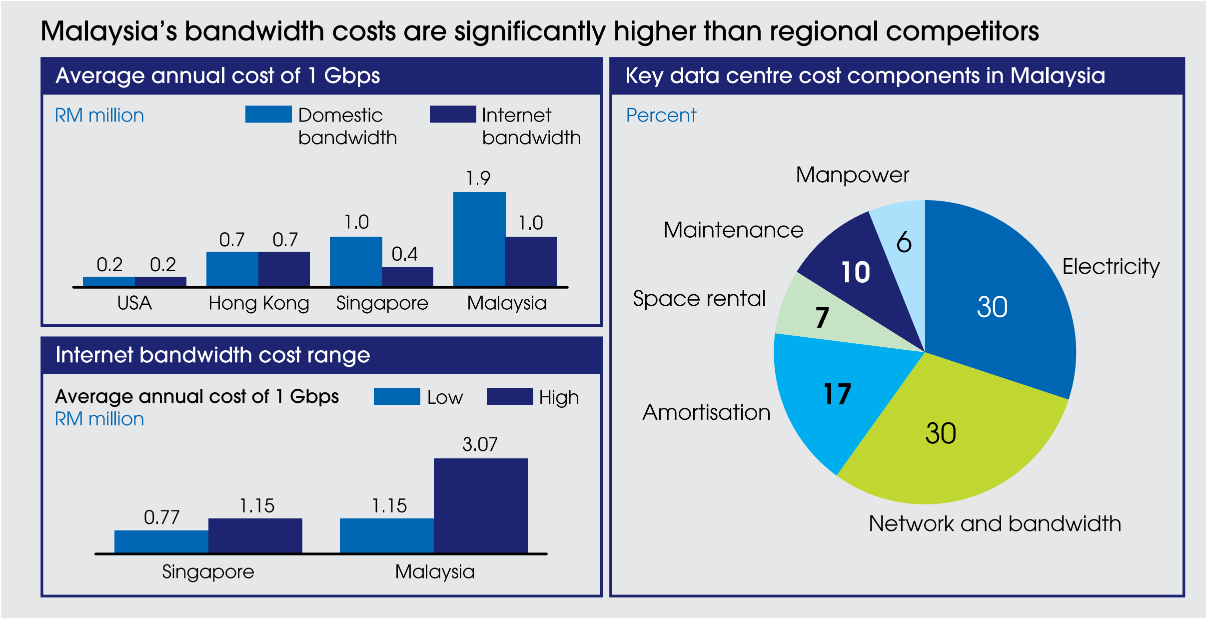
Increase sales of Malaysia DC floor space to 2.5 million square feet by 2015 and 5 million square feet by 2020, as a measure of Malaysia's success in capturing Asia Pacific's growing market revenue. With 0.5 million sq ft in 2010, Malaysia currently supplies approximately 4 percent of Asia Pacific's DC floor space. We plan to increase sales by 2015 through focusing industry efforts, targetting regional counterparts and increasing our cost competitiveness.

OM will set up a DC focus group consisting of 16 key DC companies in Malaysia. The focus group will collaborate with MDeC to improve the ease by which foreign companies can operate in our market and to also increase the supply of DC floor space according to a forecast demand pipeline. Apart from this, the focus group, via OM, will stimulate knowledge sharing in the Malaysian DC sector through conferences, workshops and human capital development in collaboration with MDeC's K-Workers Development Initiative.

In collaboration with MITI, MDeC and OM will launch roadshows and trade missions focused on mobilising regional investment.

Concurrently, the Communications Content and Infrastructure NKEA will drive efforts to reduce bandwidth costs to increase Malaysia's competitiveness on this significant cost component. Malaysia's ability to establish itself as a world-class DC hub is dependent on the ability to offer competitive bandwidth. Malaysia's bandwidth cost – which can vary from RM96 to RM256 per megabits per second per month – currently represents 30 percent of a DC's operational cost and is two times higher than Singapore and three times higher than Hong Kong, (*Exhibit 12-7*).

Exhibit 12-7



Improve the credibility of Malaysia as a DC hub. To attract DC investors, there is a need to increase credibility regarding the quality of our local DCs and the strength of our privacy standards. MDeC and OM will work in collaboration with Uptime Institute to bring 16 DCs in Malaysia up to a global certification standard. The overall baseline benchmarking will be conducted in 2010, followed by the development of a roadmap for each of the 16 DCs to achieve Uptime certification by 2013.

MDeC will lead an aggressive campaign to market Malaysia as a preferred regional location for DCs. This includes industry reviews by Broadgroup and IDC, participation in international and regional road shows and increased presence at international DC conferences.

With the gazetting of the Personal Data Protection Act, the Ministry of Information, Communications, Culture and Arts will be setting up a commission office by January 2011 and raising public awareness and seeking public feedback to develop regulations related to data privacy protection by December 2011.

Build human capital to capitalise on higher-valued managed services. To support the growth of Malaysia as a world-class DC Hub, there is a need for a pool of skilled DC workers. This will be achieved through four initiatives centred on education and knowledge sharing. We will build a DC foundation at universities by having MDeC, OM and the Ministry of Higher Education (MoHE) introduce DC relevant courses at universities (including network, server virtualisation, green IT), as part of existing or potentially new degree programmes. A review of DC courses will be held annually to ensure that they meet industry's needs. To tie learning to experience, we will leverage MDeC's U-Grad model. Beginning June 2011, MDeC will place interns with DC service providers as part of the students' industrial training.

DC lecturers will be certified as Certified DC Experts (CDCEs), accredited by Examination Institute for Information Science, beginning in January 2011. This will fall under the Multimedia Super Corridor Capability Development Programme led by MDeC.

Bi-annual workshops and annual conferences will be driven by OM and MDeC to enable knowledge-sharing amongst the DC community in Malaysia.

Funding

Total funding of RM4.25 billion is required, of which RM4.23 billion will be sourced from the private sector and the remaining portion will be public funded.

Impact

By establishing a world-class DC hub in Malaysia we will generate approximately RM2.4 billion in incremental GNI for 2020 and create over 13,000 jobs.

We will measure impact by achieving our targets of 5 million square feet of DC space and 9,000 certified DC professionals by 2020 as well as 16 DCs operating to internationally benchmarked standards (Uptime) by 2013 and an enforced Personal Data Protection Act (PDPA) by 2011.

DEVELOP FUTURE GROWTH SEGMENTS

In a world of accelerating change and increasing competition, Malaysia cannot afford to stand still. While capitalising on our current strengths, we must also look to the future, to identify the industries and jobs that will drive growth in the next decade and beyond.

There are numerous examples of forward-looking countries that have stolen a march on their rivals by investing early in nascent sectors. For example, in the early 2000s, South Korea invested heavily in broadband connectivity, resulting in the highest broadband penetration in the world. This spurred growth across a range of products and services, including smart phones, wireless technologies and home entertainment services such as video on demand. More recently, Malta has committed RM288 million to fund the construction of the world's first national smart grid. By 2012, it will install 250,000 smart electrical metres in residences and businesses. As well as reducing energy consumption, Malta is set to become a test bed for smart buildings and technologies, spurring investment and creating jobs.

EPP 4: Jump-starting a Vibrant Green Technology Industry

Rationale

Green technology is defined as products and services that reduce energy consumption and minimise pollution (*Exhibit 12-8*). Some segments like alternative energy are experiencing rapid growth of 30 to 40 percent per annum globally.

Exhibit 12-8

Green services offer RM295 billion in potential energy savings by 2020

Green services involve architects, engineers, energy managers and corbon managers

NON-EXHAUSTIVE

Energy management firms
- Energy audits and recommendations
- Energy performance contracting

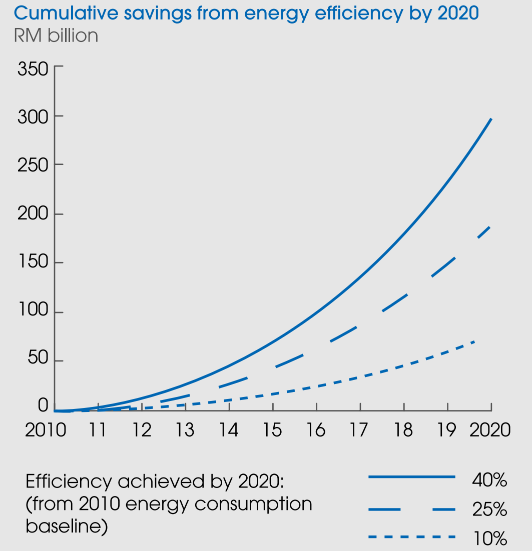
Water management firms
- Water audits and recommendations
- Advise on in-house water recycling and related

Sustainable design services
- Develop and retrofit buildings to be green, e.g. Green Building Index

Waste management firms
- Provide expertise on waste strategies, such as recycling and the management of toxic waste

Renewable energy service providers
- Consultancies for renewable energy projects
- Services such as economic viability assessments, project design, provision of technical expertise in the construction of renewable energy plants

These services enable potentially RM295 billion in energy savings by 2020



Creating a green technology industry in Malaysia will be beneficial for the following reasons:

- **Help achieve Malaysia's emission reduction targets:** Malaysia has announced plans to reduce carbon emissions by 40 percent by 2020, based on 2005 levels. Growing the supply and demand of green products and services will be vital to achieving these targets;

- **Generate sizable cost savings:** It is estimated that increasing energy efficiency by 40 percent by 2020 would result in cost savings of RM295 billion (*Exhibit 12-8*); and

- **Create a significant number of jobs:** Building a vibrant green technology industry will bring with it the creation of a range of highly-skilled positions, as has been the case in other nations that have made similar investments. For example, green employment in Scotland is anticipated to produce as many as 60,000 green sector jobs by 2020 .

Steps have already been taken in Malaysia to grow the green technology sector. However, progress has been held back by fuel subsidies, which increase the relative costs of green technology, leading to low levels of awareness among businesses and consumers, a lack of available finance for green services companies and a limited of supply of green products and services. For example, since 2004, only 15 products have been submitted for eco-labelling.

Our aspiration is to jump-start the green technology sector in Malaysia, in order to build a vibrant green technology industry and create jobs in this fast-growing sector and, in the process, generate substantial cost savings and reduce Malaysia's carbon footprint.

Actions

To achieve our target, we will act to boost demand for green products and services, strengthen suppliers and measure, monitor and publicise Malaysia's environmental progress.

Boost demand for green products and services. Government will take the lead in raising efficiency and growing the green technology industry. First, the Ministry of Energy, Green Technology and Water (KeTTHA) will set efficiency targets stipulating that all ministries must reduce electricity and water consumption by 10 percent per year from 2011 to 2013. Second, KeTTHA will set the target across ministries that 50 percent of the goods and services purchased by the public sector should be eco-labelled by 2020. To this end, a green public procurement policy shall be put in place by October 2011, to give preference to local producers, establish buying guidelines for eco-labelled products and specify the required energy efficiency certification for specific products.

Government will also examine available policy levers to reduce Malaysia's environmental impact and spur growth of the green technology industry. KeTTHA will promote a culture of conservation and efficiency. It will coordinate outreach programmes and incorporate environmental awareness into school curriculums in 2011, for example through the promotion and encouragement of activity books produced by Centre for Training Renewable Energy and Energy Efficiency.

Strengthen suppliers of green products and services through accreditation, skills development and access to finance. KeTTHA will develop an accreditation framework for energy services companies to improve and regulate the quality of energy services companies in 2011. The framework will take into account the level of technical expertise, capital base and depth of services offered by companies.

Green technology requires new skills for new jobs such as carbon traders, environmental engineers, smart grid consultants, sustainability consultants, wind turbine designers, Clean Development Mechanism consultants and energy managers. Green technology skills will be incorporated into the curriculum of existing courses, including architecture, engineering and urban planning by 2012. In addition, a list of green technology jobs under the NOSS (National Occupational Skills Standard) and SKM (Malaysian Skills Certificate) will be developed by mid-2011, establishing a common standard for green technology practitioners.

Green projects rely on knowledgeable lenders. KeTTHA will run education seminars with financial institutions in 2011, to increase knowledge of green projects to boost levels of lending. These seminars will focus on the payback structure of energy efficiency projects.

Measure, monitor and publicise environmental progress. To provide the basis for an environmental management annual report, KeTTHA will track Malaysia's environmental impact and progress of the green technology sector in a database. By mid-2011, KeTTHA will determine the scope of the database and the indicators that need to be collected as well as communicate roles and responsibilities to the relevant industry associations.

Starting in 2011, KeTTHA will publish an environmental management annual report to track Malaysia's progress against KPIs and increase awareness of environmental schemes. The report will benchmark Malaysia internationally, highlighting improvements in efficiency across Government and the private sector at the national and state levels. It will also discuss the impact of any existing subsidies for energy and water.

Funding

Total funding required is RM13.5 billion, of which RM10.8 billion will come from the private sector for investment in green buildings and infrastructure. The remaining funding will be used for investment in public sector green buildings over the next 10 years.

Impact

By taking a coordinated effort to jump-start a vibrant green technology industry in Malaysia, we can generate RM7.2 billion of additional GNI in 2020 and create over 47,000 jobs. This incremental GNI is driven primarily by growth in revenue from renewable energy service providers.

EPP 5: Growing Large Pure Play Engineering Services

Rationale

The global market for aerospace and automotive engineering services is forecast to double over the next decade, surpassing RM960 billion by 2020. A high proportion of this can be performed offshore, with the offshore market forecast to be worth in excess of RM320 billion by 2012.

Engineering services has significant potential to boost Malaysia's GNI for a number of reasons:

- **Creates high-value jobs:** The engineering services industry creates high-value technology and design engineering jobs, which are independent of the progress of the domestic manufacturing industry;

- **Serves as a source of brain gain:** A vibrant engineering services industry will attract the best engineering talent to Malaysia, both Malaysian diaspora and skilled expatriates; and

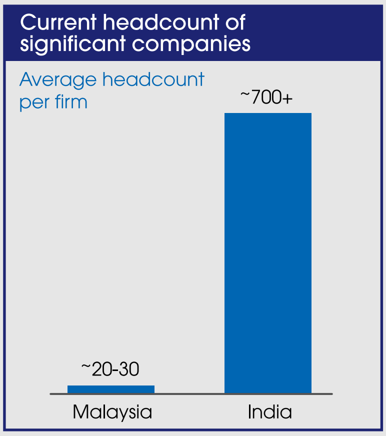
- **Builds high-value domestic capability:** Today much of the high-value design work for Malaysian products is outsourced to countries like Taiwan, Korea and Japan. By growing engineering services domestically, Malaysia can utilise domestic capabilities and manpower, moving the industry up the value chain.

With a strong existing base, Malaysia is well-positioned to grow engineering services. It has a large number of engineering graduates to fill its workforce needs. It has strong domestic demand, driven by the local automotive and aerospace industries. Moreover, some Malaysian companies already possess expertise in composite materials, which are increasingly being used across industries.

In order to effectively capture this opportunity, the industry must overcome its lack of scale and capital, fragmented expertise and talent shortfalls (*Exhibit 12-9*).

Exhibit 12-9

Several factors limit engineering services industry growth in Malaysia



Lack of scale
- Slow learning curve as firms only fulfil one contract at a time
- Volume of work insufficient for companies to expand

Lack of capital
- Lack of sufficient capital to invest in necessary technology, e.g. finite element analysis software, computer-aided design software
- Lack of sufficient capital to facilitate knowledge and technology transfer to Malaysian engineers

Fragmented expertise
- Expertise is isolated in each company, hindering the ability of the industry as a whole to fulfil total product lifecycle engineering

Talent
- Lack of communication and other soft skills
- Need for industry-specific technical skills training
- Training costs borne by players, potential for efficiencies if training is consolidated

Companies require both scale and quality of work in order to compete successfully in the global market

We have identified a set of initiatives that will allow our pure play engineering services industry to capture significant global market share.

Our aspiration is to create an aerospace engineering services company and an automotive engineering services company that are globally competitive and, in doing so, put in place the market conditions to attract high-value engineering services work to Malaysia.

Actions

To achieve the aim of creating two globally competitive engineering services companies, we have developed a set of initiatives to increase skills and capability, stimulate demand for engineering services and accelerate global expansion.

Increase skills and capabilities through training and a research and development (R&D) centre. Government will provide RM24 million in engineer training grants from 2011 to 2013. The grants will be provided to train over 700 selected engineers at Strand Aerospace Malaysia and DreamEdge Sdn Bhd so the companies can secure contracts with companies such as Nissan or Suzuki. In addition, the Ministry of International Trade and Industry will administer grants of RM60 million to equip these engineers with essential computer-aided design (CAD) software for these contracts from 2011 to 2013.

The Advanced Manufacturing Institute will establish an R&D centre for aerospace and automotive engineering by the end of 2010 and will coordinate between academia and industry to develop products relevant to the industry, which it can sell to global clients. The R&D centre will focus on areas in which Malaysia has existing expertise: composite technology and process design optimisation.

Stimulate demand for engineering services through developing a brand and leveraging Government offsets and purchases. MATRADE will establish and market the Malaysian Engineering Services brand, which will emphasise the availability of world-class engineering services in Malaysia. Overseas MATRADE staff will target specific aerospace and automotive industry clients in Europe and Japan. MATRADE will launch the brand at the Dipro Engineering Services exhibition in Japan in December 2010.

Government can leverage the existing Ministry of Defence offset policy to grow the aerospace and automotive engineering industry. Sellers must provide 50 percent of the value of foreign goods and services bought by the Ministry of Defence as offsets, i.e. agreements to purchase Malaysian goods and services in return. Starting in 2010, the Malaysian Industry-Government Group for High Technology (MIGHT) will focus on securing engineering services work as part of any new offset commitments owed to the Government of Malaysia.

In 2010 the Ministry of Defence will sign Direct Purchase Agreements with several local engineering services firms to develop aircraft structural integrity technology. This technology ensures the safety of structures and prolongs their use, reducing the cost of upgrading or replacing aircraft. This technology can be applied to civil aircraft and related aero-structures and can be marketed to Asian and Middle Eastern countries.

Accelerate global expansion. By 2013, Strand Aerospace Malaysia and DreamEdge Sdn Bhd are expected to achieve a critical mass of over 700 trained engineers and strong track records of projects executed for global clients. At this stage, the companies will seek joint venture partnerships and strategic alliances with global companies, such as Bombardier, Airbus, GKN Aerospace, Nissan and Honda. This will improve the local companies' market access and technology transfer as well as ensure sufficient workflow over the next eight years to fuel further growth of the industry. We will measure our success by targetting 17 signed contracts with local and global original equipment manufacturers (OEMs) representing 20 to 100 full-time equivalent jobs at Strand Aerospace Malaysia and DreamEdge Sdn Bhd by 2012.

Funding

This requires a capital expenditure of RM1.1 billion, with RM1 billion coming from the private sector. Public sector spending of approximately RM0.1 billion is solely for training and software grants to develop aerospace and automotive engineers from 2011 to 2013.

Impact

We believe the industry has the potential to contribute an additional RM3.5 billion of GNI in 2020 and create approximately 11,500 jobs.

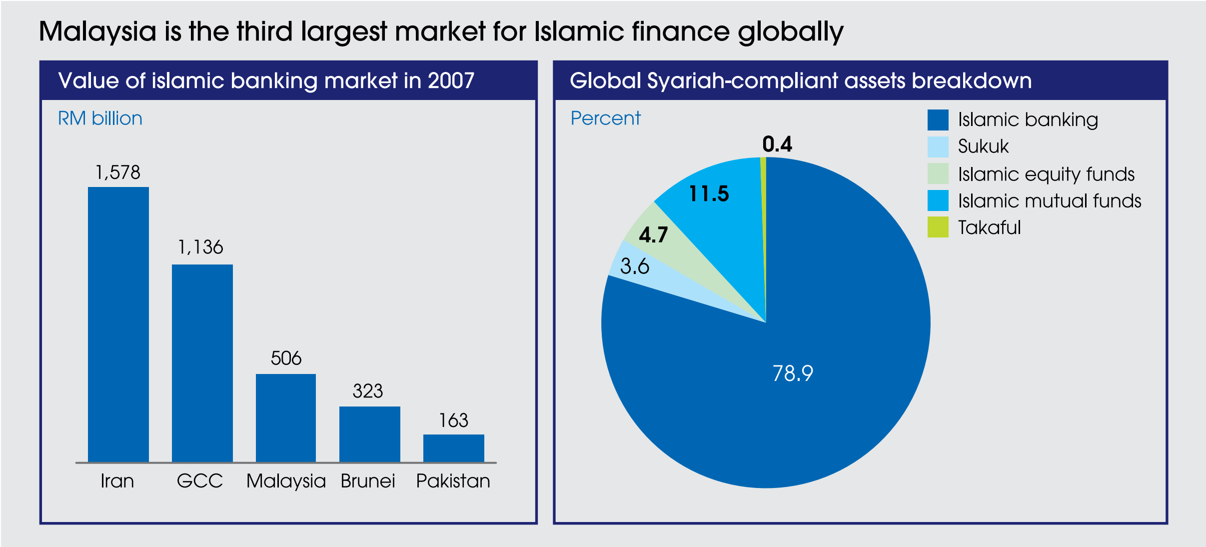
EPP 6: Developing Malaysia as a Global Islamic Finance KPO Hub

Rationale

Our aspiration is to capitalise on our leading position in Islamic finance by establishing high-value Islamic finance advisory services to the global market via a common platform focusing on new industry growth and innovation.

Malaysia is the third largest market for Islamic finance globally and a leader in the *sukuk* issuance market, with 48 percent of global *sukuk* issuance originating from Malaysia (*Exhibit 12-10*). This lead position is supported by the world's first Syariah-compliant commodity trading platform and is underpinned by a dispute resolution framework that is also compliant with Syariah.

Exhibit 12-10



SOURCE: The Banker, 2009; Top 500 Islamic Financial Institutions (TIFI)

Building on our competitive advantage in Islamic finance – experience, infrastructure and knowledge – Malaysia will set up a consortium that will actively promote Malaysia as a premier Islamic finance hub, through the provision of high value Islamic finance advisory and consultancy services (I-FACS).

I-FACS will consist of Syariah scholars and practitioners, Islamic finance lawyers, accountants, actuaries and Syariah auditors who will carry out Syariah-compliance functions. It will offer a wide breadth of services in Islamic capital markets, Islamic fund management, Islamic corporate advisory and finance.

The concerted efforts of the industry players via the I-FACS consortium will provide an avenue to address global industry challenges effectively:

- **Complex origination process:** The *sukuk* process requires end-to-end expertise from sourcing issuance to product sales. I-FACS would combine the resources of the group to issue *sukuk* and meet global benchmarks for financial standards and time to market;

- **Product development:** The majority of Islamic financial products are currently based on a conventional framework with adaptations to suit Syariah requirements, which translates into long product development cycles of 12 to 17 months. The consortium will be able to offer innovative products to capture new industry growth that are based on Syariah from the beginning of product development;

- **Standards harmonisation:** Malaysia is recognised as an Islamic financial centre that is receptive towards the opinions of various schools of thought. We will maintain this flexibility in order to continue to draw a variety of international issuers to utilise Malaysia for *sukuk* issuance and Islamic financial product development; and

- **Access to expertise:** Many countries lack an immediate pool of local expertise that is required to ensure the efficient delivery of Islamic finance products and instruments (i.e. Islamic scholars, lawyers, auditors, accountants and Syariah-compliance experts). The I-FACS consortium will address this need by identifying which specialised skills are required for the provision of advisory and consultancy services and how to provide these at globally competitive rates, through integrating the expertise of currently provided by ISRA, INCEIF, IBFIM and local specialised firms in Islamic finance.

Various Malaysian regulators are devising best-practice parameters that will culminate in guidelines mandating Syariah audit reviews for our Islamic banks and financial institutions. This will spur a new industry for specialised skills in Syariah-compliance functions that would be carried out by Syariah auditors. We expect global financial institutions to follow our move towards Syariah compliance, and I-FACS is poised to seize the opportunity of being at the forefront of this industry growth.

Actions

In order to integrate the provision of Islamic finance advisory and consultancy services that can capture global market demand, the following actions will be undertaken to reach out target of having 10 banks from two regions (Southeast Asia and Gulf Cooperation Council countries) as clients of I-FACS by 2015.

Leadership Committee to conduct feasibility study. A Leadership Committee will be created and consist of representatives from Islamic banks and financial institutions, regulators, industry players and Islamic scholars and experts. The Committee will conduct a feasibility study on the mechanism to offer Syariah advisory and consultancy services to the international market, and its recommendations will incorporate the Financial Services Masterplan for the next ten years currently being developed by Bank Negara Malaysia.

Integrate Malaysian expertise via an I-FACS consortium to offer specialised Islamic advisory and consultancy services. The I-FACS consortium will be anchored by leading industry practitioners with an internationally recognised brand name. Members of the consortium will collaborate on targetted marketing to identify opportunities in Islamic finance in collaboration and under guidance of MIFC. As a milestone, the Islamic Finance Advisory and Consultancy Services platform (I-FACS) will commence activities in mid-2011.

Market capabilities overseas. Malaysia will be positioned as the premier Islamic finance outsourcing hub, and from mid-2011, MATRADE grants will be used to fund marketing expenses in Gulf Cooperation Council countries (including Saudi Arabia, UAE and Kuwait) and in Southeast Asia (including Singapore, Hong Kong and Indonesia). This work will be carried out through MATRADE branch offices and trade fairs. Our milestone is to attend international trade conferences and fairs including the International Islamic Finance Forum, World Islamic Economic Forum (WIEF) and the World Halal Forum (WHF) in target countries every month until 2013.

Develop Syariah-compliance auditing competencies. There is a lack of Syariah auditors, and the I-FACS platform will capture the market for this new industry growth by providing clients with easy access to a large number of highly-skilled professionals and experienced firms with proven competencies. The consortium will also encourage knowledge-sharing and training across firms to grow the number of Syariah auditors.

Funding

Capital expenditure is expected to be RM217 million, with RM192 million from the private sector.

Impact

We aim to create an RM3.1 billion GNI impact and 2,010 new jobs by 2020.

BUSINESS OPPORTUNITIES

Beyond the EPPs, there are additional business opportunities that will support the growth of the industry. In additional to business as usual growth in the sector, we outline three specific business opportunities in areas beyond EPPs. A fourth area – increasing skilled resources – serves as both a business opportunity and common enabler for the sector, and is described in the Common Enablers section.

In total, these business opportunities are expected to contribute RM19.5 billion incremental GNI impact in 2020, which consists of RM12.3 billion from the specific opportunities described here and RM7.2 from organic sector growth. In addition, these business opportunities are expected to create 107,000 new jobs by 2020.

Business Opportunity 1: Multi-Disciplinary Practice Construction Firms

There is a strong link between construction-related professional services and the wider construction industry, with professional services-related fees for building projects accounting for approximately 13 to 15 percent of project value. The Malaysian construction sector is still over-reliant on Government demand with 40 to 60 percent of revenues coming from Government contracts.

Multi-disciplinary practice (MDP) construction firms provide an end-to-end solution in a turnkey manner, including architectural and engineering services, construction services and potentially even the real estate management under a single contract. Globally, multi-disciplinary contracts are gaining prominence as clients look for centralised accountability rather than having to manage a number of separate contracts.

Since Government contracts represent the bulk of the market, Government procurement processes have the potential to positively influence the skills and capabilities demanded of the industry.

We will recognise and award projects to MDP firms for Government procurement contracts. MDP firms will be recognised and allowed to bid for professional construction services tenders by mid-2011. The Ministry of Finance will enable registration as an MDP firm and award three pilot projects to MDP firms by the end of 2011. Going forward the Ministry of Finance will award larger contracts to MDP firms following a set timeline to bring the industry in line with international best practices.

Business Opportunity 2: Accounting Sector

The growth of the accounting sector has traditionally been linked to the size of the overall economy. Demand is primarily driven by domestic reporting requirements as well as domestic tax regulations. Furthermore, the level of competition within the sector is relatively low. Client contracts are relatively stable over time, as switching auditors sends unfavourable signals to financial markets.

However, as markets deregulate and global reporting standards converge, opportunities exist to export accountancy services in the future. To be able to capitalise on those opportunities, Malaysia must increase the quality of its accountants and develop specialised skill sets in areas such as international taxation, forensic accounting and carbon accounting, in line with future growth areas.

We will strengthen the quality of Malaysia's chartered accountants by introducing a requirement to hold a recognised professional qualification (e.g. ACCA, CPA, ICCA) before being admitted as a chartered accountant in Malaysia. The chartered accountant qualification is currently awarded automatically to Malaysian graduates after three years of experience within the industry. The Malaysian Institute of Accountants will introduce the additional requirement to hold a professional qualification to qualify as a chartered accountant by mid-2012.

Through education and adjustments to policies on granting visas, Malaysia can develop expertise in indirect taxation, international taxation, transfer pricing, forensic accounting and carbon accounting to increase export opportunities. The Ministry of Higher Education will improve domestic capabilities by launching new Masters programmes at local universities in these areas by 2012, and the Ministry of Home Affairs will facilitate knowledge transfer by easing restrictions on the entry of foreigners with specialised skills by mid- 2011.

Business Opportunity 3: Creative Multimedia Content Industry

The subscription revenue reported by Global Insight for the online gaming market in Asia Pacific stood at RM9.0 billion in 2007, with a CAGR of 14.8 percent expected until 2012, mainly led by China and Korea. In Malaysia, our creative multimedia industry's revenue of RM9.4 billion in 2008 contributed to 1.27 percent of GDP. This is projected to grow by a CAGR of 11.4 percent to achieve RM20 billion in 2013. As the creative multimedia industry is still young in the Asia Pacific region, it is imperative for Malaysia to lay the foundations to capture market share. The key challenges include:

- **Low level of industry exposure, profile and reputation:** This results in companies having limited access to funding and investment for production, marketing and expansion;

- **Lack of awareness and enforcement of policies and regulations:** There is currently a lack of awareness and understanding of intellectual property rights for creative industries as well as methodologies to evaluate and protect intellectual property;

- **Lack of access to global market:** Malaysian content creators currently generate most of their revenues from the domestic market. To ensure sustainable growth there is a need for the local content creation companies to reach out to the global market; and

- **Lack of competency and capacity:** Malaysian content creators are unable to effectively secure international deals due to internal structural issues such as the lack of high quality talent on the pre-production side (writers and storyboard artists) and production managers. We will need to enhance the quality and competency of our human capital as we step up to service the needs of the global market.

The Malaysia Creative Multimedia Content Initiative (MCMCI) is the strategic framework applied by MDeC to grow the creative multimedia industry. Opportunities have been identified in two key areas within the creative multimedia industry: the development of ASEAN themed online games and the development of animation for the entertainment industry (i.e. film, television), which can be achieved by increasing marketing, increasing private investment and building a cluster of human capital with the right skills for the sector.

Malaysia will set up physical trade representative offices in the United States, United Kingdom, Japan, China and the Middle East to directly tap the needs of those markets. Trade offices coupled with strong alliances with foreign media distributors and broadcasters will enable Malaysian content companies to access markets such as MIPCOM and MIPTV.

We will target a ratio of private to public investment to 80:20 by collaborating with large regional venture capitalist firms, like Singapore-based Asia Media & Technology Capital Management Private Limited and Creative Ventures Group, to attract investors for local productions. At the same time, we will consider larger fiscal incentives – potentially including tax breaks and grants – to drive investment from our domestic private sector.

To incubate the growth of local companies in Malaysia, MDeC will focus on increasing high-valued skills (i.e. scriptwriters and storyboarders) in the next 10 years by launching a dedicated creative education syllabus. It will also extend MDeC's Digital Media Zone so that it can accelerate growth in economic corridors with an ecosystem of creative industry companies and infrastructure.

COMMON ENABLERS

Increase Skilled Workforce to Meet Growth of Malaysia's Services Sector

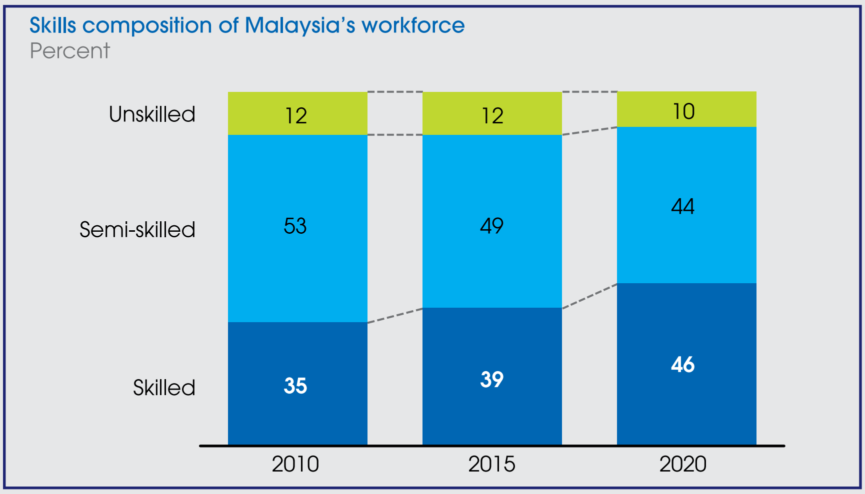
Overview

Talent is a key structural component of a knowledge-intensive economy. In most services-led economies around the world, skilled workers are a significant percentage of the total workforce. For example, Singapore's large services sector (52 percent of the country's GDP) is supported by a workforce with 49 percent skilled workers.

Malaysia's services sector is heavily dependent on skilled workers, who represent 35 percent of our business services workforce. Therefore, the growth of the services sector is dependent on our ability to increase the number and quality of skilled workers. We aspire to grow the pool of skilled labour force to 46 percent of Malaysia's workforce by 2020 to support skills demand from the services sector (*Exhibit 12-11*).

Exhibit 12-11

We project skilled labour will comprise 46 percent of our total workforce in 2020



SOURCE: ISMK, 2010

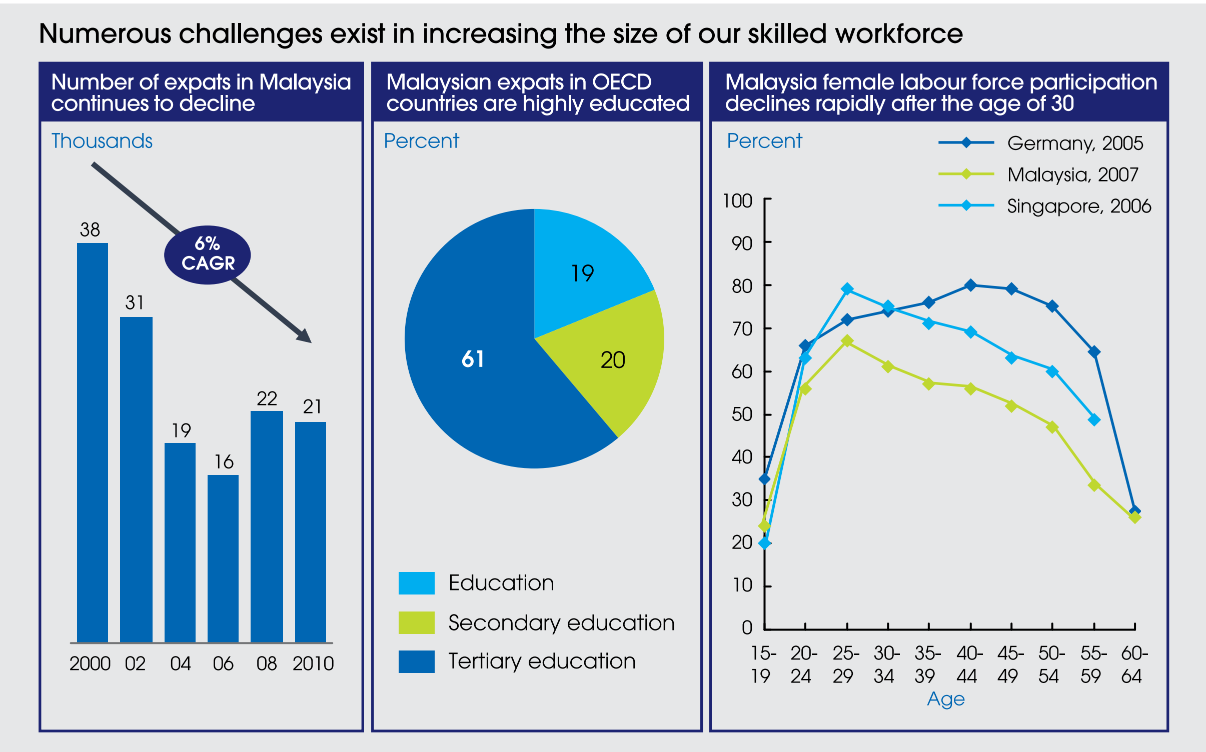
Key challenges to increase skilled workers include:

- Slow adaptation of skills supply to demand results in a skills shortage, unemployment and additional retraining cost. Between 2001 and 2009, the Government spent RM900 million on retraining graduates and placing them in jobs, in addition to the RM29.5 billion it spent on tertiary education ;

- A shrinking talent pool is a result of a decline in expatriates in the services sector (which declined 6 percent per annum since 2000) and an increase in the emigration of skilled Malaysians. An estimated 1.1 million Malaysians are working and living abroad, and a large percentage of them are highly educated. In OECD countries alone, approximately 61 percent of Malaysian expatriates have tertiary education (Exhibit 12-12); and

- Low female labour force participation rate, as few qualified female graduates either enter the skilled workforce or remain in the workforce after the age of 30. Although 57 percent of Malaysia's graduates are female, women represent only 37 percent of the skilled services workforce.

Exhibit 12-12



SOURCE: ISMK, 2010

Actions

To increase the number of skilled workers for the services sector, we recommend a set of actions focused on increasing the relevance of skills education and training to industry demands, attracting global talent and increasing the number of skilled women in the skilled-services workforce to 45 percent.

Increase relevance of skills to industry demands. MoHR will analyse skills and workforce development needs at the national level. Key responsibilities include (1) producing a subsectoral skill-analysis report annually; (2) reviewing and advising on the effectiveness of the skills training programme in addressing skill shortages; and (3) partnering with MoHE, MoE and MoHA to address skills shortages in key economic regions.

To increase the effectiveness of MoHR, we will oversee the process of providing MoHR with resources, define KPIs to deliver annual subsectoral skills analyses and set up a governance structure, led by Talent Corporation, to drive implementation of initiatives to increase skill relevance.

MoHR will (1) hire and groom an additional 20 research analyst to conduct subsectoral skills analysis across five major subsectors; (2) allocate grants to external research partners (International Labour Organisation, World Bank and others) and selected local universities to aid subsector skills analysis; and (3) set up a skills database and analytics tool to collect and analyse data related to potential skills demand and supply from EPU, Department of Statistics (DOS), industry surveys, industry regulatory bodies, MoHE, MoE, external research bodies (ILO and World Bank) and other stakeholders.

MoHR will have a KPI to deliver annual subsectoral skills analyses starting from 2010. The first national skills overview report is due in 2010, and a report analysing six subsectoral skills is due in 2011. Subsequently, MoHR will report annually its analysis of eight subsectoral skills.

Talent Corporation will set up a governance structure in 2011 to drive implementation of initiatives to increase skill relevance. A governance structure consisting of MoHE, MoE, MoHA, MOSTI, MoHR, MDeC and representatives of the key economic regions will monitor and assess the implementation of initiatives across various Government agencies on increasing skill relevance. The effectiveness of these initiatives will be fed back to MoHR as inputs to guide our efforts of improving skill relevance.

Attract global talent. To increase Malaysia’s talent pool, we will focus on increasing the inflow of foreign talent in high growth services subsectors and proactively engage Malaysian diaspora to increase cross-border collaboration, networking opportunities and the number of returning diaspora.

MoHA will abolish minimum paid up capital and restrictions on mid-income expatriates for foreign employment in 2011 for key services subsectors, based on a skills analysis by MoHR. It will also provide one-year working visas to foreign students with a CGPA of 3.5 and above to retain top talent in the country.

Talent Corporation will set up a central talent attraction unit in January 2011 to combine, align and enhance the ongoing disparate talent attraction initiatives. In the meantime, the Talent Corporation interim taskforce will drive initiatives. The key responsibilities of this central unit will be to (1) align foreign employment policies and talent attraction incentives to skills needs recommended by MoHR; (2) run campaigns to market Malaysia as a global destination for talent; (3) consolidate existing talent attraction portals in phases to produce a single one-stop portal targeting both Malaysian diaspora and foreign talent; and (4) collect and analyse profiles of Malaysian diaspora, e.g. launch targeted communications and match collaborative, networking and job opportunities in Malaysia to individuals overseas. Our milestones of success are to increase the number of expatriates in the services sector by an additional 41,000 by 2020 and to increase communication to 50 percent of diaspora by 2015 and 80 percent by 2020.

Increase number of skilled women in the workforce. Our target is to increase the proportion of skilled women to 45 percent of the skilled services workforce by 2020. Our main actions to reach this goal are to set up a women's organisation to encourage and mentor young female graduates, implement family-friendly employment policies and introduce policies and regulations so that families will have greater access to childcare facilities, and ensure these facilities have accredited staff.

Ministry of Women, Family and Community Development will set up Advancing Women Organisation to proactively place qualified final-year female graduates in internship programmes with private sector partners. Beginning in 2010, the programme will target qualified female students from local institutions to provide structured mentorship and increase their exposure to larger services companies. Students will undergo internships of three to six months, following which they will join the alumni of Advancing Women Organisation to mentor and guide new participants.

MoHR will implement family-friendly policies in 2011 to extend paid maternity leave to 90 days and to provide greater job security for part-time employees.

Ministry of Housing and Local Government will implement compulsory childcare facility regulation in 2011 to provide for adequate childcare facilities in major business centres across Malaysia. To ensure the quality of childcare facilities, the Ministry of Women, Family and Community Development will play a role in ensuring certification of childcare professionals as part of the Early Childcare accreditation programme (under the Education NKEA).

The capital requirements for these initiatives will be sourced from the private sector (RM14 million) and the public sector (RM127 million) and is expected to contribute incremental GNI of RM2.3 billion and create 43,000 jobs by 2020.

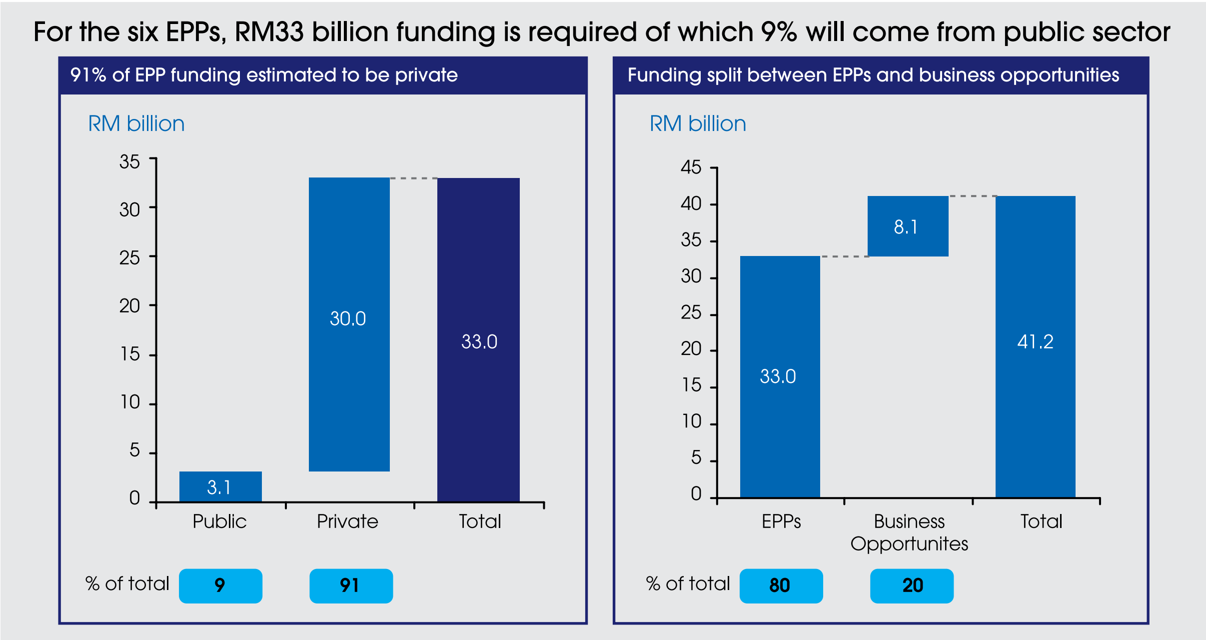
Reduce Bandwidth Costs

The cost of bandwidth is a critical enabler of business services and central to a number of our EPPs. Malaysia's ability to establish itself as a DC hub is heavily dependent on bandwidth costs, which are currently twice as high as in neighbouring Singapore. The cost of bandwidth will also have a significant impact on the competitiveness of outsourcing companies, which are central to a number of our EPPs. Efforts to reduce bandwidth costs will be driven by the initiatives described within the Communications Content and Infrastructure NKEA.

FUNDING

Achieving our EPP targets will require cumulative investment of RM33 billion from 2011 to 2020 (*Exhibit 12-13*). It is important to note that we envision 91 percent of total funding will come from the private sector, in line with the aspiration of creating a private sector-led economy. Including business opportunities, an addition RM8.1 billion is required, bringing total funding to RM41.2 billion.

Exhibit 12-13



A total of RM8.1 billion will be required to fund business opportunities and common enablers. This includes:

- **Creative multimedia content:** RM1.48 billion to fund development of infrastructure and capabilities to incubate growth of creative human capital and local creative products for distribution to the wider regional and international markets;

- **Talent:** RM140 million to set up research collaborations and a business intelligence system to facilitate annual and quarterly analyses of subsectoral skill needs as well as to launch a talent attraction marketing campaign;

- **Multi-disciplinary practice:** RM36 million to provide incentives for formation of domestic MDP construction firms, leading to increased chances of securing projects overseas and to also implement a quality-based selection system for Government contracts (e.g. incorporating lifecycle costing, clear selection criteria, open competitions);

- **Accounting:** RM3 million to develop a three-tiered accreditation scheme for tax and to develop courses for a Masters degree in taxation; and

- **Baseline growth:** RM6.5 billion in business-as-usual growth in construction professional services, engineering services, aviation MRO services, foreign outsourcing and data centre management.

As an additional benefit, our EPPs will also generate cost-savings. We estimate that rolling out shared services within Government could reduce the cost of non-core IT and business processes by up to 20 percent, saving the Government RM11.2 billion between 2011 and 2020.

GOVERNANCE AND DELIVERY

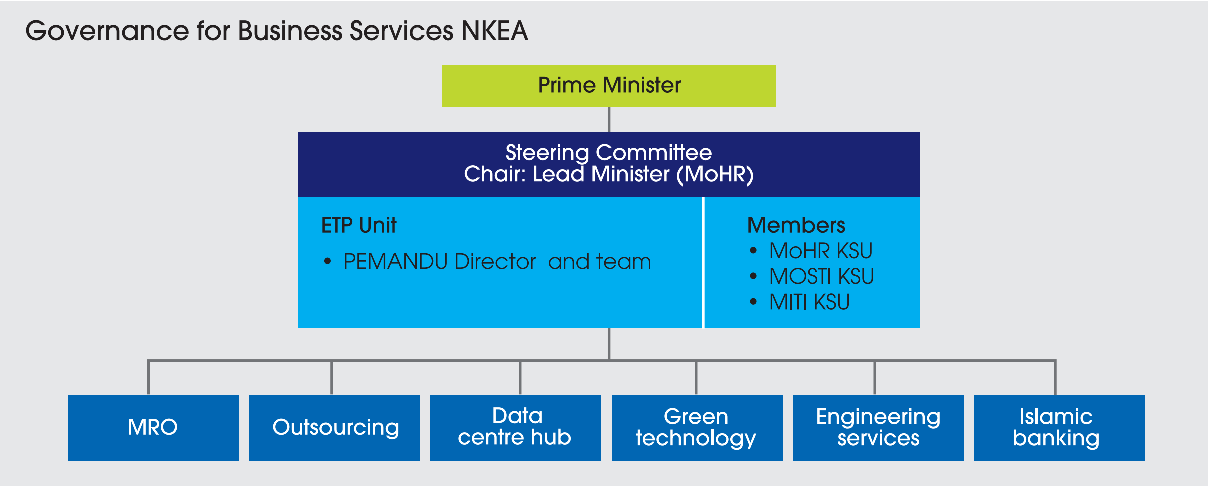
Successful implementation of the various initiatives proposed hinges on ownership and accountability for each of the projects. To ensure proper ownership and accountability, a dedicated lead owner has been identified for each project. In addition, a detailed delivery plan consisting of implementation details, KPIs and targets has been developed for each EPP as well as for the critical enabler of talent (*Table 12-1*).

Table 12-1

EPP	Lead initiative owners	Other key agencies, companies and organisations
Growing aviation maintenance, repair and overhaul services, led by MAS Aerospace Engineering	Ministry of International Trade and Industry	Malaysia Industry-Government Group for High Technology, MIDA, Ministry of Transport – Aviation Sector
Building globally-competitive outsourcers	Multimedia Development Corporation	Ministry of Science, Technology and Innovation, Malaysia Administrative Modernisation and Management Planning Unit, Putrajaya Committee of GLCs, Outsourcing Malaysia
Positioning Malaysia as a world-class data centre hub	Multimedia Development Corporation	Outsourcing Malaysia
Jump-starting a vibrant green technology industry	Ministry of Energy, Water and Green Technology	Ministry of Science, Technology and Innovation, Malaysia Green Technology Corporation
Growing large pure play engineering services	Ministry of International Trade and Industry	Malaysia Industry-Government Group for High Technology, MIDA, MATRADE Ministry of Transport – Aviation Sector,
Developing Malaysia as a global Islamic finance KPO hub	Private consortium	Malaysia International Islamic Finance Centre, INCEIF

To ensure that the EPPs are implemented according to their timelines, a proper governance structure will be established, with the Prime Minister overseeing delivery (*Exhibit 12-14*).

Exhibit 12-14



The Minister of Human Resources will act as the Lead Minister for the Business Services NKEA Steering Committee and will be supported by the PEMANDU Economic Transformation Programme Unit (ETP Unit).

An NKEA Steering Committee will be established to track the performance and progress of implementation of the EPPs, make the necessary decisions and provide direction and guidance to the teams. Reporting to the Minister of Human Resources, the Steering Committee will include the Secretaries General of MoHR, MITI,KeTTHA, DG of MIDA and CEO of MDeC. It will also include the proposed inclusion of Divisional Heads from EPU. I. The Steering Committee will meet once a month. As part of these meetings, EPP owners will provide progress updates and the Steering Committee will provide guidance, resolve conflicts and oversee all matters related to the NKEA. The Prime Minister will be updated once per quarter.

An NKEA Leader will be appointed to oversee all matters pertaining to the NKEA and will hold weekly discussions with both the ETP Unit to obtain feedback as well as with the Secretary General of MoHR to provide progress updates.

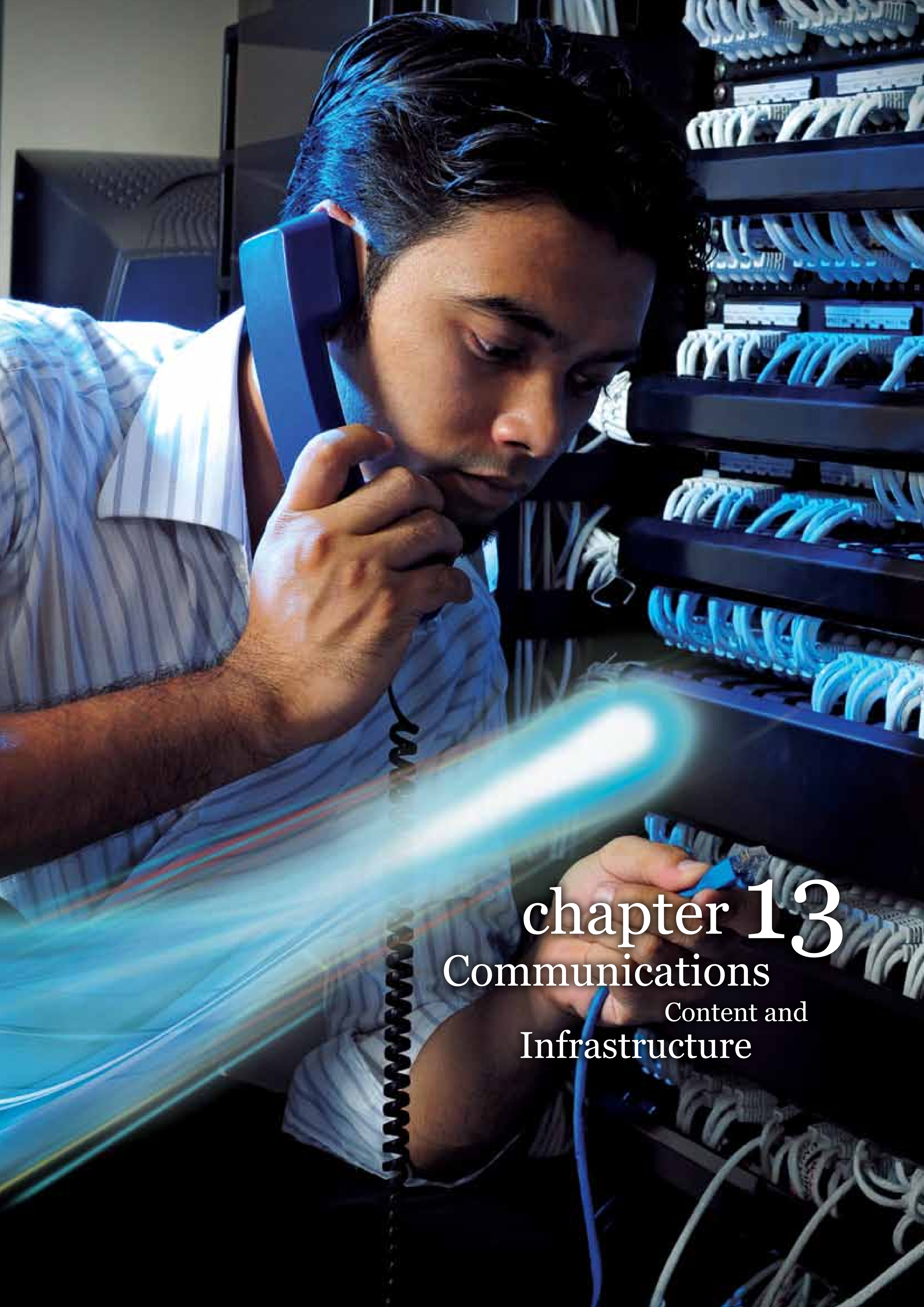
The ETP Unit has the mandate of coordinating the transfer of EPPs ownership to respective ministries or agencies as well as coordinating all inter-agency collaborations. The ETP Unit will provide performance management and tracking of the progress of the EPPs as well as provide analytical support to the implementation teams. All materials for presentations, workshops, public engagements, etc. will also fall under the responsibility of the ETP Unit.

The lead agencies of the EPPs will implement the initiatives according to the timelines and will be led by their respective Heads of division, who will hold fortnightly meetings with the ETP unit director and team.

Summary of Business Services NKEA

• **Incremental GNI impact in 2020**	RM59.2 bilion
• **Additional jobs in 2020**	245,000

- **Critical targets and milestones within 6 to 12 months**
  - MAE becomes an autonomous MRO service provider
  - Government shared services project management office established
  - Baseline benchmarking with Uptime Institute completed
  - 10 percent reduction in electricity and water consumption across all ministries
  - Industry-academia R&D collaboration through AMI established
  - Islamic finance advisory and consultancy services consortium established



chapter 13
Communications Content and Infrastructure

Chapter 13: Communications Content and Infrastructure – Driving the Transition to a Knowledge-Based Society

"Our chosen commitment is to increase the quality of life for Malaysians through ubiquitous connectivity at affordable cost to all. I would like to see the convergence of technology to be a platform for our local arts and culture content to generate new income streams for the economy and concomitantly penetrate the world market. We strive to achieve world-class communications and multimedia services, thereby enhancing our innate goal in creating the 1Malaysia society. As Minister responsible for the Communications Content and Infrastructure NKEA, your full support towards realizing this very important agenda of our country is indispensible."

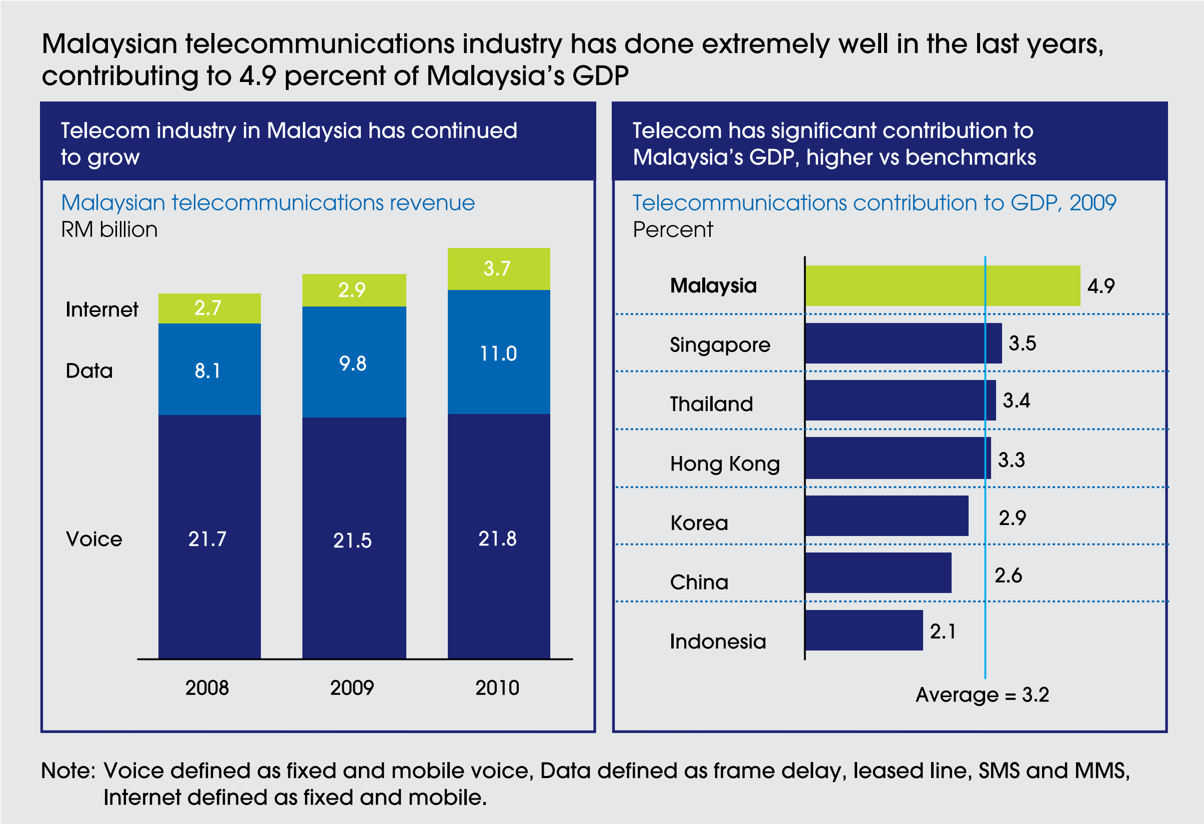
Dato' Seri Utama Dr. Rais Yatim

DEFINITION OF THE COMMUNICATIONS CONTENT & INFRASTRUCTURE NKEA

The Communications Content and Infrastructure (CCI) sector spans a wide ecosystem covering content, network applications, services and devices. In 2009, the sector contributed RM22 billion of gross national income (GNI) from telecommunications, TV, broadcasting, post and courier. This chapter focuses primarily on telecommunications, which accounted for the bulk of the GNI.

Efforts to liberalise the communications services market during the 1990s have borne fruit giving rise to a dynamic private sector driving strong growth over the last decade. This is achieved through extensive roll-out of infrastructure, and focused generation of high penetration for voice data and Internet services. *Exhibit 13-1* shows that the telecommunications sub-sector in Malaysia contributes a higher percentage of GDP compared to similar countries.

Exhibit 13-1



SOURCE: IDC; J.P. Morgan Estimates, October 2009

For Malaysia to transition from a middle-income to high-income economy, the continued development of the CCI sector is fundamental. The CCI sector should now build on the infrastructure investments of the past. In addition, the sector will have to undergo a paradigm shift from providing infrastructure and access to providing applications and content that will enable the knowledge-based economy.

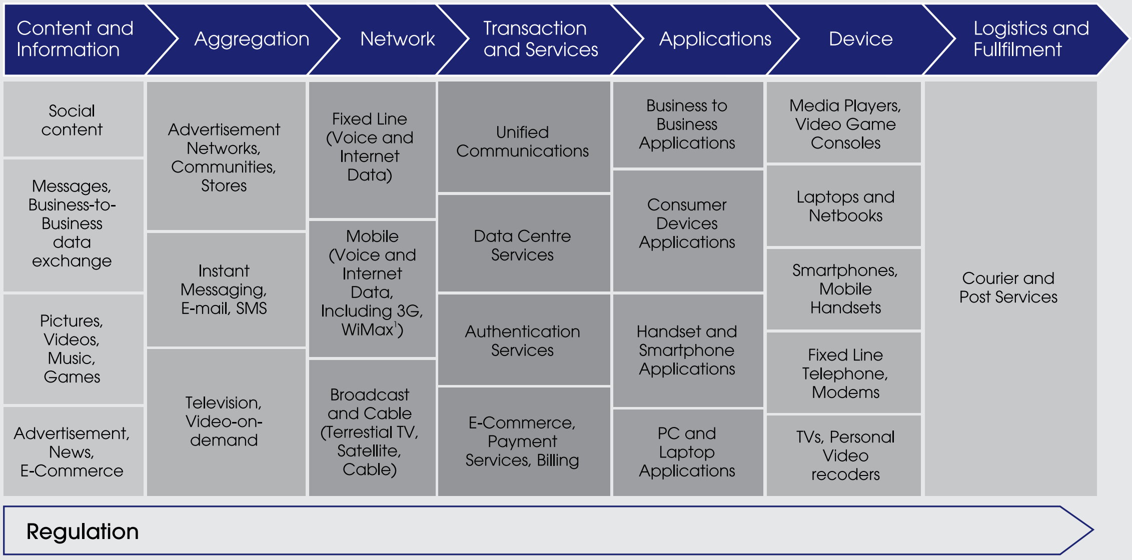
The CCI National Key Economic Area (NKEA) aims at driving continued high growth in communications services and enabling the paradigm shift from infrastructure and access to applications and content.

Communications Content and Infrastructure Ecosystem

The CCI ecosystem is comprised of a wide base with many distinct sub-industries *(Exhibit 13-2)*. The leading participants in Malaysia are the network operators, i.e. Telekom Malaysia, Maxis, Celcom and DiGi Communications. In addition, there is a broad base of other companies (e.g. Astro, TIMEdotCom, PacketOne, and Axiata), multiple emerging players (e.g. U Mobile, YTL Communication, XOX) and small and medium enterprises (SME) active in the industry. Convergence is blurring the traditional boundaries between these various sub-industries and provides an impetus for these respective companies to review and enhance their business models.

Exhibit 13-2

Communications Content and Infrastructure industry encompasses a large ecosystem in Malaysia, with particular depth in network



[1] WiMax is a wireless technology standard that provides up to 40Mbit per second speeds, substantially faster than 3G

MARKET ASSESSMENT

Opportunities and Challenges

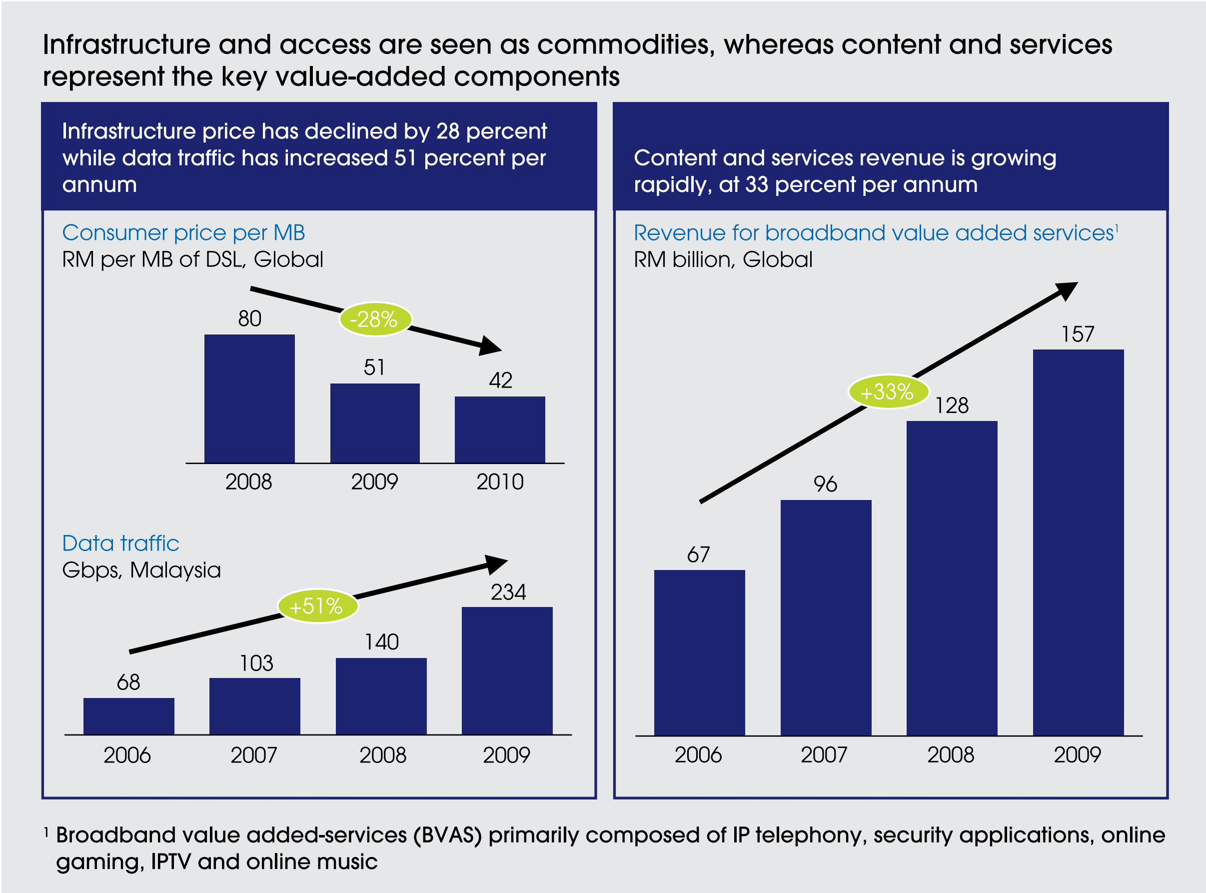
Malaysia has built a competitive industry and achieved high penetration rates for communications services. For example, Malaysia's mobile penetration of 106 percent compares favourably to Southeast Asia's 76 percent.

Global studies suggest a direct correlation between GDP growth rates and penetration of communications services, with a strong recognition of communications services as the key infrastructure for the 21st century [1]. Recent studies on developing economies concluded that a 10 percent rise in Internet penetration correlates with a 1 to 2 percent increase in GDP growth. Adding 10 mobile phones per 100 inhabitants can boost GDP growth rates by 0.8 percent and every RM1 spent on mobile services generates RM3 in related sectors such as mobile devices.

However, the landscape continues to evolve globally, with rapid changes in technology and a shift of profit margins from traditional network operators to content-providers and application-providers, as illustrated in *Exhibit 13-3*.

[1] *World Economic Forum, 2009*

Exhibit 13-3



SOURCE: Point Topic, 2010

The CCI sector faces the following opportunities and challenges:

- **Shifts in profit pools to content and services:** Globally, infrastructure and access are increasingly perceived as commodities. Network providers risk becoming a low-margin 'dumb pipe'. Profit margins are beginning to shift to content and service providers, most of which are dominant global companies. Today, 80 to 90 percent of the content accessed on the Internet in Malaysia originates from overseas;

- **Limited leverage of telecommunications for increasing reach and productivity in other sectors:** Modern telecommunications technology can unlock additional potential in many other sectors, e.g. education and healthcare. Malaysia has made good progress here, but has historically taken a fragmented approach mostly driven by the public sector. There is a real opportunity to design a holistic solutions, e.g. coordinated push on access, devices and content which incorporates public-private partnership; and

- **Next generation infrastructure opportunities:** The current infrastructure has reached maturity, with limited growth expected in fixed lines and mobile penetrations. Future applications and content will require new infrastructure. Particular challenges in Malaysia are the rollout of a nationwide fibre network and fourth generation (4G) mobile networks, with very different challenges in urban and rural areas. In urban areas, coverage and quality will be paramount whereas in rural areas, mass affordability and inclusiveness are the key drivers.

Malaysia is well positioned to address these challenges, with a vibrant multitude of competing broadband technologies, significant talent in the country and a proactive regulator driving the rollout of future technologies. The CCI sector in Malaysia has been ranked at the very top in networked readiness among comparable economies globally [2]. The CCI NKEA is focused on achieving the industry's full potential, particularly by driving initiatives that require cross-industry collaboration and continued pro-active regulatory facilitation.

Regulation: Driving Towards a Dynamic Market Environment

Malaysia has historically done well in creating a positive competitive environment as new technologies were introduced. We established a diverse mobile operator landscape with national champions and slowly reduced the incumbent's dominance in the fixed line space while ensuring that returns in the industry remained attractive enough to ensure sufficient investment in next-generation infrastructure.

Going forward, it will be critical to continue maintaining an attractive market environment to drive investments in the industry while balancing this with inclusive policy aims, particularly around affordability of access and quality of service. The Malaysian Communications and Multimedia Commission (Suruhanjaya Komunikasi dan Multimedia Malaysia, or SKMM) and Ministry of Information Communications and Culture (Kementerian Penerangan, Komunikasi dan Kebudayaan, or KPKK) will need to maintain a proactive regulatory stance, ensure efficient spectrum utilisation and regularly review price points for key inter-operator charges (e.g. IP transit costs, termination charges and broadband wholesale prices). It will also need to ease access to various opportunities in the market by ensuring low regulatory hurdles to entry. This should always be done with an eye on maximising the benefits for the country as a whole, while driving pervasive use of communications technology by the rakyat, as well as ensuring that incentives for investments in next-generation infrastructure remain adequate. In addition, the Universal Service Provision (USP) fund needs to be handled thoughtfully to ensure no competitive distortion while benefits are maximised in driving coverage and penetration of communications services in the suburban and rural areas.

TARGETS AND ASPIRATIONS

We aspire to raise the CCI sector's GNI contribution threefold from RM22.0 billion in 2009 to RM57.7 billion by 2020. This incremental GNI is driven by 10 EPPs which will deliver RM16.6 billion incremental GNI and four business opportunities that will deliver RM11.7 billion in incremental GNI. In addition to EPPs and business opportunities, the GNI impact includes RM7.5 billion of contribution from the multiplier effect created by EPPs from other sectors. The largest source of the multiplier effect is from the Wholesale and Retail NKEA, which will come from drivers like increases in ePayment, and online shopping services.

[2] *The Global IT Report 2009-2010, World Economic Forum*

To achieve our RM57.7 billion GNI target, we will increase efforts to provide new and compelling content and services to stimulate demand and enable other sectors. To support demand, we will invest in application and content development, and infrastructure build up with specific focus on quality and speed. The objective is to establish a ubiquitous, high quality and affordable broadband network that will reach 95 percent of the population by 2020. In the same timeframe, all urban areas will have at least 100 Mbps broadband access, putting Malaysia's urban areas on par with leading countries globally. Suburban and rural areas will also have broadband access ranging from 10 to 100 Mbps, connecting the population with the nation and worldwide communities. Key sectors of the economy will be fully CCI-enabled with top 10 global recognition for Malaysia's E-Learning, E-Healthcare and E-Government implementations.

In the process, we will create an additional 43,162 jobs with more than 75 percent being high-skilled and paying more than RM48,000 per annum. The required funding for EPPs will be RM30.3 billion, of which 97 percent will be provided by private entities. The remaining 3 percent public funding will mostly be deployed to achieve inclusiveness for the rakyat.

10 EPPs To Deliver RM16.6 Billion Incremental GNI By 2020

To deliver on this vision, efforts should be refocused in stimulating demand rather than only building out supply. The lab has established three key themes. *Exhibit 13-4* illustrates the GNI impact of the EPPs, business opportunities, baseline growth and the multiplier effect.

Theme 1: Serving Tomorrow

We will address the paradigm change of shifting profit pools from infrastructure and access to applications and content, by strengthening Malaysia's domestic value-add in advanced services, particularly creative content creation, payments and electronic commerce and connectivity applications

- **EPP 1: Nurturing Malaysia's creative content industry –** Nurture the domestic creative content creation, services and distribution and broadcasting sectors, eventually transforming Malaysia into a regional hub for digital content;

- **EPP 2: Deploying 1Malaysia payments –** Deploy a unified mobile and online payment system to a large user base and at a reduced cost, by ensuring full interoperability among existing platforms and utilising mobile phones; and

- **EPP 3: Connecting 1Malaysia –** Drive the development and adoption of value-added communication services and applications for business, household and Government use.

Theme 2: Pushing Boundaries

We will fully leverage CCI in other sectors through coordinated efforts to provide access, devices, applications and content in order to facilitate the shift to a knowledge-based economy, particularly in E-Learning, E-Healthcare and E-Government

- **EPP 4: Establishing E-Learning for students and professional training –** Establish a common knowledge platform for all students and incorporate professional training into the same platform;

- **EPP 5: Launching E-Healthcare –** Address pain points in the healthcare value chain with the initial thrust of enabling remote scheduling, remote monitoring, facilitating personal record keeping and streamlining payments and reducing wait times; and

- **EPP 6: Deepening E-Government –** Increase use of CCI technology to improve the convenience, efficiency and transparency of Government services to the rakyat and for trade facilitation.

Theme 3: Enhancing Foundations

Capitalise on next generation infrastructure opportunities and build infrastructure to support the future growth of Malaysia, with particular focus on coverage, affordability and quality of access

- **EPP 7: Ensuring broadband for all –** To address access gaps (mostly in urban areas), we will mandate broadband for all, treating it similarly to water and electricity utilities to ensure all new residences will have ready access to CCI services;

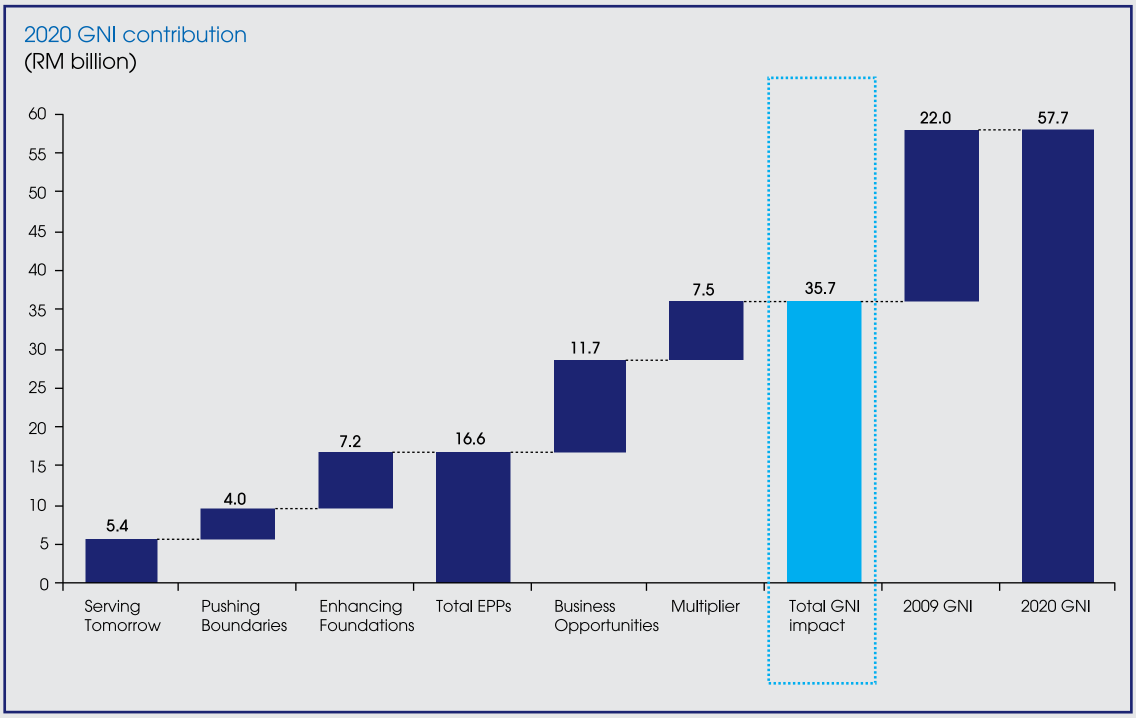
- **EPP 8: Extending reach –** To address access gaps, infrastructure will be built in sub-urban and rural areas through shared infrastructure in order to reduce costs and accelerate roll-out;

- **EPP 9: Offering a smart network –** To address quality and affordability of services, differentiated broadband packages based on priority of service, usage caps and application-specific enhancements will be offered; and

- **EPP 10: Extending the regional network –** To address affordability and quality of CCI services, additional international submarine cable capacity will be laid and data centres will be built to host content locally in Malaysia.

Exhibit 13-4

10 EPPs, 4 business opportunities and multiplier effect will deliver RM35.7 billion incremental GNI impact by 2020



SERVING TOMORROW – DEVELOP MALAYSIA'S CONTENT AND APPLICATIONS INDUSTRY

Next generation infrastructure will enable a broad range of new applications which are being developed globally (e.g. location based services, telepresence, mobile payments). In the telecommunications sector, profits are increasingly shifting away from infrastructure towards applications and content. We must exploit niches in which domestic companies can effectively compete to stimulate demand and ensure a share of the future profits in this space.

Given the pressure on profitability as well as the opportunities created by new technology, we have structured our approach around expansion into adjacent areas of the CCI value chain that currently are relatively underpenetrated. Upstream, developments in content and distribution through Internet protocol will produce a shift in types of content and broadcasting channels, offering opportunities in content creation and aggregation. Downstream, high penetration of fixed and mobile communications will create opportunities for telecommunications operators in transactions and services, as well as in applications.

The entry point projects (EPPs) target these adjacent areas of the value chain, which are prioritised as key drivers for Malaysian domestic value add. The specific focus of each EPP has been defined to capture the largest GNI impact opportunities.

EPP 1: Nurturing Malaysia's Creative Content Industry

Rationale

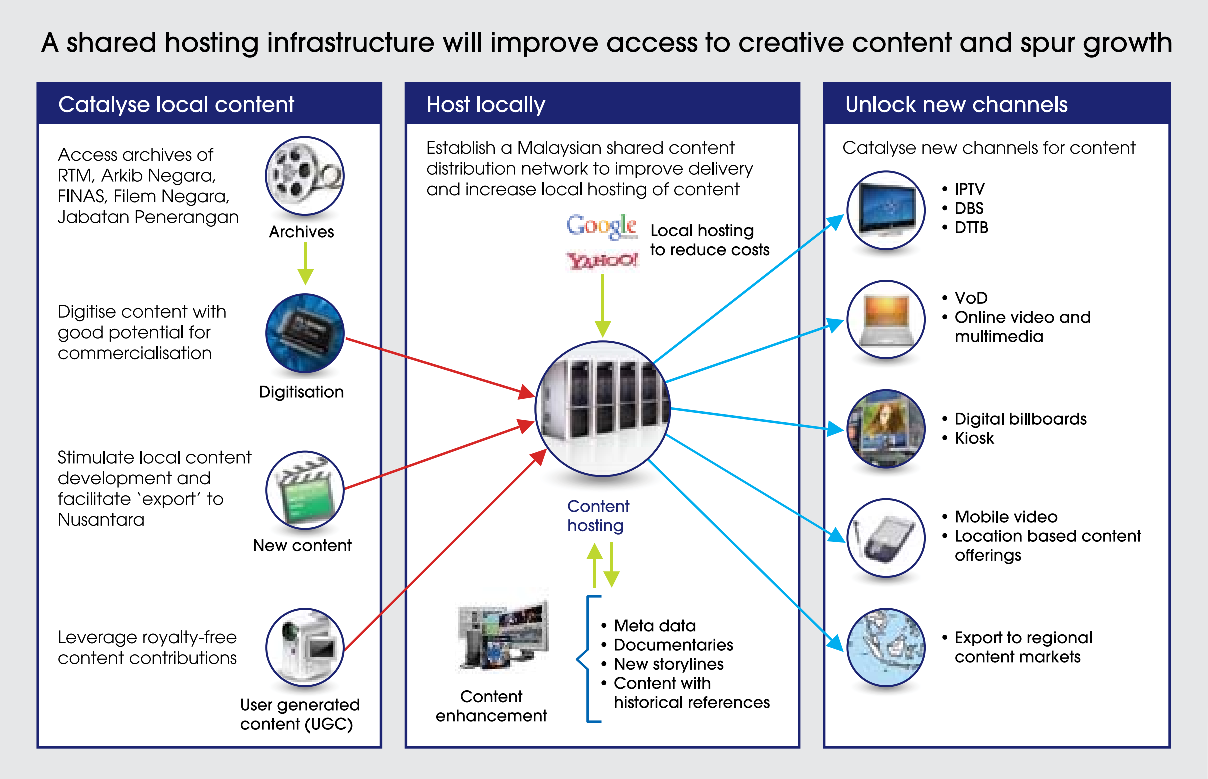
The creative industry has been identified as the cornerstone sector in the transformation of economies in several countries such as the United Kingdom and Hong Kong. The Malaysia Creative Content EPP aims to enhance our capacity and capability to create original locally produced content and at the same time develop a competency to provide content related services to the regional market.

Malaysia has already invested in the development of this sector over the past 10 years. We will build on current initiatives already started by the Government and enhance their returns (e.g. the National Creative Industry Policy in preparation at the KPKK and the MSC Malaysia Creative Multimedia Content Initiative run by the Multimedia Development Corporation, or MDeC). Current efforts by SKMM and other bodies such as the Access Forum, Content Forum and Consumer Forum have initiated interactions across the industry as a means to obtain feedback on the appropriate measures to further grow the industry.

This EPP represents a new industry-led public-private collaboration to grow the export segment at 20 percent a year and the domestic segment at 13 percent a year. The opportunities for improvement lie in developing talent for content creation and services, in providing necessary funding for local productions and in marketing our creations and capabilities internationally. Beyond GNI benefits, this EPP will help preserve Malaysia's unique culture and heritage for the 21st century and future generations.

At present, Malaysia is behind benchmark countries in terms of creative industry contribution to GDP. The marked preference for foreign productions and content manifests itself in audience ratings of TV programmes as well as traffic to major international websites. On the other hand, local productions like the animation series Upin and Ipin or the popular documentary Jejak Rasul have enjoyed considerable local success and have even made inroads into regional markets. This indicates a latent demand for quality local productions in Malaysia and regionally, a demand that is still underserved today.

Exhibit 13-5



Actions

Three focus areas are critical for developing this sector: creative content development, local hosting of content and ecosystem enhancement.

Creative content development. To address the current lack of critical mass of local content, we will start before the end of 2010 with digitising the existing archives at RTM, FINAS and Media Prima. Once the planned over 200,000 hours to digitise are available, they will provide a solid base for further enhancement and usage in producing new storylines by a large number of content developers.

The digitisation will be structured around the following steps: assessment of available content, digitisation, addition of metadata or indexing information and finally, storage. The content to be digitised will be prioritised based on its value to the national heritage of Malaysia. MDeC will oversee this initiative, while the respective content owners will lead the digitisation process.

Currently, a range of Government supported funding options is available to content developers. We will consolidate the application process for these funds to make it easier for SMEs to apply in one single step for all available resources. FINAS will work with funding resource providers for action films, while MDeC would do the same for digital productions. Besides easing access to funds, this measure will also allow a better alignment of different funding programmes with the overall industry development goals and needs. We recognise the opportunity to include cultural content whenever a production receives Government support, thus helping to promote key elements of Malaysian culture domestically and internationally.

A key factor for the growth of content creation is the availability of talent. To resolve the current gap we will provide increased support for human resources development, with scholarships and incentives to temporarily hire valuable foreign talent, starting in 2011 and continuing on a yearly basis. An Industry Guild will oversee the granting of funds (details of which are provided in the Funding section) and will complement these initiatives by maintaining a directory of professionals in Malaysia and matching them with available employment opportunities. We will maintain full alignment with existing initiatives, such as the local Pinewood Studios in Iskandar.

Developing the professional content services associated with film and video production will transform Malaysia into a preferred shooting stage for major international film projects. Professional content services are provided by a large number of small enterprises to content developers. Among these are digital graphics, professional lighting and sound, staff recruiting, stage effects and translation. Building on the competence created in this space, Malaysia will further support intellectual property creation. To enable this initiative we will expand the scope of FINAS to coordinate resources and respond to the needs of foreign and local film-makers. This will take place before the end of 2010.

Local hosting of content. Creating a content hosting platform (CHP) through co-investment from telecommunications sector companies will further drive efficiency in creative content intellectual property (IP) distribution. The CHP will be operational in Q3 2011 and will provide benefits to the Malaysian content developers, infrastructure providers and broadcasters.

With online content distribution on a fast growth path, the cost of international Internet traffic for the Malaysian infrastructure providers is soaring. To reduce this expense, foreign content will be stored on a local platform. Telecommunication companies, in their role as Internet Service Providers (ISP), will initiate negotiations with Google, Yahoo and other global Internet content providers, to build mirror servers for their content in Malaysia. Following successful negotiations, major Internet content networks will be locally hosted by end 2011.

The hosting platform will become a hub for local content, proving the link between content owners and broadcasters. This has become a necessity with the development of new broadcasting channels using a digital format. Broadcasters will be able to search easily through indexed content on the CHP and locate the material they require. The digitised archive content will also be stored on the CHP to facilitate access.

The hosting platform will be designed to respond to the needs of SMEs active in content creation and services by offering them an effective channel to market their productions nationally and internationally. On their own, an SME does not have the scale to justify individual investment and so will benefit from outsourcing this service. The newly created Malaysian Creative Content Association will promote the CHP to SMEs in Q2 2011.

Ecosystem enhancement. The content economy thrives on the ideas and talents of its practitioners. The creative market of ideas relies heavily on an efficient value chain which promotes and enhances the value of the original ideas. We will articulate a series of initiatives to help drive the growth of Malaysia's content industry. These initiatives are designed to ensure that creative content practitioners will be able to focus their energies on creating the most compelling content possible. The initiatives will require the full commitment of both public and private sectors to work together.

We will establish the Malaysian Creative Content Association (MCCA) as an industry led, non-profit organisation representing the interests of creative content practitioners in Malaysia. A key objective of MCCA is to collaborate with the Government to organise an annual international event for the creative industry, promoting Malaysia as a hub for content development. This event will first take place in early 2013 and will be preceded by a marketing campaign starting in Q3 2011. MCCA will also promote the interests of the creative content industry through the hosting of trade missions and key content market events.

The Creative Content Industry Guild will define the framework for talent development in the creative content sector. The guild will centralise the headcount and skill requirements of the industry practitioners and work with higher education institutions and professional training providers to structure the correct programmes to meet the needs of industry. The end goal is to design an accreditation system to ensure that the quality of creative content workers meets global industry standards.

The formation of the Malaysian Film Commission will formalise and centralise Malaysia's filming and production promotion activities to the global market. The existence of film commissions in other countries such as Australia, Taiwan and Singapore has helped drive the growth of their local film industries, and it is the intent of this particular initiative to put Malaysia in the same league as these other countries. The Malaysian Film Commission will sit under the auspices of the National Film Development Corporation (FINAS) and act as the central body of reference and assistance for potential incoming film projects and also for local film projects. The commission will be responsible for facilitating the necessary permits for filming and negotiating preferred rates for lodging and other logistics support services that are required by incoming and local film projects. At the same time, they will match local talent with the demands of producers.

All of the initiatives described would benefit from the formation of a centralised body to coordinate the various existing agencies and ministries that have creative content in their purview. KPKK will drive the creation of the Creative Content Development Agency (CCDA) before Q3 2011. CCDA will be responsible for tracking and monitoring the industry performance as well as ensuring that the programmes and initiatives run by the various stakeholders are fully aligned and focused on maximising efficiency in resource utilisation. CCDA will receive and use feedback from the industry to ensure it responds to existing developmental needs, while also balancing the aspirations of the Government.

Funding

This EPP will require approximately RM2.2 billion in total funds, of which RM426 million will be required from public sources.

Of the total funding needs, RM190 million will be spent on digitising existing content, and RM845 million will fund the production of content and enhancements to digitised archive content (24 percent of which will be publicly funded). A further RM186 million will be spent to address the talent shortage in services and content creation by awarding scholarships and supporting SMEs to hire foreign talent (19 percent of which will be publicly funded). A further RM147 million are required to build a content hosting platform. The private sector will fund working capital requirements with through an additional RM0.8 billion.

Impact

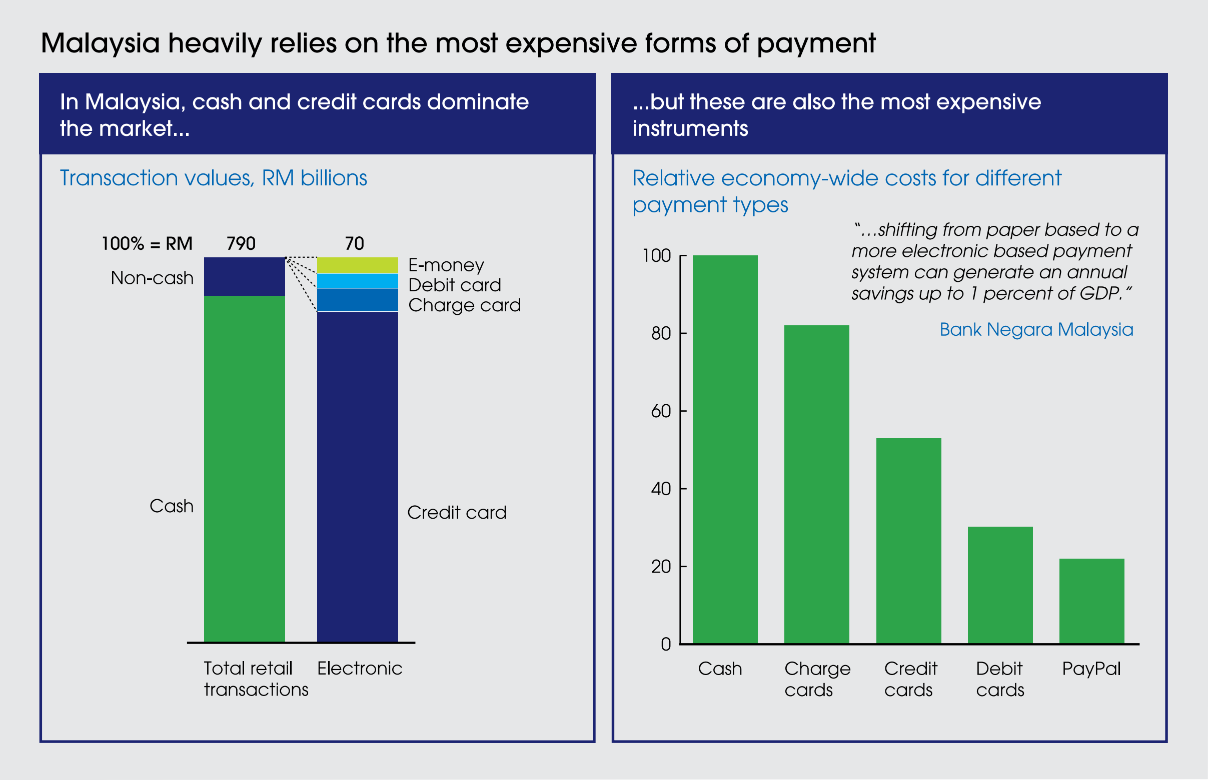
The GNI impact in the creative content sector in 2020 will be RM3.1 billion, out of which 66 percent will be generated in professional services, 22 percent in content creation, and the remaining portion in broadcasting. The EPP will create 10,326 employment opportunities.

EPP 2: Deploying 1Malaysia Payments

Rationale

1Malaysia Payments seeks to dramatically increase the access and usage of electronic payments, by capitalising on telecommunications companies' reach to virtually the entire population of Malaysia. Besides the convenience that electronic payment brings over traditional channels, this system is a necessary component for bolstering e-commerce. An additional goal is to reduce the costs of handling cash, saving as much as 1 percent of GDP[3] while also delivering increased convenience and efficiency in transactions as illustrated in *Exhibit 13-6*.

Exhibit 13-6



SOURCE: Bank Negara Malaysia, Payment Systems Report, 2010; Centre for International Economics, Exploration of Future Electronic Payments Markets, 2006; McKinsey, Global Payments Map, 2009

Countries with more developed electronic and mobile payments ecosystems used one of three models for the development of the payment ecosystem: bank-led, collaborative or mobile operator-led. The participation of telecommunications companies in the payments ecosystem brings clear benefits such as a wider customer base and experience with large-scale and highly efficient billing platforms. Financial institutions are more experienced in setting up secure platforms as well as offering a wider range of transactions.

[3] *Bank Negara Malaysia, 2010*

Actions

The EPP will pursue a collaborative model to capture the strengths of both types of companies. In parallel, financial institutions are driving towards interoperability among their existing non-mobile electronic payment systems. Our approach will be centred on a mobile payments component and ensure full interoperability with all platforms. This will expand the user base to cover the currently unbanked population who do however have access to mobile phones and tapping merchants for whom installing terminals would not be commercially viable.

A further step in our approach is to address and remove roadblocks in the way of developing electronic payments. Currently, telecommunications companies and banks have independently launched electronic and mobile payment platforms. Taken separately, these individual platforms cannot reach the critical mass of customers and merchants. We will drive towards forming a consortium with participation of both telecommunications and financial services companies, as a means to set up an integrated payment platform. This will combine existing start-up initiatives in micropayments to ensure support from all relevant participants.

A National Taskforce led by Bank Negara and SKMM will oversee the formation of the National Payment Consortium, to be concluded by end of Q1 2011. One of the first tasks of the consortium will be to drive the adoption by BNM and SKMM of the technical standards required for platform interoperability by Q2 2011. Lower transaction costs and the larger scale achieved through inter-operability will make the platform attractive to consumers and merchants. To mitigate existing security concerns, the consortium will obtain the certification of Bank Negara, building on the current initiative by SKMM and BNM to develop a standard for electronic transactions. Starting in Q2 2011, the consortium will drive a large media and public awareness campaign for the 1Malaysia Payments system. Under the Consortium's leadership, the platform will become operational before end of 2011. The deployment of our strategy is based on creating an interface platform to unify and make the existing start-up platforms interoperable, which will be fully operational by the end of 2011.

Funding

The total funding required is RM640 million, all of which will be provided by the private sector. Out of this amount, RM400 million will be spent on developing the platform. Furthermore, the private sector will fund working capital requirements with another cumulative RM240 million.

Impact

In 2020, we will generate approximately RM500 million GNI impact, from 450 million transactions per month and create 739 jobs.

EPP 3: Connecting 1Malaysia

Rationale

Connecting 1Malaysia will accelerate the benefits that communications technology can bring to the rakyat by creating an ecosystem conducive to the accelerated adoption of these technologies. To achieve this we propose a three-pronged approach: catalyse the demand for new services, accelerate adoption and dismantle barriers that prevent large-scale deployments *(Exhibit 13-7)*.

Exhibit 13-7

Connecting 1Malaysia - Accelerate adoption of new services

Objective

- Create an ecosystem that is conducive for the accelerated adoption of new services, e.g. cloud computing, teleworking, location based services, smart sensors, fleet management

Catalyse demand

Ensure customer pull by creating demand of new communication technologies
- Take decisive action to educate customers by running awareness campaigns
- Tailor solutions to appeal to different customer segments
- Cross-pollinate technology enabled improvement ideas among SMEs

Accelerate adoption

Create supply side push to ensure rapid and large scale deployment
- Mandate adoption of new technology at nation wide scale (e.g. public transport)
- Goverment consumption to be a driving force for adoption (e.g. tele-presence)
- Set aggressive targets and partner with the private industry players to achieve them

Dismantle barriers

Identify and remove roadblocks to new technology deployment and adoption
- Offer incentives to global innovators setting up business in Malaysia
- Drive industry-wide standardisation and interoperability
- Lower import tariffs for communications equipment
- Provide soft loans and goverment participation in investments

The EPP will focus on commercially viable technologies that can have a large impact by 2020. Another criterion for the prioritisation is the degree to which the adoption can be influenced by the CCI sector. This initial focus will be on cloud computing, enhanced personal communication through tele-working and tele-presence, location aware services like location-based services and fleet logistics, and digital infotainment.

Actions

Cloud computing. Cloud computing is an enabling technology for the deployment of applications to a user's desktop or mobile device. Cloud computing is based on a software application running on a remote network of servers, while only a simple interface runs on a user's desktop. This makes intensive use of network connectivity and allows for a more efficient usage of computing resources. At the same time, the user does not need to pay upfront for the right to use a software package, but instead pays corresponding to the level of usage. The project will focus on software applications delivered to office workers employed by Malaysian SMEs. Telecommunications operators are best positioned to deliver this package to the SMEs, as they have already built customer relationships through providing more basic services. Furthermore, telecommunications operators can also provide and guarantee the quality of service critical to this type of application.

By Q4 2012 telecommunications companies will secure the first contracts with application developers and begin marketing the packages to their broadband customers. A target of two million users is set for 2020.

Enhanced personal communications. Tele-working is based on unified communications, a technology that integrates voice, video, messaging, multimedia sharing and many other technologies into a single platform allowing them to work seamlessly from anywhere. To drive adoption to 660,000 users by 2020, Malaysian Technical Standards Forum Bhd. will set standards for interoperability between different platforms across telecommunication companies. Furthermore, network operators will commence campaigns in Q4 2010, to dispel the existing misconceptions on telecommuting and showcase the increased convenience and productivity it can bring. The Government will be an early adopter of this service for its employees, creating the necessary momentum to spur private sector adoption. By 2020, 95 percent of the revenue will be generated from the private sector.

Telepresence refers to high-resolution video conferencing, which offers an experience akin to real life. To deliver this service, network operators will form partnerships with equipment manufacturers, by Q3 2010 at the latest, whereby network operators will lease telepresence terminals at a negotiated price. This technology will reduce the necessity of physical presence in typical face-to-face communications. Estimates indicate that by 2020, network operators will have 35,000 users. To reduce the cost of the equipment, import duties will be reduced.

Location aware services. Location-based services (LBS) are made possible by user position data available in a mobile phone network. Applications can provide local search and deliver location sensitive advertising. The commercial success depends on the richness of the points of interest database used by such a system. By Q3 2011, Malaysian Centre for Geospatial Data Infrastructure (MaCGDI) will develop and make available for commercialisation a central Malaysian points of interest database. Telecommunication companies will pay usage rights to MaCGDI. Between Q1 and Q4 2011, telecommunication companies will develop mobile platforms and launch the first LBS applications. By 2020, 15 million users will be using this service.

Fleet logistics and management will offer cost savings to fleet owners by providing position information as well as analysis and route optimisation plans. Telecommunications providers and equipment manufacturers will collaborate to offer a complete solution to the end customer for a monthly fee ranging from RM32 to RM100. In 2020, this project will serve a total of 190,000 vehicles. By Q2 2010, network operators will have established vendor relationships and prepared commercial offerings. Prior to Q3 2011, network operators will have participated in tenders organised by large vehicle fleet operators (i.e. public transportation, courier services operators). Starting in Q1 2012, network operators will target smaller fleets and commercial vehicle owners.

Digital infotainment is based on a large size touch-screen display installed in high traffic areas, such as shopping malls, commercial streets and hotels. The screens display targeted advertising and will offer on-demand information. Telecommunication companies will partner with equipment manufacturers to install these interactive screens and link them via wireless Internet. The roll-out preparation phase will be concluded by Q1 2011, at which time the marketing campaign will start. Beginning in Q2 2011, the screens will be progressively installed. A network of 5,000 smart screens will be deployed across Malaysia by 2020.

Funding

A total of RM2.9 billion in funding is required, all from private sources. RM50 million will fund cloud computing; RM260 million will fund investments in tele-working; RM580 million will fund telepresence; RM720 million will fund location-based services; RM350 million will fund vehicle tracking; and RM250 million will fund digital infotainment. Furthermore, the private sector will fund working capital contributions with another cumulative RM700 million.

Impact

Connecting 1Malaysia will generate RM1.8 billion in GNI and create 2,056 incremental employment opportunities.

PUSHING BOUNDARIES – ENABLE OTHER SECTORS

The increased use of communication services is a powerful enabler in increasing the ability of other sectors to enhance service value and reduce costs. Key sectors identified for concerted introduction of augmented communication services are education, healthcare and Government services. We are focusing on these sectors for three reasons. First, these strategic sectors play a large role in improving the country's competitiveness. Second, the Government's deep involvement in these sectors gives us a unique position to accelerate transformation. Lastly, these sectors provide a solid base for further improvement as they have already made significant progress in introducing innovative communications services.

Initial efforts have achieved success and can significantly be scaled up by embracing a more holistic approach, industry commitment and particularly cross-agency collaboration. The EPPs for this theme identify revenue streams that can be addressed cost-effectively and holistically across devices, access, infrastructure and content. A common challenge across these EPPs is the need for cohesive coordination between the public and private sectors and between different public sector entities.

EPP 4: Establishing E-Learning for Students and Professional Training

Rationale

The E-Learning EPP aims to establish a common knowledge platform for students and professionals. The aim of this EPP is to enhance traditional teaching methods in terms of quality, interactivity and accessibility. It also aims to encourage continuous learning for professionals and help prepare the general population as the country shifts towards a knowledge-based economy.

E-Learning is the computer and network enabled transfer of skills and knowledge from schools and professional associations to users via different channels such as the Internet or satellite TV. Countries that have substantially implemented E-Learning have experienced tangible benefits. For example, in some studies in the US, students' course completion rates doubled, and exam scores increased by more than 20 percent. Moreover, the time and cost savings from continued use of online content, which has minimum operational costs, are significant. Effectively implemented E-Learning can provide learners with flexibility and generate wider access to high quality education.

Actions

Our approach to E-Learning as illustrated in *Exhibit 13-8* is based on tight collaboration between the public and private sector, easy access to the system, device distribution and content and a campaign to drive awareness.

Exhibit 13-8

E-Learning - Increase quality of education through technology

Collaboration and planning

- SKMM to coordinate with MoE
- SKMM, MoE, private sector and professional bodies to collectively determine requirements on access, device and content requirements

Access

- Build an **integrated knowledge platform**
  - Student record systems
  - Library management
  - Curriculum aids
  - Collaboration tools
- **Connect 10,000 schools** with Internet broadband
- Extend the knowledge platform to **encompass continuous professional development**

Devices

- Ensure all schools are equipped with an **adequate supply of PCs**
- Deploy *One-Device-per-Student*
- Build ***managed environment***
  - Remote monitoring and maintenance
  - Automated software update and installation
  - Security
  - Content filtering

Content

- Develop ***E-Learning curriculum*** e.g. **modules** for simulations, collaborative learning, and educational games
- **Mandate** e-textbooks, e-homework, e-coursework, e-self assessment training
- Develop **CPD (continuous professional development)** content vetted by recognized professional bodies

Campaign

- Market E-Learning initiatives to drive awareness and encourage adoption

Malaysia can improve bandwidth availability to educational institutions by rolling out fibre to reachable schools. Reachable schools, primarily located in non-rural areas, will have 10 to 100 Mbps of bandwidth by 2020. For rural schools, VSAT[4] and new wireless technologies will be deployed. The private sector will drive this deployment to accelerate implementation.

The knowledge platform will be an ecosystem based on broadband connectivity, linking not only all Malaysian schools, but also related parties such as educators, students and their families. The knowledge platform will also integrate other institutions such as libraries, museums and universities.

All students and teachers will be provided with their own PCs and netbooks to enable them to connect to the integrated system. Interaction with the knowledge platform will be possible also through mobile devices. To the extent possible, these devices will be deployed under a managed environment to allow remote monitoring and automated maintenance.

The platform will support not only the E-Learning curriculum, defined by the Ministry of Education (MoE), but also Continuous Professional Development (CPD) for professionals such as teachers, lawyers and accountants. The cost savings to the Government from targeting teachers is substantial as it would greatly reduce travel expenses for their training. Electronic CPD (E-CPD) modules will be defined and accredited by their respective professional bodies, focusing on the targeted needs of professionals. The CPD applications should be made mandatory by both the Ministry of Human Resources and respective professional bodies.

E-CPD has the potential to be rolled out regionally. To do this, Malaysian professional bodies will contact their local counterparts in other countries to define module content and network providers will partner with local network companies to roll out and manage the system.

SKMM will lead the entire process and facilitate the effort in partnership with the MoE. MoE will work with network providers and SMEs to implement system requirements and content development.

Implementation will start in 2011 with a data centre and applications platform to support more than 10 million users. Educational and CPD materials will be digitised and placed onto this platform. To ensure a critical mass of adoption, the MoE will make specific portions of the digital curriculum mandatory. By 2012, 64 percent of schools should be connected.

Funding

A total of RM1.3 billion in funding is needed. RM0.9 billion, all from private sources, will go to ensure that all 10,000 schools in Malaysia have broadband connectivity and the necessary number of PCs to create a common knowledge platform for schools and to digitise and create educational content. Furthermore, the private sector will fund working capital requirements with another cumulative RM0.4 billion.

[4] *Short for "Very small aperture terminal", which are small two-way satellites commonly used to transmit narrowband data*

Impact

E-Learning will generate incremental GNI of RM1.5 billion and 800 new jobs by 2020. Furthermore, 30 percent of families will be able to monitor their children's programmes and performance. A typical urban school's connectivity will be at least 10 Mbps; and less reachable schools (i.e. those located in deep rural areas) will have at least 4 to 5 Mbps. The number of connected devices used primarily for E-Learning will grow from 0.5 million to 8 million. The end-to-end management of the network, platform, devices and distribution will be managed by the network operators. Successful establishment of the domestic E-Learning industry will enable Malaysia to become an educational hub for the entire region.

EPP 5: Launching E-Healthcare

Rationale

Malaysia's medical institutions are hindered by low quality connectivity and insufficient IT equipment. Existing applications have limited adoption due to doctors' scepticism about their value and the general population's lack of awareness about them. Collaboration between the public and the private sector, access to the system, device distribution and contents are the basic elements that we have identified in order to reach E-Healthcare targets *(Exhibit 13-9)*.

Exhibit 13-9

E-Healthcare - Increase quality of healthcare through technology

Collaboration and planning

- SKMM to coordinate with MoH
- SKMM, MoH, private sector and representatives of the medical industry to collectively determine requirements on access, device and application requirements

Access

- Connect **500 hospitals** and **8,500 clinics** throughout Malaysia, without broadband
- **Develop Health Net platform** supported by data centre
- Enable other providers to populate the platform with **useful services and applications** (e.g. workflow systems, patient record management)

Devices

- Deploy **sufficient quantity and quality of IT equipment**; provide option for managed environment (e.g. remote maintenance and monitoring, automated software update and installation, security)
- Ensure **all medical institutions** have necessary IT equipment
- Enable **patients to interact** with the "Health Net" using different devices, e.g. for E-Scheduling

Application

- **E-Medis**: patient self-monitoring of data, personal health records and remote monitoring for chronic diseases (e.g. cardio vascular and diabetes)
- **E-MC**: connection between companies and medical institutions (e.g. for electronic transfer of medical certificates)
- **E-GL**: connection between insurance companies and medical providers streamlining process of claims information

Campaign

- Significant marketing campaigns to create public awareness

Benchmarks show that significant social benefits can be achieved through this EPP. For example, Australia's E-Healthcare initiatives are projected to prevent more than 5,000 deaths by 2020, and the USA's initiatives are expected to help save RM704 billion over the next five years.

Actions

The E-Healthcare EPP aims to connect all medical institutions to the HealthNet platform. The platform will allow healthcare providers to access applications that will increase their productivity while lowering costs and errors. Companies and patients will also be able to access the system to access healthcare-related services.

SKMM will lead the implementation process, while the platform requirements will be jointly determined by the network operators, the Ministry of Health (MoH) and the private healthcare sector.

The E-Healthcare EPP will provide a managed network to connect all healthcare institutions with a minimum connectivity of 2 Mbps and provide a platform for the MoH's proposed ICARE plan. Companies, patients and insurance companies will have access to the system from anywhere. Network operators will provide medical institutions with the necessary IT equipment.

After interconnectivity among hospitals and clinics is established, four applications will be implemented to run on the platform:

- **E-Medis:** Allow patients with chronic diseases (e.g. diabetes, cardiovascular issues) to self-update their status to enable healthcare providers to remotely monitor and track their condition;

- **E-MC:** Directly connect companies and medical institutions for electronic data transfer, thus saving time for medical record-keeping (e.g. medical certificates);

- **E-GL:** Directly connect insurance companies and medical providers to streamline payment processes; and

- **E-Scheduling:** Allow patient access for electronic scheduling of appointments to reduce waiting times.

Implementation of the HealthNet platform and connectivity among medical institutions will commence in 2011. Applications will be ready by 2011 and they will be launched in 2012. By 2012, 50 percent of hospitals and clinics will be on HealthNet, with the ultimate objective of reaching all medical institutions by 2015.

Funding

A total of RM1.3 billion funding is required, all from private sources. RM1 billion will fund creation of an interface to enable interaction between hospitals and patients and the building of infrastructure for 8,500 clinics and hospitals. Furthermore, working capital requirements will require an additional RM0.3 billion.

Impact

E-Healthcare will generate an incremental GNI impact of RM1.4 billion and 250 new jobs by 2020. From fewer than 100 institutions today, we target to have 500 hospitals and at least 8,000 clinics connected to HealthNet with the result that more than 5 million patients will have direct access to the system.

EPP 6: Deepening E-Government

Rationale

E-Government is the use of CCI technology to enhance the access to and delivery of Government services to the rakyat and businesses.

Actions

Malaysia's E-Government initiatives launched over the past few years have been recognised by international case studies. However, there are opportunities for further improvement *(Exhibit 13-10)* based on fulfilling three objectives:

- **1Malaysia account:** Enable a secured communication channel to Government E-Services accessible through all devices: @1Malaysia.my;

- **Counter services:** Move towards zero face-to-face services by setting a target of having 90 percent of all transacted services online and all services available on all devices; and

- **Paperless Government:** Create end-to-end online processes for job applications and internal circulars.

Exhibit 13-10

E-Government - Increase accessibility of government services

E-Counter Services

- Towards zero face-to-face: 90 percent of all transactions online, remaining 10 percent of e-forms
- Available on all devices (kiosks, PC, mobile), at all locations (CBC, PID, post offices) and at all channels (government portals and SMEs such as MyEG)

Paperless Government

- Replacement of paper archives with digital archives, i.e. document management system
- Gradual elimination of papers in stages
  - Meeting invitations and minutes
  - Presentation material
  - Internal circulars
  - Inter-ministry and inter-agency memos

1Malaysia Account

- Unique official email account and ID, e.g. <id_no>@1Malaysia.my
- Default and secured, with single-sign-on channel to all government E-Services, e.g. E-Hasil, EPF, license renewal
- Value-added services (e.g. online bill payment, public record searches)

Digital Signature

- Drive convergence of digital signature to encourage mass adoption in Malaysia - made available across *E-Counter Services, Paperless Government, 1Malaysia Accounts*

Campaign

- Significant marketing campaigns to create public awareness

E-Government will foster a better business environment, strengthen good governance, broaden public participation and improve the productivity and efficiency of Government agencies. SKMM will take the lead in the process. It will coordinate, together with MAMPU, all the Ministries and telecommunication companies in order to determine the requirements and the necessary steps to push the migration to E-Government. In 2011, the digital document management system will be established and by 2012, 70 percent of transactions across ministries and key applications for the public, businesses and employees will be online. In 2012, 50 percent of the counter services will be available online and the 1Malaysia Accounts will cover half of the population older than 18 years.

Funding

A total of RM2 billion of funding is required. From the private sector, RM900 million will fund the creation of 1Malaysia online accounts, RM54 million will fund the setup of E-Government kiosks in select locations and RM520 million will be used for working capital requirements. RM560 million from public sources will fund the development of E-Government applications.

Impact

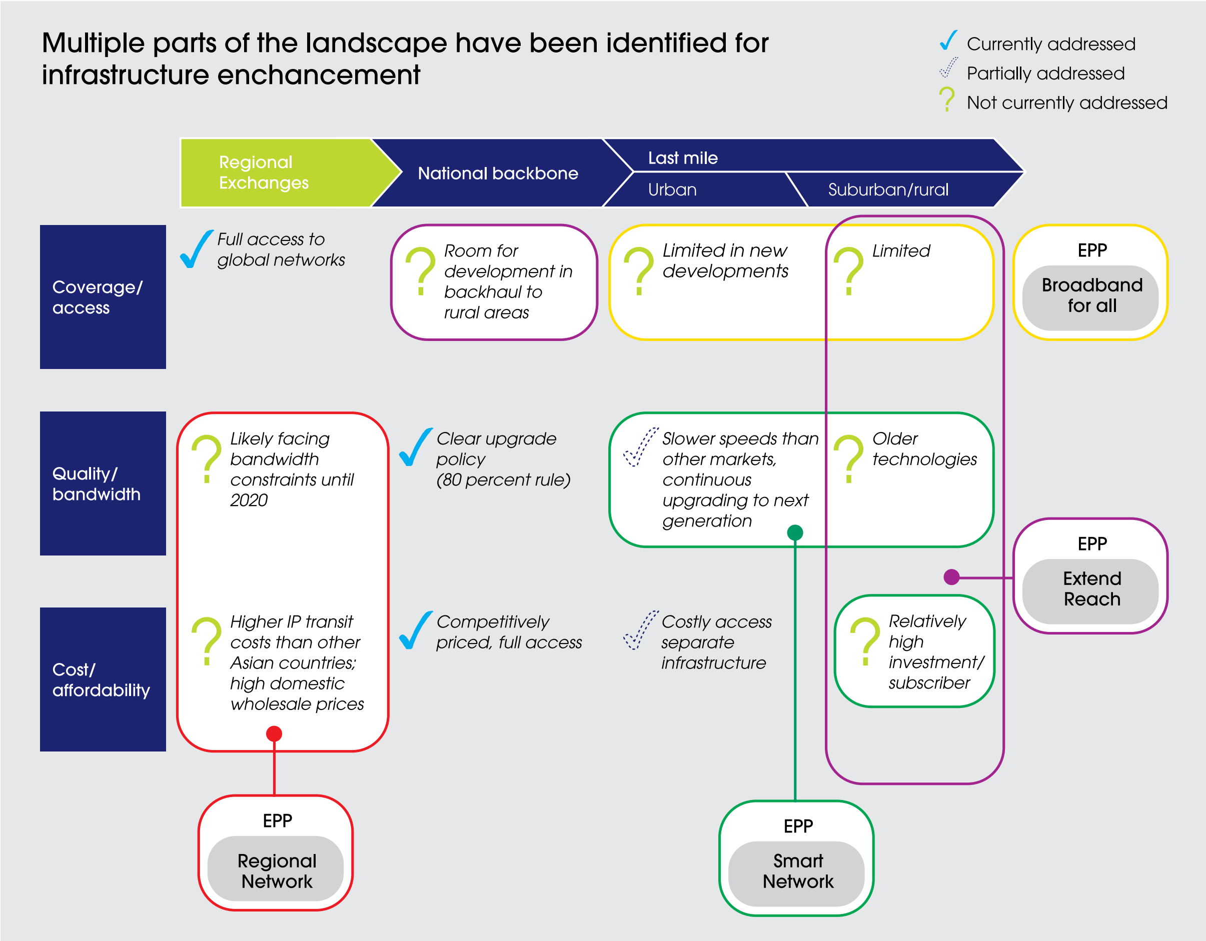
E-Government will have a GNI impact of RM1.1 billion in 2020 and create 1,000 new jobs.

ENHANCING FOUNDATIONS – SUPPORT GROWTH WITH NEXT GENERATION INFRASTRUCTURE

The infrastructure requirements of the sector need to be able to meet growing domestic demand, enable economic growth and drive Malaysia's evolution towards a knowledge-based society. Malaysia faces infrastructure issues on three dimensions: coverage, cost and quality. A recent study by SKMM showed that more than 45 percent of the population feel that broadband prices are too high. Slow speeds have plagued consumers due to the mismatch between the growth of Internet traffic and the growth of capacity. Moreover, significant portions of the population do not have access to broadband. Suburban and rural areas are generally underserved due to high costs associated with building infrastructure.

We have identified four EPPs to close gaps that are not currently addressed by private companies *(Exhibit 13-11)*. Collectively, these EPPs will generate GNI of RM10.7 billion in 2020 and 10,728 new jobs.

Exhibit 13-11



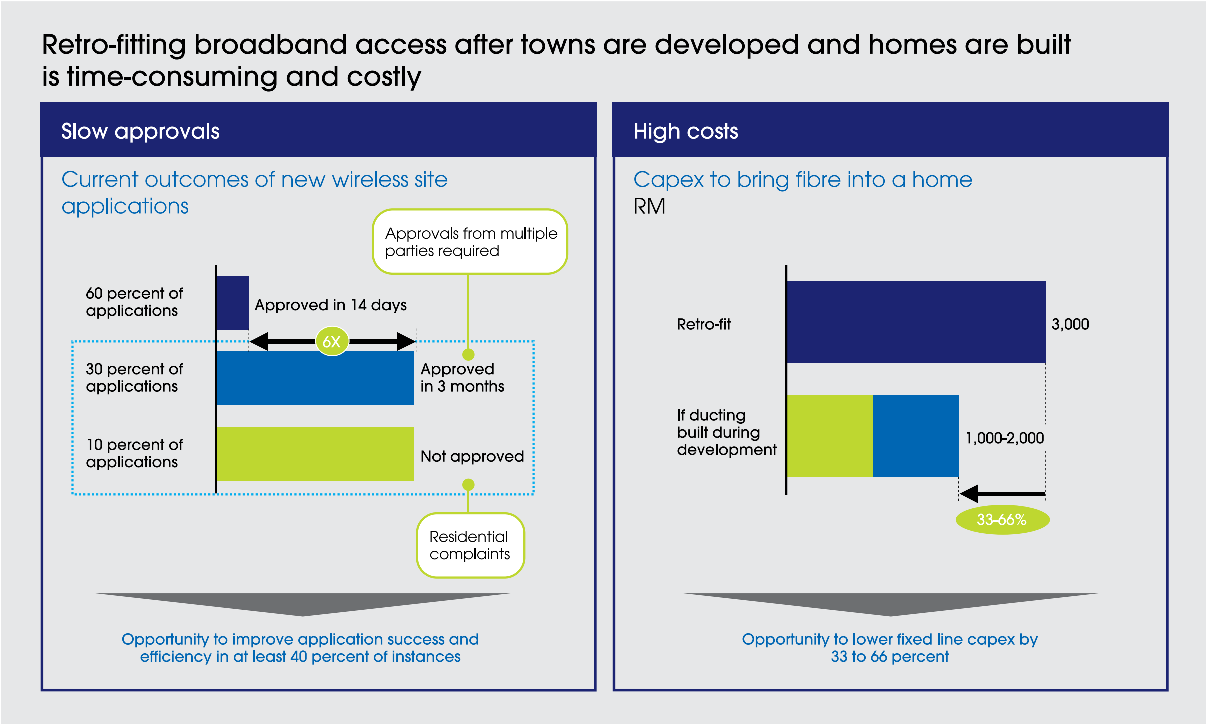
EPP 7: Ensuring Broadband For All

Rationale

Ensuring Broadband for All aims to increase broadband accessibility by designating broadband access as an essential utility for consumers, similar to the way in which water and electricity are treated today. Finland has legally mandated universal broadband access, and other countries such as the United Kingdom and Sweden have announced similar plans.

Broadband can be provided through both fixed and wireless means. However, wireless spectrum is a finite resource so particular emphasis should be given to provisioning fibre-optical cables. Many residential units in Malaysia today suffer from a lack of readily available broadband access due to developers not installing ducts during construction. Retro-fitting access is both time-consuming and expensive, causing inconvenience and raising costs to the end user *(Exhibit 13-12)*. At least 1.2 million residential units are forecast to enter the market in the near future and this EPP will be the means to ensure that residents will have convenient broadband access.

Exhibit 13-12



SOURCE: Telecommunications expert interviews

Actions

To drive this, the Ministry of Housing and Local Government (Kementerian Perumahan Dan Kerajaan Tempatan or KPKT) will amend the Uniform Building By Laws to include broadband as an essential service by the end of 2010. This will make it mandatory for building developers to construct ducting into the nearest network boundary in all new developments. All state governments will need to adopt this in their respective statutes.

The current situation in which town planners do not gazette wireless telecommunications sites also hinders the penetration of wireless broadband. To remedy this, SKMM will amend the National Development Masterplan in all states to gazette landed and rooftop sites for wireless infrastructure by early 2011. Developers and SKMM will find an operator to take over the ducting and provide open access to telecoms operators, while both operators and state-backed companies (SBCs) will be allowed to build towers. SKMM will regulate infrastructure access pricing to be fair and affordable by the second half of 2011.

Funding

A total of RM2.4 billion will be required, all from private sources. Of this, RM1.34 billion will fund capital expenditure for providing fixed broadband to subscribers and the construction of 1,500 wireless sites. Furthermore, working capital requirements will require an additional RM1.0 billion.

Impact

The initiative will result in RM1.7 billion in GNI contribution and create 5,468 new jobs. To achieve this, 0.75 million new fixed broadband subscribers, 1.92 million new mobile data subscribers and 2.4 million new voice subscribers are expected to take up services by 2020. To a large extent, this growth will come from servicing the increase in skilled foreigners and high net worth individuals the Greater Kuala Lumpur NKEA is striving to attract.

EPP 8: Extending Reach

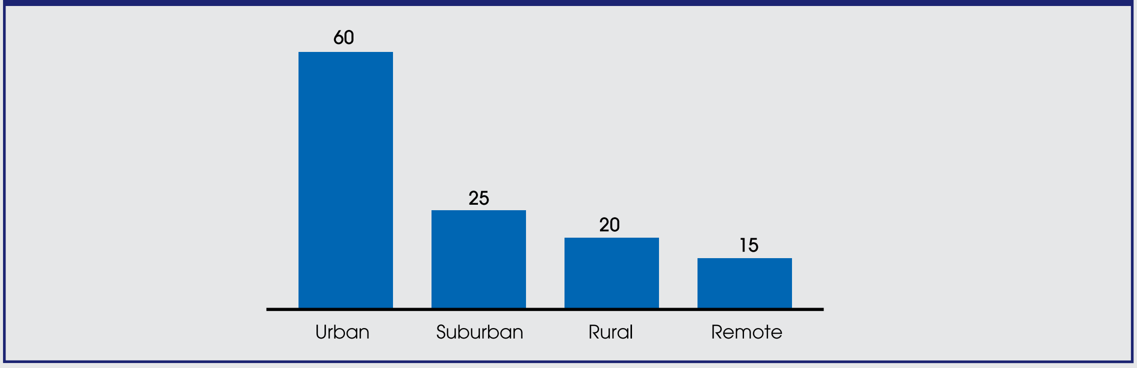
Rationale

This EPP aims to drive up broadband subscription levels in non-urban areas in Malaysia through greater industry and public-private collaboration. Countries around the world have faced challenges in extending broadband access into sub-urban and rural areas, primarily due to high investment costs relative to expected revenue. Malaysia is no exception. Urban areas (Kuala Lumpur, Klang Valley, Johor Bahru) enjoy particularly high subscription (60 percent) rates *(Exhibit 13-13)*. At the same time, in addition to economic benefits, broadband encourages greater integration of remote populations with the wider world. Therefore, extending network reach becomes a critical building block of development.

Exhibit 13-11

Urban areas enjoy particularly high subcription rates

Broadband subscription rate
1Q 2010, Percent by household



Note: Urban defined as WP Kuala Lumpur, Klang Valley, Johor Bahru; Suburban defined as non-Urban Mukims with population greater than 50,000/km²; Rural defined as Mukims with population of 5,000 to 50,000/km²; Remote defined as Mukims with population greater than 5,000/km²

SOURCE: MCMC

Actions

Approaches to serving the non-urban population can be broken down by geography.

Sub-urban areas (greater than 50,000 people/km²). Wireless service providers will form a consortium by the end of 2010 to lower costs of providing access through active infrastructure sharing. Significant cost savings can be achieved through sharing electronic equipment. Up to two-thirds of capital expenditure could be reduced if multiple mobile operators shared systems, and operating costs of up to seven percent of revenue can also be eliminated. Once a consortium is formed, it will reduce overlapping equipment beginning in 2011.

Rural and remote areas (less than 50,000 people/km²). SKMM's Universal Service Provision (USP) Fund is designed to enable the roll-out of broadband to these regions. The private sector will use the USP contributor utilisation clause and access funds to build backhaul and last mile infrastructure to underserved areas with a particular focus on wireless solutions for the short and medium term. Fixed access will take a larger role over the longer term to mitigate the impact of scarce wireless spectrum.

Beyond these geographic and demographic criteria, network providers must also take into account areas populated by the urban poor as these pose similar challenges to rural and remote areas in terms of commercially viable infrastructure provisioning.

Funding

A total of RM6.6 billion in funding is required, all from private sources. Funding of RM2.8 billion is needed to build 4,000 new wireless sites to reach underserved areas, while RM2.6 billion will fund fixed capital expenditure. RM0.9 billion will fund additional base stations to support active infrastructure sharing. Furthermore, working capital requirements require RM0.3 billion. The private sector will use the USP contributor utilisation clause and access funds to build backhaul and last mile infrastructure.

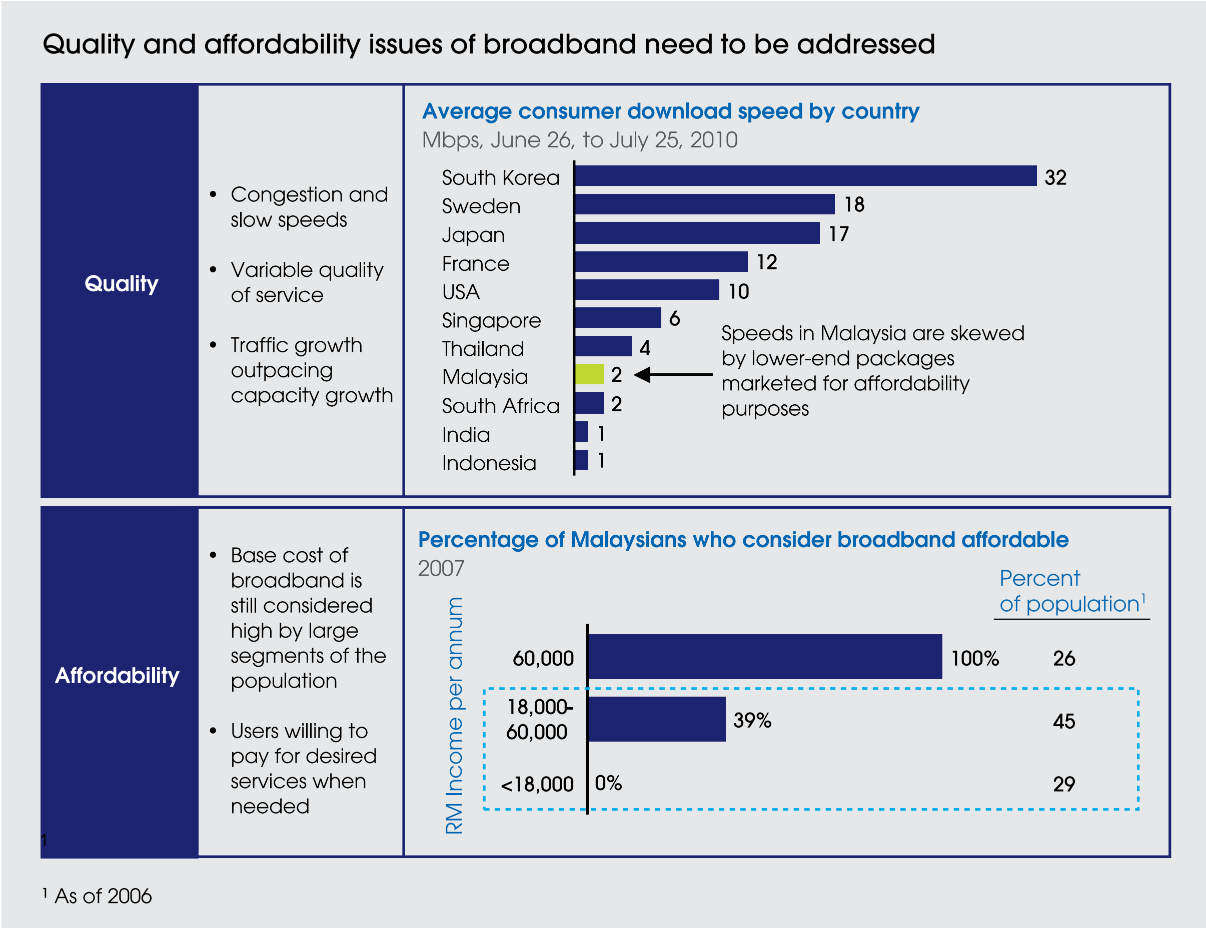
Impact

With this initiative, we aim to drive subscription levels in non-urban areas to as much as 90 percent of households by 2020, resulting in 3.4 million new broadband subscribers. We forecast corresponding GNI impact to be RM2.4 billion and for 2,090 new jobs to be created.

EPP 9: Offering a Smart Network

Through offering a smart network we aim to address affordability and quality of service issues hindering Malaysia's networks *(Exhibit 13-14)* by providing tiered price plans differentiated by priority of service. The high-end segment that finds broadband access easily affordable often desires and will pay for faster speeds. Meanwhile, the more price-conscious segment desires a low barrier to entry and services that are functionally sufficient. Currently, service providers can only differentiate based on speed and usage. With the smart network initiative, network operators offer differentiated packages based on priority of service and charge accordingly. The initiative will also be another instrument to fairly charge the small minority of users who consume a disproportionate amount of usage.

Exhibit 13-14



SOURCE: Net Index by Ookla; MCMC

Actions

At the top end, consumers will have their traffic prioritised with the highest usage caps. In return for premium service, tariffs will be higher than today. For the 'good enough' segment, we will offer a package at very low tariffs, offering basic speeds and low usage caps. As an improvement on offerings today, these consumers will have the option on buying priority services on demand. In addition, consumers may purchase application-specific priority packages, e.g. video streaming or peer-to-peer services. We will thereby allow end users to pay for the type of service they want and not negatively impact other users who have different needs.

The technology for this initiative is readily available; however, SKMM will need to maintain a light touch for its regulatory approach to quality of service. The industry can operationalise the smart network by 2012, and we expect 30 percent of service providers to offer tiered pricing plans based on service priorities by the end of that year. Over the longer term, investment savings will also accrue to the sector.

Funding

A total of RM0.7 billion is required, all from the private sector. RM0.4 bbillion will fund upgrades in network, billing systems and other back-office and front-office functions required to enable the initiative. Furthermore, working capital requires an investment of RM0.3 billion.

Impact

By 2020, GNI impact will be RM847 million and there will be approximately 1,950 new jobs.

EPP 10: Extending the Regional Network

Rationale

By extending the regional network we aim to add up to 3 terabits per second (Tbps) of international bandwidth by 2020 and support the growth of an additional three million square feet of data centre space, addressing cost and quality issues today and enhancing future revenue streams.

Given that 80 to 90 percent of Internet traffic in Malaysia travels outside the country, we require significant bandwidth on international submarine cables. Capacity in Malaysia has lagged behind demand historically. IP transit costs are higher than in other markets that have built out capacity more aggressively, like Hong Kong, Japan and Singapore; and the differential reaches about 80 percent when compared to Singapore. Quality has also suffered due to congestion on the international network with Malaysia's Internet speeds slower than 100 other countries.

Actions

International bandwidth demand is estimated to reach at least 4 Tbps by 2020. Today there are approximately 200 Gbps of capacity being used, with an estimated 600 Gbps that can become available. To close the gap, service providers will form a local consortium in 2011 to acquire 3 Tbps of capacity by 2020. To enable the capital expenditure, EPU and MoF will provide a soft loan to finance this project.

The increased bandwidth will lower wholesale costs and allow industry to reduce costs to consumers. In addition, it will enable the expansion of data centres in Malaysia by an estimated 3 million square feet, which will attract business from domestic and international sources. The sector will provide facilities within this space and enable business services companies to operate advanced data centres, moving up the value chain by offering premium differentiated services. This initiative is critical to providing a means to support local content and locally host foreign content.

Funding

Funds of RM10 billion will be allocated for the construction of 3 Tbps of submarine cables to Hong Kong and the USA. This will be enabled through a soft loan from the Government.

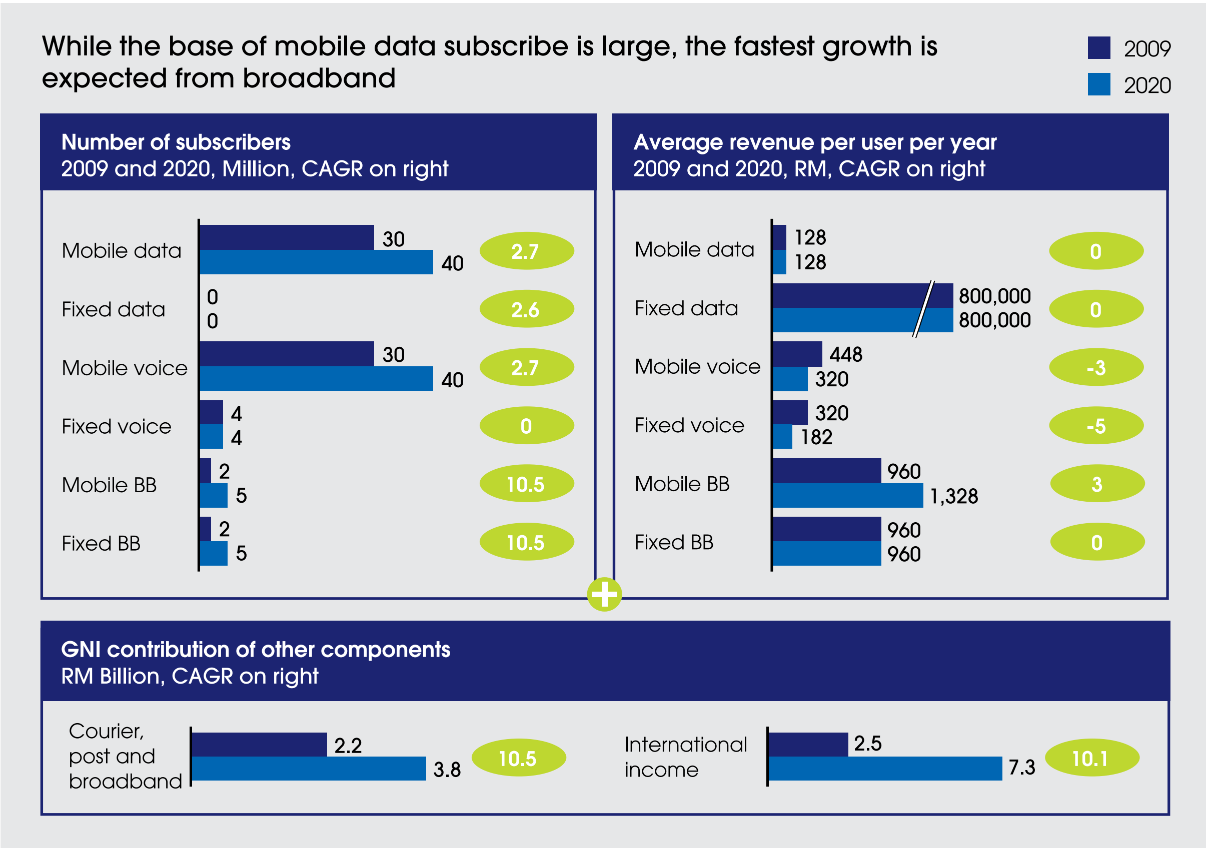
Impact

We target the initiative to generate RM2.3 billion in incremental GNI and 1,220 new jobs by 2020.

BUSINESS OPPORTUNITIES

Beyond the EPPs, the CCI sector will grow through the domestic growth of existing companies as well as through Malaysian ownership of foreign companies. Broadly, growth will be pursued along four fronts: fixed service, mobile services, courier, post and broadcast, and regional operations. The forecasts for fixed services and mobile services are shown in the *Exhibit 13-15*. These business opportunities will provide RM11.7 billion in incremental GNI and create 17,265 new jobs by 2020.

Exhibit 13-15



Business Opportunity 1: Fixed Services

Growth from fixed services will come primarily from fixed broadband and data lines. Fixed broadband subscribers will grow by 10.5 percent compound annual growth rate (CAGR), as existing fixed line users take advantage of bundled packages. Services such as IPTV and online gaming and music will drive much of this increased uptake. Fixed data lines will grow by 2.6 percent CAGR as more companies require their own internal networks. This opportunity will contribute RM1.7 billion in incremental GNI and create 3,250 new jobs by 2020.

Business Opportunity 2: Mobile Services

Mobile services will see subscription growth in all segments: voice, data and broadband. Voice lines will grow by 2.7 percent CAGR driven by both the growing population and increasing tendency of subscribers to have multiple mobile accounts. Mobile data, which includes SMS, content and services that do not require an Internet connection, will grow in line with subscriber growth. Lastly, mobile broadband subscribers will grow rapidly by 10.5 percent CAGR as 3G users begin to access the Internet, more advanced devices induce Malaysians to use their phones as their primary means of Internet access and lower costs allow mobile Internet access to become more widespread. This opportunity will contribute RM3.6 billion in incremental GNI and create 5,788 new jobs by 2020.

Business Opportunity 3: Courier, Post and Broadcast

Courier, post and broadcast sector's GNI contribution will grow by 5.2 percent annually over the next ten years.

The courier and post sector will offer a broader range of services such as commercial transaction fulfilment, warehousing, inventory management, demand planning for manufacturers and assembly services. A multi-tiered licensing system prepared by SKMM will impose higher requirements for top tier license holders and will encourage consolidation, raising the capacity of the sector to invest.

Furthermore, the post and courier sector has an opportunity to capitalise on the expected growth in electronic commerce and offer services specifically designed to meet the needs of merchants. Further opportunities exist in expansion in regional logistics, subject to obtaining freight forwarding licenses, as well as in competing internally on quality and performance of service rather than price.

Although paid broadcasting has almost reached a plateau in terms of penetration, new opportunities for the broadcast sector will open up as new services are introduced. Digital terrestrial TV will allow the broadcasting of more channels and will have a positive impact on revenues starting in 2015, when SKMM plans to mandate the switching off of analogue broadcasting.

Additional upside opportunities may come from mobile TV and 3D TV content. The infrastructure for offering these services are generally in place. Solutions are being explored to address content creation for these new channels and overcoming barriers to adoption.

This opportunity will contribute RM1.6 billion in incremental GNI and create 7,563 new jobs by 2020.

Business Opportunity 4: Regional Operations

Malaysian companies in the sector such as Axiata, Maxis and Astro are aggressively pursuing international opportunities in large and fast growing markets such as Indonesia, India and Bangladesh. Currently, these investments account for approximately RM2.5 billion of GNI. By 2020, these investments will generate additional GNI of RM4.8 billion and 664 new jobs, as the Malaysian controlled companies leverage the fast growth of these markets and pursue market share.

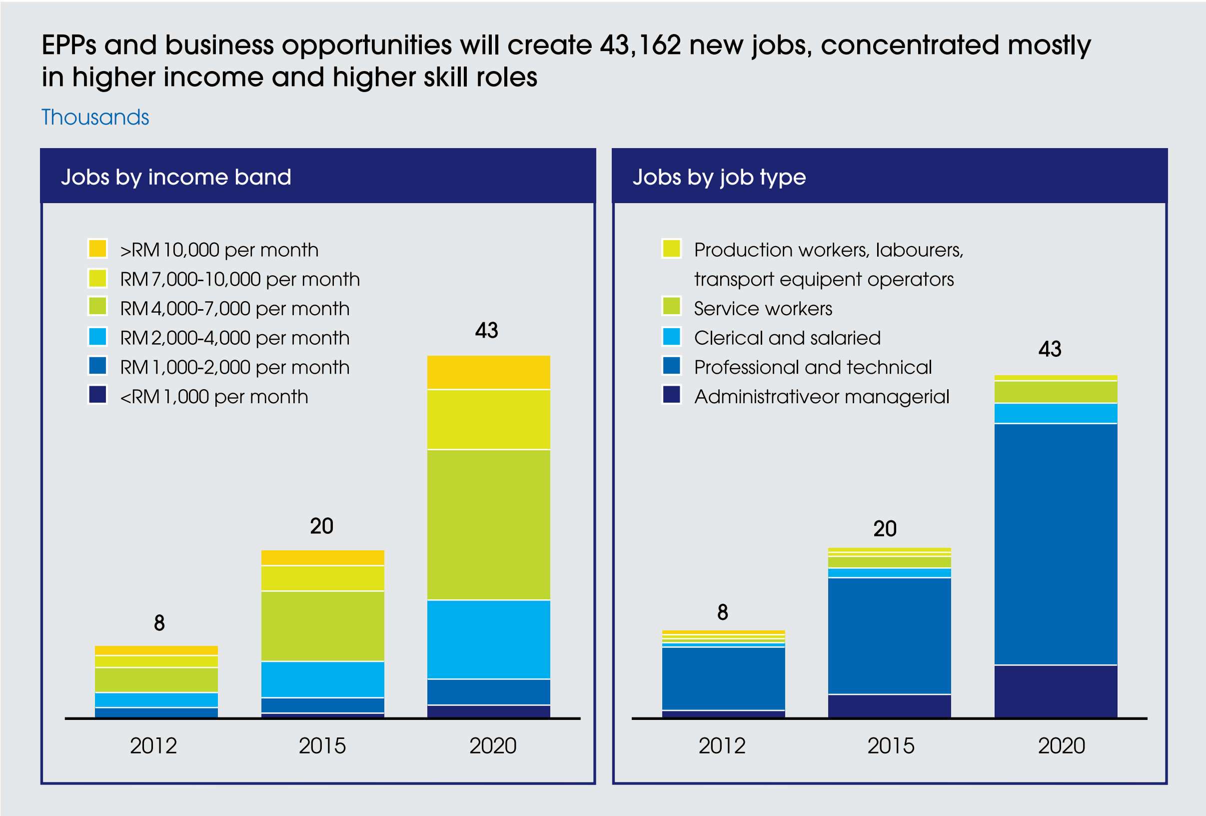
COMMON ENABLERS

Human Capital - Create World-class Communications Experts

Overview

Having the right human capital is critical in knowledge-intense sectors like CCI, and the positive outcome of this NKEA is driven greatly by the level of qualification and skills that the sector attracts and develops. To achieve our ambitious growth targets, 43,162 additional workers will be required by 2020. Of this, 25,899 workers will be required to support our EPPs, while existing business opportunities require 17,263 workers. In terms of qualifications, most of these new jobs will be high income (with 67 percent above RM4,000 per month in salary) and require a high level of qualifications. Examples include business managers, communications-related engineers and creative content experts. A breakdown of expected future incremental employment in CCI is illustrated in *Exhibit 13-16*.

Exhibit 13-16



Actions

While this growth will bring significant secondary benefits for the economy, we need to ensure that Malaysia's future workforce has sufficient educated talent available. The development of programmes to mitigate this challenge is covered under the Education NKEA.

The CCI NKEA envisions a few changes. In the near term, talent will need to be sourced from neighbouring countries and overseas Malaysians. Relevant incentive programmes and simplified visa processing for highly-skilled professionals will be critical in this context. In the medium term, multiple programmes will be planned to support growth of the domestic talent base:

- **Grow continuous professional development in the industry:** Companies will drive ongoing training programmes for their employees as they form new divisions to address EPPs and new business opportunities;

- **Increase university education programmes on communications:** Further growth in communications-linked engineering programmes as well as creative programmes at universities; and

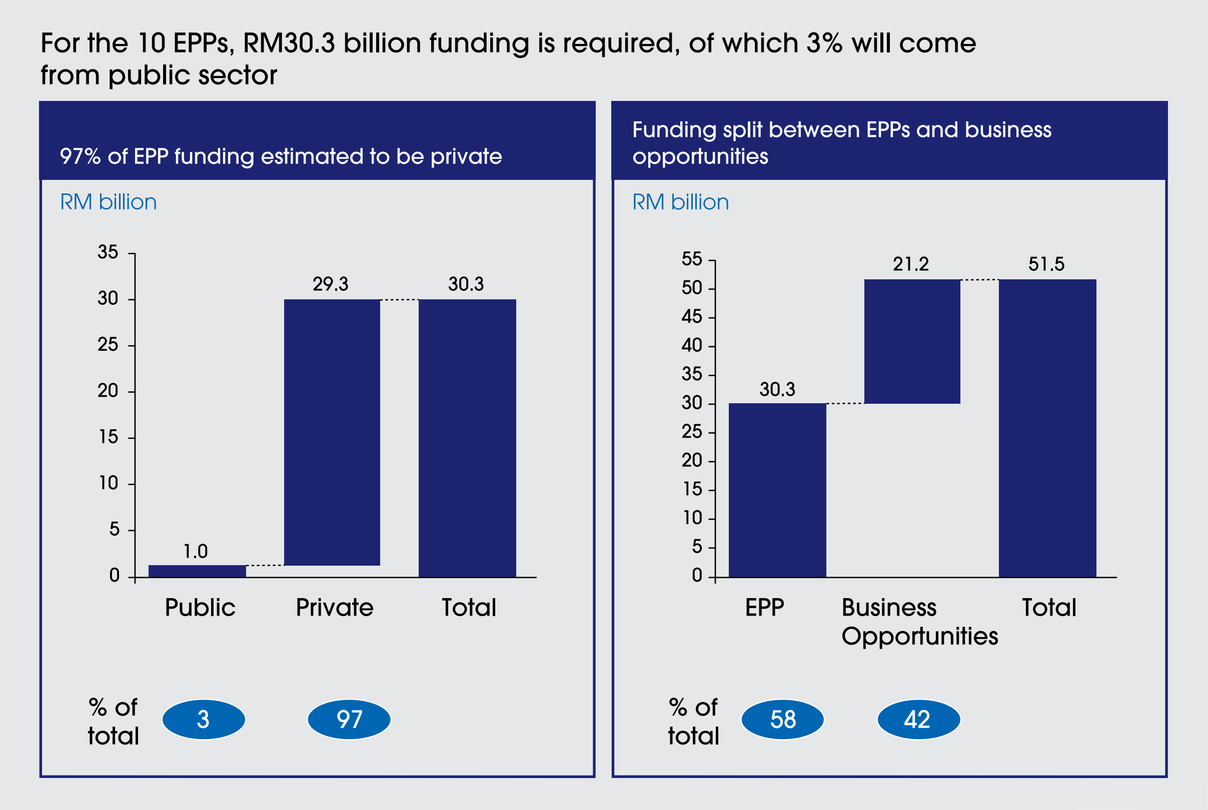
- **Drive company sponsorship of overseas studies:** SKMM will proactively track highly talented individuals and drive main operators to grow the programmes they sponsor for overseas study.

With a coordinated push from all interested stakeholders (education sector, KPKK, SKMM and private industry), we are confident in being able to close the talent gap.

FUNDING

To achieve the growth plans of the CCI NKEA, significant funding will be required for capital expenditures and working capital. As the sector is focusing on commercially viable projects, operating expenses will be funded by revenue after the initial phase. As illustrated in *Exhibit 13-17*, the sector will require cumulative funding of RM51.5 billion from 2011 to 2020 to deliver the expected GNI growth of RM35.7 billion for 2020. Only 3 percent of the funding needed for EPPs (RM30.3 billion) will need to be Government-funded, as 97 percent of the total will be provided by industry companies over the course of the next 10 years. This equates to an average annual investment by the private communications industry of approximately RM3 billion.

Exhibit 13-17



Of the total, RM21.2 billion will be required for business opportunities through 2020 with the largest share of RM10.3 billion in mobile networks. Business opportunities will be entirely privately funded to deliver additional GNI growth of RM11.7 billion.

For the EPPs, RM30.3 billion funding is required through 2020 with RM1 billion being contributed by the Government, mostly to initiate services.

GOVERNANCE AND DELIVERY

The CCI NKEA will require the public and private sectors to work closely together under the overall leadership of KPKK and SKMM. The private sector will provide most of the resources and be the primary driver for delivering EPP results. We understand the private sector's need to be convinced of the commercial attractiveness of pursuing EPPs and the assurance of the right regulatory framework to make such an investment. To do this, the public sector will need to lead by dismantling regulatory impediments, fostering a level playing field and providing oversight for issues impacting the entire sector or national interest. The public sector will also coordinate various private sector entities and public sector stakeholders.

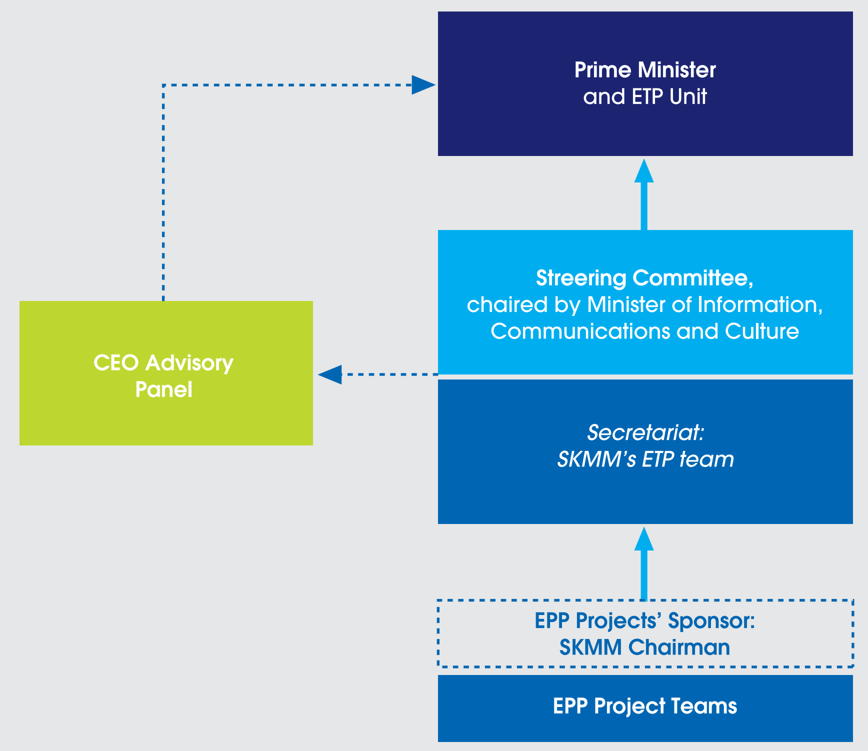
To ensure successful implementation, we will undertake the following:

- The Minister of Information, Communications and Culture will provide strong public sector leadership through the existing SKMM structure;
- Private sector representatives will work closely with public sector at the implementation level; and
- The SKMM's ETP team will support project management and augment the current SKMM capacity.

An effective governance mechanism under the oversight of the Prime Minister will serve to ensure goals are achieved and implementation timelines are met *(Exhibit 13-18)*. This structure brings together both private companies and public parties on an ongoing basis.

Exhibit 13-18

Governance for Communications Content and Infrastructure NKEA



The Minister of Communications will provide strong public sector leadership through SKMM. The Minister of Information, Communications and Culture will take the lead and chair the monthly Steering Committee. The Steering Committee's primary purpose will be to overcome roadblocks and coordinate with other stakeholders in the public sector (e.g. Ministry of Housing for Ensuring Broadband for All, Ministry of Education for Establishing E-Learning). Senior Directors of SKMM will serve as owners of the various EPPs *(Table 13-1)*. SKMM will also form an ETP team to serve as the secretariat and monitor progress. The Steering Committee will update the Prime Minister, ETP team and other key stakeholders such as cabinet ministers on a quarterly basis (bi-monthly, during the first six months of implementation).

Private sector representatives will work closely with the public sector at the implementation level. Private sector entities involved in the EPP will be represented and work closely with SKMM owners as part of weekly EPP project team meetings. SKMM will be flexible in its implementation approach, being heavily involved in EPPs that require more regulatory support and using a light touch approach with EPPs that are primarily driven by the private sector. As a rule, obligations will not be unduly imposed on private sector participants. However, private sector participants will be held accountable to the commitments they make. Additionally, a CEO Panel of Advisors will be convened quarterly to facilitate sector-wide collaboration and resolve commercial issues that arise.

SKMM's ETP team will support project management and augment the SKMM structure. This ETP team will support EPP implementation at all levels. This support will take the form of monitoring progress and KPIs, flagging and resolving issues and facilitating the coordination of the various stakeholders.

Table 13-1

Entry Point Projects	Lead initiative owner	Other key agencies, companies and organisations
Nurturing Malaysia's creative content industry	Zamani Zakariah	KPKK, Ministry of Tourism, Home Ministry, MIPO (domestic trade), MDeC, Media Prima, Astro, TM, RTM, Private Funders (MAVCAP, MDV), Creative Sector SMEs
Deploying 1Malaysia payments	Toh Swee Ho	Bank Negara, MEPS, Association of Banks, MTSFB, Internet Banking Taskforce, Khazanah
Connecting 1Malaysia	Toh Swee Ho	MAMPU, Khazanah and PNB, Device Manufacturers
Establishing E-Learning for students and professional training	Zamani Zakariah	MOE, EPU, KPKK, SKMM, National PTA, National Union of Teachers, SMEs developing educational content and applications, TM, TdC, Khazanah
Launching E-Healthcare	Zamani Zakariah	MOH, MMA, Insurance companies, Khazanah, PNB, SMEs developing medical content and applications
Deepening E-Government	Dato Jailani Johari	MAMPU, Identified pilot agencies (e.g. JKR), Other system integrators and service providers
Ensuring broadband for all	Mohd Ali Hanafiah	KPKT, KPKK, State Economic Planning (UPEN), Developers (REHDA), Service providers (e.g. Access Forum)
Extending reach	Dato Jailani Johari	KPKK, State Economic Planning (UPEN), Service providers (e.g. Access Forum)
Offering a smart network	Mohd Ali Hanafiah	Service providers and technology suppliers
Extending the regional network	Toh Swee Ho	EPU, KPKK, SKMM, Service providers, Data centre companies, Khazanah

Summary of Communications Content and Infrastructure NKEA

• **Incremental GNI impact in 2020**	RM35.7 billion
• **Additional jobs in 2020**	43,163

- **Critical targets and milestones within 6 to 12 months**
  - MY Creative Content identified
  - 1Malaysia Payments interoperability standards defined
  - Connecting 1Malaysia industry partnership formed
  - First batch of urban schools connected to E-Learning
  - First batch of medical institutions connected to E-Healthcare
  - Roadmap to full online processes for E-Government completed
  - Uniform Building By Laws and National Development Masterplan amended
  - Process of removing redundant active infrastructure begun
  - Smart Network service standards defined and supported by SKMM
  - 200 to 500 acres for data parks secured

chapter 14
Education

Chapter 14: Transforming Education as an Engine of Growth

"In 2009, the Government developed the Education NKRA agenda to widen access to quality and affordable education, and to improve student outcomes. In line with the National Education Policy, we recognise the critical role education plays in strengthening our economic competitiveness and building 1Malaysia.

One year on, we have developed the Education NKEA agenda which focuses on the private sector as a powerful complement to the Government. We believe that the public and private sector can no longer afford to work apart. Instead, both must come together through innovative public-private-partnership models to jointly deliver Government objectives and growth targets.

The Government is committed to unleashing the full potential of the private education sector by removing barriers to entry and growth. In return, we ask that the private sector take up the challenge, step forward and work with us on the journey to drive Malaysia towards high-income nation status."

YAB Tan Sri Dato' Haji Muhyiddin bin Mohd Yassin,
Deputy Prime Minister & Minister of Education

"The education sector is critical, not just as a means of cultivating first-class human capital and creating social mobility, but also as an engine of growth in its own right. In higher education, our vision is nothing less than to develop Malaysia into a regional centre for excellence in tertiary education. We aspire to produce more researchers and scientists, more engineers and professionals, more specialists and skilled technical talent who can succeed in an increasingly competitive global market. Both private and public higher education institutions in Malaysia must rise up to this challenge.

Therefore, the Education NKEA focuses on the role of private institutions in leading innovation and driving growth in the industry. We see the private education sector as catalysts for industry transformation, and as indispensable partners in the Government's efforts to raise quality standards and to create an international higher education brand for Malaysia. We have an exciting journey ahead of us, and I look forward to continued close collaboration with the private education sector and with industry to ensure that we achieve our ambitious aspirations."

YB Dato' Seri Mohamed Khaled Nordin,
Minister of Higher Education

Malaysia's education sector supports a lifelong learning experience spanning early child care and education through to tertiary and post-graduate education. Education is one of the most critical drivers for our transformation from a middle- to high-income nation due its impact on productivity and human capital development. It is also an engine of growth in its own right. The sector contributed approximately RM27 billion or 4 percent of Malaysia's gross national income (GNI) in 2009, of which RM23 billion comes from Government-funded education services alone. Nonetheless, with public sector spending expected to grow modestly, the focus of the National Key Economic Area (NKEA) of Education will be on strengthening the private education services sector by increasing private consumption and investments as well as expanding education exports.

The aspirations set out in this chapter are undeniably ambitious and will require unprecedented collaboration and co-ordination in terms of scale and scope among private and public sector institutions. Yet, to do or to dream of anything less would see Malaysia running the risk of falling behind, in education today and in the global economy tomorrow.

The Tenth Malaysia Plan focuses on human capital development as an economic imperative. Accordingly, the Government is completely committed to supporting the delivery of the entry point projects (EPPs) described herein and to removing unnecessary barriers to entry and growth that hinder market expansion and liberalisation. In return, the private sector will step forward as critical partners in the funding, development and execution of this exciting transformation journey.

Overall, the delivery of the Education NKEA aspirations will require five essential shifts from the circumstances in place today, specifically:

- **Industry structure:** From a fragmented sector with many sub-scale small and medium enterprises (SMEs) to one that encourages SME innovation and growth spearheaded by renowned high quality national and regional players;

- **Student base internationalisation:** From a market primarily focused on domestic students and consumption to one where education exports (e.g. attracting high quality foreign students) are major drivers of GNI and a critical part of the economy;

- **New ways of working:** From public and private sector players moving in separate spheres to a level playing field with innovative public-private partnerships that complement each sector's strengths and nurture positive competition;

- **Regulatory transformation:** From a highly regulated industry to one that emphasises greater self-regulation, industry-led quality standards and harmonised regulations across both public and private institutions; and

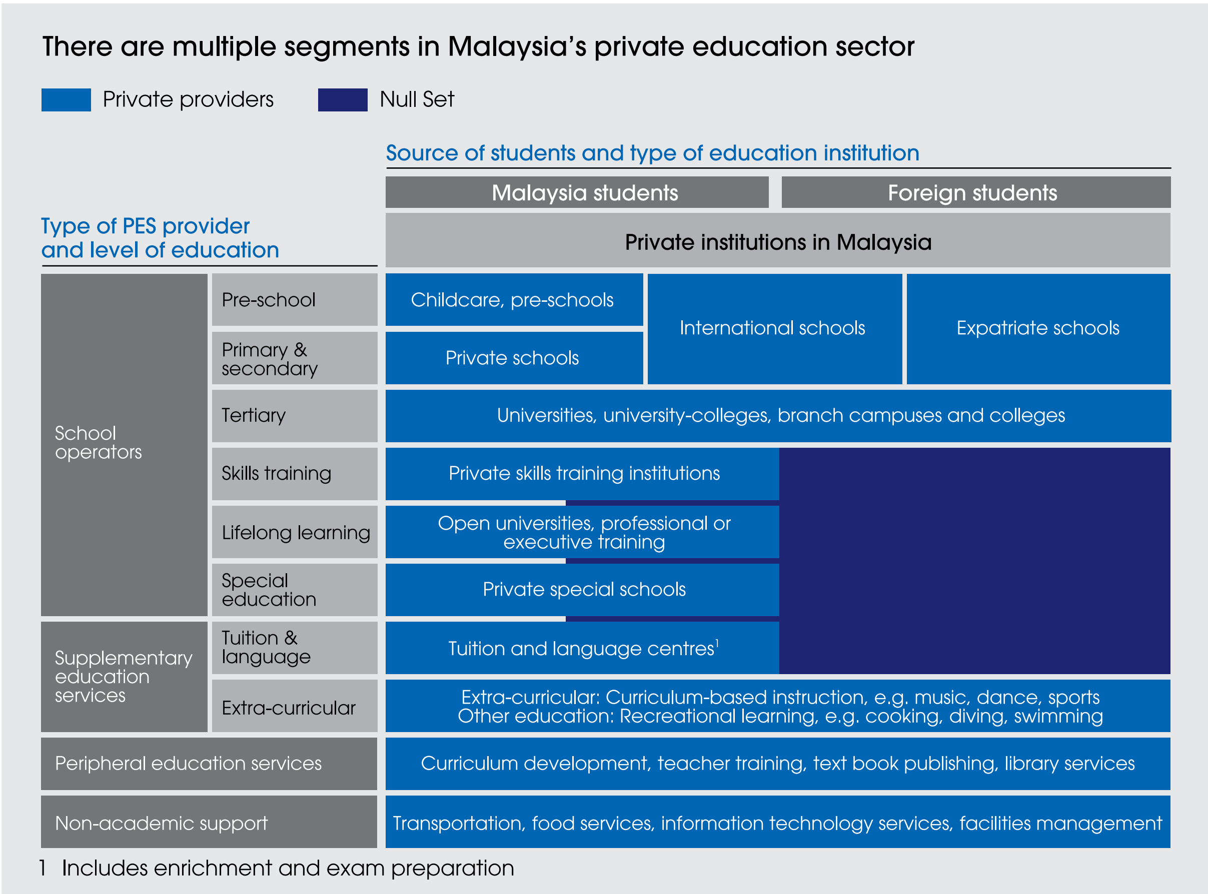
- **Funding shift:** From primarily supply-side funding of public institutions to (1) greater demand-side funding of students for both public and private institutions; and (2) more performance-based funding of private institutions that are better positioned to deliver outcomes.

We envision a rebranding of Malaysia – from a stopover location for education to a major education centre of choice and a pivotal hub in the global education network. We envision a 2020 where education is a big business that delivers significant, widespread and sustained GNI impact, while raising standards and widening access. Only then will Malaysia be able to develop a first-world talent base.

DEFINITION OF THE EDUCATION NKEA

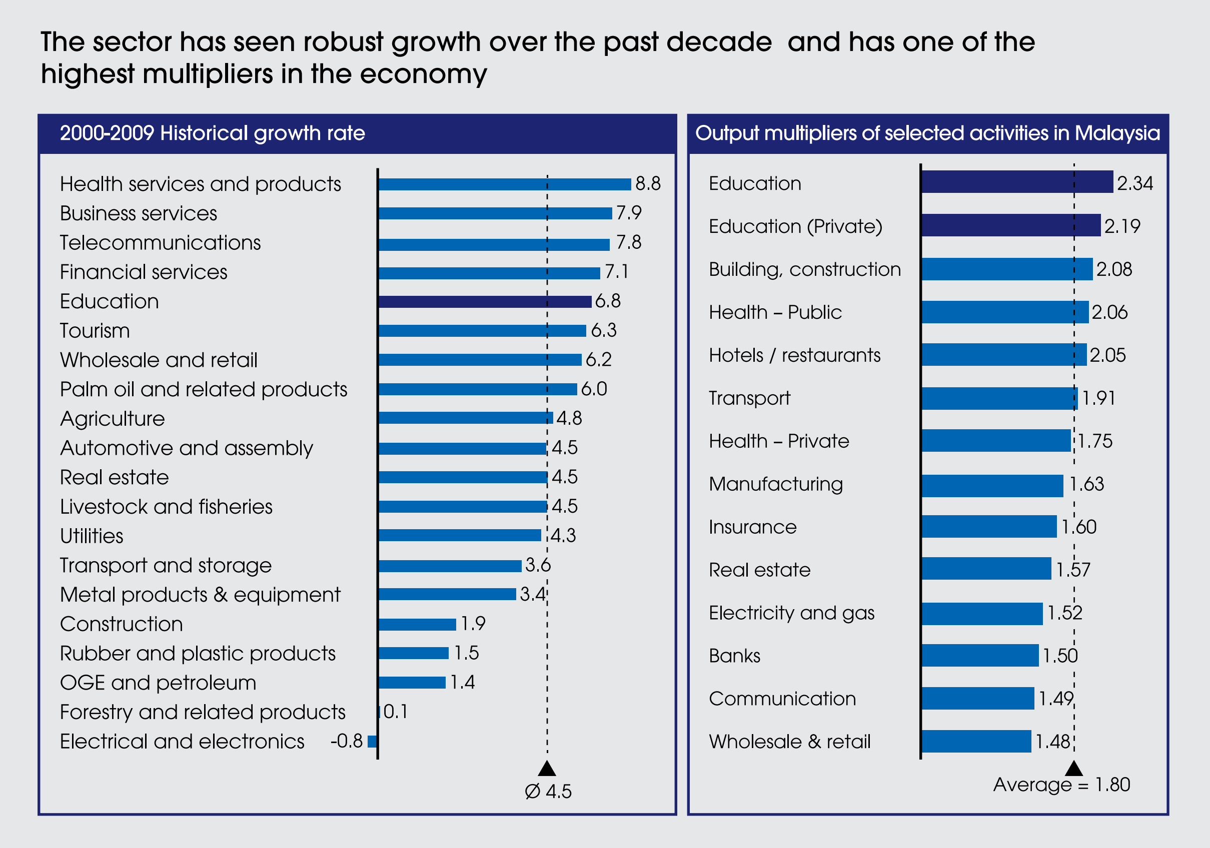
The private education sector (PES) can be divided into multiple segments, as illustrated in *Exhibit 14-1* based on the nature of services provided and the age of the learner targeted. In 2009, there were approximately 10,000 providers serving over 1 million students. Most providers are SMEs that focus on a particular phase in the education value chain. However, there are a growing number of large, national players that span multiple education phases.

Exhibit 14-1



Despite the current moderate size of the private education sector, it boasts one of the fastest growth rates over the past decade and one of the highest output multipliers in the country – even higher than sectors where stimulus packages have been allocated *(Exhibit 14-2)*. As the education sector grows, it generates growth impact on other sectors. We believe its robust trajectory will continue, supported by Malaysia's growing middle class as well as increasing investor interest in education worldwide. As an example, the global value of private equity investments in education grew at 11 percent year-on-year from approximately RM1.7 billion in 2001 to nearly RM4.3 billion in 2009.

Exhibit 14-2



MARKET ASSESSMENT

Within Malaysia, the private education sector has historically played a key role in supporting the delivery of public education objectives. The drive towards increased tertiary level enrolment, for instance, would not be possible without private tertiary institutions *(Institusi Pengajian Tinggi Swasta)* (IPTSs), which provide for 50 percent of all tertiary students today. Private sector participation can also spur competition in the industry, leading to improved processes, more choices for consumers and improved quality. Up to 20 percent efficiency gains have been observed in education initiatives led by the private sector, and the greater autonomies typically afforded to private providers enable increased innovation and ease in adapting to changing market demands.

More broadly, investing in education has significant long-term productivity gains. A European Union study found that a permanent one-year increase in the average education level of the labour force translates into a 0.45 percentage point increase in annual labour productivity growth. Indeed, research conducted by McKinsey & Company estimates that the economic cost of the current United States student achievement gap is up to RM7.4 trillion, a value equivalent to a permanent national recession in the USA.

Above all, our desired shift from a middle-income to high-income nation will not be possible unless we develop a first world talent base. All of the 12 NKEAs have identified the supply of skilled talent as a key success factor, making education critical, not just as a growth engine in its own right, but as an underlying enabler for the national economy.

Strengthening the Private Education Sector

Malaysia's private education sector has undergone remarkable growth since the 1980s and is recognised today in international circles as one of the most innovative and progressive in the region. Achievements include the development of innovative forms of transnational education programmes such as split degrees and our position as the 11th top exporter of education globally.

There are however a number of challenges that threaten to impede further growth, or may set the industry on a downward trajectory:

- **Wide variation in quality:** The quality and consistency of teaching and learning standards are ongoing concerns for the industry. In 2009, only one Malaysian university was among the top 200 institutions listed in the Times Global Higher Education Ranking; at present only seven are in the Top 200 Universities in Asia. Within Malaysia, the 27 percent unemployment rate after six months for students graduating from local higher education institutions in 2009 also suggests that there is a quality mismatch between what is required and what is produced. Our ability to effectively monitor and enforce quality standards has not kept pace with the rapid growth of the industry. Inconsistencies remain in standards or requirements across public and private institutions, and there are limited mechanisms for helping consumers make quality comparisons;

- **Lack of scale:** The sector is dominated by small and medium enterprises, and this fragmentation means that many providers lack the resources and expertise to scale up. This not only means that we have few national players (much less international ones), but also that it is harder to engage the industry on sector transformation;

- **Gaps and inefficiencies in regulation:** Private providers report difficulties in starting up and expanding their operations, with numerous bottlenecks identified in processes such as accreditation and financing. For example, private education providers often have difficulties accessing funding from commercial banks, and there are limited Government-aided loans in comparison to those provided to other priority sectors such as, tourism; and

- **Competition from other hubs:** Malaysia is currently the 11th largest exporter of education globally, thanks to the "value-for-money" proposition we offer and our innovation on transnational programmes (e.g. twinning degrees). However, the rise of education hubs such as China, Singapore, Thailand and Qatar, threatens our ability to maintain this position.

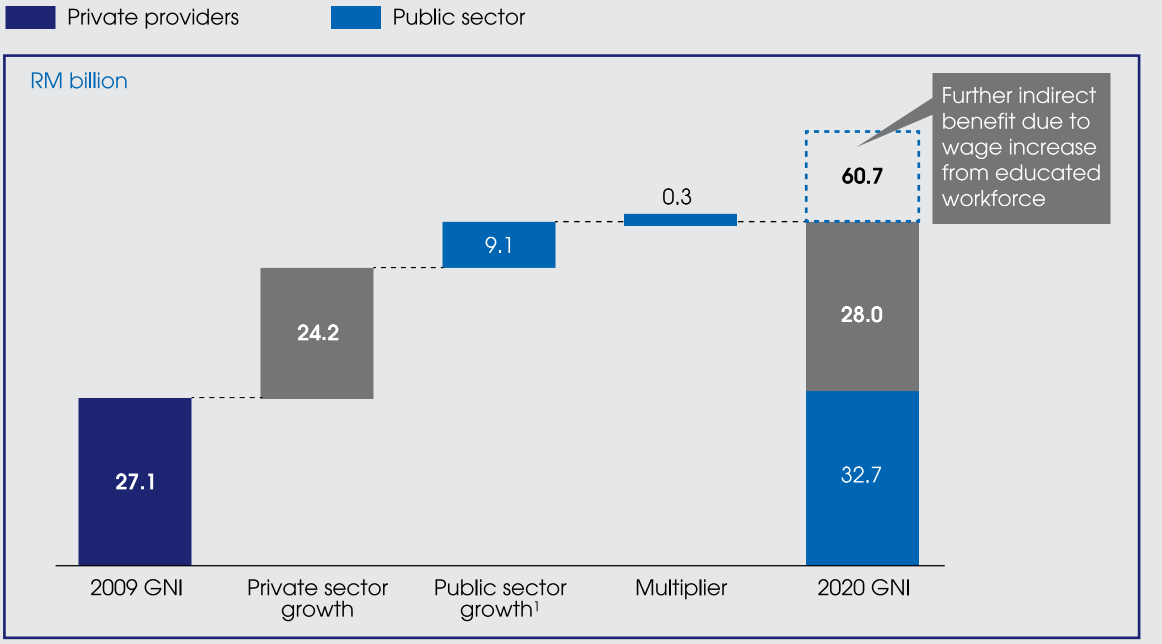
Despite these challenges, we have many strengths to offer. Education experts and investors have highlighted Malaysia's regulatory environment for private education as among the most open in the region. Accordingly, the sector has an increasingly international orientation, with high profile international institutions such as Monash University, Swinburne University, Curtin University and Nottingham University establishing branch campuses in Malaysia. Furthermore, the rapid growth of the industry, despite the challenges, highlights high levels of resilience and entrepreneurship that can be unleashed with further liberalisation of the market.

TARGETS AND ASPIRATIONS

The Education NKEA is targeted to raise total GNI contribution to RM60.7 billion by 2020 from RM27.1 billion in 2009. As public sector growth is expected to be limited, this goal will require the private education sector to grow significantly *(Exhibit 14-3)*.

Exhibit 14-3

The private education sector will need to grow significantly by 2020 to reach GNI contribution target of RM60.7 billion, with further indirect contribution from wage increases



[1] Assuming modest increase in public spending on education, e.g. in line with inflation expectations

In achieving this, an additional 535,000 jobs will be created, with the majority of them in professional and technical fields. We also aspire to triple our foreign student enrolment from around 70,000 today to 200,000 by 2020. Beyond GNI impact, we envisage that the private education sector will have a strong impact on our nation's socio-economic development, through multiple education touchpoints *(Exhibit 14-4)*. As such, we see the private education sector as playing a critical complementary role to the public sector in delivering the education outcomes and Government objectives laid out in the National Key Results Area (NKRA) on Education.

Exhibit 14-4

Entry Point Projects will expand education touchpoints by 2020

	Education NKEA Entry Point Projects	Education Touchpoints (Thousands) 2010	Target 2015	Target 2020
Rapid Scale-Up	1. Scaling up early child care and education centres	321	553	857
	2. Improving early child care and education training	1	13	25
	3. Scaling up international schools	19	37	75
	4. Expanding private teacher training	0	3	10
	5. Scaling up private skills training provision	55	96	110
	6. Expanding international distance learning	7	46	161
Concentration	7. Building an Islamic finance and business education DC	2	12	54
	8. Building a health services discipline cluster	55	90	150
	9. Building an advanced engineering discipline cluster	0	12	34
	10. Building a hospitality and tourism discipline cluster	17	35	43
	11. Launching EduCity @ Iskandar	3	16	16
Demand Generation	12. Championing Malaysia's international education brand	77	124	200
	13. Introducing public private partnerships in basic education	0	8	13

13 EPPs to Deliver RM19.0 Billion GNI

To deliver these targets, four education segments have been prioritised based on existing market size and potential for future growth: tertiary education (both domestic and foreign students), technical education and vocational training (TEVT), basic education (primary and secondary) and early child care and education (ECCE).

A total of 13 EPPs have been developed across these four segments based on their GNI impact and potential to catalyse further business opportunities and investments. These EPPs are also expected to raise overall education standards (defined in terms of improved access, quality and equity), create transformational rather than incremental change and deliver significant results within a 10-year timeframe. These EPPs fall into three themes, as illustrated in *Exhibit 14-5*.

Theme 1: Rapid Scale-Up Initiatives

Rapid scale-up to quickly develop high quality private school chains or increase private sector participation in fragmented and immature markets.

- **EPP 1:** Scaling up early child care and education centres;
- **EPP 2:** Improving early child care and education training;
- **EPP 3:** Scaling up international schools;

- **EPP 4:** Expanding private teacher training;
- **EPP 5:** Scaling up private skills training provision; and
- **EPP 6:** Expanding international distance learning.

Theme 2: Concentration and Specialisation Initiatives

One of our challenges is the wide variation in quality, particularly at the tertiary level where industry linkages are critical. Best practice examples from countries in comparable situations suggest that a way forward lies in the development of integrated networks of institutions across one or more phases of the education value chain.

- **EPP 7:** Building an Islamic finance and business education discipline cluster;
- **EPP 8:** Building a health sciences education discipline cluster;
- **EPP 9:** Building an advanced engineering, science and innovation discipline cluster;
- **EPP 10:** Building a hospitality and tourism discipline cluster; and
- **EPP 11:** Launching Educity@Iskandar.

Theme 3: Demand Generation Initiatives

These initiatives aim to significantly increase individual willingness to pay for high-quality course offerings as well as to export education by developing Malaysia as a regional education hub.

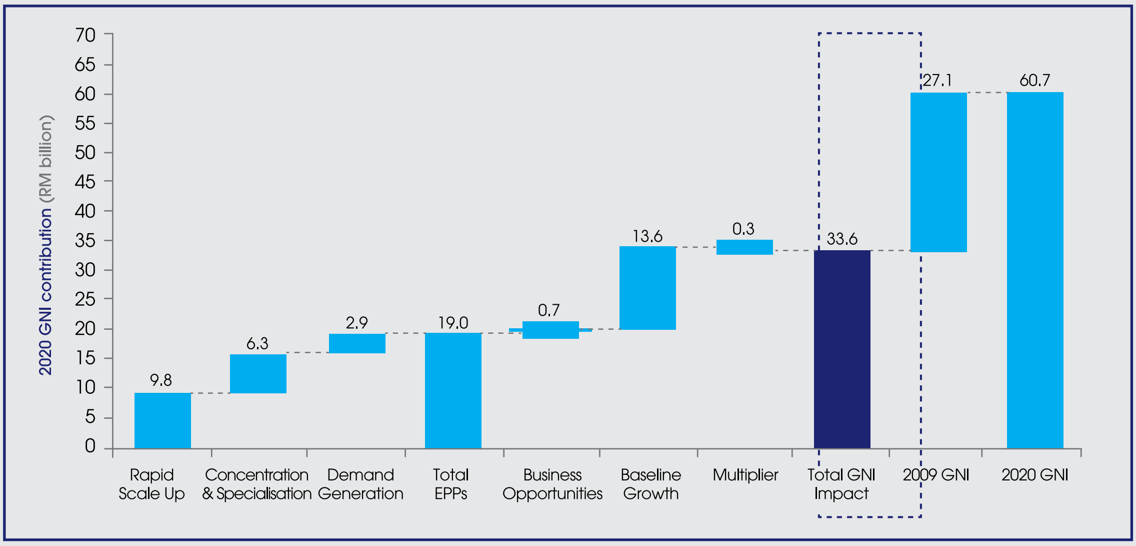
- **EPP 12:** Championing Malaysia's international education brand; and
- **EPP 13:** Introducing public-private partnerships in basic education.

Collectively, these EPPs will contribute RM19 billion in additional GNI towards the sector's targeted GNI contribution. Combined with an estimated RM14.3 billion of GNI in business opportunities and baseline growth, the sector will have an overall target of RM60.7 billion in GNI.

This also includes approximately RM0.3 billion of GNI from the multiplier effect created by EPPs from other sectors. The largest sources of this multiplier are NKEAs including Wholesale and Retail and Business Services, which are the result of increased spending in these sectors, for example, increased employee training and skill-building programmes.

Exhibit 14-5

13 EPPs, 2 business opportunities, baseline growth and multiplier effect will deliver RM33.6 billion incremental GNI impact by 2020



RAPID SCALE-UP INITIATIVES

A major challenge for the industry is fragmentation and lack of scale. Accordingly, we need to encourage existing providers to increase capacity, or make it easier for new providers to enter the market. At the same time, we need to maintain high quality standards and prevent the crowding out of existing providers.

EPP 1: Scaling Up Early Child Care and Education Centres

Rationale

The public sector currently serves 68 percent of child care enrolment and 57 percent of pre-school enrolment. Under the NKRA agenda, the Ministry of Education (MoE) aims to increase pre-school enrolment from 67 percent in 2009 to 87 percent in 2012. We propose to invest an additional RM813 million between 2010 and 2012 towards this effort. However, we will require significant private sector support in the form of funds and the actual provision of pre-school education to meet the NKRA target.

This dependence on the private sector will increase even more if we expand our focus from pre-school to include child care, as our current enrolment rate is 4 percent compared to the OECD average of 25 percent. We know that a child's brain develops the most during the first five years of life, and quality child care improves a child's potential. Moreover, the provision of child care enables women to return to or enter the workforce.

Actions

When scaling up, private pre-school and child care providers are challenged with maintaining quality across all centres. There are four potential expansion models: franchising, growing organically via a hub-and-spoke model, network programming and acquisition. *Exhibit 14-6* illustrates each model and highlights examples of local best practice.

Exhibit 14-6

Private ECCE operators can scale up via multiple models but will need to focus on delivering quality across all schools

Model	Description	Example of players
Franchise Model	Adopt franchise model to grow chain of pre-schools (by franchisees) with common branding and shared syllabus	• Smart reader • Qdees • Kinderland
Hub-and-Spoke Model	Own and operate multiple pre-schools under same brand and operating model – expand via organic growth	• Peter & Jane
Network Programme	Provide services, support and quality assurance for associate network of preschools (with different owners), e.g. syllabus customisation, consulting, teacher training provision	• Talento • Harapan preschool programme
Acquisition Model	Expand by acquiring other pre-schools for economies of scale, and central shared services	• Beacon House

Successful scale-up models must maintain and enhance quality improvements across all ECCE centres

In parallel, MoE will encourage the private sector's efforts by removing four major roadblocks faced by the private sector in entering the market or expanding. All enablers are expected to be in place by the first quarter of 2011, so that private companies can execute as rapidly as possible.

To begin, we will explore the possibility of expanding the voucher scheme for ECCE services to all low-income families (i.e. the bottom 40 percent of the national household income distribution). By allocating funds to students rather than to institutions, families will be able to choose the provider that best meets their needs, thereby generating competition and a higher quality of service. The amount of funds given to families will be on a sliding scale basis, pegged to household income, with more support going to those who need it most.

MoE and the Social Welfare Department will streamline the licensing and registration process. This will be done in collaboration with local authorities, i.e. town planning divisions, health departments and fire departments. The end goal is to enable the end-to-end licensing approvals of these three agencies to be secured within one month. This will be done by harmonising procedures across all agencies throughout the country and streamlining the vetting process. For example, we will secure agreement of local authorities to use the same application form nationally and require private providers to secure approval of the local authority's town planning division prior to actual site acquisition.

We will also engage the Ministry of Finance (MoF) and Economic Planning Unit (EPU) to secure the designation of education as a priority sector eligible for preferential loans from Government institutions such as SME Bank. More information is provided in the section on Common Enablers.

We will establish an independent council or industry association for quality control and advocacy. Comprising members of the ECCE industry, this council will be responsible for setting standards, improving the quality of the industry and representing its interests to the public and to national or Government agencies (e.g. National Committee on Pre-schools).

Funding

The total funding required is RM3.9 billion. The private sector is expected to contribute a cumulative sum of RM482 million over the next 10 years for capital expansion. Cumulative Government funding of RM3.5 billion is required, of which RM2.4 billion comprises a shift in existing Government funding from the supply side to the demand side for pre-school and child care vouchers, RM0.7 billion is for soft loans to stimulate investment in the sector and the remaining RM0.4 billion is allocated to new funding to extend additional vouchers to child care.

Impact

The rapid scale-up of ECCE centres would generate RM3.9 billion in GNI in 2020 and create 78,000 jobs.

EPP 2: Improving Early Child Care and Education Training

Rationale

A key success factor to the development of a high standard across the sector is the quality of ECCE teachers. Roughly 93 percent of ECCE teachers in the private sector do not possess any accredited teacher training certification. The Tenth Malaysia Plan aims to change this by moving towards a minimum diploma level qualification for all ECCE teachers. Delivering on this aspiration will require both upskilling existing teachers and providing pre-service training for new teachers to raise the quality and level of professionalism in ECCE.

Actions

The private sector is expected to take the initiative in developing high quality teacher training centres that provide pre-service and in-service ECCE courses recognised by the Malaysian Qualifications Agency (MQA). The MoE will negotiate off-take agreements with qualified private teacher training centres. Likely assessment criteria will include investment in the research and development of innovative teaching and learning practices that can be commercialised via the production of teaching materials. For instance, the centres could specialise in cross-cultural teaching, as befitting Malaysia's multi-cultural and multi-lingual diversity.

MoE will also fast-track the policy recommendation that training programmes can be taught in other languages such as English, Mandarin and Tamil. Our intention is to have these enablers in place by Q1 2011.

Funding

This EPP will require a total of RM51.2 million in funding. RM19.2 million will come from the public sector, and RM32 million will come from the private sector to fund the building of new training centres or the expansion of existing ones.

Impact

The development of private ECCE centres would generate RM338 million in GNI in 2020 and create 370 jobs.

EPP 3: Scaling Up International Schools

Rationale

International schools have been growing at a rate of 10 percent over the past five years, driven by growth in the expatriate population as well the relaxation of the cap on the number of Malaysian students per school. Looking ahead, this demand is expected to further increase due to the Greater Kuala Lumpur NKEA's target of increasing the expatriate and returning diaspora population from 100,000 to 500,000 by 2020.

Increasingly, Malaysian families are sending their children abroad for primary and secondary education. Reasons for this range from business interests abroad to the higher job mobility such an education is perceived to result in. As an illustration, approximately 15,000 Malaysian students study in Singaporean schools.

Actions

To meet this demand, MoE will encourage local providers by removing the barriers to expansion of international schools. Should domestic providers not be able to meet demand, we will also identify prestigious foreign school providers and encourage them to set up locally.

We have already identified 10 providers that are willing to commit to an expansion programme starting from 2011. MoE will set up a team responsible for tracking the progress of expansion and running marketing campaigns to engage new local and international providers.

We will provide international school operators with support on the issue of land acquisition and soft loans. Both of these are common enablers that affect companies across all phases of the education value chain and will thus be discussed in greater detail in the section on Common Enablers. Finally, we will work in collaboration with the Ministry of Higher Education (MoHE), the Ministry of Human Resources (MoHR), the Ministry of Tourism (MoTour), Malaysia External Trade Development Corporation (MATRADE) and Wisma Putra on marketing Malaysia as a destination of choice for private basic education.

Funding

The capital requirement will be sourced entirely from the private sector and amounts to RM2.4 billion over 10 years.

Impact

The initiative will generate RM2.6 billion in GNI in 2020 and will create approximately 10,000 jobs. Enhancing the quality and increasing the number of international schools would also support the Greater Kuala Lumpur NKEA's objective of attracting more expatriates.

EPP 4: Expanding Private Teacher Training

Rationale

MoE has an aggressive plan to train new teachers and upskill existing teachers, particularly in subjects such as English where there are shortages in quantity and quality. The former is according to the policy "Upholding the Malay language, and strengthening the English language" , which will require about 5,000 new teachers per annum, while the latter is driven by the fact that almost 50 percent of the 35,000 current English teachers were trained to teach subjects other than English (non-optionists).

Current projections suggest that public institutes do not have sufficient capacity to meet this demand. Rather than investing heavily in capacity expansion of Teacher Education Institutions, the NKRA Teacher Quality Lab approved the liberalisation of the market to include private providers for increased competition. This EPP supports the delivery of that initiative.

Actions

We will allow private providers to provide pre-service and in-service training for primary and secondary school teachers. Private providers will be responsible for determining the subject areas they wish to specialise in (e.g. English or special education), as well as what business model they will use (e.g. face-to-face, e-learning, or blended models). They must, however, comply with the quality standards set by MoE and MQA for teacher training and must source their own capital investment and staff.

MoE will open hiring of public sector teachers to graduates of these institutions, regardless of whether they were sponsored by the Government. As with the ECCE training centres, we will also negotiate off-take agreements based on a compelling, value-for-money proposal for training of our teachers. These providers will be selected via a request for proposal process, the first of which will be launched by the end of 2010.

Funding

A total of RM500 million funding is required, of which approximately RM50 million is required from the public sector and RM450 million from the private sector for infrastructure development. In addition, approximately RM25 million will be required by the Government to cover total operating expenditures (e.g. supplies like books, chalkboards and classroom equipment).

Impact

Building these private teacher training centres will generate an additional RM434 million in GNI by 2020 and create 430 jobs.

EPP 5: Scaling Up Private Skill Training Provision

Rationale

The Tenth Malaysia Plan has set a target for a 50 percent skilled workforce by 2020. At our current pace, however, we are unlikely to meet this target. To illustrate, the number of Malaysian Skills Certificates awarded has levelled off in the last five years, and there is low private sector investment. The challenge is not a lack of potential students. Annually, approximately 130,000 dropouts and Malaysian Certificate of Education leavers enter the workforce directly. There are also around 8.4 million existing unskilled and semi-skilled workers and 6.3 million unemployed or stay-at-home citizens that would benefit from access to skill training.

This stagnation stems from other reasons. There is a weak link between industry needs and curriculum development and modes of delivery. The involvement of multiple ministries for funding, delivery and accreditation results in a lack of central oversight and discrepancies in policy implementation. Skill training is perceived as an unattractive career path; it is usually the fall back option for school dropouts and poor performers. Demand side funding to stimulate private sector involvement and inclusiveness via the Skills Development Fund Corporation *(Perbadanan Tabung Pembangunan Kemahiran* or PTPK*)* is limited to RM100 million per annum for pre-service students, which can only support approximately 12,200 students yet there are 40,000 applicants annually for skill training.

Actions

Private skill training institutions are well-placed to respond to these challenges as they tend to have closer ties to industry, are able to adapt more quickly to changing market demands and have excess capacity. The Department of Skills Development (*Jabatan Pembangunan Kemahiran* or JPK) under the MoHR will work with MoE and the MoHE to support this expansion through a set of initiatives targeting employers, students and private providers *(Exhibit 14-7)*.

Exhibit 14-7

A comprehensive set of initiatives have been developed to address gaps in the skills training sector

Priority initiatives



	Initiatives Summary	
Employers	Promote closer links with industry	• **Appoint Industry Lead Body (ILB) and Technical Committee (TC)** for each skill sector to guide development of TEVT in Malaysia
	Harmonise skill training via regulatory reform by sector and location	• **Harmonise accreditation** across Ministries, industries, and private skills training providers by expanding JPK's role as the single accreditation body • **Establish BOT (Board of Technologists)** to regulate, monitor and accredit all TEVT programs
Students	Increase availability of demand-side funding	• **Increase demand side funding (PTPK)** to increase access to skills training for disadvantaged students, and to increase choice for other students • **Increase availability of HRDF[1]** funds for the upskilling of workforce
	Conduct awareness campaign	• **Roll out "SkillsMalaysia" branding** for all initiatives to promote skills training
	Articulate the professional pathway	• **Articulate the professional pathway for TEVT** by allowing Malaysian Skills Certificate holders to progress to selected degree programs • **Convert the SKM evaluation system to a competency point average system** to enable ease of pathway articulation
Providers	Increase the number of qualified instructors	• Allow academically qualified and experienced industry personnel to **fast-track to become TEVT instructors**
	Assist providers in attracting students	• **Collaborate with MOHE to market SkillsMalaysia internationally to** increase international awareness and attract foreign students to enrol into Malaysia's TEVT systems • **Review and simplify regulation** to allow international students to enter skills training programmes • **Buy places** from private skills training providers to utilise excess capacity

1 Human Resources Development Fund

JPK will accelerate the appointment of industry-lead bodies (ILBs) for each sector, beginning with the NKEA strategic sectors. ILBs will be the designated link between industry members, JPK and the private skills training sector. Their main function is to ensure the relevance of national standards to industry needs and identify gaps in supply and demand of human capital. In addition, they will promote skill training amongst members and perform research on future needs of the industry. It is envisioned that existing associations representing a majority of their industry will be appointed as ILBs. The concept has already received endorsement from 22 potential candidates, and it is envisioned that 4 ILBs will be appointed this year, with a further 16 to be appointed in 2011.

We will expand JPK's role as the single accreditation agency for all skills training programmes to harmonise the fragmented skills training landscape. JPK will work with the various ministries, industry sectors and private skills training providers to set a national professional standard by December 2011. To further assist in this, we will establish a Board of Technologists to monitor and regulate professional conduct of technologists. Its mandate will be similar to that of the Board of Engineers, and it will report into the Ministry of Works. Progress towards full recognition of the importance of skills training has already been demonstrated, with the Public Service Department recognising the Malaysian Skills Certificate, Malaysian Skills Diploma, and Malaysian Skills Advanced Diploma for civil servants.

We will increase the funding for PTPK from RM100 million in 2010 to RM500 million for pre-service students, which will benefit 60,000 to 70,000 students per annum. While this is an increase in cost, this sum is still significantly lower than the amount disbursed by the National Higher Education Fund Corporation *(Perbadanan Tabung Pengajian Tinggi Nasional* or PTPTN*)*, which is the primary source of tertiary education funding. It disburses RM3 billion annually, which supports 200,000 students. We will also move towards a performance-based approach for disbursement of PTPK funds, where institutes rated highly for employability of their graduates will receive more funds for students. It is envisioned that tracer studies will be implemented to monitor this key performance indicator.

We will also launch a national awareness campaign in 2011 to engender a shift in public mindset. Promotions of initiatives will be unified under the brand SkillsMalaysia and will begin with a national media campaign in 2011. The key messages will emphasise tangible benefits for students, e.g. high salary multiple, high probability of employment and the possibility of furthering their studies in advanced courses as well as highlighting priority sectors with a shortage of skilled labour. Messages from the media campaign will be reinforced by school counsellors, who will provide comprehensive career guidance to students.

Other initiatives to encourage the private provision of skills training include marketing vocational training to international students (see EPP 12) and collaborating with MoE in a public-private partnership, whereby vocational courses in secondary schools (during Forms 4 and 5) will have their practical component at the private skills training institute. To enable the latter, statutory revision of the Education Act may be necessary to regulate the interaction with industry.

Funding

This initiative requires a total of RM8 billion in funding, of which approximately RM3.4 billion is sourced from the private sector and RM4.6 billion in cumulative public funding is required. Of this latter amount, RM154 million in cumulative public funding is required to support the appointment of ILBs, carry out marketing campaigns and upskill TEVT instructors. The remaining RM4.5 billion constitutes a shift from supply side to demand side funding (PTPK) to reach the goals of the Tenth Malaysia Plan.

Impact

Scaling up private skill training providers will result in a RM2.1 billion increase in GNI in 2020, with significant indirect contribution from increased wages. It will also create approximately 12,400 jobs.

EPP 6: Expanding International Distance Learning

Rationale

Distance learning, particularly online diplomas and tertiary degrees, is a globally booming market. Asia alone has seen an average growth rate of 12 percent per year over the past 10 years and this trend is expected to continue as countries push to raise enrolment at the post-secondary level. Multiple national players have been established to address this demand in India, Indonesia and Malaysia. However, as of 2010, no university in the region had succeeded at building an international presence.

If we were able to step into this vacuum and become the leading regional player in Asia, we stand to gain up to RM351 million in incremental GNI by 2020. Indeed, we are already well-placed to do so, with 31 government-to-government agreements concerning education across Asia. Our efforts thus far, however, have been hampered by a lack of collaboration among key stakeholders and unfavourable regulations.

Actions

MoHE will facilitate a discussion between the three existing online universities *(Box 13-1)* to determine which institution or network of institutions will act as the gateway for all Malaysian universities that want to market their content online. This gateway university will concentrate on developing e-learning expertise and work closely with other universities to transform their total content into distance learning material, supported by revenue-sharing agreements. The gateway university will also be responsible for building partnerships with local universities in target countries to push offerings into foreign markets. This separation of the delivery and content development functions will allow the gateway university to ramp up quickly and cost-effectively. To guard against the attempted expansion of international competitors into Asia, we intend to offer content in local languages as well (e.g. Mandarin and Bahasa Indonesia).

This push to expand our distance learning presence will occur in two waves. The first wave will target China and India due to their size, as well as Indonesia, Vietnam and Thailand due to their cultural fit. Central Asian, African and Middle Eastern countries will be targeted in the second stage.

We will support the efforts to expand online distance learning by contracting additional government-to-government agreements and ensuring that countries comply with existing agreements. We will also review existing regulations that hamper the expansion of online distance learning and help facilitate cross-Ministry discussions as well as improve the set of incentives for local universities, particularly public tertiary institutions (*Institusi Pengajian Tinggi Awam* or IPTAs), to have their content digitised and rolled out online.

Funding

The private sector will provide RM71.3 million in cumulative funding for capital expansion. No public funding is required.

Impact

Building one or more strong regional players in distance learning will result in incremental GNI of RM351 million by 2020 and 3,900 new jobs. This does not include the indirect impact of foreign students who choose blended learning formats that require them to spend part of their studies in Malaysia.

Box 13-1

Delivering a regional online university

Malaysia currently has three major players in the online education space: Asia e-university, Wawasan University and Open University. This provides us with a strong starting base to develop our "gateway" into the regional market.

Asia e-University was established in 2007 with the explicit goal of becoming the e-learning hub for Asia. It has secured local accreditation in all Asia Cooperation Dialogue (ACD) countries, and collaborative agreements in 14 countries. Accordingly, 70 percent of its 3,500 students are from other countries.

Open University was established in 2000 by a consortium of 11 public universities. It aims to provide flexible education solutions so that all Malaysians can have access to tertiary education. It has over 80,000 students, of which 30 percent are foreign students.

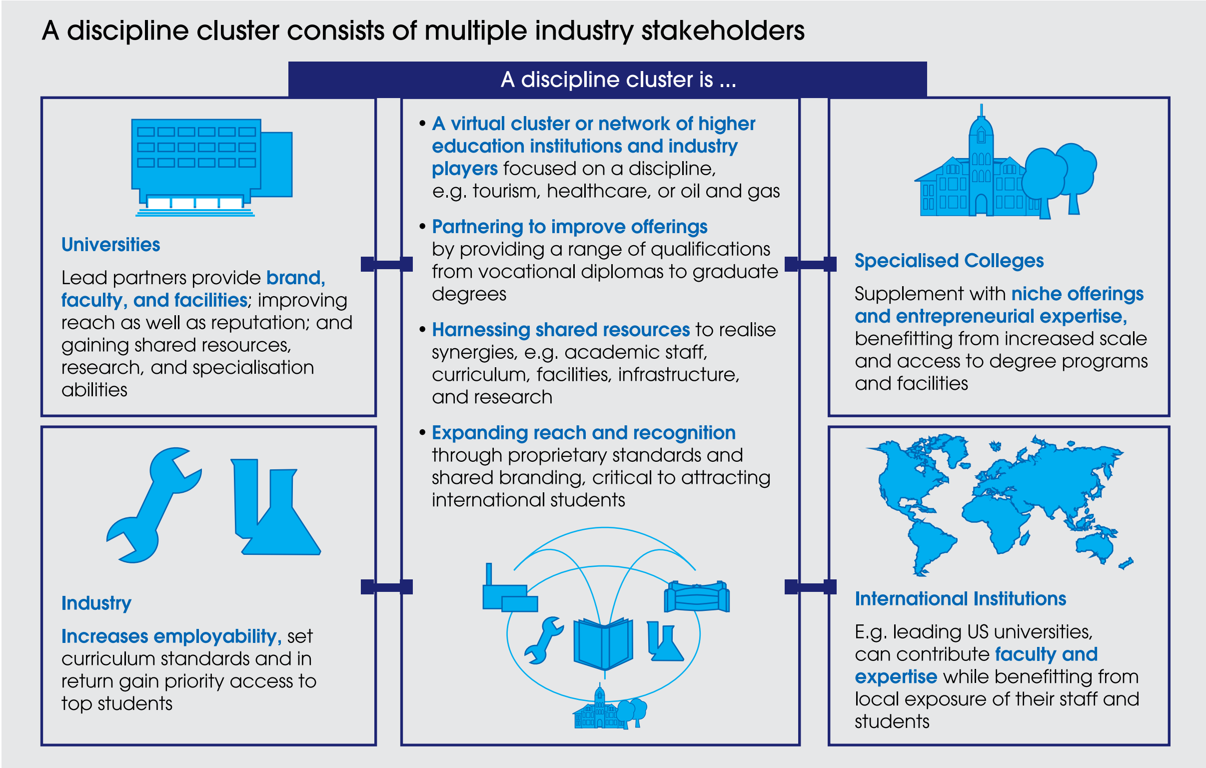
Wawasan University was established in 2007 and specialises in Adult Learning degrees and certification in management science in technology. It has 5,000 students, 20 percent of which are foreign students.

CONCENTRATION AND SPECIALISATION INITIATIVES

As *Exhibit 14-8* illustrates, a discipline cluster is a network of academic institutions and industry players that partner to improve offerings and raise standards so as to expand their reach and recognition. Such clustering will enable Malaysian institutions to overcome the challenges of scale and quality that beset the industry by allowing them to leverage shared resources, jointly mitigate risks and develop proprietary quality standards in coordination with industry.

Multiple discipline clusters can be developed to meet the human capital pipeline needs of each NKEA sector *(Exhibit 14-8)*.

Exhibit 14-8



EPP 7: Building an Islamic Finance and Business Education Discipline Cluster

Rationale

In terms of Islamic banking assets, Malaysia is currently ranked fifth globally after the United Arab Emirates, Saudi Arabia, Kuwait and Qatar with around RM3.2 trillion. In the fast growing sub-field of Sukuk, commonly referred to as the Islamic equivalent of bonds, Malaysia is the top issuer in the world with a 67 percent market share.

Despite this strong position, we currently supply less than 3 percent of the global Islamic finance talent pool. One reason is the lack of national consensus on a standard curriculum for an education in Islamic finance and business. This disagreement makes it difficult for us to develop an internationally-recognised professional certification, critical in major markets like the Middle East. We have also yet to systemically brand Malaysia as a hub in this field.

Actions

The Association of Chartered Islamic Finance Professionals (ACIFP), will take the lead in developing a harmonised undergraduate and post-graduate curriculum that is endorsed by the International Shari'ah Research Academy for Islamic Finance. Both of these organisations are under the purview of Bank Negara Malaysia (BNM).

This curriculum will build off existing ACIFP modules and other successful curricula run by partner institutions such as the International Centre for Education in Islamic Finance, the International Institute of Islamic Business and Finance, the International Islamic University Malaysia and the Islamic Science University of Malaysia. It will become the national standard for the industry and consist of a comprehensive education in Islamic and Syariah principles, followed by a specialisation in Islamic finance, business or law.

Once the standardisation and innovation of the curriculum is complete, ACIFP and its partner institutions will launch a marketing campaign to build international recognition among potential students. ACIFP will also bring in foreign institutions as partners, and leverage the Central Bank's strong international network to build global acceptance among leading financial institutions. Both initiatives will target the Middle East.

Funding

This EPP will be funded entirely by the private sector. In total, RM144 million will be required to cover the cost of ACIFP's administrative build-up, international marketing campaigns and curriculum development.

Impact

The EPP will produce an incremental 2020 GNI impact of RM1.2 billion, and approximately 4,300 jobs at local universities and research centres.

EPP 8: Building a Health Sciences Education Discipline Cluster

Rationale

Southeast Asia currently suffers from an undersupply of 1.2 million healthcare professionals, and this is projected to rise to 1.8 million by 2020. Of this shortage, nurses account for 67 percent. Malaysia too is struggling with a shortage of healthcare professionals, particularly in rural areas. Malaysia had a shortfall of around 86,000 practitioners in 2010 and this figure is expected to increase slightly to 95,000 by 2020.

With over 150 health services education institutions and a respectable market reputation, Malaysia has the ability to take a leading role in addressing this shortage. However, we have thus far failed to do so due to a lack of scale and industry linkages – both for crucial practicum placements as well as for the development of industry-relevant curriculum. These challenges are particularly apparent in the private sector, where employability rates of graduates three months after graduation (80 percent) are significantly lower than that of public institutions (nearly 100 percent).

Actions

The cluster is to be driven by anchor institutions from the education sector and allied health industry. During the first phase these anchor institutions will be responsible for building partnerships with smaller training colleges and developing a portfolio of joint programme offerings from diplomas to postgraduate degrees. This sharing of basic curricula will free up space for member institutions to pursue specialities in niche areas, thereby enhancing the overall portfolio of the cluster. We expect the cluster to provide programmes in all health sciences education. As part of this process, the cluster will engage industry players (e.g. hospitals and clinics) to develop an industry-recognised quality standard.

The anchor institutions are also responsible for setting up joint investment vehicles that will pool private investments to develop critical infrastructure like clinical labs and teaching hospitals. An integrated teacher training process, shouldered by all cluster participants, will also help to address the shortage of lecturers. During the second phase, from 2012 to the end of 2013, the cluster will be broadened to welcome any institute that meets the quality standard. This may well include international partners from educational institutions to health service providers.

The Ministry of Health and MoHE will support the growth of the cluster through a number of incentives. We will facilitate the export of health care professionals through government-to-government agreements that guarantee the acceptance of Malaysian diplomas and degrees in other countries. Where reasonable and relevant, we will allow the increased usage of human-patient-simulators as a partial (20 percent) substitute for clinical postings. We will also restructure the approval process for student quotas so that institutions with good track records can be approved for increases in student numbers based on planned capital expenditure instead of finished infrastructure. This will increase utilisation and planning security for private investors.

Funding

Total funding required is RM1.4 billion, The private sector will fund all capital expenditure renewals, estimated at RM0.2 billion. The public sector will fund approximately RM1.2 billion. Of this amount, RM0.3 billion will help increase quality through the purchase of an international curriculum and the upskilling of instructors. An additional RM0.9 billion will be used to support this initiative by shifting public hospitals in the pipeline to the private sector to operate as teaching hospitals.

Impact

We expect to create an incremental GNI contribution of RM2.87 billion and create 11,800 jobs by 2020.

EPP 9: Building an Advanced Engineering, Science and Innovation Discipline Cluster

Rationale

To move the NKEA sectors up the value chain, we will require access to world-class research that is interdisciplinary, commercialisation-focused and industry-linked. Such research creates a high demand for advanced and postgraduate science and technology students – both as researchers and employees.

In 2009, however, the advanced engineering, science and innovation sector produced 35,000 private students of which only 1,300 were postgraduates. Current projections across the NKEA sectors, particularly for Oil, Gas and Energy, Business Services and Healthcare, suggest that we will need an additional 20,000 specialised graduates per year by 2020, of which 5,000 must be postgraduates. Further, due to high market fragmentation and academic silos, interdisciplinary collaboration is rare, cutting-edge facilities are scarce, resources and industry linkages with the goal of commercialisation almost non-existent. Accordingly, profit from the commercialisation of research across the sector is valued at less than RM50 million, with the average university income from research pegged at less than 1 percent of total revenue.

Actions

As scientific collaboration requires sufficient facilities and benefits enormously from the close interaction of researchers, industry and investors, we recommend that this cluster be physically collocated with industry. The ideal anchor institution is thus a science or technology park that draws researchers and industry from multiple growth sectors, possessing the necessary cutting-edge equipment and laboratories and providing professional commercialisation support.

In the business model, universities would commit research projects to be fully or partly located at the host, and have their professors serve as experts in the host network (e.g. hold periodic, specialised knowledge seminars). The host would provide free basic support functions (e.g. funding mapping, business plan support) and facilities (office space, wireless communications network, libraries and databases), while advanced offerings and facilities (e.g. grant proposal support or tailored laboratories) would be accessible at a discounted rate. Additionally, participating universities would get access to the host's network of start-up and mature companies, experts and other researchers.

We anticipate that the process of starting up this cluster and signing the relevant memoranda of understanding to be completed by the end of 2010.

Funding

The total funding requirement is approximately RM372 million. The private sector will provide RM240 million for infrastructure renewal and capacity build-up. However, additional public funding of approximately RM132 million is requested for infrastructure and facilities renewal.

Impact

We project an incremental annual GNI impact of RM636 million by 2020 as well as the creation of 4,300 jobs in the higher education sector.

Box 13-2

Delivering an Advanced Engineering, Science and Innovation Cluster

Technology Park Malaysia (TPM), Monash University, University Tenaga National (UniTen) and Multimedia University are working together to develop an advanced engineering, science and innovation cluster hosted at TPM.

As a host site, TPM offers university partners cutting-edge office and lab facilities, commercialisation support along the value chain and an interdisciplinary ecosystem with 124 companies across the fields of ICT, biotech and engineering. These companies encompass local and foreign firms, major and promising start-ups to provide a rich mix of industry linkages.

In return, the university partners have committed to pooling resources for capital investment, hosting research projects at the site and having staff act as experts for the TPM network. Any research developed will be shared by the cluster members.

EPP 10: Building a Hospitality and Tourism Discipline Cluster

Rationale

As described in the Tourism NKEA chapter, Malaysia aspires to grow the tourism sector threefold by 2020. To meet this aspiration, we will need to increase our annual output of hospitality personnel from 20,000 in 2009 to 50,000 students by 2020, and the share of graduates with diplomas or degrees will have to increase from 13 percent to 50 percent in the same timeframe.

The primary challenge is that approximately 85 percent of all hospitality and tourism education providers are small in size and only provide basic skills training. This means that only one in every eight employees has a diploma or degree in hospitality and tourism, putting Malaysia at the lower end of its direct Asian competitors (e.g. Thailand and Bali) and limiting opportunities for upward progression. Accordingly, salaries are generally low: a starting worker earns between RM1,000 and RM1,500 a month, and this rises to just RM2,000 per month after five years – the lowest pay increase of any sector. Unsurprisingly, job attractiveness is low, and the industry struggles to recruit talent.

Actions

Each cluster will link one or more universities or university colleges with neighbouring skill training institutions to deliver an integrated set of curricula, from skill training diplomas to academic degrees that build on one another to outline a clear career ladder. Small providers will be instrumental in channelling their students to practical classes held at the college for a fee, or through a voucher system, payable by the student at the end of the session. Pure skill training facilities would gain reputation and quality, while university colleges would get access to a network of feeder institutions, producing a win-win situation.

MoTour will support this initiative by providing clusters with access to underutilised facilities (e.g. conference centres and hotels) so as to minimise the need for upfront capital investment. Private hospitality and tourism companies may also wish to play this role.

Funding

The private sector will fund the capital requirements for this EPP, amounting to RM59 million. The Government will provide an underutilised, Government-owned hospitality facility as a training ground, free of charge, to the first pilot cluster.

Impact

This initiative will create an incremental GNI of RM618 million by 2020 and 2,300 jobs.

EPP 11: Launching EduCity@Iskandar

Rationale

Iskandar aims to become Southern Peninsular Malaysia's most developed region, seamlessly integrating living, entertainment, environment and business into a vibrant metropolis. For this to happen, Iskandar will require high quality education institutions, both to supply the planned economic pillars of Iskandar with talent as well as to help attract top local and foreign talent.

Actions

EduCity@Iskandar is a 305-acre fully integrated education hub comprising universities and institutions of higher education, research and development centres, accommodation and recreational facilities. This multi-varsity campus environment is intended to contribute to the MoHE's and MoE's strategic blueprint in positioning Malaysia as a regional hub in the global education network. It will also provide Malaysians with the opportunity to study at renowned institutions from around the globe, at a cost that is significantly lower than studying at the home campus.

Thus far, EduCity@Iskandar has secured investments from Newcastle University Medicine Malaysia, Netherlands Maritime institute of Technology, Raffles University Iskandar, Management Development Institute of Singapore and Marlborough College.

Funding

EduCity@Iskandar is entirely privately funded and requires RM1.2 billion of investment.

Impact

EduCity@Iskandar is expected to generate RM1.0 billion in GNI impact in 2020 and will create 1,100 new jobs.

DEMAND GENERATION INITIATIVES

There are significant opportunities across the education sector to substantially increase individual willingness to pay for high-quality course offerings as well as to export education by developing Malaysia as a regional education hub.

EPP 12: Championing Malaysia's International Education Brand

Rationale

Globally, international student mobility is expected to increase to about 6 million by 2020, of which 70 percent are expected to come from Asia Pacific. While Malaysia currently has a strong market position (as the 11th largest exporter of education in 2009), the rise of neighbouring education hubs in China, Singapore and Thailand threatens our continued dominance. Our aspiration is thus to increase foreign student enrolment at the tertiary level to 200,000 by 2020 and differentiate fees for locals and internationals by up to 50 percent. We also aspire to increase our student intake in international schools from 16,000 currently to 74,000.

Actions

As *Exhibit 14-9* illustrates, positioning Malaysia as a regional hub of choice in the global education network will require actions that address each phase of the recruitment of foreign students.

Exhibit 14-9

MoHE will take the lead as brand champion for Malaysian international education and co-ordinate with other agencies

Marketing Funnel	Roles needed	Who is responsible?	Proposed initiatives
Awareness	• Brand Champion for MY Education - Clear value proposition - Diverse products	**MEPC**[1] + Supported by Tourism and MATRADE, MoE, MoHR	• Integrate My Education in all Tourism campaigns • Share physical facilities with Tourism or MATRADE • Bulk buy advertising time for MY Education and IPTs
Consideration	• Marketing strategy by country • Info availability and channel management	**MEPC** + Supported by MoE, MoHR, Tourism, MATRADE	• Focus marketing efforts on high priority countries • Develop IPT-driven marketing and placement body
Decision-making	• Placement to institutions	**MoHE, MQA**	• Streamline foundation programmes • Differentiate fees for locals and internationals across all IPTs • Limit the number of foreign students based on quality rating of institution
Experience in Malaysia Retention	• Advocacy and streamlining e.g., - Immigration visa - Media management - Branding to locals - Student safety	**MoHE, MoE, MoHR, Immigration, KDN**[2]**, IPTs**	• Streamline visa application process by Immigration • Allow students to work during and after graduation under specific conditions • Create green-lane student pass application process

1 Malaysian Education Promotion Centre
2 Ministry of the Interior *(Kementerian Dalam Negeri)*

To begin, the Malaysian education brand requires greater international awareness and national cohesion. While all three core Ministries (MoHE, MoE and MoHR) aim to bring in foreign students, MoHE (as the Ministry with the largest number of foreign students, and the focus of this EPP), will take the lead in developing and championing a consistent brand. We will engage with MoTour, MATRADE, Malaysia Investment Development Authority (MIDA) and Wisma Putra to explore ways of sharing international offices. This is to ensure that we can rapidly increase the number of Malaysian Education Promotion Centres (MEPC) from 4 offices today to 10 by the beginning of 2012.

MoHE will move from an ad hoc marketing campaign across 50 different countries to one that targets 10 countries with high potential. These 10 top countries were selected based on historical and projected outbound student numbers, government-to-government relationships and demand and supply matching (i.e. they have a shortage of graduates in a discipline we have excess capacity for). To improve cost-effectiveness, we will work with MoTour to explore the bulk purchase of advertising space in shared target countries. MoHE will also facilitate the set-up of a tertiary institution (IPT)-driven marketing and placement body, to complement the efforts of the Malaysian Education Promotion Centres.

MQA will streamline the various foundation programmes on offer to create two common Malaysian Foundation Programmes — one for science and another for arts. These will be the single local foundation programme accepted by all local higher education institutions for degree programmes. We anticipate that it will take three years to develop and pilot the Malaysian Foundation Programme, following which we can export it to support the branding of the Malaysian curriculum.

A comparison of fees at competitor hubs suggests that we can increase our fees for international students by up to 100 percent and still be competitive, due in large part to our low living costs. MoHE will thus encourage all institutions, public and private, to differentiate their fees for local and international students by up to 50 percent. MoHE will also ensure that all IPTAs first charge market level fees for foreign students, so as to create a level playing field with IPTSs.

Finally, we will need to address various immigration challenges that have been raised by foreign students, from the slow application process for a student pass, to their ability to work during term time and on completion of post-graduate studies. Further details are provided in the section on Common Enablers.

Funding

Total funding requirements excluding operational expenditures are approximately RM1.2 billion. Government funding of RM310 million is required for increased marketing expenditure and infrastructure to accommodate the capacity increase, assuming that a fraction of foreign students will attend IPTAs. In addition, the initiative requires the Government to fund operational expenditures of approximately RM146 million per annum on average for operating costs related to students who subsequently attend public higher educational institutions (e.g. books, classroom supplies and related items, excluding salaries). The private sector fund comprises approximately RM890 million.

Impact

The EPP will generate an incremental GNI increase of RM2.8 billion in 2020 and 153,000 jobs.

EPP 13: Introducing Public-Private Partnerships in Basic Education

Rationale

Currently, MoE runs approximately 10,000 schools across Malaysia and has an additional 70 schools in its pipeline for 2011. On average, the Government spends RM4,000 on each student in a public school (in terms of tuition as well as other costs). As the number of schools increases, the challenges of managing them all at a high standard becomes increasingly complex.

Governments in similar situations worldwide are increasingly separating the role of funder and regulator from that of provider. The public-private partnership (PPP) model, that this split enables, offers several benefits. First, it provides greater choice to families through a broader portfolio of school types at an affordable price and leverages the private sector as a partner in meeting national objectives. Second, the resulting competition raises overall standards across both public and private schools. Third, private providers find it easier to expand their business or to enter the market as they do not have to invest heavily in capital expenditure.

Actions

We have developed a PPP model wherein the public sector provides the investment for building new schools, while the private sector operates them on a private school licence. MoE will secure a certain number of seats for students from low-income families from the surrounding catchment area. For these students, MoE will pay no more than the average per student cost of a public school. The private sector will not be allowed to charge these students any top-up fee. The private school provider will be responsible for recruiting the remaining students and may set their own fee levels for these students.

To get the programme up and running quickly, new public schools in the pipeline will be put up for bid as PPP schools. We aim to have at least 10 schools set up in 2011. MoE will evaluate private school providers based on criteria such as their historical track record on financial management and student outcomes, commitment to national development and required facilities.

Funding

This programme will require a total of RM400 million in funding, which is already provided for by the Government. The private sector will provide RM300 million in operational funding.

Impact

This EPP will generate RM160 million in GNI contribution by 2020 and create 1,000 jobs.

BUSINESS OPPORTUNITIES

Beyond the EPPs identified, there are additional business opportunities that will support the growth of the industry. These business opportunities include projects already planned and baseline growth in areas beyond the four education segments highlighted above. Overall, these business opportunities as well as the baseline growth of the sector is estimated to contribute a further RM14.3 billion of GNI in 2020 and generate over 252,000 incremental jobs.

Business Opportunity 1: Discipline Clusters to Support NKEAs

Over the next 10 years, the development of each NKEA will require an intensive pipeline of human capital and skilled workers. This represents exciting opportunities for collaboration between industry and education institutions, both local and foreign. For example, other NKEA sectors could benefit from leading private companies and Government Linked Companies (GLCs) partnering with anchor education institutions to develop focused discipline clusters around oil, gas and energy services, or around agro-technology and food sciences. This opportunity is expected to contribute approximately RM590 million GNI in 2020 and generate 180 jobs.

Business Opportunity 2: Centre for Excellence in Language Learning

Malaysia is uniquely positioned as a multi-cultural and multi-lingual environment that can offer native-level instruction across multiple languages. As a leading tourist destination, these opportunities are highly complementary to the Tourism NKEA. Malaysia will offer unique value propositions tailored to a wide array of international student segments, including as a hub for immersive multi-language studies, language tourism packages or modular short intensive language programmes in English, Arabic, Mandarin or Bahasa Malaysia to regional students. This opportunity is expected to contribute approximately RM80 million GNI in 2020 and generate over 100 jobs.

Baseline Growth

The baseline growth across the sector is expected to contribute approximately RM13.6 billion to GNI in 2020 and generate approximately 252,000 jobs, which reflects the increasingly important role and profile of the private education sector in driving the education objectives for the country. Accordingly, the baseline growth from public education services is expected to be lower going forward at RM9.1 billion.

We expect to see continued robust growth in private schools and private tertiary institutions in Malaysia given the strong characteristics of the sector and the existence of many high-quality schools and institutions. In parallel to the EPPs identified, the Government will continue to support strongly the development of private entrepreneurs and businesses in the private education sector.

In addition, the expansion in EPPs across the sector is expected to catalyse opportunities and generate significant demand in services and products such as curriculum development, book publishing, education software provision, library services, extra-curricular services and enrichment classes as well as non-academic services such as facilities management and information technology support services.

COMMON ENABLERS

Beyond the specific enablers for each EPP, we have identified five sector-wide enablers critical to unleashing the full potential of the private education market. These enablers will help private providers meet demand opportunities, promote more PPPs in the funding of education and empower students and families as paying consumers.

Raise Quality through Regulatory Reform

Overview

Underpinning all of the EPPs is the need for larger regulatory reforms aimed at raising the profile, branding and quality of the sector as a whole. In the tertiary sector, for instance, approximately 36 percent of the 440 registered active private higher education institutions in December 2009 had a student population of less than 300 students. While some of these colleges are boutique institutions with lucrative niche markets, most are struggling financially.

Actions

The MoHE is launching a college rating system akin to SETARA for universities and university colleges. The process will begin in November 2010 and be implemented by mid 2011, and once the results are out, any college that only receives a one-star or two-star rating will be put on a strict three-year improvement cycle. During this period, underperforming colleges are expected to either improve on their own or seek mergers to help them attain the key performance indicators expected by the Ministry. If they are not able to do so, they will not have their licence renewed and will be closed down.

Concurrently, the Ministry will actively encourage the harmonisation of IPTAs and IPTSs via bilateral partnerships, credit transfer arrangements and seat buy-ins. The latter refers to the purchasing of seats in IPTSs rather than continuously expanding the capacity of public institutions. A pilot model is being developed between Sunway University College, in affiliation with the University of Lancaster and University of Malaya, for Sunway's School of Business and University of Malaya's Faculty of Business and Accounting.

MoHE will also link SETARA and the forthcoming college rating system to various incentives so as to reinforce the role of these ratings as the industry gold standard. *Exhibit 14-10* outlines the planned linkages, all of which will begin from January 2011 for universities and university colleges and from January 2012 for colleges.

Exhibit 14-10

MoHE will link SETARA and the forthcoming college rating system to eligibility for various benefits

A minimum[1] of ...	Benefit
★★★ Three stars	• Limited access to PTPTN student loans
★★★★ Four stars	• Full access to PTPTN student loans • Tax exemption on the value of increased exports, if at least 40% of the institution's student population are international students[2] • Consideration for self-accreditation by school or faculty
★★★★★ Five stars	• Receive a 10-year institutional licence instead of 5-year licence • Consideration for self-accreditation by institution • Ability to vet student pass applications

1 A comparable rating will be set for the college rating instrument once it is launched at the end of 2010
2 Exact details are being negotiated

Finally, MoHE has also committed to improving the functionality of MQA. For instance, to reduce turnaround times on the approval and accreditation of programmes, MQA will negotiate one-on-one with each IPT, starting with the six-star institutions and working downwards to those with four stars, to secure academic staff as members of its panel of assessors. MQA is also negotiating with professional and industry bodies to empower these entities to accredit programmes in their own fields.

Improve Access to Supply-side Financing

Overview

Education providers have difficulties in securing debt financing or doing so at affordable rates. Local commercial banks typically decline loan applications, and Government-aided loans are limited. For instance, SME Bank currently has only RM20 million set aside for higher education companies. This sum represents the balance from the Ninth Malaysia Plan funding allocation; no allocation has yet been made under the Tenth Malaysia Plan.

Actions

MoE will engage MoF and the Economic Planning Unit to secure the designation of education as a priority sector eligible for Government-aided loans from institutions such as the SME Bank and Bank Pembangunan. There are two elements to the request: a preferential interest rate and dedicated funds for all education companies regardless of phase. We seek to secure this designation by January 2011.

We will also work towards reducing the cost base for private companies by addressing the high cost of acquiring land. In 2010, local authorities charged a premium ranging from 15 to 30 percent of the land's value to convert it (e.g. from residential or agricultural designation to commercial designation). MoE will take the lead in working with selected local authorities throughout 2011 to pilot potential solutions. Therefore, actions may include reducing the premium charged by state governments for converting the land designation, creating a land designation specifically for private education institutions and designating more land for mixed-use purposes.

Shift to Demand-Side and Performance-Based Financing

Overview

We devote a sizeable portion of our Government budget each year to fund education services (e.g. 23 percent in 2010). The majority of this funding is termed supply-side funding (funds provided directly to school providers) and is provided regardless of the quality of the institution. The challenge with such funding schemes is that there is very little incentive for school providers to reduce their costs or raise their quality. There is also little incentive for households to take ownership of and contribute to the cost of the education their family members receive.

Actions

We aim to increase the amount of demand-side financing through the expansion of the NKRA voucher scheme for pre-schools and the introduction of a comparable scheme for child care and basic education. MoE is also expanding the use of PPP off-take arrangements and frameworks, such as the ones described in the EPPs for training ECCE and basic education teachers and new build PPP schools. Finally, we will ensure that the expansion of technical education and vocational training as promised in the Tenth Malaysian Plan involves sufficient demand side funding. All of these initiatives should be in place by the 2012 school year.

On performance-based funding, MoHE will start in 2011 by linking the SETARA rating of universities and university colleges to their eligibility for research grants and PTPTN student loans. This initiative will be extended to colleges in 2012 once the college rating system has been implemented. Over the next five years, we will also explore the possibility of expanding the system of performance-based funding to other types of grants (e.g. the operating block grants that IPTAs receive).

Box 12-4

Transforming the National Higher Education Fund Corporation

MoHE is taking steps to accelerate and widen reforms for the National Higher Education Fund Corporation, which is the primary source of funding for 82 percent of domestic IPTA students and 55 percent of domestic IPTS students. We will do so by getting tougher on recovery, to bump up our recovery rates from 40 percent in 2009 to 90 percent by 2020. In the short term, we will employ debt recovery specialists to recover bad debt amounting to RM72 million. In the long term, the Ministry has already agreed to transfer its recovery function to the Inland Revenue Board by requiring all loan recipients from 2011 to register with Internal Revenue Board. PTPTN is also deploying targeted recovery teams to work through a backlog of more than 60,000 cases that need to be issued letters of demand or summons and submitted for judicial processing.

We will also improve our disbursement policies. Here the main initiative is to provide a capped level of tuition fees to all successful applicants, instead of both tuition fees and living allowances as was previously the case. Students from low-income households may then appeal to request living allowance support as well. This policy change will begin in 2013.

Finally, we are also going to encourage more families to save via the National Education Savings Scheme (*Skim Simpanan Pendidikan Nasional* or SSPN). We will do so by reinstating the requirement for students to have a SSPN account before they can qualify for a loan, with an exemption for extremely poor families. We will also target secondary schools in our marketing campaign for SSPN to encourage parents to start saving for their children's education as early as possible.

Remove Barriers to Entry for Foreign Students

Overview

Foreign students frequently cite bureaucratic immigration processes as a discouraging factor in coming to Malaysia. To illustrate, the process for applying for a student pass takes up to three months on average as the MoHE or MoE first vets every application before sending it on to the Department of Immigration for processing. Another example is the fact that not all Government agencies recognise the International Student Card issued to foreign students as a valid form of identification.

We have also historically imposed tight regulations on foreign students. For instance, we do not currently allow foreign students to work during term time, or to automatically stay on following graduation. Internationally mobile students increasingly prioritise such work-opportunity incentives when choosing where to study, and it is notable that most major export countries (e.g. United States of America and Australia) have loosened their restrictions in this regard.

Actions

MoHE will create a green-lane facility for student pass applications wherein some IPTs will not need verification from the Ministry. This facility will start from January 2011 and be open to all IPTs that receive a minimum SETARA rating of five stars. A comparable benchmark will be set for colleges once the college rating instrument is implemented by mid 2011. To discourage abuse, the Ministry will conduct periodic spot checks on institutions, with stringent fines imposed in case of fraud.

To address the challenges of the immigration process, MoHE will spearhead discussions with the Cabinet Committee on Foreigners on three proposals:

- Extending the planned single-tier visa system for tourists to foreign students;
- Including students in the planned biometric tracking programme for all foreign workers; and
- Allowing high performing graduates to work in Malaysia if they meet stringent quality criteria.

For instance, the proposal is for postgraduates to be allowed to work for up to five years if they have a minimum CGPA of 3.5 and come from institutions with a minimum SETARA rating of four stars. The proposal is to allow them to work for up to three years if they score a first class degree, have had a minimum student pass of three years and graduated from an institution of at least four stars. These discussions are ongoing, and we expect a resolution on these issues to be secured by the end of 2011 at the latest.

Improve Ease of Doing Business

Overview

The large number of government agencies involved in the education sector unfortunately lends itself to a bewildering array of regulations. For instance, just setting up a private education institution involves over 10 government or government-related agencies. This process is further complicated by the fact that licensing requirements and application forms may differ by local authority.

Actions

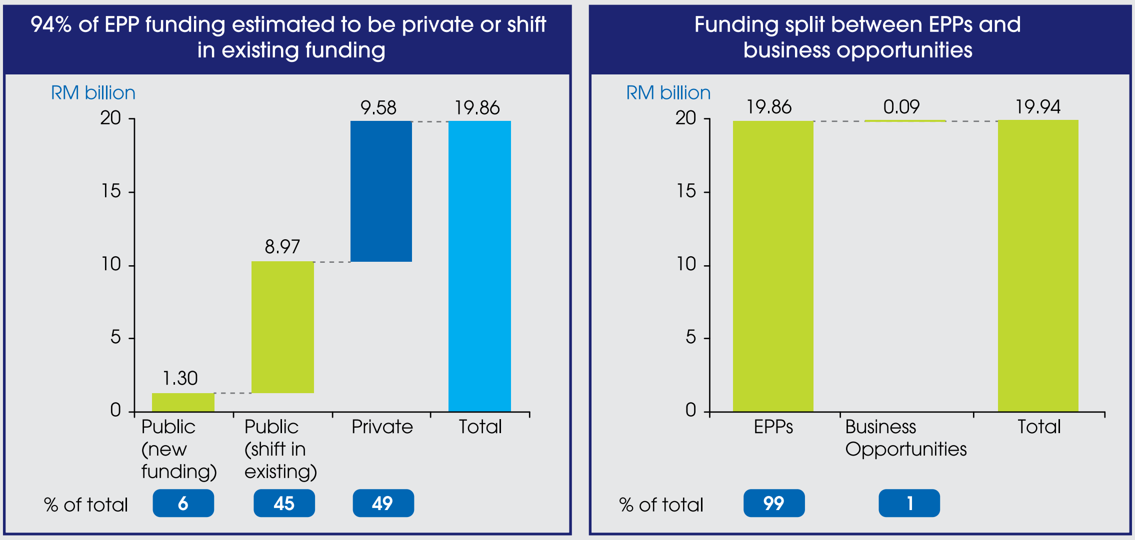
MoE will spearhead engagements with other government bodies (e.g. Ministry of Housing, local and state governments) to streamline the processes and forms involved in setting up or expanding a private education institution. This may include establishing a virtual one-stop shop for registering institutions. To do so, we will develop an automated database of all private providers at different levels and automate processes so that private providers may submit their registration documents, receive progress updates and perform other transactions online.

FUNDING

As *Exhibit 14-11* illustrates, achieving our growth aspirations will require RM19.86 billion in funding over the next 10 years for our 13 EPPs, of which new funding provided by the Government comprises only 6 percent of total funding requirements.

Exhibit 14-11

For the 13 EPPs, RM19.86 billion capex is required, of which only 6% of new funding will come from public sector



Of the RM10.27 billion in total public funding required, about 12 percent (RM1.30 billion) constitutes a request for new funding. The remaining 88 percent of funds required (RM8.97 billion) is a reallocation of spending from supply to demand-side funding. Shifting from supply-side funding to performance-based demand-side funding is in line with Tenth Malaysia Plan policy and will result in cost savings for the public sector. For instance, the pre-school voucher programme shifts funds we would have previously spent on publicly-run educational institutions to privately-run institutions, thus encouraging the private sector to invest. The financial impact on the public sector is either net neutral, or we will save money through improved cost efficiencies.

GOVERNANCE AND DELIVERY

The successful implementation of the Education EPPs will require concerted coordination and planning across multiple ministries, agencies, local authorities and private sector companies. At the same time, each EPP requires clear lines of accountability. As such, each EPP has a public sector owner that will be responsible for regulating and delivering the relevant enablers. There are also private sector stakeholders who will be responsible for delivering the actual projects. *Table 14-1* summarises these owners and stakeholders, as well as selected milestones in the delivery journey.

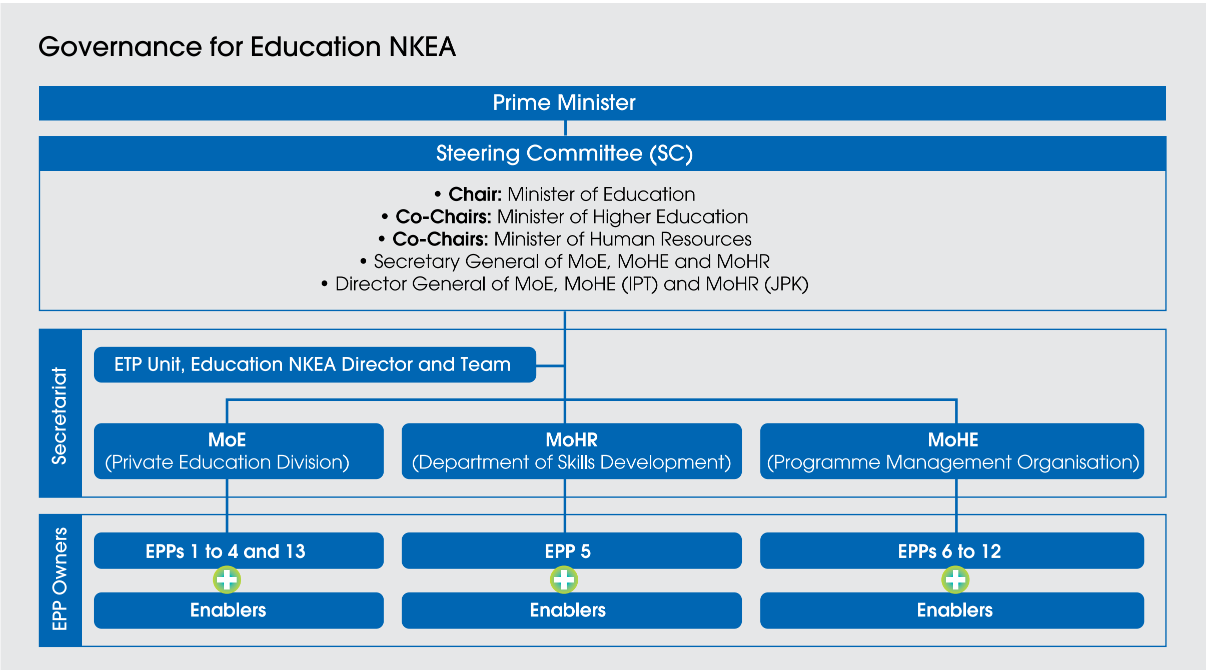
Table 14-1

EPP	Lead initiative owner	Other key agencies, companies and organisations
Scaling up early child care and education centres	Private Education Division, Ministry of Education and Welfare Department, MoWFCD	Ministry of Women, Family and Community Development (MoWFCD)
Improving early child care and education training	Private Education Division and Teacher Education Division, Ministry of Education	Private early education and child care training centres, Ministry of Women, Family and Community Development
Scaling up international schools	Private Education Division, Ministry of Education	International schools, Malaysian Education Promotion Centres
Expanding private teacher training	Private Education Division and Teacher Education Division, Ministry of Education	Private teacher training institutions
Scaling up private skills training provision	Department of Skills Development, Ministry of Human Resources	Industry-led bodies, Ministry of Higher Education
Expanding international distance learning	Program Management Office, Ministry of Higher Education	Asia e-University, Wawasan Open University, Open University
Building an Islamic finance and business education discipline cluster	Program Management Office, Ministry of Higher Education	International Centre for Education in Islamic Finance, Association of Chartered Islamic Finance Professionals, Bank Negara, Higher Education Institutes (e.g. International Islamic University Malaysia, UniRazak)
Building a health sciences education discipline cluster	Program Management Office, Ministry of Higher Education	Ministry of Health, Higher Education Institutes (e.g. Masterskills, SEGI)
Building an advanced engineering, science and innovation discipline cluster	Program Management Office at Ministry of Higher Education Ministry of Science, Technology and Innovation	Private companies, e.g. Technology Park Malaysia, Monash University, Multimedia University (MMU), Universiti Tenaga Nasional (UniTEN)
Building a hospitality and tourism discipline cluster	Program Management Office, Ministry of Higher Education	Private companies, e.g. UCSI University
Launching EduCity@Iskandar	Program Management Office, Ministry of Higher Education Private Education Division of the Ministry of Education	Iskandar Investment Berhad, Khazanah Nasional Berhad, Ministry of Education
Championing Malaysia's international education brand	Marketing Division, Ministry of Higher Education Private Education Division, Ministry of Education	Ministry of Education, Ministry of Human Resources, Ministry of Tourism, MATRADE
Introducing public-private partnerships in basic education	Policy and planning unit, Private Education Division, Ministry of Education	Private school operators, Economic Planning Unit

A broader governance structure will also be required to ensure clear mechanisms for inter-agency coordination and private sector collaboration, as well as to provide overall strategic leadership. As *Exhibit 14-12* illustrates, we have set up a Steering Committee that brings together the senior leadership of our three core Ministries: MoE, MoHE and MoHR. They will meet every month to approve decisions for all ongoing initiatives, resolve inter-agency issues and provide direction on the overall progress of the NKEA agenda. The Steering Committee will also provide updates to the Prime Minister every quarter.

Day-to-day execution will be overseen by a team composed of ETP Unit staff and ministry-level Delivery Management Offices (DMO). ETP Unit will be responsible for facilitating private sector engagement, coordinating inter-DMO activities and monitoring overall progress across all three ministries. Ministry DMOs will provide line management leadership for their dedicated EPPs. Each Ministry has committed to enhancing the functionality of pre-existing units rather than adding to the existing bureaucracy by creating new ones, and the three DMOs will be housed in the Private Education Division in MoE, the Programme Management Office in MoHE and the Department of Skills Development in MoHR.

Exhibit 14-12



Summary of Education NKEA

• **Incremental GNI impact in 2020**	RM33.6 billion
• **Additional jobs in 2020**	535,000

- **Critical targets and milestones within 6 to 12 months**
  - Off-take agreements with ECCE training centres signed
  - 1,000 additional seats in international schools created
  - Gateway distance education university with first intake of students established
  - Discipline clusters with first intake of students for Islamic finance and business education, health services, advanced engineering and hospitality and tourism established
  - Two new institutions in EduCity@Iskandar opened
  - Five new international offices for international marketing established

chapter 15
Agriculture

Chapter 15: Transitioning from Agriculture to Agribusiness

"The global demand for agriculture produce is expanding rapidly and there are many niches that Malaysia can exploit, given our natural advantages. We aim to double the agriculture sector's contribution to Gross National Income by expanding the production of high-value items such as swiftlet nests and by increasing the percentage of raw produce that is made into downstream products. Through better infrastructure, management techniques and technology, we also target to increase the productivity in paddy farming, seaweed farming and temperate vegetables farming by more than 40%. This will enable farmers participating in our projects to more than double the monthly income that they receive"

YB Datuk Seri Noh bin Omar

The agriculture sector plays an important role in Malaysia's economic development – providing rural employment, uplifting rural incomes and ensuring national food security. Traditionally labelled the poor man's sector, the face of agriculture is slowly changing entrepreneurial farmers in diverse businesses from swiftlet nest ranching to large-scale paddy farming have been able to move in to Malaysia's top 20 percent income group. Internationally agriculture has become the centre of cutting-edge research and development (R&D) as the drive to feed the global population within environmentally sustainable constraints is leading to experimentation in solutions such as vertical farms, laboratory-grown meat and advanced genetic engineering.

Excluding industrial crops such as palm oil and rubber which are covered in the Palm Oil NKEA, the agriculture sector contributed RM20.2 billion or about 4 percent of Malaysia's gross national income (GNI) in 2009, with a compounded annual growth rate between 2005 and 2009 of 10.7 percent.

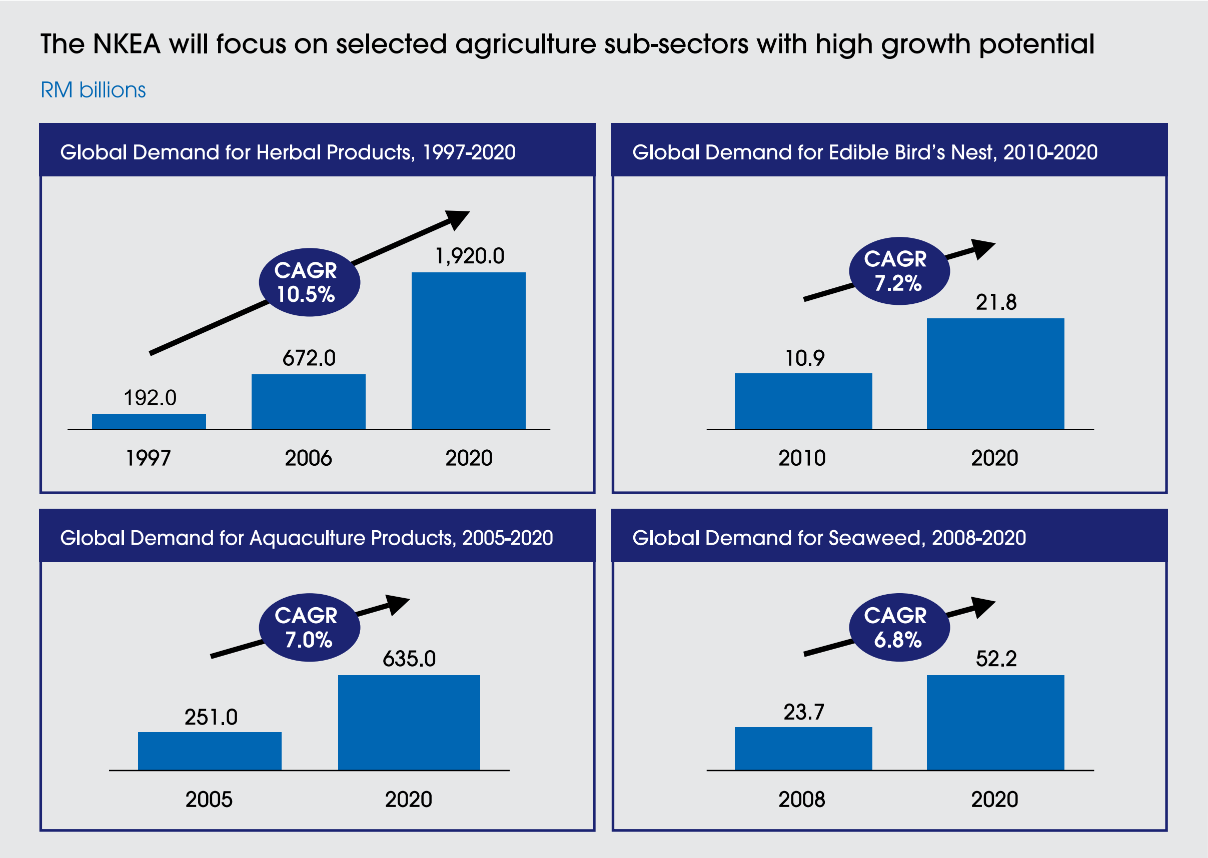
The growing global demand for agricultural products provides great potential to expand the sector's contribution to GNI and elevate rural incomes. Our aim is to transform agriculture into agribusiness, moving towards a model which is inclusive but simultaneously anchored on market-centricity, economies of scale and value chain integration.

DEFINITION OF THE AGRICULTURE NKEA

The overall agriculture sector is broad, encompassing industrial crops such as oil palm and rubber, food and cash crops (also known as agro-food, food that is produced by agriculture) such as paddy and livestock, and specialty products such as edible bird's nests and herbs.

The Agriculture NKEA will focus on selected sub-sectors which have high-growth potential, namely aquaculture, seaweed farming, swiftlet nests, herbal products, fruits and vegetables and premium processed food *(Exhibit 15-1)*. This will enable Malaysia to tap a large global market that is rapidly expanding.

Exhibit 15-1



SOURCE: World Bank, Birds' Nests Traders Association of Malaysian, Food & Agriculture Organisation (FAO)

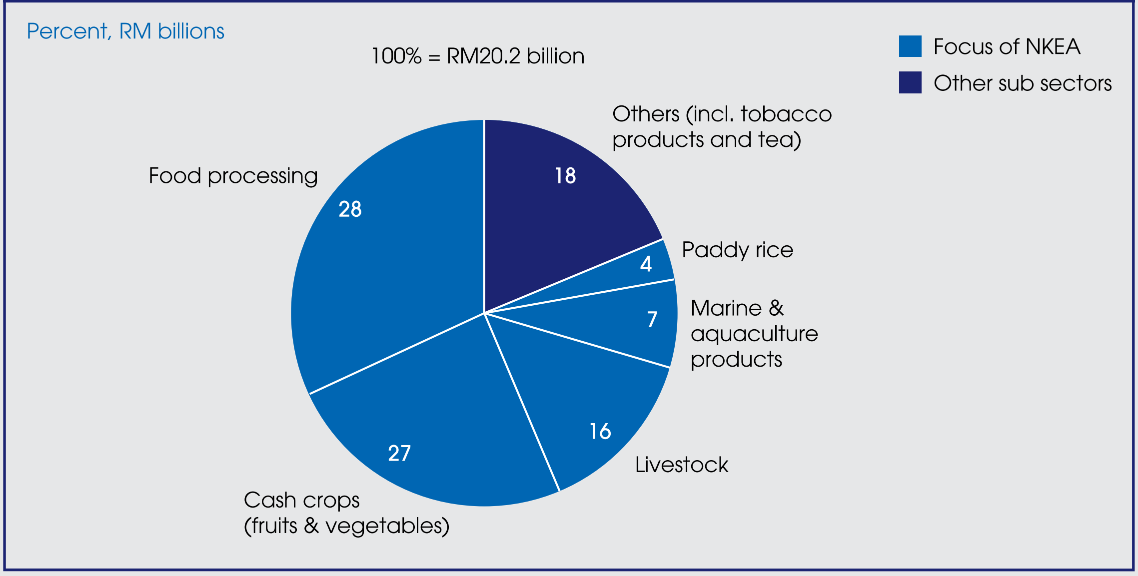
In addition, the paddy and livestock sub-sectors were selected due to their strategic nature in ensuring national food security.

The eight sub-sectors identified above generated total domestic production worth approximately RM16.6 billion in 2009 and account for 82 percent of the GNI contribution of the agriculture sector *(Exhibit 15-2)*.

Exhibit 15-2

The sub-sectors under the NKEA account for 82% of agriculture's contribution to Malaysian GNI in 2009

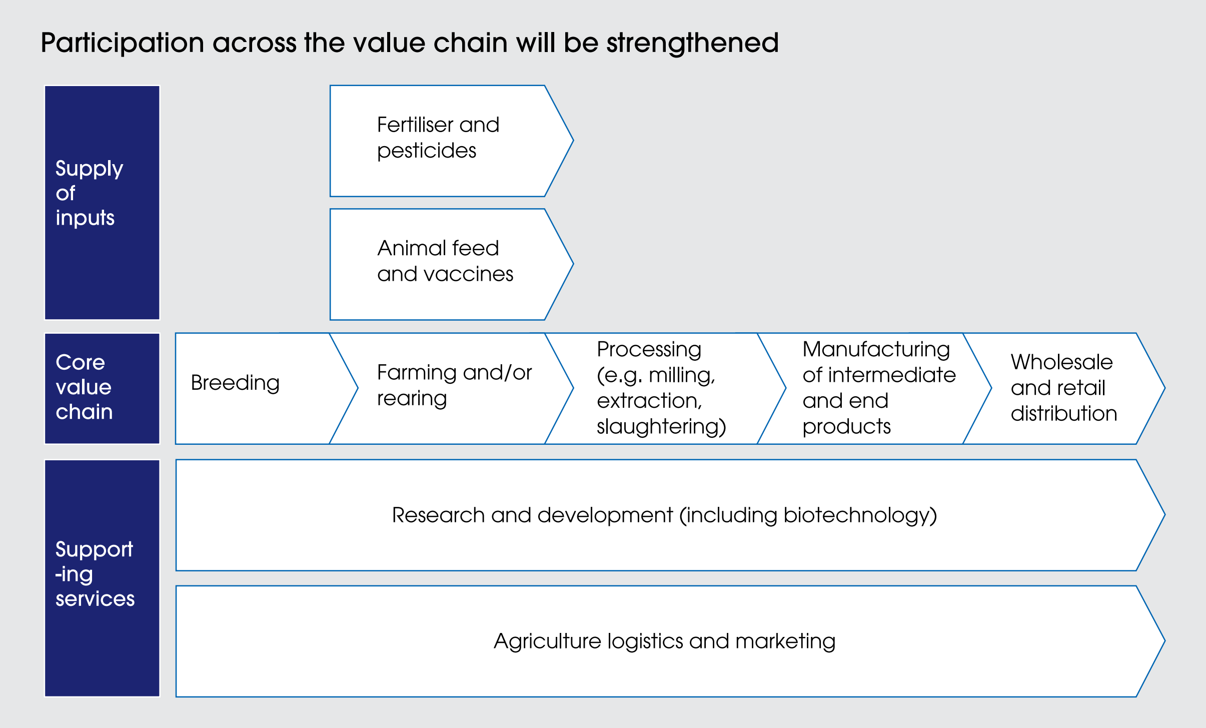
Sub-sectors contribution to agriculture GNI, 2009



SOURCE: Department of Statistics and Ministry of Agriculture

Across each sub-sector, the NKEA will adopt an end-to-end approach from breeding to distribution and encompass support services such as biotechnology and agriculture logistics *(Exhibit 15-3)*. In breeding, the use of technologies such as molecular markers will be accelerated to ensure crops and livestock have high-yield and disease-resistant attributes, longer shelf-lives and better taste and nutritional content. In downstream processing, emphasis will be given to higher-value products such as botanical drugs from herbs and ready-to-consume edible bird's nest products.

Exhibit 15-3



Additionally, emerging areas such as agriculture biotechnology and agriculture logistics will be expanded, capitalising on the growth of the agriculture sector regionally.

MARKET ASSESSMENT

The world's population continues to grow and so does the average calories consumed per person, driving steady demand for agricultural produce. Between 2010 and 2015, global food demand is expected to increase by 10 percent, while both production and supply will respectively increase by a mere 1.6 percent.

While this points to positive prospects for global agriculture, increased consumer affluence and governmental response to climate change are driving key changes in the demand for agriculture produce. These trends are:

- **Concern for health and food safety:** Consumers are looking for foods that are low in fat, have less sugar and are free from harmful chemicals. Retail sales of organic foods in the USA and Europe grew at a compounded annual growth rate of 14 percent between 1997 and 2008, despite the fact that the total food market grew at only 1.6 percent per annum over the same period;

- **Demand for convenience:** Busier lifestyles and the increased cost of out-of-home dining is driving demand for convenient in-home dining products. Sales for premium ready-to-heat meals in the USA, UK and Japan were worth RM15.4 billion in 2009 and are expected to grow annually at 15 percent up to 2014. In parallel, related segments such as pre-mixed sauces and frozen food are recording strong growth of 7 percent per annum;

- **Concern for environmental sustainability:** Due to climate change concerns, governments in developed markets such as the European Union are forcing retailers and producers to be more responsible in ensuring environmental sustainability. Large firms such as Walmart and Unilever are requiring suppliers to adopt good agriculture practices that minimise detrimental impact on the environment; and

- **Increased willingness to embrace exotic foods:** Globalisation and the media are increasing consumer familiarity with different cultures and their foods. As a result, there is increased demand in developed markets for ethnic foods such as Indian, Chinese, Vietnamese and Japanese cuisine, and many products are now available in mainstream supermarkets. In parallel, global imports for tropical fruits such as pineapple, papaya, starfruit and melon increased by a compounded annual growth rate of 9.7 percent between 2001 and 2007.

The message is clear: there is significant market potential that Malaysia can tap, but unless we customise our products according to market demands and change our practices to embrace food safety and environmental requirements, the market will be inaccessible. *Box 15-1* tells the story of one Malaysian company that has been successful in premium food exporting of papayas.

Box 15-1

Agribusiness integrated supply chain model: From Lanchang to London

Malaysian AgriFood Corporation (MAFC) has set a new approach to agribusiness, adopting a model that is market-oriented and integrated across the supply chain, as opposed to one that is production-centric.

A papaya cultivation pilot project in TKPM/TPM Lanchang was set up, where the papaya variety was developed based on market needs such as firm texture, sweet taste, fragrant aroma and longer shelf life. In addition, compliance to global standards of food safety, quality and sustainability were ensured to gain market acceptance. Consistency of high quality papaya cultivation is managed through the use of controlled environment farming facilities that emphasise the use of high technology production techniques such as fertigation - the application of fertilizers, soil conditioners or other water soluble products through an irrigation system.

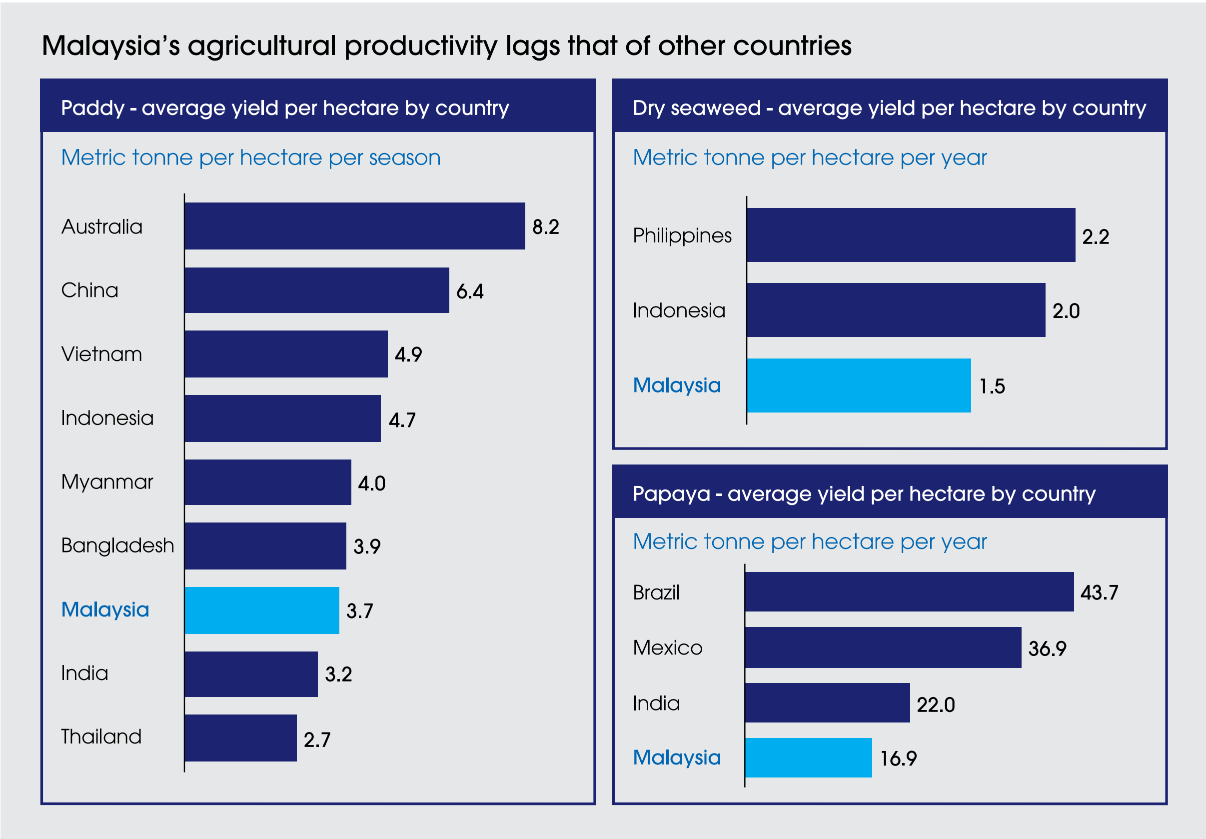
MAFC adopted a contract farming programme to integrate small scale farmers into its model. Contract farmers benefit from a guaranteed buyback scheme and extension services programmes where Master Growers collaborate and train contract farmers to ensure precise farm inputs such as supply of seedlings, fertilisers and pesticides and provide technical advice on achieving optimal yield.

A state-of–the-art consolidation, processing and packaging centre was established to manage post-harvest requirements, mechanising the sorting and grading of papayas according to size and weight. This precision reduces wastage, a key cost factor in post harvest management.

Malaysia has many advantages that position the country to capitalise on the growing global demand for food products. Our climate allows us to be one of the few countries that can produce items such as tropical fruit and temperate vegetables as well as swiftlet nests. We are well-endowed with natural resources such as 4,675 kilometres of coast that can be leveraged for aquaculture. Pristine sheltered coasts in Sabah are ideal for seaweed cultivation and our bio-diverse flora and fauna can be utilised for herbal products. We have a significant land bank of 6.6 million hectares already dedicated to agriculture, which can be used more productively, or reallocated to more marketable products. Our geographical position enables our products to reach markets such as Singapore, Hong Kong, Japan, China, Australia, the Middle East and European Union within six hours by air or seven to eight days by ship, enabling us to access 900 million consumers in the middle-income group.

However, the performance of our agro-food sector lags that of neighbouring countries *(Exhibit 15-4)*. Our productivity in areas such as rice farming, seaweed cultivation and fruit farming is significantly lower than competitors. At the same time, while countries such as Thailand are able to be net agro-food exporters, Malaysia's agriculture trade deficit has increased. The trade deficit in selected sectors such as fruit, vegetable, fish, meat, dairy, egg, coffee, herbal products and seeds has increased from RM4.3 billion in 2004 to RM8.5 billion in 2008.

Exhibit 15-4



SOURCE: International Rice Research Institute (IRI), Food & Agriculture Organisation (FAO), Universiti Malaysia Sabah, Agriculture Statistics Handbook 2009

Poor productivity has resulted in low incomes for farmers, with average paddy farmers earning RM1,400 per month and average fruit farmers earning RM1,860 per month. These earnings includes price support of RM248 per metric tonne provided by the Government. With rural areas accounting for 35 percent of Malaysia's population and agriculture accounting for 43.7 percent of rural employment, improving agriculture productivity is critical to closing the rural-urban income gap, which was 1.00:1.82 in 2009.

If the current situation remains, we will not only fail to capture market opportunities, but see our food import requirements continue to rise, in a market environment where food prices are rising due to land and resource scarcity. Three critical issues need to be addressed to effect a transformation: lack of scale economies, lack of market centricity and focus on low-value products.

Lack of Scale Economies and Ageing Farmer Community

The overriding issue in our agriculture sector is the predominance of small-scale farmers and the lack of large, industrial-scale companies. For example, the average farm-size in paddy farming is 2 hectares (economic size is approximately 300 hectares), 2 hectares in aquaculture (economic size is 1,000 hectares for an integrated operation) and 1 hectare in the cultivation of fruits (economic size is 1,000 hectares in order to support one sorting, processing and packaging plant). This is in sharp contrast to the oil palm sector where large companies manage land banks in excess of 500,000 hectares.

At the same time, Malaysia is faced with an ageing farming community, where the average age of paddy farmers is above 60 years and 40 percent of fruit farmers are above 55 years of age.

The issues of scale and ageing farmers have led to farming not being approached as a business with profit maximisation objectives. In this context, farmers have had little incentive to invest in new forms of mechanisation, comply with international food safety standards or adopt good agricultural practices, such as the precise application of fertilisers.

As a result, products are unable to be sold to premium markets such as the European Union. Additionally, in certain segments such as fruits and vegetables, wastage due to lack of good collection practices and off-grade produce can be as high as 40 percent. This results in low incomes for farmers, who sometimes need Government intervention in the form of subsidies and price support mechanisms.

Lack of Market Centricity

There is a lack of a demand-driven approach in Malaysian agriculture today. For example, there is potential to increase the export of fresh tropical fruit to the European Union, where annual consumption of papaya and pineapples has increased by 8 percent and 16 percent respectively over the past five years. However, these markets want produce that is certified pesticide-free, has longer shelf-life, is more convenient to consume and farmed according to environmentally sustainable standards. Due to low awareness on the need for compliance with good agriculture practice and inadequate R&D on post-harvest crop treatment, Malaysia's ability to capture these premium markets is limited.

The current approach to agriculture is predominantly production-centric and farmers have poor market linkages, relying on traders or middlemen to get their output to end markets.

Focus on Low-value Products

Malaysia is over-focused on the production of commoditised products that capture low market-value. For example 81 percent of natural products are in the lower value segment such as personal care products (e.g. facial creams and soap) and nutraceutical (also known as functional food), and only 19 percent are in the higher value of the nutraceutical segments, and most of these products are not based on Malaysian herbs. There is insufficient R&D, clinical studies and marketing done to tap into the premium markets that offer higher margins.

TARGETS AND ASPIRATIONS

The Agriculture NKEA has three main aspirations. First, we target to increase GNI contribution by RM28.9 billion, to reach RM49.1 billion in 2020, more than double the current size of the sector. Second, we target to create 74,600 job opportunities, the bulk of which will be in rural areas. Third, we target to increase the incomes of farmers participating in our initiatives by two to four times *(Exhibit 15-5)*.

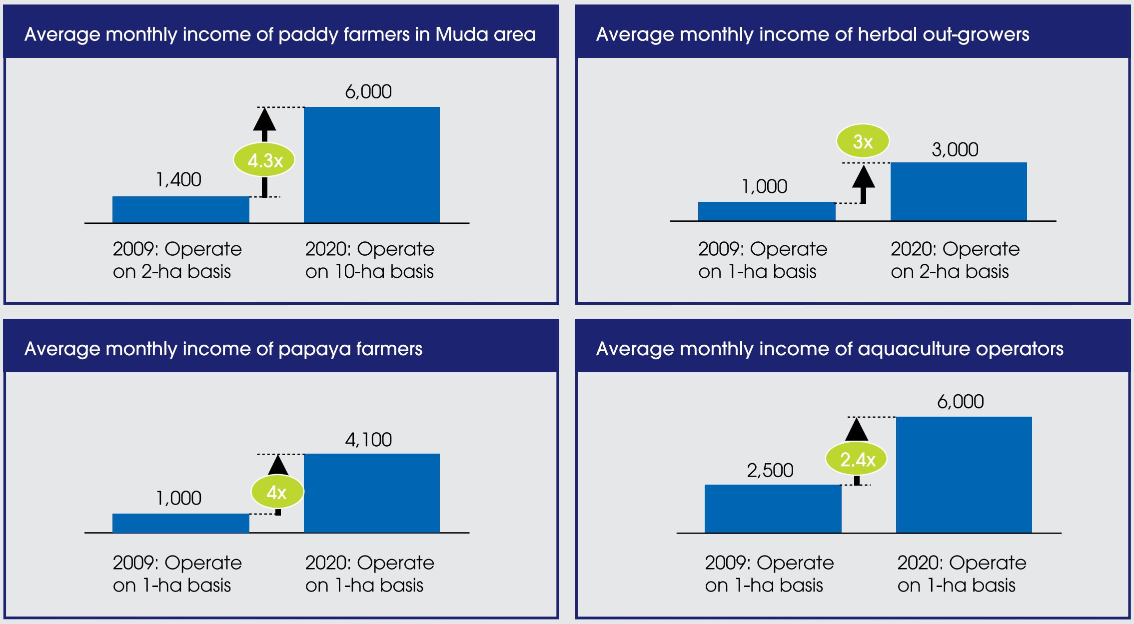
These achievements will involve capturing higher value for what we produce and increasing productivity. Downstream investment in higher-value activities will be catalysed for edible bird's nest, herbal products and processed food, enabling us to capture up to 10 times the value that we are capturing today. At the same time, we target to increase average yields for paddy farming, seaweed farming and temperate vegetable farming by 60 percent, 46 percent and 40 percent respectively.

As a result of the agriculture sector's transformation, rural employment structures will shift. Agriculture is currently labour-intensive, but provides subsistence-level employment. Mechanisation and scaling up will be accelerated. This will support the exit of aged farmers and enable the creation of higher-value agriculture-related businesses for the next generation of rural workers. *Box 15-2* tells the story of a Melanau farmer who increased his income through swiftlet nest ranching.

Exhibit 15-5

We target to increase farmers' incomes by 2 to 4 times

RM/month



Box 15-2

Swiftlet nests increase income 20-fold for Burkan

In the year 2000, forest fires caused by open burning of forest estates in Kalimantan caused the forced migration of the edible bird's nest (EBN) swiftlet to Mukah, providing a unique opportunity for its 50,000 residents to benefit from bird's nest ranching activities.

A Melanau farmer, Burkan Aje Mohamed Roslan used to earn no more than RM150 per month to support his entire family. After realising the income potential from EBN ranching, Mr Burkan worked closely with relatives to save enough money to build a small EBN house of about 5.66 metres wide and 8.49 metres in length. Building upon guidelines established via an EBN research project at Universiti Teknologi Malaysia UTM on affordable ranching, most birdhouses in Mukah are constructed using a small piece of concrete slabs as a base and are supported with walls made from recycled agricultural by-products, including rice husks and palm fronds. Each birdhouse typically costs less than RM10,000 to build, and most residents like Mr Burkan typically share the building costs with other investors, in this case his relatives.

Through the implementation of sustainable harvesting practices and by maintaining a network with established larger producers who buy from him, Mr. Burkan now earns up to RM3000 a month from the sale of his birds' nests, approximately a 20x increase from his previous income. Other residents of Mukah involved in EBN ranching are also engaged in barter trade, exchanging the lucrative nests from their EBN premises for necessary household goods.

16 EPPs to Deliver RM28.9 Billion GNI

To achieve our objectives, we have identified 16 entry point projects (EPPs) and business opportunities that catalyse the establishment of market-driven, industrial scale and integrated agriculture-related businesses. These initiatives fall under four themes:

- Capitalising on Malaysia's competitive advantages
- Tapping premium markets
- Ensuring food security objectives are consistent with increasing GNI
- Expanding participation in the regional value chain

Capitalising on Malaysia's Competitive Advantages

This theme aims at unlocking value from our biodiversity by venturing into areas where Malaysia has intrinsic advantages. For example, we have a diverse range of natural herbs, unique native seaweed varieties in Sabah and a long and underutilised coastline. Five EPPs have been identified under this theme:

- **EPP 1:** Unlocking value from Malaysia's biodiversity through high-value herbal products;
- **EPP 2:** Expanding the production of swiftlet nests;
- **EPP 3:** Venturing into commercial scale seaweed farming in Sabah;
- **EPP 4:** Farming through integrated cage aquaculture systems; and
- **EPP 5:** Rearing cattle in oil palm estates.

Tapping Premium Markets

This theme aims at capturing the growing global market for premium foods. We will focus on efforts such as expanding production of premium grade fruits and vegetables for export, certified shrimps for export and premium-processed food such as convenient ready-to-heat meals. Four EPPs have been identified under this theme:

- **EPP 6:** Replicating integrated aquaculture model (IZAQs) to tap market for premium shrimp;
- **EPP 7:** Upgrading capabilities to produce fruit and vegetable for premium markets;
- **EPP 8:** Strengthening the export capability of the processed food industry through an integrated processed food park; and
- **EPP 9:** Introducing fragrant rice variety for non-irrigated areas.

Ensuring Food Security Objectives are Consistent with Increasing GNI

While growing the sector, the Government will ensure that food security objectives are met. As Malaysia's population continues to grow, the need for scaling up and increasing productivity of agro-food production, such as paddy farming, to increase national self sufficiency and reduce subsidy dependency by both farmers and end consumer s. Four EPPs have been identified under this theme:

- **EPP 10:** Scaling up and strengthening productivity of paddy farming in the Muda area;
- **EPP 11:** Scaling up and strengthening productivity of paddy farming in other irrigated areas;
- **EPP 12:** Strengthening current anchor companies in cattle feedlots; and
- **EPP 13:** Partnering with a large foreign dairy company to establish dairy clusters in Malaysia.

Expanding Participation in the Regional Value Chain

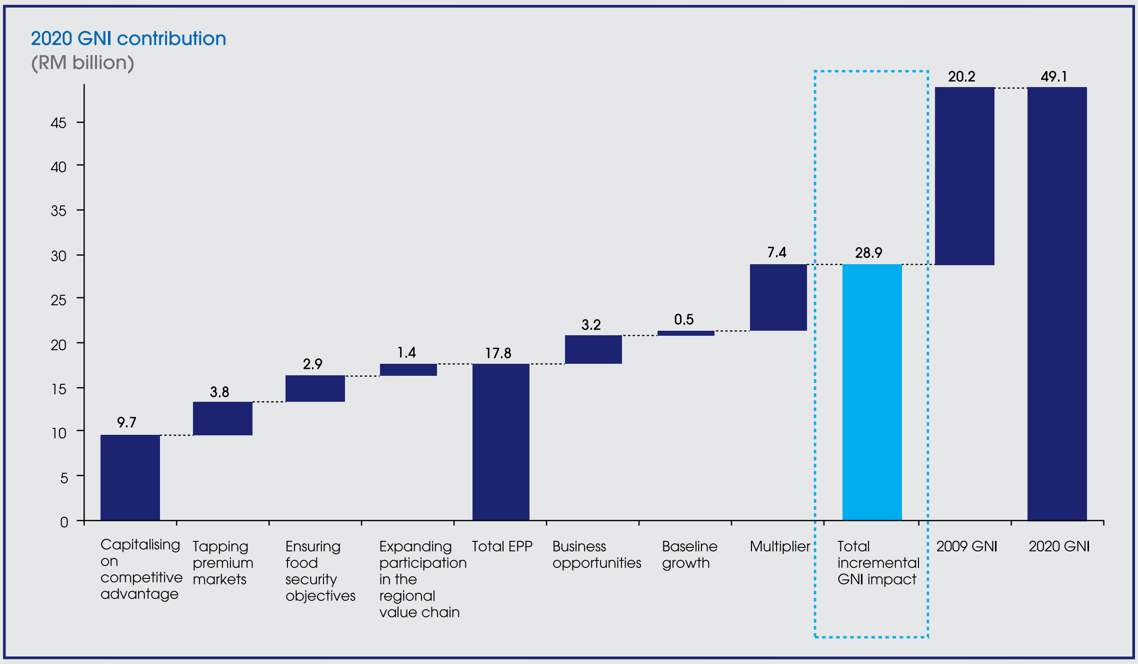
As markets for food become more globalised, due to better logistics and also broadening of consumer tastes, we will aim to expand our participation in the agricultural sector in the region. This can be done through acquiring foreign farms, undertaking contract farming activities overseas and providing regional services in niches such as molecular marker discovery and validation for breeding. Three EPPs have been identified:

- **EPP 14:** Establishing a leadership position in regional breeding services;
- **EPP 15:** Securing foreign direct investment in agriculture biotechnology; and
- **EPP 16:** Investing in a foreign cattle farming company.

The 16 Entry Point Projects and 11 Business Opportunities will contribute to the increase in GNI of RM28.9 billion by 2020 *(Exhibit 15-6)*. This includes about RM7.4 billion of GNI from the multiplier effect created by EPPs from other sectors. The largest source of the multiplier effect on the Agriculture NKEA is the Palm Oil and Wholesale and Retail NKEAs, which is estimated to contribute to 37 and 27 percent of the multiplier effect respectively. This includes increased demand for agriculture sector output from sales of food products in new retail outlets.

Exhibit 15-6

16 EPPs, 11 business opportunities, baseline growth and multiplier effect will deliver RM28.9 billion incremental GNI impact by 2020



The top 10 EPPs add up to 93 percent of the incremental GNI. The remaining EPPs have a relatively smaller GNI impact; however they are important either from a food security perspective, from an inclusiveness perspective or play a key role in supporting other EPPs.

The EPPs are based on the replication of successful ventures and are designed to address economies of scale. Anchor companies will be created in emerging high-potential areas such as aquaculture, seaweed farming and horticulture by replicating proven models. At the same time, small-scale farmers will be linked to anchor companies via contract farming or other models, enabling improved productivity. In paddy farming, scaling-up will be pursued by incentivising aged farmers to lease their land or allow it to be managed by a third party on a profit-sharing basis. *Box 15-3* tells the story of a Malaysian dairy farmer whose breeding programme increased yield significantly.

Through the EPPs and business opportunities, we envision a transformation:

- **From fragmented and small-scale farms to integrated, clustered and large scale agri-businesses:** Farms will be re-organised to form large and economical clusters supported by modern infrastructure and central management. Sufficient scale of upstream production in turn enables expansion into downstream products. In the farming of fruits, a cluster of approximately 1,000 hectares will be able to support a sorting and packaging plant and processing of second grade produce into snacks, purees and juices;

- **From production-centric to market-driven:** Farming activities will be designed to meet market demands in terms of nutrition content and safety, sustainability and convenience. This will drive supply chain innovation and upstream and downstream R&D. For example, new methods for rice processing will be adopted in Sarawak to preserve nutritional content. Anchor companies will take the lead in working with contract farmers to ensure compliance with food safety and environmental sustainability standards; and

- **From low value-to higher value-add products:** Innovation and technology adoption will be intensified to develop higher value, differentiated and customised products such as clinically-tested herbal products, premium grade fruits, organic rice and bird's nest-based products.

Box 15-3

Datuk Yap: "My parents were very poor, and my education was only up to Form 3…"

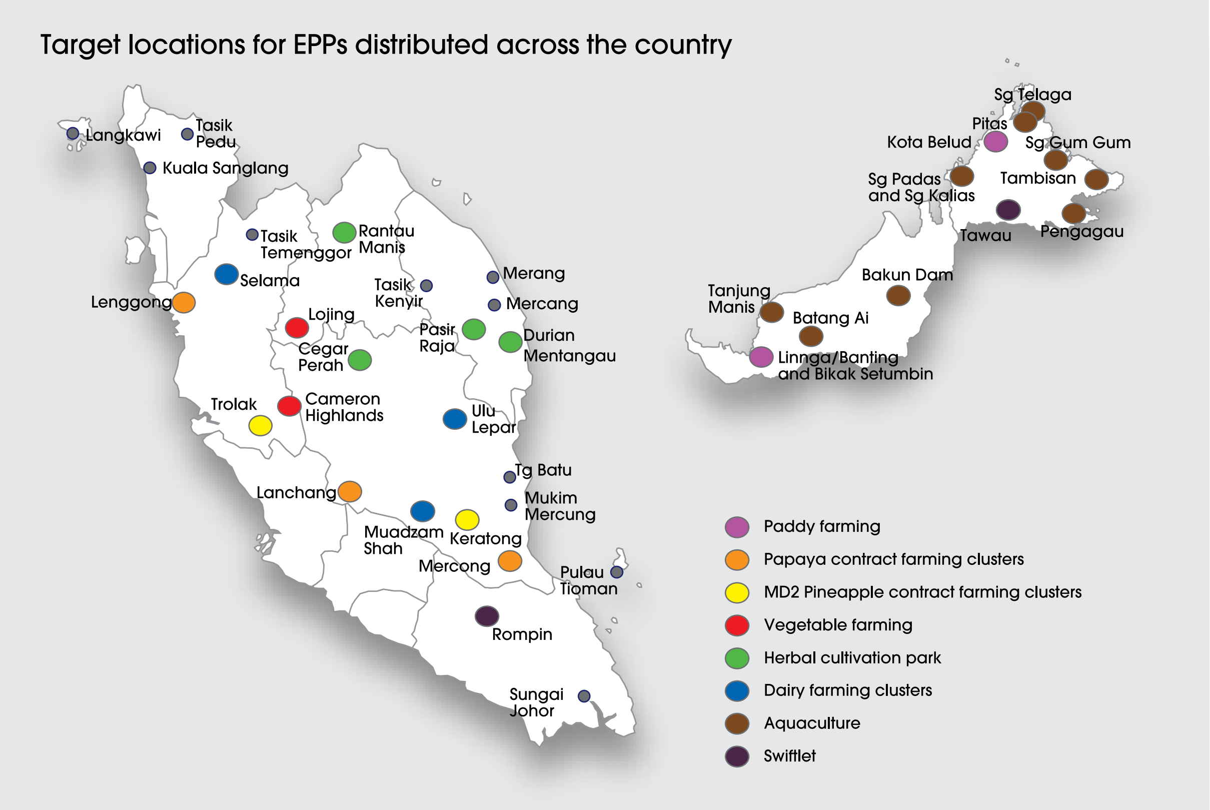
Yap started his dairy farm 18 years ago on a 0.8 hectare land in Kampung Ansip, Keningau with only two cattle, loaned by the Department of Veterinary Science. Today, Datuk Yap's company, Evergreen Sdn Bhd runs the largest private dairy farm in Malaysia, with 5,000 cattle, 2,000 deer, an integrated milking house and an accredited halal abattoir.

Among his success factors were establishing his own breeding programme using artificial insemination techniques. Sexed semen is sourced from the USA to ensure female offspring and strong quality breeds. In addition, strict culling is practiced whereby only cows producing 12.5 litres of milk a day or more are kept for the dairy, while the rest are slaughtered for meat. Good animal husbandry practices are adopted such as prevention of in-breeding and ensuring the quality and sufficiency of feed by planting fodder on the farm.

Datuk Yap's farm supplies 60 percent of Sabah's dairy milk requirements and it is a successful model for the local dairy industry to emulate.

The EPPs are spread geographically to promote balanced growth and promote economies of scale in infrastructure development *(Exhibit 15-7)*.

Exhibit 15-7



CAPITALISING ON MALAYSIA'S COMPETITIVE ADVANTAGE

Malaysia has significant competitive advantages that the agriculture sector can leverage, including its biodiversity, sheltered pristine coast suitable for the cultivation of seaweed, native birds suitable for the harvesting of edible bird's nest and 4.7 million hectares of oil palm plantations that can be tapped for crop or animal integration.

EPP 1: Unlocking Value from Malaysia's Biodiversity through High-Value Herbal Products

Rationale

Global trade of natural products, which amounted to RM777 billion in 2006, is projected to triple by 2020. The shift in healthcare, denoted by global growth in nutraceuticals, towards a preference for natural products with therapeutic value provides opportunities for Malaysia to become a significant global player, given our rich biodiversity. However, the majority of local products are largely in the low-end market segment such as fortified beverages. Diversification towards high-end herbal products based on standardised extracts and validated by clinical studies remains weak due to lack of industry champions, weaknesses in local R&D, large investment required for clinical studies and difficulty in penetrating international markets.

Actions

To address these issues and move up the value chain, six programmes will be implemented under a coordinated national project. The aim is to strengthen product quality and marketing efforts to penetrate global export markets for nutraceutical products and botanical drugs. Several popular Malaysian herbs have been identified as the focus, including *Tongkat Ali, Kacip Fatimah and Misai Kucing*.

Establish four herbal centre of excellence clusters. Each centre will respectively lead R&D in discovery, crop production and agronomy, standardisation and product development and pre-clinical studies. The centres of excellence will be responsible for coordinating research amongst research institutions, establishing strategic research collaborations amongst domestic and international institutions, ensuring quality of research output and obtaining intellectual property rights on the research findings.

Promote and market internationally a national brand as the identity of Malaysia's healing and beauty tradition. Local herbal products will be exported under the umbrella brand. Government will work with foreign regulators to facilitate the registration of Malaysian herbal products in their markets. This will reduce the need for individual companies to invest in branding and product registration.

Develop herbal cultivation parks in Durian Mentangau and Pasir Raja in Terengganu, Cegar Perah in Pahang and in Rantau Manis, Kelantan. This is to ensure adequate and consistent supply of raw materials. The parks will undertake herb cultivation at commercial scale based on a contract-farming model.

Each 400-hectare park will allocate 40 percent of its land to be cultivated by more than 50 out-growers. The out-growers will benefit in terms of technical skills development, production quality assurance, secure off-take and income from the anchor company. It is anticipated that out-growers will have the potential earn RM3,000 per month.

Expand extraction facilities. There are currently limited commercial-scale facilities; most are small or of pilot scale and not designed to operate commercially. New facilities will be built, each with a capacity of 1,000 kilograms per week to supply the industry with reliable, premium quality extracts at competitive cost.

Enablers

The Malaysian Herbal Development Council will be set up to be responsible for the end-to-end development of the herbal industry, including setting strategic directions and developing appropriate policies and regulations for the benefit and growth of the industry. The council will consist of members from both Government and private sectors and will enable coordination across 24 government, state authorities and private sector bodies currently involved in this sector.

While the main EPP for herbal products focus on five popular herbs, two related business opportunities have been identified. There is potential to capture value from the development of other herbs. Funding will be provided to accelerate the commercialisation of new products that are based on these herbs. Local manufacturers will be supported to move up the value chain through the provision of financial assistance, R&D support and marketing efforts.

Additionally, the possibility of acquiring a foreign distributor with large distribution networks in strategic markets such as the US, EU or China will be studied and pursued. This is to assist in overseas market penetration of Malaysian herbal products.

Funding

A dedicated herbal fund of RM533 million from public funding will be established beginning from 2011 which includes grants to support upstream research and funding of pre-commercialisation activities such as pre-clinical, product development and clinical studies. In addition public funding of RM69 million is needed for facilities upgrade and investment in the herbal park. The private investment in the herbal park and extraction facilities is estimated to be RM237 million. The total capital investment for this EPP is thus RM839 million.

Impact

The targetted GNI from this EPP is RM2.2 billion by 2020 from high-value products based on five core herbs. There will be a total of 1,800 jobs created with opportunities for 300 manufacturers to upgrade their services from mere trading and packaging to high-end manufacturing of innovative formulations as well as prospects for 1,500 rural farmers to move up the value chain into primary processing.

EPP 2: Expanding the Production of Swiftlet Nests

Rationale

The annual global market for swiftlet nests is RM10.2 billion, of which Malaysia is currently the second largest producer with RM1.5 billion in sales. From a consumer perspective, Malaysia's output consistently fetches 20 percent more in the global market relative to our main competitor, Indonesia, due to more consistent quality. However, although the local industry has seen rapid growth of approximately 20 percent per year since the early 2000s, future prospects are dim due to insufficient regulation, a depleting wildlife population and lack of research in productivity improvement and downstream uses.

Actions

By building on Malaysia's status as a recognised supplier and resolving key challenges within the industry, we aim to capture 40 percent of the global market by 2020 with increased production from 290 tonnes to 870 tonnes and increased domestic processing into downstream products.

Develop comprehensive legislation and guidelines to ensure sustainability of harvesting, animal welfare, consumer health and safety and regulated premises. This will allow Malaysia to become the first country to comprehensively regulate the production of edible bird's nest. By December 2010, the Ministry of Agriculture (via the Department of Veterinary Services) will table detailed proposals and amendments to current laws as well as promote the industry's best practices.

Establish an additional 70 Malaysian-owned processing facilities. At the moment only 30 percent of the local swiftlet nest production is processed domestically. Through the provision of financing opportunities and certification of manufacturing facilities, a target of 50 percent of all local products would be processed by Malaysian firms by 2020.

Enablers

A direct market-to-consumer link will be established by facilitating more direct link between local entrepreneurs to the export destination primarily China and Taiwan. Currently, 80 percent of all swiftlet nest trading and consolidation is conducted in Hong Kong. Through the establishment of a comprehensive traceability programme and the provision of sufficient export licenses, a target of 50 percent of all local products will be sold direct to the common consumers by Malaysian firms by 2020, enabling a higher margin to be captured.

An R&D programme on mechanising post-harvest processing will be set up, with the objective of completely mechanising the de-feathering process without damage to the end product. This can potentially reduce post-harvest processing costs by 80 percent.

Opportunities for entrepreneurs to enter into upstream production will be made simpler. Marine wood bird's nest premises only require start-up capital of RM10,000. Agrobank has introduced a low-interest financing scheme for rural entrepreneurs, requiring no collateral. In parallel, standard operating procedures and training will be provided.

Through increasing funding for clinical trial research, health claims regarding the benefits of swiftlet nests will be certified, allowing for larger market access overseas and strong export potential for local companies who develop final products based on swiftlet nest extracts. The estimated market size for finished products using swiftlet nest extracts is RM29 billion, and we target to capture 30 percent of this market by 2020.

Funding

It requires total cumulative investment of RM1.8 billion until 2020 to build processing plants and associated structures, with public funding requirements of RM64 million to facilitate R&D, enforcement and traceability.

Impact

The targetted GNI impact is RM4.5 billion by 2020. This will generate 20,800 jobs and establish Malaysia as the primary recognised supplier and certifier of raw and processed swiftlet nests globally.

EPP 3: Venturing into Commercial Scale Seaweed Farming in Sabah

Rationale

Sabah is well-placed to grow seaweed due to its strategic location in the Coral Triangle together with Indonesia and Philippines. This triangle supplies nearly 80 percent of *Kappaphycus* seaweed, which is highly sought-after in the processed food and pharmaceutical industries. However, traditional and labour-intensive farming practices have resulted in a low average yield of 1.5 metric tonnes of dried seaweed per hectare per year over the total cultivated area of 8,000 hectares.

Actions

We aim to transform the industry to a high-yielding and commercial scale business by leveraging our strength in R&D and strong downstream infrastructure. The seaweed mini-estate initiative aims to increase yield from 1.5 metric tonnes to 5 metric tonnes of dried seaweed per hectare per year in a farmed area totalling 28,000 hectares. Six varieties of seaweed will be cultivated based on their carrageenan yield and growth rate.

Implement seaweed cultivation immediately in areas such as Pulau Omadal, Pulau Selakan and Pulau Sebangkat. The Sabah state government has designated 7,500 hectares of new areas for seaweed cultivation under Industrial Aquaculture Zone (ZIA), and an additional 20,500 ha will be designated by 2020.

More than five anchor companies will manage clusters of 200 hectares each. This is to ensure each anchor company is able to optimise cost and mitigate operational challenges such as water movement and weather variations. The anchor companies will link to smaller scale farmers by providing training and apprenticeship programmes, targetting the local community, particularly youth.

The Government, in collaboration with universities, will assist anchor companies by issuing farm-operating procedures and providing extension services. Best practices in the production value chain have been developed and will be rolled out, such as mechanical harvesting, which improves harvesting efficiency by nine times from 1 metric tonne per day to 10 metric tonnes per day and the tie-tie system, which reduces the time at sea for cultivation by 60 percent.

Seek secure investors to establish two factories. Factories will have production capacity to process between 20 and 50 metric tonnes of dry seaweed per day each, to be built in 2013 and 2015 respectively, to complement existing factories to cater for the increased production.

Funding

Total investment required for this EPP is RM700 million with RM176 million in public funding to facilitate investment of basic infrastructure such as nursery for seedling, drying and storage facility as well as accommodation quarters for workers.

Impact

We target to increase dried seaweed production to 150,000 metric tonnes, compared to 13,500 metric tonnes in 2009. Out of this, 20 percent will be exported in dried seaweed form and the remaining 80 percent will be processed to produce high value-add alkaline treated chips and semi-refined carrageenan. The targetted GNI impact by 2020 is RM1.4 billion. An additional 12,700 jobs will be created in Sabah with worker welfare addressed through accommodation and medical benefits.

EPP 4 and 5 and Business Opportunity 1, 2 and 3

Two other EPPs and a related business opportunity are described in *Table 15-1*.

Table 15-1 : Other EPPs and Business Opportunities

Description	Owner	GNI Impact, Jobs and Funding
EPP 4: Farming using integrated cage aquaculture Promote large scale, anchor company-driven cage farming that focuses on three species that have high export value, i.e. grouper, sea bass and tilapia. The integrated farms will use the latest cage technology in the form of galvanised iron and high density poly-ethylene cages. A developmental rebate for basic infrastructure will be provided to large companies to expedite project implementation.	Department of Fisheries	GNI: RM1.4 billion Jobs: 10,100 jobs Total funding: RM717 million with RM92 million public funding
EPP 5: Rearing cattle in oil palm estates Cattle-rearing companies will contract with large oil palm plantations, especially GLCs, to rent their land for cattle-rearing purposes. The focus is on structured, rotational grazing to ensure profitability and sustainability. We target to increase the number of cattle in oil palm estates by 300,000 by 2020.	Malaysian Palm Oil Board	GNI: RM150 million Jobs: 3,600 Funding: RM 343 million with RM 143 million public funding
Business opportunity 1: Nutraceutical products There is potential to capture value from the development and commercialisation of products based on other herbs. ation of new other herbs. Local manufacturers will be supported to move up the value chain through the provision of financial assistance, R&D support and marketing efforts.	Undisclosed investor	GNI: RM259 million Jobs: 400 Funding: RM18 million with RM 10 million public funding
Business opportunity 2: Foreign distributor There is the possibility of acquiring a foreign distributor with large distribution networks in strategic markets such as the USA, EU or China will be studied and pursued. This is to assist in overseas market penetration of Malaysian herbal products.	Undisclosed investor	GNI: RM612 million Funding: RM256 million from entirely private sources
Business opportunity 3: Ornamental fish farming Capturing increased value from ornamental fish exports through establishing own branding and marketing channels as opposed to relying on other countries to export Malaysia's products. In addition, by intensifying R&D, introduce specific pathogen-free fries to improve yield and quality.	Department of Fisheries	GNI: RM630 Jobs: 100 Funding: RM32 million from entirely private sources

TAPPING PREMIUM MARKETS

Increasing consumer affluence is driving concerns for health and food safety, growing demand for variety and convenience in food consumption and building awareness on environmental sustainability. Across agriculture sub-sectors, products with food safety certification or those able to meet consumer needs for convenient consumption can capture a premium. Malaysia has developed successful models in aquaculture and horticulture that can capitalise on this trend.

EPP 6: Replicating Integrated Aquaculture Model (IZAQs) to Tap Market for Premium Shrimp

Rationale

The global demand for fully-certified and traceable seafood has increased from 20,000 metric tonnes to 600,000 metric tonnes in the last five years. This robust growth for fully-certified seafood is driven by commitments of global buyers, more stringent requirements from international regulatory agencies and growing affluence in Asia and the Middle East. Natural endowments and strong infrastructure provide a unique opportunity to position Malaysia as a country of origin for quality seafood.

Actions

Implement a new approach to producing fully-certified and traceable seafood in a sustainable manner through IZAQ. The IZAQs are a network of industrial scale, land-based aquaculture zones that will be championed by strong anchor companies. Each IZAQ will have integrated infrastructure consisting of hatcheries, grow-out areas, a processing plant and feed-mills on a 1,000 hectare site.

A target of 10 IZAQs will be established in Kedah, Pahang, Sabah, Sarawak and Terengganu. These sites were selected based on suitability of land, water quality and availability of local workers within the vicinity. Private sector investors will develop and operate the IZAQs, while the federal government will assist in developing the basic critical infrastructure such as access road, electricity and clean water supply for the of the sites. Respective state governments will provide access to land.

Each IZAQ will be led by an anchor company and SMEs will be involved in leasing pond modules through a contract farming concept. Anchor companies will deploy and enforce standard operating procedures at all pond modules to ensure production quality complies with certification requirements. A skills-training centre will be set up to develop the skills of workers, and these centres will be linked to public universities to enable certification and access to quality instruction.

Establish an R&D facility to focus on developing breeding programmes for SPF shrimp and other species as well as health, nutrition and aquaculture related technologies. The preliminary site identified is in Langkawi, leveraging the existing fisheries research institute and the suitable sea conditions.

Build a fully accredited diagnostic facility to address the issue of food safety and traceability. This will include a credible on-site verification system that will ensure aquaculture products in IZAQs meet the highest international requirements in terms of certification. Associated with this, training programmes will be developed to upgrade knowledge on standards for government officials and agencies. In collaboration with anchor companies, the Government will establish training programmes to increase the number of certification auditors and upgrade the knowledge of scientists in the aquaculture industry.

Introduce a pilot aquaculture insurance scheme as well as attractive funding programmes to facilitate private sector investment in the IZAQs. We will evaluate a model whereby the anchor company guarantees off-take of the shrimp, enabling a credit guarantee to back private-sector lending. Anchor companies will be encouraged to build and operate feed mills that also cater to grow-out farms. Other companies can also be encouraged to join the industry through strategic partnership with grow-out companies, where the feed companies build the infrastructure and handle the operations and the grow-out companies provide a captive market.

Set up aquaculture export centres near major airports to facilitate the export of live and chilled fish to major importing countries such as Hong Kong, Taiwan and Japan. To enable air freight as a more economically-viable portion for fish exporters, the centres will have modern technologies to reduce the weight of fish to water ratio from 3:1 to 1:1. *Box 13-4* tells the story of one Malaysian company that has been successful in exporting live grouper by air.

Funding

The total funding requirements for the EPP is RM3.2 billion with RM1.6 billion from public funding for R&D, skill development centre and developing common and critical infrastructure.

Impact

The IZAQs will be developed in rural areas and are expected to generate a GNI impact of RM1.3 billion. Approximately 11,900 rural jobs will be created by the EPP, and annual wages will total RM200 million.

EPP 7: Upgrading Capabilities to Produce Fruit and Vegetables for Premium Markets

Rationale

Malaysia's location in the tropical belt with an annual average rainfall of 2,000 millimetres is ideal for the farming of premium tropical fruits. In addition, our highland areas, which have consistent temperatures between 14°C and 28°C are suitable for farming temperate crops. However, issues of scale, lack of integration across the value chain and limited compliance to global food safety standards have hampered the ability to tap into the growth of the premium, food safety-assured market for fresh fruits and vegetables.

Rationale

We intend to increase production of better quality and better tasting fruit and vegetables that comply with food safety standards, thereby enabling access to premium markets in the Middle East and Europe. Premium varieties of tropical fruit such as the eksotika papaya, MD2 pineapple, KR1 rock melon, B10 starfruit, J32 jackfruit, Cavendish banana and three highland vegetables i.e. tomato, capsicum and lettuce will be the core crops.

Identify anchor companies to lead the implementation using an extended supply chain model. The model is market-oriented, where production at the farm is based on a crop calendar derived from forecast market demand. The anchor company will manage contract farmers and coordinate processing and distribution. To ensure acceptance by export markets, the anchor company will lead compliance to relevant international standards such as GAP, HACCP and GMP with emphasis on traceability of produce from farm-to-fork. In addition, the anchor company will coordinate the post-harvest management facilities to extend storage and shelf-life and preserve the quality of fresh produce during transportation.

Up-scaled and on-boarded existing farms as contract farmers to the anchor company to achieve greater economies of scale. Four *Taman Kekal Pengeluaran Makanan* (TKPM) and one *Taman Pertanian Moden* (TPM) will produce papaya, starfruit and rock melon. In addition, 9,000 hectares of oil palm plantation land owned by a large GLC have been identified for intercropping of banana and pineapple during the first three years of the oil palm replanting period.

In all, 488 hectares of high-tech farms will be developed in Lojing through expansion of new land (288 hectares) and Cameron Highlands through the intensification of existing farms (200 hectares). The farms will be equipped with controlled-environment farming infrastructure such as greenhouse and fertigation control systems to control farm inputs.

Government and farmers to work together to establish a farmers' cooperative. The objective is for the cooperative to eventually take over some of the roles of the anchor company when the anchor company scales back to focus on value-added services such as marketing, branding and production planning, thus ensuring inclusiveness for the farming community.

Funding

The EPP will require RM1.4 billion investment with RM540 million from public funding to develop necessary infrastructure such as roads.

Impact

Increased export market penetration will enable the capture of higher prices for the produce, thereby enabling farmers to earn a monthly income of approximately RM4,500 per hectare. This EPP is expected to contribute RM1.6 billion to GNI and 9,100 jobs by 2020.

Box 15-4

Exporting live grouper by air to capture higher value

SKC Group started operation in 1960, focusing on traditional capture fishing before diversifying into trading, wholesaling, processing and distribution. As capture fishing became increasingly stagnant, the Group ventured into aquaculture farming in 2005. Based in Sungai Johor, the farm started with 500 traditional cages focusing mainly on sea bass for domestic consumption.

Realising that the local industry was still very traditional in its approach compared to other major producers, SKC embarked on several programmes to modernise its farming practices. It has established working arrangements with a leading Taiwanese university to develop specific pathogen resistant vaccine and is currently working with the Department of Fisheries to build a modern hatchery in Pulau Pangkor. In addition, it introduced new farming methods such as steel net cages to improve yield and reduce operational costs. As a result, it now has more than 3,000 fish cages of various species including grouper, pomfret, snapper and threadfin thus making it one of the largest companies in Johor.

EPP 8: Strengthening the Export Capability of the Processed Food Industry by Establishing an Integrated Food Park

Rationale

Increased consumer affluence is driving busier lifestyles and across most major markets, the demand for ready-to-heat meals and other convenient in-home dining products are forecasted to rise by more than 10 percent per annum. Malaysia currently has a negative trade balance for edible products and preparations, with only 2 percent out of 3,800 companies involved in canned and bottled food and 8 percent in meat and fish processing. Most of these companies operate on a small scale. Excluding oils and fats companies, 75 percent of companies recorded annual revenue of less than RM10 million in 2005.

Due to their small scale, these companies are unable to supply consistent volume of outputs, invest in international marketing, upgrade technologies used in production or innovate their products. Additionally, necessary raw materials, such as chicken compliant with World Organisation for Animal Health (OIE) standards is lacking, preventing the end products from being accepted in premium markets.

Actions

Reorganise and scale-up the industry through domestic anchor companies that will establish four integrated food parks in phases. The target is to complete the first cluster at the end of 2013, two in 2015 and the final one in 2018. The anchor companies will be responsible for obtaining product certification (such as standards on halal, food safety, organic and natural foods), packaging, branding and marketing and managing suppliers. These companies will establish a network of raw material providers, ingredient providers and end product manufacturers within the food park, either through relocation or expansion of existing small and medium enterprises (SMEs).

Pursue the involvement of foreign partners. They will strengthen market access through contract manufacturing arrangements, equity sharing and licensing out of proprietary products and brands. Existing incentives provided for under the Promotion of Investment Act will be leveraged.

Leverage linkages of institutions such as MARA and SMECorp to the SME base in Malaysia to identify potential SMEs to be migrated. Through support provided by the anchor companies, SMEs can concentrate on producing one to two product lines each based on the anchor company's specifications, thereby enabling them to achieve scale and compliance to higher standards. Issues of taking the product to market and modifying the specifications of the product to suit the requirements of different markets will be handled by the anchor company.

Funding

This EPP is fully funded by RM575 million of private investment.

Impact

The target GNI contribution from this EPP is RM884 million. An additional 4,900 jobs will be created and Malaysia's trade deficit in edible products and preparations will be reduced.

EPP 9 and Business Opportunities 4, 5, 6, 7, 8 and 9

One EPP and five related business opportunities are described in *Table 15-2*.

Table 15-2 : Other EPPs and Business Opportunities

Description	Owner	GNI Impact, Jobs and Funding
EPP 9: Introducing fragrant rice variety for non-irrigated rice farming A new rice variety (MRQ76) has been developed by MARDI, which has 80 percent similar attributes to foreign fragrant rice, thereby enabling it to tap the higher-end rice market, compared to normal white rice. The focus is on cultivating MRQ76 in rain-fed areas, leveraging its draught tolerant attributes, which will enable yields in rain-fed areas to increase. Dedicated areas will be identified for the farming of this variety, to ensure no contamination by the normal white rice variety, and dedicated millers will be appointed to prevent contamination and preserve the product's brand identity in the consumer market. This premium identity will enable farmers to fetch a price for unmilled rice that is 20 to 30 percent higher, increasing their incomes.	Malaysian Agriculture Research Institute	GNI: RM100 million
Business opportunity 4: Aquaculture feed mill There is a business opportunity to develop feed mills for aquaculture.	Undisclosed investor	GNI: RM427 million Jobs: 300 Funding: RM 94 million with RM5 million from public funding
Business opportunity 5: Aquaculture export centre There is a business opportunity to develop aquaculture export centres.	Undisclosed investor	GNI: RM114 million Jobs: 100 Funding: RM16 million entirely from private sources

Description	Owner	GNI Impact, Jobs and Funding
Business opportunity 6: Snacks Industry The US and European organic and natural snacks market is growing at more than 20 percent per annum. The EPPs will increase domestic production of fruits by 500,000 metric tonnes. Fruit that is not sold as fresh fruit will be separated and sent to a processing plant nearby. New technologies, such as instant pressure drop, will be used to produce high quality dried fruit snacks from papaya, starfruit and pineapple that preserve more of the nutrition, taste, texture and volume of the fruit. Certification from international bodies will be obtained to enable the product to claim that it is natural, while relevant product registration will be performed to support functional and nutritional claims in target markets. The aim is to sell the products at a premium of 30 to 100 percent.	Agro-based industries Division, Ministry of Agriculture	GNI: RM828 million Jobs: 4,900 Funding: RM976 million entirely from private sources
Business opportunity 7: Free-range chicken rearing Addition of 20,000 poultry per year within oil palm plantations to target the growing market for free range and organic chicken.	Department of Veterinary Services and Malaysia Palm Oil Board	GNI: RM200 million Jobs: 6,000 Funding: RM240 million entirely from private sources
Business opportunity 8: Button mushroom farming Malaysia imports many types of mushrooms including dried, canned and fresh forms as local mushroom cultivation is lacking. However, Malaysia has favourable agro-climatic conditions for industrial production of mushrooms and companies that are successfully cultivating mushrooms on a large scale basis. The Department of Agriculture will facilitate the establishment of mushroom-farming businesses by providing standard operating procedures based on successful models and coordinating with Agrobank to provide funding.	Department of Agriculture	GNI: RM182 million Jobs: 1,300 Funding: RM506 million with RM102 million public funding
Business opportunity 9: Packaged fruit production such as jackfruit Jackfruit products such as ready-to-eat fresh jackfruit, juice and vacuum-fried chips are growing increasingly popular in markets such as China. These minimally processed products are much simpler to export than the whole fresh fruit, which typically would not be able to meet the phyto-sanitary requirements of export markets. Anchor companies amongst medium-sized SMEs will be identified to establish minimal processing operations including a hygienic processing room of between 15°C and 20°C and basic operations such as chilled-water immersion, cutting and pre-treatment.	Department of Agriculture	GNI: RM54 million Jobs: 800 Funding: RM26 million with RM6 million public funding

ENSURING FOOD SECURITY OBJECTIVES ARE CONSISTENT WITH INCREASING GNI

For food security reasons, it is necessary for Malaysia to ensure a certain level of self-sufficiency in rice and key proteins. The NKEA targets to increase domestic production so that Malaysia can produce 85 percent of domestic consumption in rice, 40 percent of domestic consumption in beef and 5 percent of domestic milk consumption by 2020. However, key issues such as lack of economy of scale and poor value chain integration are causing domestic producers to be uncompetitive and dependant on a significant level of Government assistance. The EPPs under this theme have been designed to address the core issue of scale and replicate successful ventures in Malaysia and elsewhere.

EPP 10: Scaling Up and Strengthening Productivity of Paddy Farming in the Muda Area

Rationale

The Muda granary area accounts for 40 percent of national rice production and 22 percent of rice cultivation area. The average yield is 5 tonnes per hectare per season, higher than the national average of 3.74. Although soil quality is generally good (60 percent of the area has soil class 1 or 2), irrigation intensity is low (18 metres of irrigation per hectare, compared to more than 30 metres per hectare in granaries other than those for the Muda Agriculture Development Authority, MADA), the majority of farms are small (average farm size is 2 hectares) and the farming community is elderly (average age of farmers is more than 60 years).

Actions

We will promote commercial-scale farming, improve irrigation density and accelerate the use of new technologies with the target of increasing average yield to 8 tonnes per hectare by 2020.

Establish a unit in the Muda Agriculture Development Authority (MADA) by Q1 2011 to provide standardised land management contracts and monetary incentives to encourage landowners to outsource management of their land. Currently, although 25 percent of landowners already outsource the management of their land, the prevalent form of contract is fixed rental of approximately RM2,000 per season, i.e. RM667 per month. Additionally, contracts can sometimes be verbal, without proper protection for the rights of either landowners or tenants.

Three models of land management contracts will be supported, namely fixed rental, profit sharing and fixed management fee models:

- **Fixed rental:** The tenant pays the landowner a fixed rental every season, part of which is paid in advance, e.g. five seasons of rental paid in advance. All risks of the venture including fluctuations to the paddy price of unmilled rice and costs of farming are borne by the tenant;

- **Profit sharing:** The tenant and landowner share the risks, revenue and costs of the venture. However, the tenant guarantees the landowner a minimum income equivalent to the prevailing rental rate; and

- **Management fee:** The landowner hires the tenant to farm the land. The tenant receives a fee for every tonne of net output produced. All fluctuations in revenue (i.e. paddy price) and costs are borne by the landowner.

MADA will act as a master tenant operator, creating parcels of economically-sized lots, e.g. 100 hectares each, and employing existing operators or farmer cooperatives to manage these large farms.

Improve irrigation intensity, prioritising the areas with highest potential for yield gain. Currently, only 44 blocks in MADA have tertiary canals, which results in some areas receiving water only after 30 days. Rice is a crop for which water management is critical, i.e. the water level has to be maintained between 50 and 100 millimetres during the 20 to 90 day growing period. Therefore, we plan to extend tertiary canals to another 128 blocks by 2020, thereby improving irrigation intensity to 30 metres per hectare.

MADA will establish a subsidiary that will be involved in the entire rice value chain, from seed supply to rice processing and wholesaling. The subsidiary will be co-owned by farmers who join the land outsourcing scheme and other private sector stakeholders. This commercial entity will work with existing service providers in order not to create an over-supply situation. The establishment of this entity will create the first integrated rice company in Malaysia, and enable farmers to share in the value captured in the downstream segment. The company will guarantee a minimum income for farmers who join the scheme. *Box 15-5* tells the story of an Australian company that operates across the entire rice value chain and has the highest average yield in the world.

Intensify the adoption of technologies across the value chain. In seed R&D, technologies such as molecular markers and genetic engineering will be intensified. In the field, the use of effective microbes to enhance soil fertility, nano fertilisers to improve absorption of nutrients and larger scale mechanisation will be researched. Technologies such as instant pressure drop will be explored in milling to reduce energy costs in the drying process and improve recovery. Additionally, higher value uses for paddy straw (such as environmentally-friendly packaging material) will be encouraged by resolving basic issues such as collection of straw from the field.

Funding

The total investment of this EPP is RM2.7 billion from public funding with RM2.2 billion to intensify irrigation and RM0.5 billion needed to provide incentives for small rice farmers to lease their land or agree to be managed on a profit-sharing basis by larger operators.

Impact

By 2020, significantly larger farms, commercialisation of rice farming and more farmers participating in downstream activities will improve farmers' incomes by at least 30 percent (if they elect to be passive) or by more than five times (if they are employed to operate large scale farms). Their dependency on subsidies will also be reduced over time.

The targetted GNI contribution from this EPP is RM1.0 billion. There will be a reduction of 14,900 low-value jobs.

EPP 11, 12 and 13

Three other EPPs are described in *Table 15-3*.

Table 15-3 : Other EPPs

Description	Owner	GNI Impact, Jobs and Funding
EPP 11: Scaling up and Strengthening Productivity of Paddy Farming in Other Irrigated Areas The model to be adopted in the Muda area, particularly the provision of incentives to encourage outsourcing of land management and the setup of an integrated rice corporation, will be replicated in the KADA granary and in areas such as Batang Lupar in Sarawak and Kota Belud in Sabah. In granaries managed by Integrated Agriculture Development Authorities (IADA), the focus during the initial stage will be on providing incentives to encourage outsourcing of land management.	KADA Department of Agriculture Ministry of Modernisation in Agriculture, Sarawak	GNI: RM1.4 billion Jobs: Reduction of 9,600 low-value jobs Funding: RM1.8 billion entirely from public sources
EPP 12: Strengthening Anchor Companies in Cattle Feedlots Expansion of feedlot capacity by 240,000 heads in Malaysia via an increase in the number of small-scale feedlotters and development of one anchor company to strengthen the link between farm and consumer. Animals will be brought into the country at optimum size to ensure the majority of value can be captured in Malaysia versus merely serving as a retail hub for already fattened animals.	Department of Veterinary Services	GNI: RM183 million Jobs: 2,000 Funding: RM634 million with RM121 million of public funding
EPP 13: Partnering with a Large Foreign Dairy to Establish Dairy Clusters in Malaysia Development of three dairy clusters with 27,000 heads of dairy cattle and downstream processing facilities, to increase the Malaysia's milk sufficiency from 2 percent to 5 percent by 2020. Re-introduce the school milk programme to improve consumer perception of the local dairy industry while ensuring a steady purchaser.	Department of Veterinary Services	GNI: RM326 million Jobs: 800 jobs Funding: RM709 million with RM184 million of public funding

Box 15-5

SunRice: From Seed to Plate

SunRice is a brand name for rice and rice-based foods produced by Ricegrowers Limited, Australia. The company is involved in the whole rice value chain from seed production, paddy farming, milling and rice processing, up to marketing, distribution and export of rice and rice-based products. Ricegrowers Limited belongs to around 2,000 farmer families who grow rice in the Murrumbidgee and Murray valleys of New South Wales and Victoria. Through the consolidation of land in the 1970s and 1980s, the average size farm is around 400 hectares per family, while their average yield is 10 metric tonnes per hectare, which is the highest average yield in the world.

EXPANDING PARTICIPATION IN THE REGIONAL AGRICULTURE VALUE CHAIN

The agriculture sector is expected to undergo rapid expansion in the region, with the sector's growth in Indonesia, Vietnam and Thailand already recording growth of 16 percent, 24 percent and 11 percent respectively from 2001 to 2006. There is opportunity for Malaysia to become a service provider in higher value-added areas, generating growth beyond what we can plant and process domestically. We will leverage proprietary systems and intellectual property that we have developed domestically or exclusively licensed. At the same time, cross-border investment by Malaysian companies in the agriculture sector, which is currently lacking, will be promoted to encourage value chain integration across different countries.

EPP 14: Establishing a Leadership Position in Regional Breeding Services

Rationale

Breeding plays a key role in increasing the productivity of agriculture by ensuring crops and livestock have disease resistant traits and high fertility and by ensuring that produce has traits that are desirable to the consumer, such as rice that is fragrant, palm oil with lower saturated fat content and meat with marbled texture. Globally, the seed industry is worth RM117 billion and is growing at 10 percent per annum.

Actions

Currently there is no established seed or livestock research centre for tropical crops and livestock. Hence there is potential for Malaysia to be the first to establish a regional breeding centre, capitalising on the expected growth of the agriculture sector in Indonesia, Thailand and Vietnam.

Set up the Centre for Marker Discovery and Validation (CMDV) to lead seed and brood-stock research, initially in Malaysia, and subsequently in the region. Through collaboration with a leading Canadian research centre, the CMDV will be designed and built to support high throughput screening of genetic materials to discover molecular markers for desired traits.

This will enable the production of planting materials or brood-stock that are certified to contain desired attributes, thus enabling Malaysia's sales of these products to increase and capture significantly higher value. For example, normal seeds for some crops can cost RM2.50 per kilogram but plantlets with confirmed attributes of high fertility and disease resistance can fetch RM25 each.

Funding

A total investment of RM274 million is required with RM17 million from public funding to facilitate the development of the CMDV.

Impact

The CMDV will benefit the domestic agriculture sector by concentrating R&D resources and enabling better selection of planting materials before they are planted in the field, thereby increasing yield. Additionally, the CMDV can serve the regional market, positioning Malaysia to capture the high value add segment of the regional agriculture sector. The targetted GNI contribution from this EPP is RM467 million and 5,400 jobs will be created.

EPP 15 and 16 and Business Opportunity 10 and 11

Two other EPPs and two related business opportunities are described in *Table 15-4*.

Table 15-4 : Other EPPs and Business Opportunities

Description	Owner	GNI Impact, Jobs and Funding
EPP 15: Securing foreign direct investment in agricultural biotech Attract potential investors in agriculture biotechnology, leveraging existing bio-nexus incentives and focusing on areas such as crop nutrition and/or bio-yield enhancers, bio-pesticides and flavours and fragrances. Investments can be carried out either through merger and acquisition, joint venture or the set up of a new company.	Malaysian Biotech Corp	GNI: RM820 million Jobs: 1,200 jobs Funding: RM1.9 billion with RM233 from public sources
EPP 16: Investing in foreign cattle farms Acquire four overseas cattle operations in order to ensure a steady supply of breeder cattle, dairy animals, and cattle for local feedlots. Investments will also generate profit for Malaysia since overseas farms can also export to a global marketplace.	GLCs and investment funds	GNI: RM117 million Funding: RM1.3 billion entirely from private sources
Business opportunity 10: FDI in herbal products Attract foreign companies to collaborate in conducting research on Malaysian herbs to speed up the discovery of new bioactive compounds and accelerate product development. Upon successful findings, the foreign companies will be given incentives to set up manufacturing facilities in Malaysia, enabling value capture of downstream activities.	Herbal Industry Development Unit	GNI: RM166 million Jobs: 300 jobs Funding: RM665 milion with RM10 million from public funding
Business opportunity 11: Snack Food Industry (SFI) / Country Food Facilities Relocate from Singapore to Malaysia the processing facilities for fruit, vegetables and meat to be made into frozen food or convenience meals. Malaysia can offer the competitive advantages of low labour cost, proximity to Singapore market and abundance of materials.	Herbal Industry Development Unit	GNI: RM150 million Jobs: 640 jobs Funding: RM120 million with RM20 million from public funding

COMMON ENABLERS

Five key enablers are required to support the implementation of the EPPs and business opportunities:

- Provide incentives for anchor companies;
- Strengthen the adoption of good agricultural practices (GAP) and good manufacturing practices to enhance market access;
- Change regulations and policies;
- Strengthen logistics infrastructure; and
- Ensure sufficient pipeline of human capital.

Provide Incentives for Anchor Companies

Anchor companies will play a key role in effecting the transformation of the agriculture sector from small-scale, production-centric activities to a large-scale, market-centric and integrated approach. To encourage companies across the food and agri-business value chain to play the role of an anchor, the Government will provide incentives based on the value of contract farmers' produce that they manage.

To qualify, prospective anchors must have a minimum paid-up capital of between RM100 million and RM200 million, depending on sub-sector. They need to demonstrate the provision of services to organise small scale farmers, such as provision of seeds, provision of extension services, ensuring GAP compliance and providing off-take contracts based on transparent settlement and fair trade principles. Anchor companies are also required to work on an integrated supply-chain model encompassing post-harvest management, logistics, marketing and branding. They can be involved in managing contract farmers in any of the major agriculture sub-sectors such as horticulture and aquaculture.

The incentive will be RM50 per RM1,000 of value purchased from contract farmers. This will replace the previous fruit and vegetable production incentives of RM75 per metric tonne and RM81 per metric tonne respectively.

With the introduction of this incentive, we expect major retailers and wholesalers to expand their role in the agri-business value chain and integrate backwards to supply sources within the country.

Strengthen Adoption of Good Agriculture Practices and Good Manufacturing Practices

Compliance to international standards is important to ensure that our products are accepted by foreign markets. Standards such as Global Good Agriculture Practices require that pesticides and fertilisers are free from harmful chemicals, while Good Manufacturing Practices, HACCP and BRC (British Retailers Consortium) ensure among others that food safety processes are adopted in food manufacturing.

Both demand-side and supply-side measures will be adopted in increasing compliance to GAP and GMP. Firstly, retailers will be held accountable for food safety, similar to what is practiced in the European Union. This will be done initially through self declaration, whereby retailers are encouraged to display "free from harmful chemicals" claims beside produce. By 2013, the Food Act 1983 and the Food Regulation 1985 will be reviewed with the view of making this a mandatory requirement.

Secondly, the Government, as a major purchaser will impose food safety standards on all procurement for the armed forces, hospitals, boarding schools and prisons, amounting to a purchase value of RM1.29 billion per annum. Food safety officers from the Ministry of Health will be responsible for ensuring transparency of and compliance with food safety requirements.

The capability of the domestic industry to comply will be strengthened by connecting small-scale farmers to anchor companies, introducing Human Resource Development Fund HRDF claimable training programmes and by SIRIM increasing the number of certified trainers and auditors.

As the food safety standard of the domestic industry is strengthened, it is important to ensure that in parallel, products being brought into Malaysia from overseas markets comply with the same food safety requirements. This will be important to ensure consistency of standards for both imported and domestic products. The Ministry of Agriculture will initiate a programme to inspect key sources from among the foreign farms and collection centres.

Change Regulations and Policies

Regulatory and policy changes are required in certain areas to enhance the credibility of the Malaysian agriculture industry. Regulation for fresh fruits and vegetables is adequately covered under the recently introduced FAMA Act 2009. However, in processed foods, requirements for traceability and food safety need to be strengthened. In parallel, regulation for the natural products industry needs to be simplified and differentiated from that of therapeutic drugs.

Table 15-5 summarises the proposed regulatory revisions is provided below. The Ministry of Agriculture will work with relevant agencies to study regulatory benchmarks and the impact of proposed regulatory changes, with the view of further developing the proposed regulatory changes.

Table 15-5 : Proposed regulatory changes

Industry and appilicable legislation	Current scope of regulations	Potential other areas to be included based on practices in other countries	Custodian	Timeline to table ammed-ments
Processed food: • Food Act 1983 • Food Regulation 1985 • Bio-Safety Act 2007	Food content requirements Food additives and nutrients usage requirements Food content labelling requirements General food safety and hygiene handling requirements	Traceability Use of fertilisers and pesticides in the raw material Specific safety, processing and handling requirements of food with high potential of contamination, e.g. milk, meat Food additives and functional ingredient manufacturing Labelling for genetically modified substances Trans fatty acid Retailer accountability in food safety	Ministry of Health (Food Quality and Safety Division)	2013
Natural and/ or nutraceutical products: Control of Drugs and Cosmetics Regulation 1984	Lack of coverage specifically for nutraceutical products	Active ingredients, i.e. minimum amount for efficacy, and maximum limit to avoid toxicity Allowed compounds Permitted claims for active ingredients Use of natural ingredients to substitute for conventional additives	Ministry of Health (National Pharma-ceutical Control Bureau)	2012
Animal husbandry: Animal Act 1953	Animal welfare and health requirements Import and quarantine requirements Private abattoir requirements	Breeding procedures Traceability requirements Animal feed composition and type and level of active ingredients allowed	Ministry of Agriculture (Department of Veterinary Services)	2014

Strengthen Logistics Infrastructure

Malaysia has excellent port and road infrastructure to deliver imported agriculture produce to end consumers, however, infrastructure to deliver domestic produce from farms to export markets is weak. The increased production of fresh produce targetted under the NKEA will require expanded cold chain and cool chain logistics infrastructure in order to reach export markets. Premium shrimp, fish, meat, flowers, fruit and vegetables will need to reach export destinations in a manner that prevents contamination and preserves freshness. The Department of Agriculture will lead the setup of perishable centres in Penang Port and Kota Kinabalu and expansion of facilities at KLIA to fulfil these requirements.

The perishable centres will have Sanitary and Phytosanitary (SPS) facilities such as vapour heat treatment, fumigation area and hot water treatment to ensure produce in transit at the airport are protected from foreign contaminants. The existing perishable centre in KLIA can cater for only 30 pallets per day, however, the expected annual volume to be shipped by airfreight in 2020 is approximately 45,000 tonnes or 150 tonnes per day, thereby requiring the expansion of KLIA to handle 300 pallets per day.

The cost to expand KLIA capacity is RM115 million. Another RM200 million will be invested building similar facilities in Penang Port and Kota Kinabalu Port, while RM80 million will be invested building irradiation facilities in Port Klang.

Ensure Sufficient Pipeline of Human Capital

A sufficient pipeline of business managers and entrepreneurs as well as a workforce with core agriculture skills such as agronomy are required to enable the success of the EPPs.

In 2020, it is estimated that 4,000 aquaculturalists, 2,000 animal nutritionists, 500 agronomists, 200 pathologists, 200 entomologists, 200 soil scientists, 100 veterinarians and 50 plant physiologists will be required.

For some positions, such as agronomists and veterinarians, local universities are producing sufficient graduates, but the industry still faces a skills gap, due to graduates electing not to work in the sector and the lack of field experience.

The Ministry of Agriculture will undertake four actions to address this issue:

- Work with anchor companies and successful entrepreneurs to promote farming as a high-income occupation, with the objective of attracting better quality students to choose agriculture related disciplines;

- Work with Universiti Putra Malaysia (UPM) to restructure existing syllabuses to ensure sufficient emphasis on core fields such as animal nutrition, animal husbandry, animal breeding, agronomy and agriculture ICT;

- Ensure a sufficient pipeline of graduates in relatively newer fields, such as aquaculturalists and aquaculture systems engineers, by having sufficient places in these courses in local universities; and

- Liaise with universities and anchor companies to establish internships and apprenticeship programmes to help develop a talent force with better field experience.

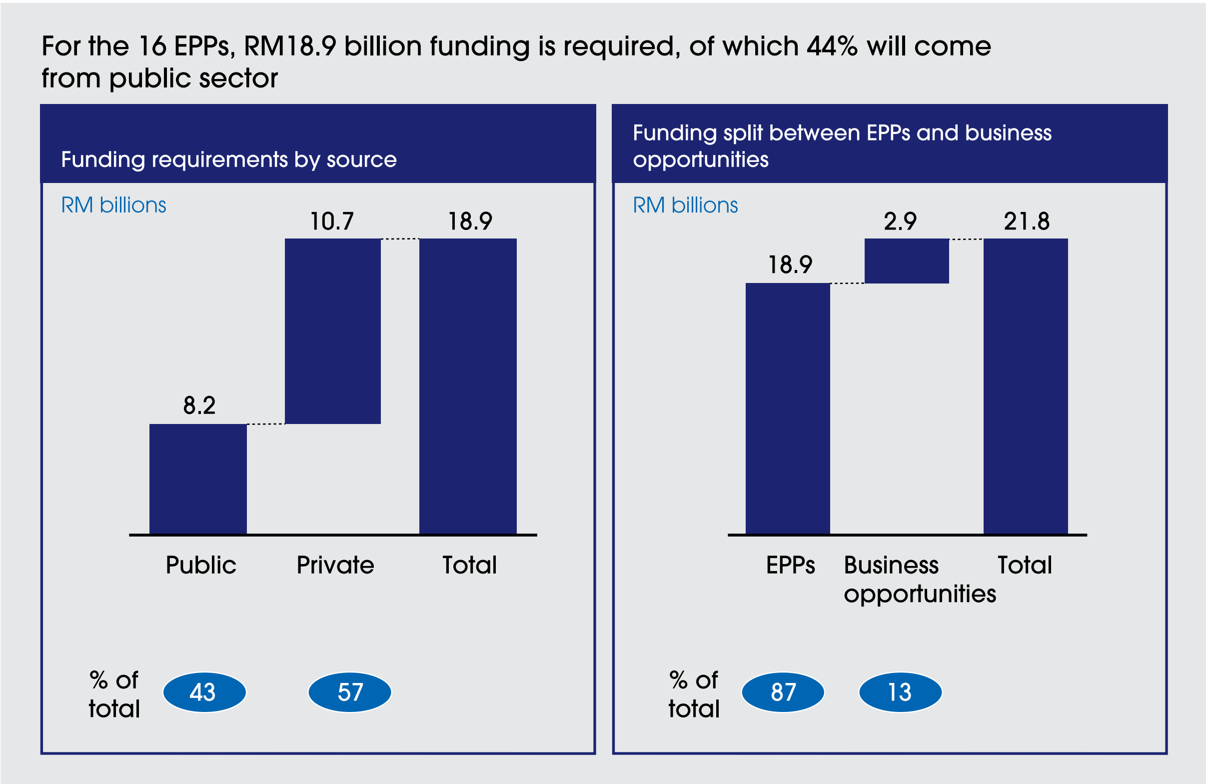
Additionally, agriculture-focused universities such as UPM and public-research institutions such as MARDI will intensify research in breeding, post-harvest diseases and post-harvest crop management.

Approximately 15,000 entrepreneurs and business managers will be required by 2020 to manage large scale agri-businesses in areas such as aquaculture, fruit and vegetable farming, paddy farming and food processing. This can largely be met by tapping existing corporate and government talent, particularly retiring civil servants from the Ministry of Agriculture and related agencies, as well as retiring estate managers from the industrial crops sector. Entrepreneur development programmes will be conducted focusing on these target groups. Training will be provided by leveraging anchor companies' model farms, while funding programmes will be structured with Agrobank.

FUNDING

The investment required to implement the EPPs and business opportunities identified is estimated to be RM21.8 billion, as shown in *Exhibit 15-8*, of which RM18.9 billion will be towards the 16 EPPs.

Exhibit 15-8



Out of the total investment towards EPPs alone, 44 percent (RM8.2 billion) will be from public sector and 56 percent (RM10.7 billion) will be from private sector. Out of total investments, 62 percent (RM13.4 billion) will be invested by the private sector and the balance (RM8.4 billion) will be public sector funding. Around half of the total Government's investment will go towards upgrading irrigation systems in Muda and other granary areas. Another RM1.5 billion of Government investment will be to develop critical infrastructure (e.g. water intakes, roads and jetties) in the identified aquaculture zones. This will be matched by the private sector for investment in operating infrastructures such processing plants, grow-out farms and hatcheries.

For the herbal industry, RM602 million will be allocated for large-scale publicly-funded research programmes on local herbs and other industry development initiatives. The research grants will be used to develop products with strong scientific evidence, secure intellectual property and provide support for product claims. This will enable the Government to minimise risk and promote private investment in developing high-value herbal products that can penetrate large export markets.

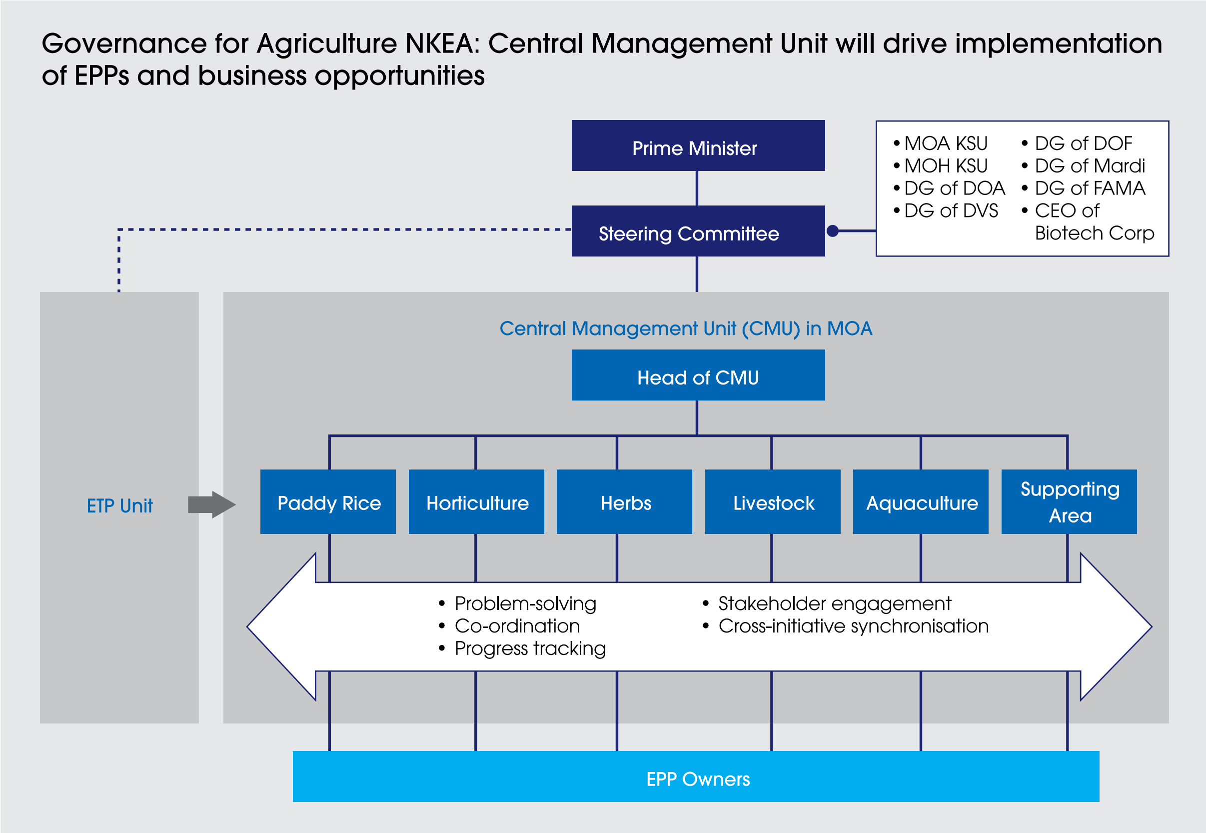
In terms of private investments, biotechnology initiatives are estimated to attract approximately RM820 million in foreign direct-investment by attracting multinational companies to invest in related industries such as bio-fertilisers, bio-pesticides, flavours and fragrances. The same amount will be invested in swiftlet nest farming to build new economical standard structures and processing plants. Additionally, it is anticipated that the private sector will invest RM1.3 billion to acquire overseas cattle operations and RM883 million to build integrated farm infrastructure for fruit and vegetables such as collection and processing centres.

GOVERNANCE AND DELIVERY

The EPPs identified have been sequenced to give immediate priority to replicating success models such as those for horticulture and large-scale aquaculture. At the same time, EPPs that are critical to unlocking value from certain sectors, particularly the herbal sector and paddy farming, will also be given priority.

The implementation structure for the NKEA has been designed to balance high-level, strategic oversight with cross functional on-the-ground teams to undertake implementation of each EPP. The overall delivery structure is depicted in *Exhibit 15-9*.

Exhibit 15-9



A Central Management Unit (CMU) will be established under the Ministry of Agriculture, which will lead the implementation of this NKEA. The unit will report to top leadership in the Ministry, namely the Chief Secretary and Minister.

From an operational perspective the Central Management Unit will consist of six teams aligned to the sub-sectors. For example, the paddy team will oversee the implementation of all related EPPs and be responsible for coordinating across them, assisting to resolve issues, tracking progress, engaging with stakeholders and synchronising across other teams.

The sub-sector teams will interface with the individual initiative owners identified for each EPP, who are responsible for day-to-day implementation activities. For example, the rice team will interface with MADA with respect to the transformation of rice farming in MADA and with MARDI for the fragrant rice initiative. The lead initiative owners for the top 10 EPPs and the other stakeholders involved are summarised in *Table 15-6*.

Table 15-6

EPP	Lead initiative owner	Other key agencies, companies and organisations
Swiftlet nest farming	Department of Veterinary Services (DVS)	Ministry of Housing and Local Government Ministry of Health Ministry of Natural Resources and Environment
Herbal products	Herbal Council	Department of Agriculture Malaysian Agricultural Development and Research Institute (MARDI) Ministry of Health Ministry of Natural Resources and Environment Khazanah
Premium Fruits and Vegetables	Department of Agriculture	Federal Agricultural Marketing Authority (FAMA) State Governments Khazanah
Seaweed	Department of Fisheries	Sabah State Government University Malaysia Sabah
Integrated Cage Farming	Department of Fisheries	State governments
Scaling-up paddy farming in the Muda area	Muda Agricultural Development Authority	Department of Agriculture Farmers' Cooperatives
Scaling up paddy farming in other irrigated areas	Ministry of Agriculture	Kemubu Agriculture Development Authority (KADA) IADA Pulau Pinang IADA Barat Laut IADA Kemasin-Semarak IADA KETARA IADA Kerian Sungai Manik IADA Seberang Perak Ministry of Agriculture Sabah (for Kota Belud) Ministry of Modernisation in Agriculture, Sarawak (for Batang Lupar)
Integrated shrimp aquaculture	Department of Fisheries	State Governments Khazanah
Biotech MNCs	Malaysian BiotechCorp	Ministry of International Trade and Industry Ministry of Science, Technology and Innovation
Food Park	Ministry of Agriculture	SME Corp The Council of Trust for the Bumiputera (MARA)

Focus groups will provide part-time support and be the mode used to gather private sector input for the successful implementation of each EPP. ETP Unit, as overall programme manager across all NKEAs, will monitor the delivery process, conduct weekly problem-solving sessions to resolve bottlenecks and track achievement of targets.

Summary of Agriculture NKEA

• **Incremental GNI impact in 2020**	RM28.9 billion
• **Additional jobs in 2020**	74,600

- **Critical targets and milestones within 6 to 12 months**
  - Incentives for rice farmers in Muda area to release their land for management by MADA's Special Purpose Vehicle (SPV) provided
  - Operation of first seaweed mini estate in Sabah commenced
  - Development of aquaculture cages in Temenggor and Kenyir Lakes completed and operations commenced
  - Construction of farm infrastructure for existing Taman Kekal Pengeluaran Makanan (TKPM) and Taman Pertanian Moden (TPM) for fruit cultivation started
  - Upgrading of facilities such as centralised processing and packaging centre and cold room in Cameron Highland for export of highland vegetables started
  - Centre for Marker Discovery and Validation to provide services in identifying desired traits for crops and livestock formed and operations commenced
  - Setup of a foreign biotech company in Iskandar Region completed and operations commenced
  - Construction of herbal cultivation parks in Durian Mentangau and Pasir Raja, Terengganu started
  - 500 DIY edible bird's nest premises distributed to the hard core poor

chapter 16
Healthcare

Chapter 16: Creating Wealth Through Excellence in Healthcare

"Healthcare is now at the cross-roads. While maintaining focus towards providing for the health and well-being of Malaysians, we also realised the unlimited economic potential of this sector.

We are aware that healthcare sector is also a wealth creator. Beyond just the organic growth in services, pharmaceuticals and medical devices, we will explore new horizons in services, clinical research, health travel, and generics pharmaceuticals manufacturing.

In this journey, we aspire to contribute USD10.4b to GNI by 2020. To achieve this, I seek the support of all healthcare providers, corporations and organizations."

Y.B. Dato' Sri Liow Tiong Lai
Minister of Health

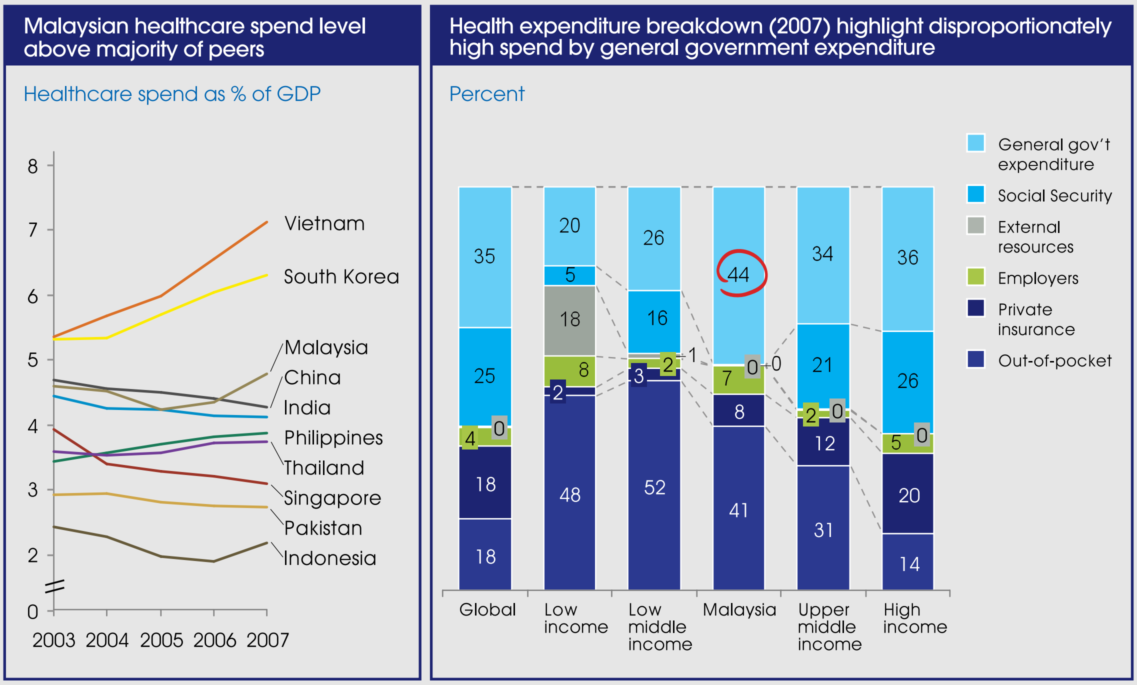
The global healthcare industry is among the most dynamic and rapidly growing industries in the world economy. Spurred by demographic shifts such as extended longevity and a rise in lifestyle diseases such as hypertension and cardiovascular ailments, cancer and diabetes, national healthcare costs are increasing dramatically. At the same time the health industry has become a powerful engine of economic growth.

Malaysia's record of healthcare expenditures is no exception to the rule. At 4.8 percent of GDP, our spending on healthcare is above our regional peers and public spending is a disproportionate contributor to healthcare costs. The burden on public spending is even more pronounced when compared to countries in the upper-middle to high-income brackets (*Exhibit 16-1*).

While numerous efforts are already underway to stem the expenditure trajectory, there is no coordinated effort to grow healthcare revenues. The Healthcare NKEA intends to address this asymmetry of focus and identify private sector opportunities to reframe health as an economic commodity as well as a social right.

Exhibit 16-1

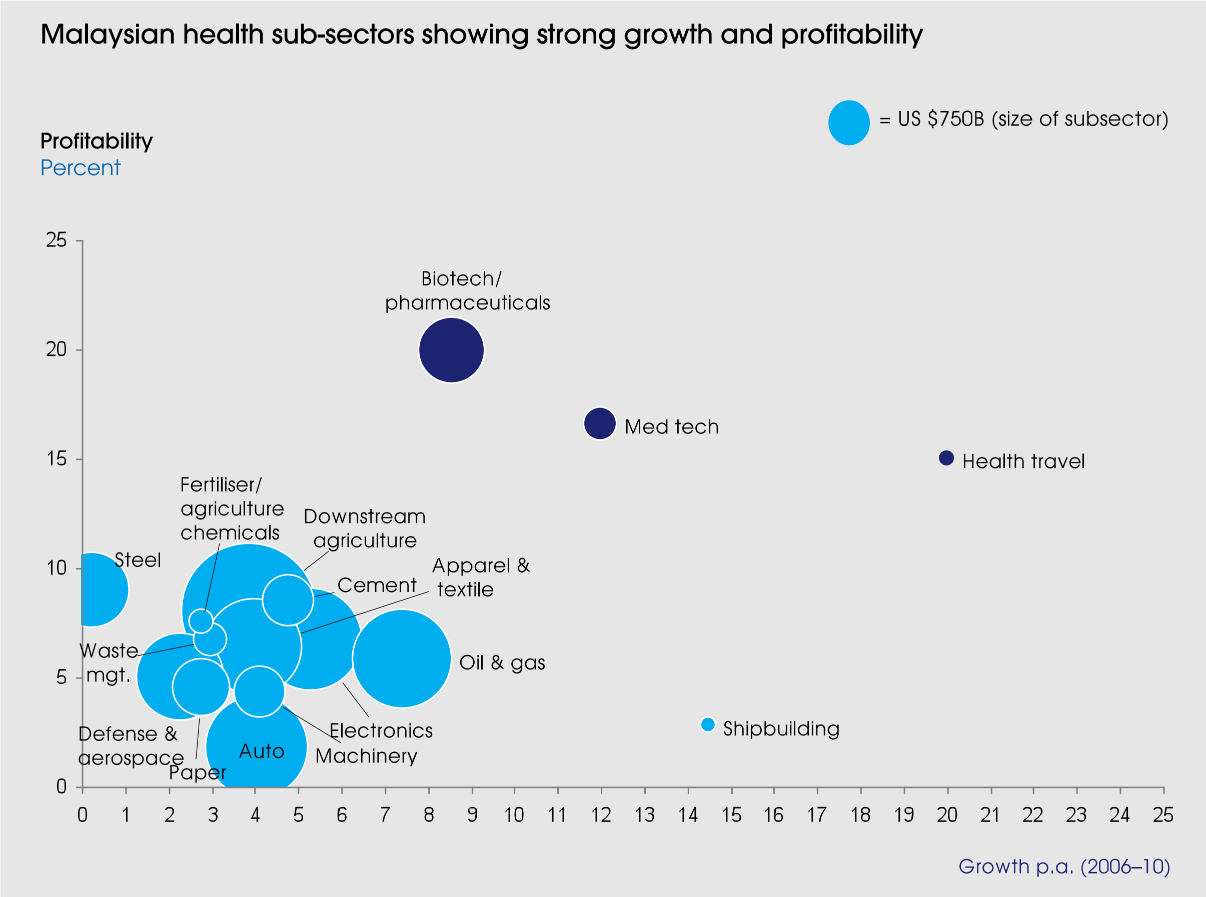
Healthcare spending in Malaysia higher than majority of peers, and much of it coming from the government



DEFINITION OF THE HEALTHCARE NKEA

While it is easy to develop a singular focus on healthcare as a cost and view managing these costs as the critical agenda, it is time for Malaysia to reframe the discussion. The healthcare industry can be a robust economic engine and one that indirectly creates significant social impact. Higher value jobs can be created, infrastructure can be upgraded and both specialist skill-sets and technology can be harnessed to improve the quality of care for patients. When examined from a profitability and growth lens, the Malaysian health sector opportunity looks extremely attractive despite its modest beginnings. As seen in Exhibit 16-2, all three key sub-sectors of the larger healthcare ecosystem, pharmaceuticals and biotechnology, medical technology (med tech) and health travel, have delivered stronger performances relative to the larger, more traditional economic sectors such as automotive, agriculture and electronics.

Exhibit 16-2



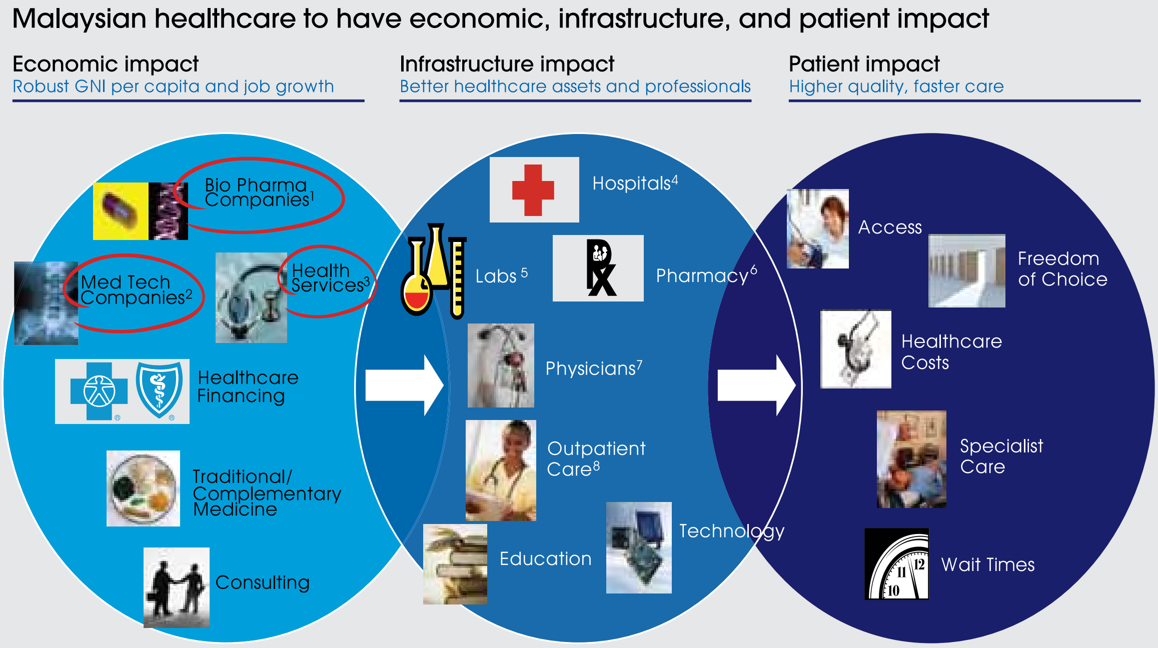
SOURCE: WHO; Ministry of Health; Department of statistics 2000-2007, Yearbook of statistics 2008; Malaysia Tourism Promotion Board; Epsicom; Matrade data; EIU; Lab analysis

The growth of the healthcare industry in Malaysia has been organic in nature and is primarily driven by domestic consumption of healthcare products and services. Moving forward, it is now time to reframe and position healthcare as an engine of economic growth.

To ensure the right balance of breadth and depth of coverage, the Healthcare NKEA is focused on the larger sub-sectors within the healthcare ecosystem. These include bio-pharmaceuticals, med tech, private healthcare financing and health services. Wellness services as related to traditional and complementary medicine (T&CM) are considered out of scope for the Healthcare NKEA given the infancy of the industry, fragmentation of the competitive landscape and the fact that until the enactment of the T&CM Bill, the boundaries of T&CM are still not well defined.

As seen in *Exhibit 16-3* our expectation is that focus on the largest economic engines will directly impact the healthcare infrastructure and indirectly result in better quality care for the *rakyat*. For example, the increase in hospital beds, doctors and nurses as a result of the growth in the healthcare industry should reduce wait times for patients, shorten the turnaround time on diagnostic lab results and improve the quality of patient outcomes through access to more specialist care centres.

Exhibit 16-3



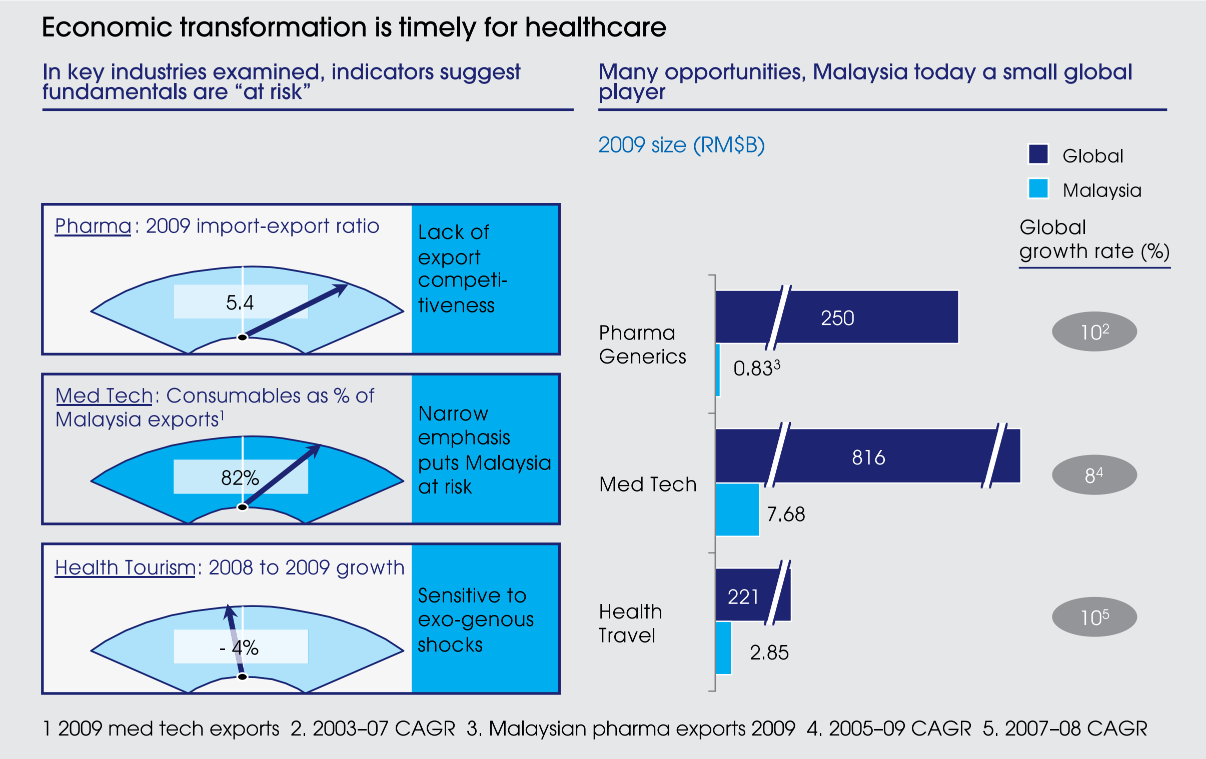
1. Includes generics exports, alternative medication (TCM, Herbal, Nutraceuticals)
2. Includes medical equipment, medical devices, medical supplies and HCIT
3. Includes Health travel, Wellness, and Seniors Living
4. Includes all ~130+ public and ~210+ private hospitals and all beds (~70% in public)
5. Includes diagnostics centres and private pathology labs
6. Represents ~6.4k pharmacists
7. Includes ~25k doctors of which 15k are in the public sector, 10k in the private sector
8. Represents rehabilitation centres, outpatient clinics, etc.

MARKET ASSESSMENT

Malaysia is in a unique position today. We can either aggressively participate in the global shift towards Asia by becoming a major player in the region's healthcare arena, or we can become marginalised as less developed countries such as Indonesia and less expensive countries such as Vietnam play larger roles on the ASEAN stage. Indonesia and Vietnam are already positioning themselves for healthcare growth. In Indonesia, local pharmaceutical companies are capturing an increasing share of the domestic market. In Vietnam extensive commitments and strong government support are going towards growing the med tech sub-sector through developing infrastructure and building a skilled, low-cost labour force.

Malaysia must act now and determine how best to use its infrastructure capabilities, domestic consumption base and diverse population to create an economic growth agenda for healthcare. Recent indicators show that despite fundamentals being at risk, the Malaysian healthcare industry has a solid starting point to undertake an economic transformation (*Exhibit 16-4*).

Exhibit 16-4



SOURCE: WHO, MOH, Department of Statistics, Matrade, EIU, IMS, Epsicom

From *Exhibit 16-4*, we can see that there is a real opportunity to improve our position on each of the fundamental sub-sectors. Although RM422 billion of prescription and pharmaceutical drug patents are about to expire in the next 10 years, Malaysia remains a net importer of generic products. Despite the rapid growth in med tech products, Malaysia remains focused on one category of products, medical consumables, which are primarily rubber-based products. The emphasis on lower-value products has resulted in Malaysia not fully developing the more profitable med tech sub-sectors such as medical devices, diagnostic equipment and healthcare information technology.

Finally, the health travel industry in Malaysia remains small and fragile and in 2009 declined by four percent. This can be primarily attributed to the lack of clear positioning relative to peers and an insufficient network of partners for source patients. In contrast neighbouring countries such as Singapore and Thailand continued to grow during the same period and leveraged price, quality of care and an overall health travel experience to retain volume. It is critical for Malaysia to bounce back in this attractive sector.

With 1.9 beds per thousand and 0.8 doctors per thousand as of 2008, Malaysia has a solid foundation to build on. In addition the high incidence of lifestyle diseases and experience with quality assurance permits Malaysia to be a credible R&D and clinical trial destination for the pharmaceutical and med tech industries.

Our goal is to migrate from primarily a lower-value product strategy to a more comprehensive product, services and asset strategy that better leverages our competencies.

TARGETS AND ASPIRATIONS

To achieve our target incremental GNI growth of RM35.3 billion between 2010 and 2020 aggressive targets will be set for each sub-sector.

For pharmaceuticals, we are targeting a 22 percent GNI growth rate that will deliver RM16.6 billion GNI by 2020. This is driven by higher exports of generic pharmaceuticals and enhanced generics and increased clinical research in Malaysia. The impetus for this aggressive growth is two-fold. First, we believe that significant extra capacity in the domestic pharmaceuticals industry can be re-focused on higher value manufacturing. Second, we believe that through investment in research and development, original research and product innovation, we can create a sustainable and thriving pharmaceutical industry.

In the services sector, we are targeting a GNI growth of 10 percent which will result in a GNI of RM27.8 billion by 2020. Driving this growth is an increased emphasis on export-focused services such as health travel, specialist care centres and seniors living.

Finally our planned growth in med tech remains a moderate eight percent. We believe that in the next 10 years growth will continue to come from the export of consumables to new markets, but towards the end of the next decade a new higher margin industry will emerge. Malaysia will be able to manufacture in-vitro diagnostic (IVD) test kits, orthopaedic implants and dental devices that leverage our ongoing research efforts and manufacturing advantage.

The next 10 years could be transformative for the healthcare industry. To succeed we must not only move faster than our regional peers, for example Indonesia, Thailand and Vietnam, but also migrate beyond a product-centric strategy to one which is centred on offering services to patients.

To ensure success we must work closely with a number of the other NKEAs, such as: palm oil, tourism, financial services and education. In the near future, a Health Industry Development Corporation (HIDC) will need to be established to drive the economic agenda for Malaysian healthcare.

Six EPPs, Two Business Opportunities and Baseline Growth to Deliver RM35.3 billion of GNI Impact

By 2020 we aspire to generate RM35.3 billion incremental GNI from the entry point projects (EPP) and business opportunities on top of baseline growth, welcome one million health travellers and conduct 1,000 clinical trials, all of which will result in approximately 181,000 new jobs. This includes about RM400 million of GNI from the multiplier effect created by EPPs from other sectors. The largest source of the multiplier effect on the Healthcare NKEA is the Tourism NKEA, which is estimated to contribute to 38 percent of the multiplier effect. This includes, for example, benefits to the Healthcare NKEA from a growth in medical tourism.

These projects represent an aggressive export campaign, an upgraded services platform and a commitment to better healthcare for Malaysians. *Exhibit 16-5* details the GNI contribution across these projects. The six EPPs are categorised into three themes: quick wins, strategic opportunities and longer term bets.

Quick wins

These are initiatives that can be implemented immediately in 2010 as they are already being debated within the public sector and require low to moderate levels of private sector support to enable successful execution. The two EPPs falling within this theme are:

- **EPP 1**: Mandating private health insurance for foreign workers
- **EPP 2**: Creating a supportive ecosystem to grow clinical research

Strategic opportunities

This theme includes medium-term initiatives that require significant change to the status quo and strong individual champions to rally the private sector into action. The two EPPs falling within this theme are:

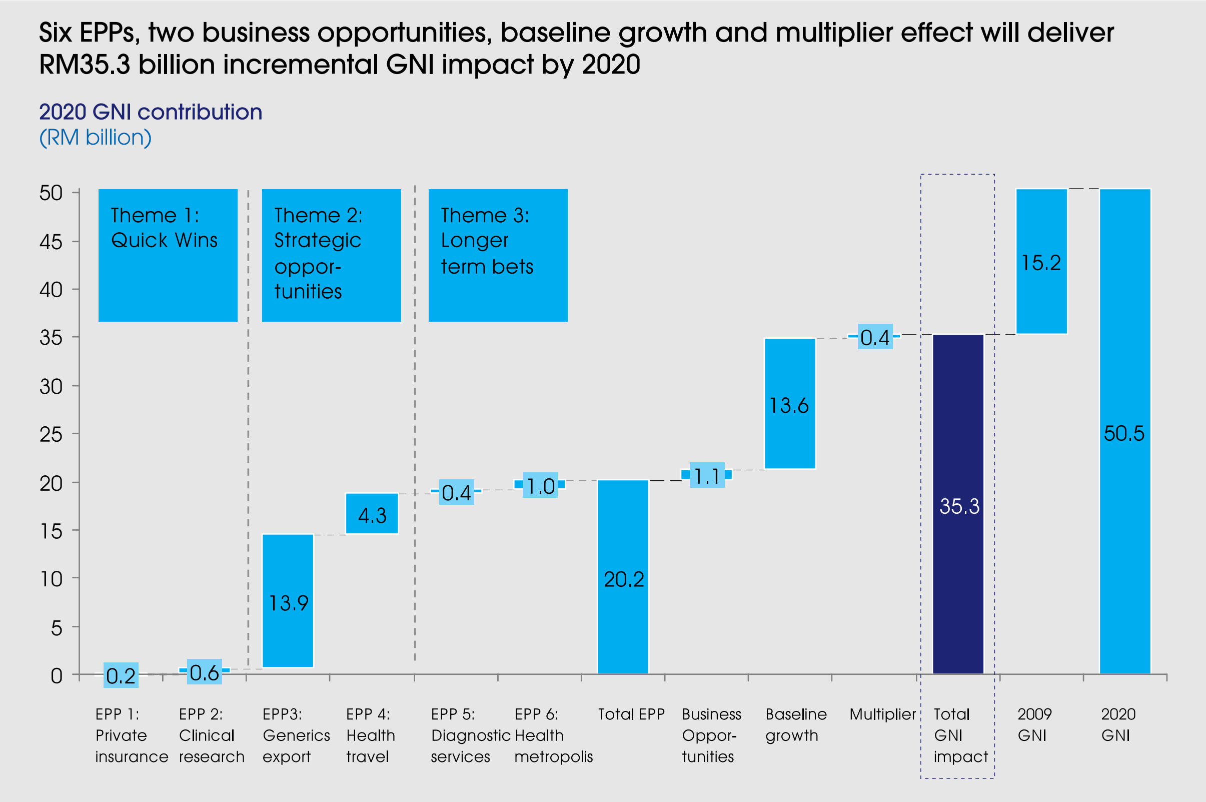
- **EPP 3**: Pursuing generics export opportunities
- **EPP 4**: Reinvigorating health travel through better customer experience, proactive alliances and niche marketing

Longer term bets

This theme includes initiatives that require significant support from both the public and private sector and are critical to placing Malaysia on the global innovation map. The two EPPs falling within this theme are:

- **EPP 5**: Creating a diagnostic services nexus to achieve scale in telemedicine for eventual international outsourcing
- **EPP 6**: Developing a health metropolis: A world-class campus for healthcare and bioscience

Exhibit 16-5



QUICK WINS

The two quick win projects tackle two issues that share nothing more than an ease of implementation due to a general bias towards action and few private sector stakeholders. The first is the insurance of foreign workers to protect worker heath, secure healthcare payments and bolster Malaysia's image. The second is a structural change in how clinical research is managed in Malaysia to reverse the decline in clinical research trials.

EPP 1: Mandating Private Health Insurance for Foreign Workers

Rationale

There are over three million foreign workers in Malaysia, 1.8 million of whom are registered and of which, only 75 percent are covered by workman's compensation schemes. Current compensation payouts for occupational injury and death within the Malaysian schemes are significantly below those of our neighbours including Thailand and Singapore. This leaves us with two problems. First, given our current compensation schemes, Malaysia's image as an employer of foreign labour is at a disadvantage compared to other nations. Second, we face an ever-increasing load of unpaid hospital bills that increases the burden of healthcare costs on the *rakyat*. To illustrate, foreign workers left RM64 million of unpaid healthcare bills in the past five years, 2005 to 2009, 19 percent of which were for care at public hospitals.

Action

To alleviate this problem, we will amend workmen's compensation regulation and impose mandatory insurance. All foreign workers will have to be covered under two insurance schemes:

- Workmen's compensation insurance to cover occupational-related diseases and accidents will be paid by the employer; and

- Medical insurance for non-occupational diseases and injuries will be paid by the foreign worker.

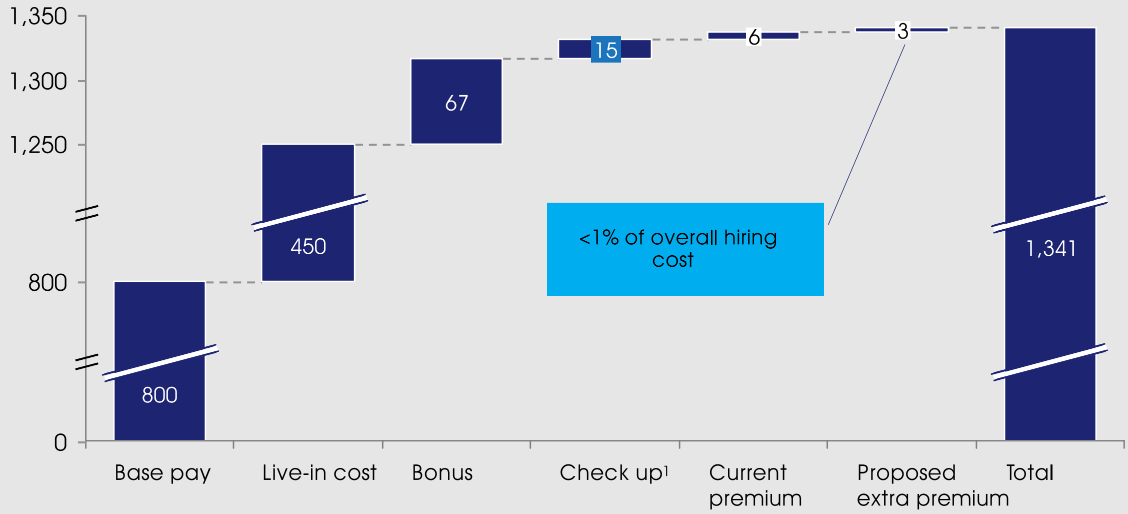
This initiative requires the alignment of the various stakeholders: Ministry of Human Resources (MOHR), the Ministry of Health (MOH), Ministry of Home Affairs (MOHA) and Bank Negara Malaysia (BNM). In addition to the above, support is also required from the General Insurance Association of Malaysia (PIAM), industry and employer associations and the governments that are exporting foreign workers, for example Bangladesh, Cambodia, China, Indonesia, Myanmar and Philippines.

We believe that private health insurance for foreign workers will not be significantly more expensive for employers to provide as it translates to just an additional RM3 per month per foreign worker (*Exhibit 16-6*).

Exhibit 16-6

Increasing foreign worker insurance will be almost negligible, compared to overall cost of hiring (an additional RM3 per month)

Incremental insurance cost relative to overall cost of hiring
Monthly cost of hiring, RM



1. Check up figure is calculated from average price of RM180 per annual check up, divided over 12 months
Note: Figures are based on interviews with employers and private insurers-actual additional premium and benefits to be finalised after more extensive actuarial studies to be completed.

SOURCE: Interview with employers and private insurers

Given that the initiative will only increase cost marginally and that there exists numerous benefits for workers, employers and the public hospital system we believe there will not be significant implementation risk or investment required.

The primary owner for this project and each of its steps will be MOH. For the Private Insurance EPP to be implemented successfully four critical steps have to be taken:

- Amendment of workmen's compensation regulation for all foreign workers. This will be tabled in Parliament by 2011;

- Agreement by leading private insurance companies to insure all foreigners who currently do not have insurance per the FOMEMA database, which will be completed by 2011;

- Alignment with MOHR, MOHA and employer groups; and

- Commitment by the Immigration authority to check for insurance while approving work permits, which will be achieved by end 2011.

Funding

In order to be able to process insurance for foreign workers, we need to make an investment into system integration and provide computer terminals in government hospitals. A one-off cost of RM5 million is required, which will be funded by the Government.

Enablers

In addition to the policy and regulatory reform detailed above, MOH will need to further facilitate the process by serving as a third-party administrator to ensure that payments for hospital services used by foreign workers are billed to their respective health insurance companies. MOHA will look into enforcing compulsory insurance as part of work permit applications for foreign workers, with all regulatory amendments to be tabled by end of 2011.

Impact

This EPP will deliver RM171 million in GNI by 2020.

EPP 2: Creating a Supportive Ecosystem to Grow Clinical Research

Rationale

The global clinical research industry has grown at 15 percent annually to reach more than RM64 billion in 2009. Growth in Asia has outpaced the global market, with China, India and Southeast Asia collectively delivering approximately 30 percent year-on-year growth in recent years. Malaysia's performance has lagged behind its Asian peers; in 2009 only 100 trials were conducted and the annual growth rate in clinical trials was only seven to eight percent between 2003 and 2009.

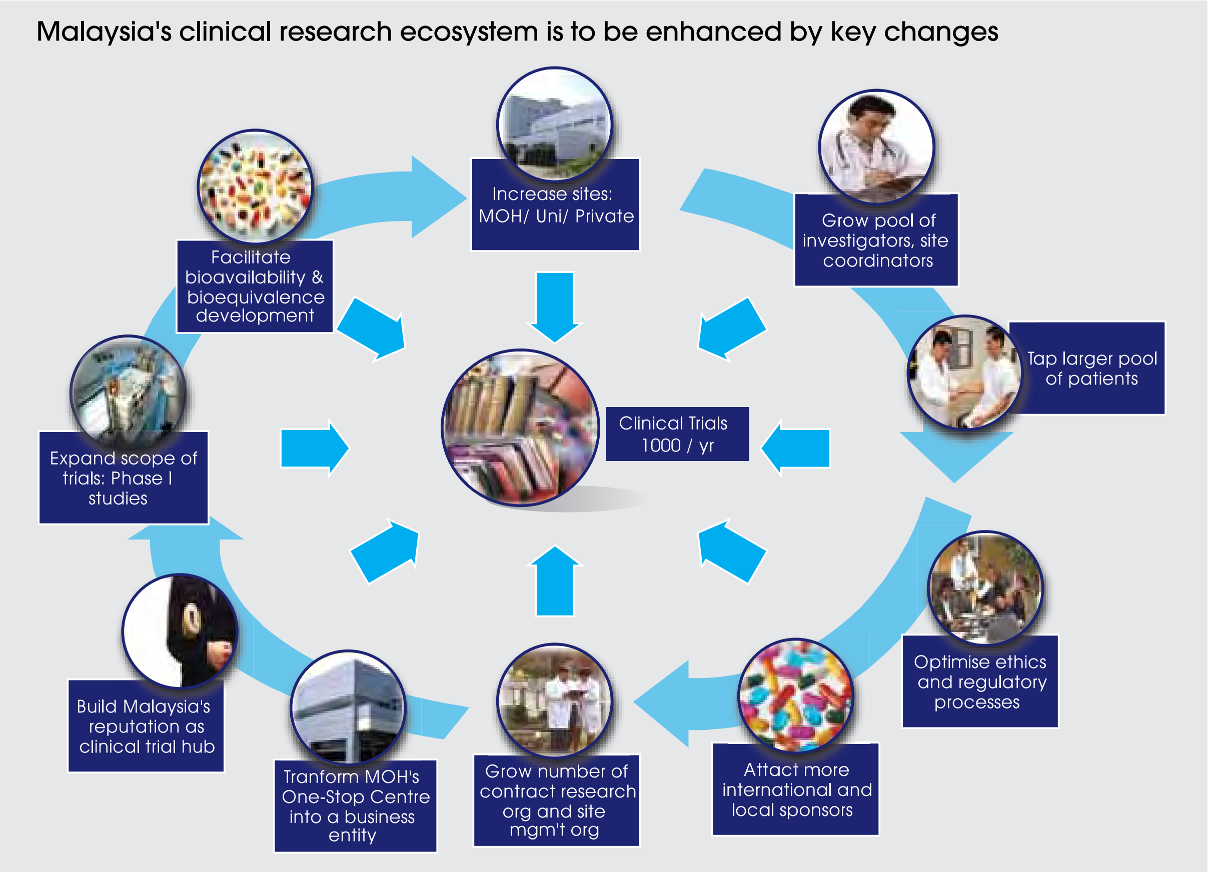
We aspire to move from 100 ongoing clinical trials in 2009 to 1,000 ongoing clinical trials by 2020. This would place Malaysia in a competitive position vis-à-vis countries like Taiwan, which has the same population size as Malaysia but eight times the number of ongoing clinical trials.

Actions

Our goal is to fundamentally change the Malaysian growth trajectory by creating focus and accountability as well as an emphasis on sponsors and investigators. To enable these goals, a new corporatised business entity will be created within MOH to spearhead the industries development, Clinical Research Malaysia (CRM). CRM will act as a clearing house for all funds relating to clinical trials to meet strict international requirements on transparency in payment. It will also support home-grown successful clinical research organisations that focus on building expertise in lifestyle diseases such as diabetes and cardiovascular conditions and tropical infectious diseases. The aim in the coming 10 years is to ensure Malaysia is seen as the Asian destination of choice for Phase II to Phase IV trials in these areas.

To succeed, we must reshape the clinical research value chain and address some of the fundamental issues limiting higher quality clinical trials. With CRM taking steps to plug current capability gaps that exist in Phase I trials and analytical studies, Malaysia will be able to offer services along the entire spectrum of drug and device development. *Exhibit 16-7* provides a snapshot of the key changes that are being proposed, the highlights of which are detailed below.

Exhibit 16-7



CRM will support our high-performing sites and groom investigators into regional or even global centres of excellence with cutting-edge technology medical centres that provide integrated service and undertake research and training. CRM will improve coordination and communication between the sites and investigators in government hospitals and tap the currently under-utilised capabilities of senior, experienced investigators in private centres.

MOH will expand the pool of investigators by providing dedicated time for research, address the shortage of skilled support staff and overcome the administrative hurdles for remuneration and reimbursement for all participants in contract research. CRM aims to meet industry expectations of speedy ethical approvals, outperform rivals in patient recruitment and improve data quality, support and logistical services. Finally, we will coordinate the promotion of Malaysia as a high quality and high performing clinical research site in the ASEAN region.

Funding

The Government will provide an investment of RM38 million to fund the initial capital expense and the operating costs of a network of individual clinical research hubs. A hub will exist in each of the 13 states. In addition to the hubs, seven centres of excellence will be established. A further investment of RM4 million will be required from private investors by 2020 to upgrade existing clinical research sites.

Enablers

To develop a culture of research, MOH will demonstrate high-level support, by assigning research key performance indicators to hospital administrators and doctors, creating protected time for research and making research critical to career progression. Both MOH and MOHE will also train and conduct regular re-certification of doctors in the international standard Good Clinical Practice (GCP). MOH will also increase the number of clinical research associates and study coordinators and promote study coordination as a career with good prospects.

The Government will provide seed funding for the network of CRM hubs across Malaysia and seven centres of excellence focusing on major disease areas like cardiology and oncology by 2015. Each facility will include basic physical infrastructure (internet access, secure facilities for the storage of research products) and a core team with permanent staff on-site to provide crucial support services such as site and document management and study coordination. MOH will also develop facilities and capability to perform bio-equivalence testing.

Another key driver of success is MOH establishing CRM as a corporatised business entity within MOH by mid 2011, to enable commercial transactions and business flows for the commercial function of MOH Clinical Research Centre. MOH will also change its policy to allow for payments to individual public sector employees for conducting trials to incentivise participation. MOH will further consider a change in policy to allow MOH's Clinical Research Centre to sign clinical trial agreements on behalf of the government, in place of the current requirement of Cabinet approval since speed is important when competing for international trials. Finally, the Government will impose a requirement for all clinical trials conducted by universities and private hospitals to be registered with MOH's Clinical Research Centre, in order to create a complete Malaysia National Clinical Research Registry. These policy changes will be completed by 2011.

To turn Malaysia into a destination for clinical research and drug trials, CRM will market directly to international pharmaceutical companies to base their drug trials in Malaysia, offering fast-track registration of such products. These marketing efforts will occur at international trade shows and promotional events, promoting Malaysia as a high-quality, high-performing clinical research site across diverse disease areas. CRM will also engage experienced local pioneers and regional leaders as consultants to enable quick ramp-up and develop systems for project oversight and monitoring. In addition, CRM will maintain a network of high-quality trial sites and work towards achieving the vision of a more vibrant clinical research ecosystem that will support home-grown innovation in pharmaceuticals and med tech.

Impact

When all the enablers have been achieved, there should be no significant operational risk in accelerating the transformation process of CRM to deliver the GNI target of RM578 million and 900 new jobs by 2020. There will also be significant social impact as fast-track registration will give patients quicker access to the latest treatment options available.

STRATEGIC OPPORTUNITIES

The two strategic opportunities for healthcare are in generics and health travel segments. As these segments have the potential to move Malaysia up the healthcare value chain, we need to change the way we think about our industry and how the public and private sectors can work together.

EPP 3: Pursuing Generics Export Opportunities

Rationale

While Malaysia's pharmaceutical manufacturers have, thus far, been largely focused on the domestic market, the patent expiration of major blockbuster drugs (drugs that generate over RM3.2 billion of revenue for its owner each year) over the next 10 years opens up an attractive global market opportunity for Malaysian generics exports worth RM435 billion.

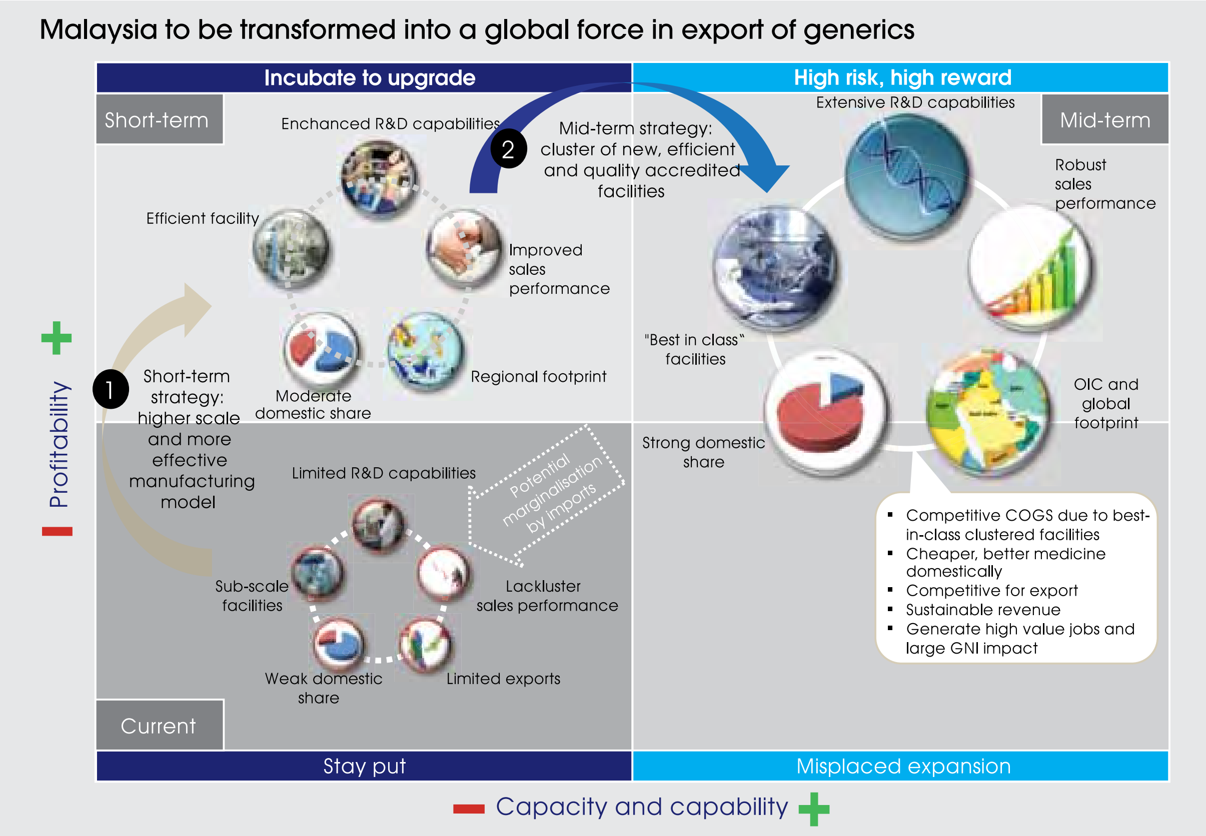
At face value, Malaysian generics are not cost-competitive relative to India and China. However an export-oriented strategy geared towards the Organisation of The Islamic Conference (OIC) countries, may mean Malaysia could succeed. As the only OIC country with the highly-regarded PIC/S (Pharmaceutical Inspection Convention and Pharmaceutical Inspection Co-operation Scheme) membership and a credible halal platform, Malaysia can differentiate itself from its larger competitors. In addition, by actively seeking local partners and pursuing mutual recognition agreements Malaysia may be able to enter several target countries.

Actions

The key to success will be migrating from an inefficient industry model (overlapping portfolios, sub-scale production) to a leaner, more focused set of local pharmaceutical manufacturers.

As shown in *Exhibit 16-8*, the Healthcare NKEA will execute a strategy to transform Malaysia into a major force in the export of generic pharmaceuticals. The critical driver in the first 12 months is MOH, which is currently looking into ways to support private sector efforts to generate business in OIC countries. In parallel between 2011 and 2015 the private sector is likely to get increasingly involved in both rationalising existing capacity and investing in new operations.

Exhibit 16-8



Private investors to create higher scale and efficient manufacturing model by 2011. By enabling multinational pharmaceutical companies to license production to local manufacturers, the issue of the latter's sub-optimal scale could be addressed. On the basis of efficiency improvements, companies can move up the value chain into higher value-added products like biological drugs and enhanced generics.

Private investors and pharmaceutical companies to build a cluster of new, efficient and quality accredited manufacturing facilities. The new facilities will begin construction from 2011 and have dedicated production lines focused on specific therapeutic areas. These will focus on large-volume production of generic drugs with recent patent expiries. The result will be a more globally competitive cost structure and a more flexible mechanism to deliver high-quality drugs into OIC markets.

For this ambitious initiative to succeed, it is imperative that we position pharmaceuticals as a key strategic industry. The following actions and enablers, especially regulatory enablers, will ensure that the pharmaceutical industry is well positioned internationally and domestically.

The government will consider a more robust domestic strategy for local generics and will look into permitting only audited PIC/S equivalent international generics into the Malaysian market. In addition, MOH together with a Special Purpose Vehicle (SPV) sponsor will pursue private investment for new manufacturing clusters, while supporting novel R&D efforts to create a sustainable advantage. Further efforts to tie in ongoing research programmes at local universities and put in place appropriate incentives to encourage commercialisation of such research will help to drive success.

Enablers

To ensure adequate human capital for the pharmaceuticals sub-sector, new pharmacists will be allowed to spend part of their studies and compulsory service in the pharmaceutical industry by mid-2011.

For this EPP to succeed, the government will recognise pharmaceuticals as a strategic industry within the healthcare ecosystem and ensure its interests are represented in international trade missions and negotiations. MOH will establish the post of a National Pharmaceutical Industry Advisor to the Minister of Health, who will be appointed by 2011. This person is accountable for developing the pharmaceutical industry. The advisor should also encourage local industry to rationalise and create companies that focus on high value-added products. To promote R&D, MOH will look into regulatory changes to bundle pharmaceutical products into a limited set of public procurement tenders and require a minimum percentage of sales to be ploughed back into pharmaceutical research and development by 2011. MOH will further implement and enforce the National Medicines Policy by mid- 2011 to require local production of specified patented drugs that are sold to the public sector. MITI will further look into ways to encourage multinational pharmaceutical companies to out-source manufacturing to local companies, while requiring imported generics to meet manufacturing standards of local companies.

Another regulatory change MOH will look into is the requirement for bio-equivalence testing in the registration of all generics products. MOH will also consider building a consolidated national database of all local manufacturing capabilities: capturing financial, operational, organisational and portfolio information to augment policy-making abilities by mid-2011. Furthermore, all other ministries will need to obtain MOH approval before making concessions regarding the pharmaceutical industry in any trade negotiations. Finally, we need to modify patent laws to prohibit multiple patent extensions and align with U.S. patent expiry data.

MITI, MOH and the Pharmaceutical Industry Advisor will look into the establishment of government-to-government agreements giving Malaysia preferential market access and mutual recognition of product registration with select countries from 2011 onwards. MITI will also look into trade negotiations to open up access to various markets within ASEAN.

MITI will further provide grants to cover a certain percentage of the costs for pharmaceutical trade shows and promotions and will assist more Malaysian companies to promote made-in-Malaysia pharmaceuticals internationally.

Funding

In order to realise our Generic Pharmaceutical Export strategy, HIDC will need to attract private investment totalling RM10.2 billion. In addition, the Government will provide public investment of RM96 million over three years (2010 to 2012) to kick-start the project and for the building of 60 highly efficient manufacturing facilities for production of generic drugs for export.

Impact

With the implementation of the various enablers detailed in this book, this EPP will yield a significant impact of RM13.9 billion GNI and 12,400 new jobs by 2020.

EPP 4: Reinvigorating Health Travel through Better Customer Experience, Proactive Alliances and Niche Marketing

Rationale

Although the Malaysian healthcare travel industry has shown consistent growth of 38 percent per annum between 2003 and 2008, in 2009 the market experienced a contraction. The industry continues to remain small (estimated at RM350 million in 2010) and is prone to both exogenous shocks such as a global economic crisis and increased competitive pressure from neighbouring countries.

Markets such as Singapore and Thailand have not only shown faster historical growth but weathered the downturn better by positioning themselves as leaders in specific niches of the industry – high-quality care and high-value health experiences.

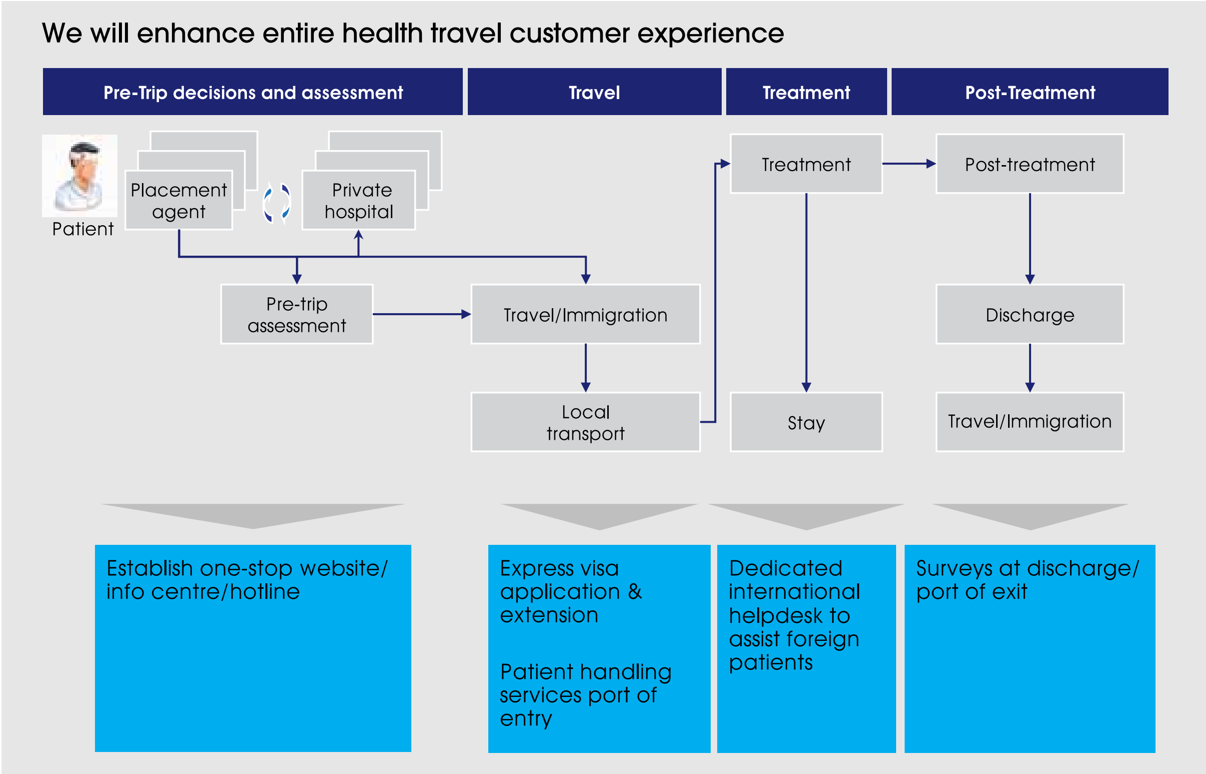
Actions

The goal of this EPP is to create a differentiated position for Malaysia and to broaden the customer base beyond Indonesia (70 percent of 2009 receipts) and beyond lower margin outpatient treatments (more than 80 percent of health travel procedures). The primary owner for the extensive marketing efforts is the Malaysia Healthcare Travel Council (MHTC). The effort to develop better infrastructure and the development of strategic bilateral relations will be undertaken by the MOH and Ministry of Tourism (MOTOUR). It is expected that the development of the marketing campaign and bilateral relations will occur within 2011.

The first phase of the strategy will be to grow patient volume and expand beyond the Indonesian market, and the second phase will be to build capability in niche specialties to drive a shift towards more profitable in-patient care in later years.

Eight potential markets have been identified for expansion and a three-tiered value proposition has been developed. For the proposed target markets of Indonesia, Vietnam and Bangladesh, we intend to provide a healthcare service that offers good value-for-money. Examples of healthcare services would range from regular health check-ups to more complex in-patient procedures in the fields of cosmetic surgery, cardiology and oncology. We believe that a different approach towards the Middle East and Singapore markets, providing high quality healthcare at a reasonable price, will attract more patients. For Japan, China and Western countries alike, a healthcare and tourism package will increase the attractiveness of Malaysia. Providers of these services would be the 35 identified private hospitals earmarked to promote health travel.

Exhibit 16-9



SOURCE: Interviews with industry experts, lab analysis

As illustrated in *Exhibit 16-9*, MHTC will work with private hospitals, placement agents and multiple agencies to introduce a customer experience incorporating four critical changes:

- Extensive and well-coordinated marketing effort from both state agencies and individual hospitals to penetrate new markets;
- Proactive alliances with foreign governments and insurers to secure patient loads and ensure medical insurance is portable, for example Indonesian insurers;
- RM335 million investment into infrastructure and human capital to ensure sufficient hospital capacity and 5,300 trained medical professionals to support growth in demand; and
- A seamless end-to-end patient service to create positive word of mouth, which plays an increasing role in patient choice of healthcare destinations.

The operational risk with this EPP is more pronounced than others as greater coordination across multiple agencies is required. A very clear, simplified roadmap for potential patients will require collaboration across all 35 of the private hospitals earmarked to lead health travel. A strong operational leader from the private sector to catalyse this change will be critical and MHTC has begun a search for the right candidate. MHTC's goal is to ensure that this champion has the ability to impact the most critical parts of the new healthcare travel strategy.

The plan encompasses several steps, one of which is launching a focused, aggressive and segmented marketing campaign to better reach our target markets. Next, healthcare travel in Malaysia should migrate towards higher value customers by offering specialised treatments. MHTC will work with BNM to negotiate for portability of medical insurance between countries and secure targeted alliances across Ministries, for example Tourism, Home Affairs, Finance, Foreign Affairs and with all Malaysian representative offices abroad. The continued development of adequate healthcare infrastructure and specialised human capital to cater to more specific healthcare needs is also crucial to this initiative. Finally, enabling a seamless end-to-end patient experience – from the time a patient decides to explore Malaysia as a healthcare destination, through the actual clinical experience and during the post operative recovery period – will improve the attractiveness of Malaysia as a healthcare destination.

Enablers

The Ministry of Home Affairs and Immigration Department will consider ways to shorten the time required by private hospitals to bring in foreign doctors, nurses and other allied health labour to support the growth in hospital capacity. In addition, MOH and MOHE will increase specialist doctor training capacity to raise domestic supply and establish centres of excellence, which will be a one-stop location for innovative care, research and specialised education to further enable development of a greater pool of specialists in the nation.

MOF shall continue offering tax incentives for the upgrade of existing facilities to accelerate the development of health travel infrastructure. Further speeding up the processing time of approvals on areas such as renovations, new buildings and licence inspections at both local authorities and MOH level will also enable infrastructure development. Meanwhile, MOH will continue monitoring existing hospital capacity and expand the number of private hospitals and facilities that are allowed to offer health travel services.

MOH will consider revising advertising guidelines to allow hospitals to publish patient testimonials on their websites and in marketing collateral. MOH also needs to work with Immigration Department to allow express visa approvals and extensions for health travellers and their companions by end of 2011.

To attract more health travellers, MITI will involve MOH in various trade missions, to seek agreement with foreign governments or foreign insurers to provide portability of medical insurance. In addition, MOH will encourage hospitals to pursue alliances with foreign hospitals and doctors to strengthen the referral network. Private hospitals will also actively engage Malaysian MNCs to encourage them to send their overseas employees to Malaysia for treatment.

MOH will enable MHTC to function as a corporate entity with flexibility to coordinate marketing activities by end of 2010. MHTC will need to prepare marketing collateral and conduct training for all relevant offices within Malaysia's global network of offices for example, embassies, Foreign Trade mission offices, MATRADE, Malaysia Airlines (MAS) and Tourism Malaysia. MHTC will also allow co-branding with MAS and Air Asia – these would take the form of promotional packages that include healthcare inserts in in-flight magazines and the inclusion of a healthcare segment within in-flight arrival videos. Finally, MHTC will sponsor the establishment of a Brand Ambassador for Health Travel who will actively market Malaysia as a healthcare destination.

Funding

It is critical that RM335 million be sourced from the private sector hospitals to upgrade hospital infrastructure required to accommodate the rising number of health tourists.

Impact

With all these enablers in place, we are expecting Malaysia's health tourists from the identified markets to reach 1.9 million in 2020, contributing RM9.6 billion revenue. This translates into a GNI impact of RM4.3 billion and the creation of an estimated 5,300 jobs.

LONGER TERM BETS

We believe that we must tackle more difficult issues in order to gain a strong position early in new technologies such as telemedicine and to establish Malaysia as a source of significant medical innovation. These two EPPs will require government to work hard to gain the support, commitment and energy of a variety of public and private sector partners.

EPP 5: Creating a Diagnostic Services Nexus to Achieve Scale in Telemedicine for Eventual International Outsourcing

Rationale

As Malaysia's population grows there will be increased demand for preventative care, including early diagnosis of diseases. Today's distributed model of providing diagnostic services such as radiology and pathology across more than 130 public and 210 private hospitals is far from ideal. As a result, the average turnaround time for elective radiology and pathology services in public hospitals ranges from one to six months.

Actions

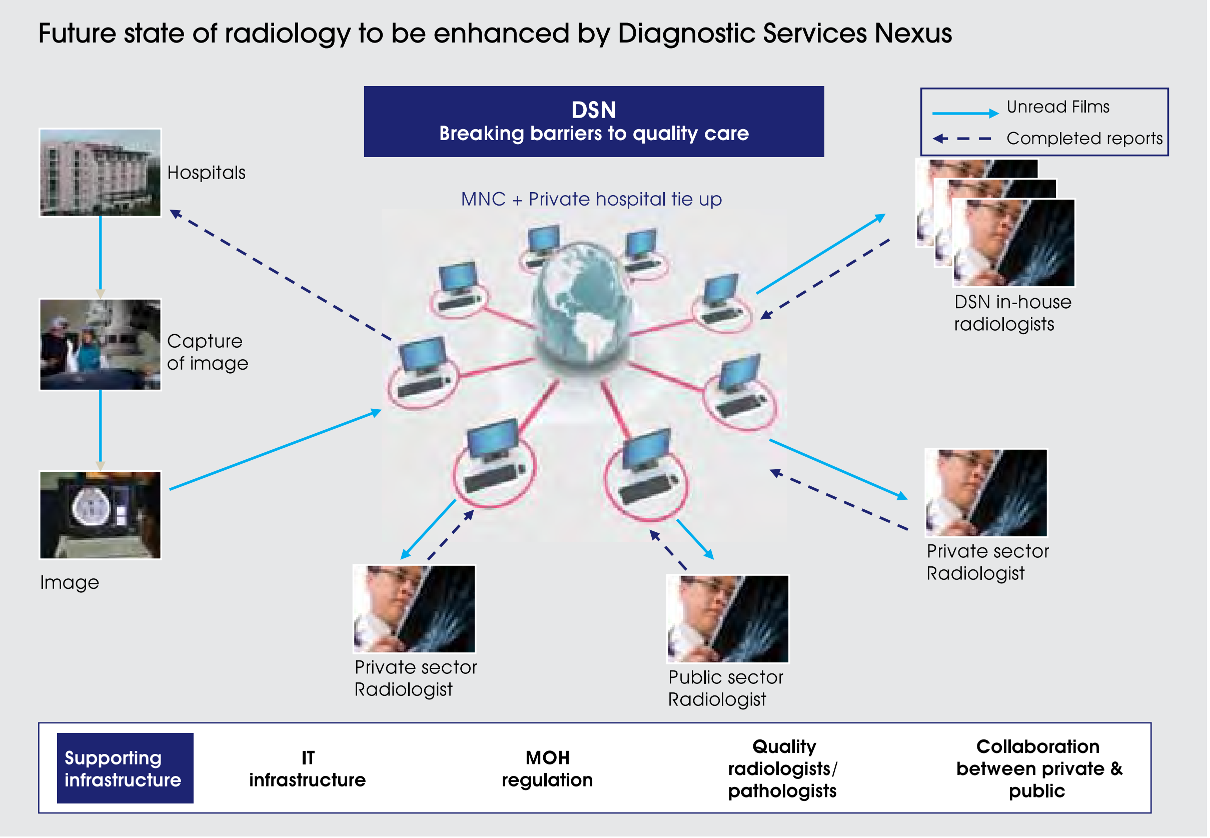
The Diagnostic Services Nexus (DSN) aspires to deliver two changes:

- Create efficiency within the existing domestic diagnostic services through public-private partnerships. For radiology a partnership between a private diagnostic services provider and a large multinational corporation as a technology partner would create a central coordinating body to help evenly distribute the workload. For pathology, a partnership between the MOH and private pathology providers would allow the outsourcing of pathology laboratory services; and

- Leverage a scaled business model that would pursue international diagnostic outsourcing opportunities via telemedicine and build on Malaysia's first-mover strength in having telemedicine statutes and regulations.

The initial focus will be on radiology and pathology. Radiology services will be linked to the DSN via a tele-radiology grid and will include general radiology, mammography, multi-slice cardiac and neuro computed tomography (CT) and general, cardiac, neuro and breast magnetic resonance imagery (MRI) as illustrated in *Exhibit 16-10*. Pathology services will be consolidated and outsourced and include all basic tests and some specialised tests.

Exhibit 16-10



The critical building block for success will be creating connectivity between healthcare information systems residing within hospitals and the DSN. The plan is to engage a large global company with healthcare IT capabilities and a proven track record of successful telemedicine implementation to invest in and develop this network. Examples of global companies with the required IT expertise are GE, Philips and Siemens. The private sector healthcare service provider and the global player will together form the DSN, which will be implemented in four phases.

- Phase I: Pilot tele-radiology in three hospitals, starting with domestic connectivity for radiologists to access and read the films or images remotely. DSN is to fund the necessary information and communication technology (ICT) investment. DSN will also reduce scanning and waiting times via an online queuing system among participating facilities. At the same time, MOH will pilot the outsourcing of pathology services in selected hospitals;

- Phase II: Expand to all hospitals with digital radiology capability and have each hospital outsource their excess workload to DSN, which will guarantee faster turnaround but at the same cost;

- Phase III: Expand scope to additional hospitals and diagnostic centres nationwide in Malaysia; and

- Phase IV: DSN to export tele-radiology and pathology services globally, backed by the solid foundation in the domestic market, standard operating policies and protocols as well as robust business models.

The operational risks of this model are high, of which gaining agreement from public sector hospitals to outsource diagnostic services will be the biggest challenge. Active dialogues have begun with various MOH radiologists and pathologists, and the use of pilot sites will facilitate smooth transition during the expansion phase. MOH will be involved through the setting of standards and KPIs for the DSN and private pathology service provider, to ensure that all stakeholders are clear on expectations. The second concern is identifying a diagnostic services champion, and the search is currently underway. Finally, although attracting investment from MNCs whilst developing capacity for radiologists and pathologists is expected to be challenging, we believe this concern is more manageable. A number of large MNCs have already expressed an interest in investing and a mutually beneficial path is currently being explored.

Enablers

MOH and MOHE will need to provide for the training of more radiologists and sub-specialist in various radiology and pathology fields beginning in 2011. Examples of sub-specialties include MRI, CT and interventional radiology. They will go one step further by creating linkages between Malaysian Masters programmes and international colleges for radiology and pathology, in for example Australia, the UK and USA. This is to enable local radiologists and pathologists to be accredited and recognised internationally, thus facilitating the export of radiology and pathology services to the global market. This effort will begin in 2012.

Telecommunication service providers and the private investor will ensure that a robust and secure high bandwidth broadband infrastructure and the establishment of dedicated bandwidth for transmission of the diagnostic images are in place in targeted areas. The DSN service provider, through a tie-up with the MNC technology partner will implement a modern data compression technology to allow the smooth and reliable transfer of images leading to faster diagnostic turnaround times. Another infrastructure requirement for DSN would be the establishment of cloud computing and/or server farms by the private sector investor by 2011 for secure archival of radiology and pathology digital files; storage will be for a minimum of seven years, as per statutory requirements for patient medical records.

MOH will endorse the outsourcing of radiology reporting from public hospitals to DSN and pathology to another private sector operator to be determined during a tender process. MOH will also review a change in policy to allow MOH radiologists and pathologists to accept financial reimbursement for reading and reporting additional diagnostic tests and for providing help with the establishment of standard operating protocols for the DSN. Finally, MOH also needs to mandate professional indemnity insurance for all radiologists who participate in the DSN. These policy changes will be implemented by mid-2011.

To facilitate international export of our diagnostic services in the later phases of the EPP, MITI will need to negotiate free trade agreements to allow for cross-border export of medical services, specifically radiology and pathology starting from 2013.

Funding

It is necessary that the private sector investor and MNC technology partner contribute RM91 million to build the infrastructure and purchase equipment for a radiology central job bank, which can serve as the foundation for a future national archive of diagnostic images. This funding is expected to come primarily from the private sector investor.

Impact

The resulting impact of this effort would be incremental GNI of RM356 million and the creation of approximately 300 jobs. The benefit for the MOH would be achieving consistent quality of diagnostic services and quicker turnarounds of radiology and pathology reports, with the potential for earlier detection of diseases and medical conditions. For Malaysia, the DSN will create higher-value jobs for trained medical professionals and enable us to gain a leadership position in healthcare digitisation and telemedicine in Asia.

EPP 6: Developing a Health Metropolis: A World-class Campus for Healthcare and Bioscience

Rationale

Various academic institutions, public and private sector hospitals and private sector conglomerates in Malaysia and the region are all working towards the creation of a thriving medical ecosystem located in one large campus. Potentially interested companies include University of Malaya (UM), MAHSA University College, International Specialist Eye Centre (ISEC), Kumpulan Perubatan Johor(KPJ), Pantai Group, General Electric (GE), Gribbles and Forest Medical Centre.

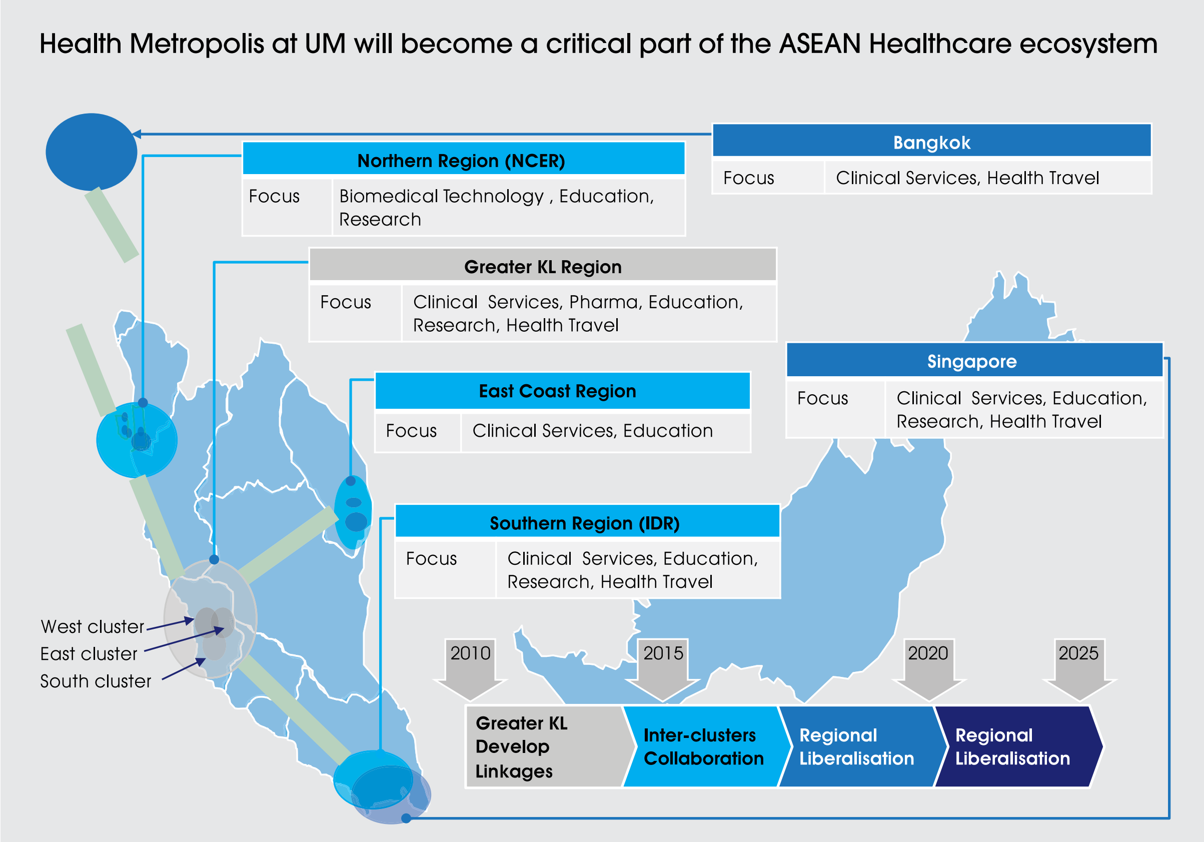
Two of the global best-in-class examples, Harvard's Longwood Medical Area and Stanford's Bio-X Centre, show that a successful ecosystem can deliver better quality care, generate innovative research and produce better trained clinicians.

Actions

The goal for this EPP is to create a healthcare ecosystem in Greater KL/KV as a launching pad for a series of ecosystems in other locations. UM would serve as the anchor. With its strong academic curriculum, research capabilities and large tracts of available real estate, the ecosystem will create traction on education and research and be able to attract others to deliver the remaining components of clinical care. Organisations such as Institut Jantung Negara (IJN), Columbia Asia, Cell Safe, Khazanah, Sime Darby and International Medical University (IMU) have all expressed interest in participating and understand the synergies of having access to trained professionals and innovative research.

By creating an economically self-sustaining metropolis University Malaya will be able to expand, at a later stage, into value-added services and products, for example healthcare education, medical expositions and collaborative global research and patents. Although the achievements of Harvard or Stanford may take quite some time, as shown in *Exhibit 16-11*, University Malaya plans to be the first critical first step towards building a successful network of healthcare focused hubs in Malaysia.

Exhibit 16-11



The moderate to high levels of operational risk are mitigated by the momentum already created by alliance partners willing to invest in the idea. Nonetheless, various enablers required to accelerate success have been identified.

Enablers

MOH and MOHE will work together with private hospitals to ensure that university hospitals and private healthcare providers can help with specialist doctors and allied health training programmes to meet national needs.

The Land Transport Commission (*Suruhanjaya Pengangkutan Awam Darat* or SPAD) will look into building an MRT station, providing public transport and approving the construction of new car parks in Health Metropolis by 2015 to reduce traffic congestion. Selangor state government and Petaling Jaya City Council (MBPJ) will also approve land zoning and construction plans to kick-start infrastructure development in 2011.

To assist in the development of the metropolis, MOHE will consider providing strategic research grants to encourage R&D activities. MOF will also provide tax incentives to companies qualifying under Health Metropolis status.

Funding

The investment required for Health Metropolis is estimated at RM1.1 billion, channelled towards the construction of necessary infrastructure to be able to provide patient services, research and healthcare education in a single location. EPU's facilitation fund will supply targeted incentives for 10 percent of the investment, and the remaining 90 percent is to come from private sector tenants.

Impact

The incremental GNI delivered from this EPP is estimated at RM986 million with 4,400 jobs by 2020 and the development of a thriving medical ecosystem.

BUSINESS OPPORTUNITIES

The Healthcare NKEA has identified two longer term business opportunities, both of which could deliver significant economic benefit but are still in very early stages of growth. The first, med tech contract manufacturing is organically mushrooming, but the market remains fragmented and we do not have enough information to understand how this segment can be enabled further. The second, seniors living, addresses the outpatient and community-based care needs for the elderly, but is still a novel concept in Malaysia.

Business Opportunity 1: Med Tech Manufacturing

The medical device industry in Malaysia is still in the initial stages of development. Although a baseline growth rate of eight percent is expected in the future, the fact that there are 180 companies and that exports are largely composed of rubber-based consumables (for example catheters, examination gloves) make a growth strategy for non-consumables challenging.

We believe however that Malaysia's contract manufacturing heritage and experience with rubber-based products as well as the more sophisticated electrical and electronic industry creates a unique niche opportunity for the country that should be explored further. An example of the products that could be further developed includes orthopaedic replacement devices, in-vitro diagnostic kits and dental surgical products.

Med Tech will be closely tied to the pharmaceuticals EPPs (generics and clinical research) and should benefit from the growth and innovation in this industry.

One example of a med tech opportunity is the manufacturing of in-vitro diagnostic kits and equipment. We estimate the global IVD market to be RM94 billion and believe that with our high prevalence of tropical diseases such as malaria as well as tuberculosis and H1N1, Malaysia is well positioned to win in this sub-segment. We already have a small base of high-quality research and production in this sub-segment and with the right incentives (soft loans, MNC alliances, R&D investment), it could scale rapidly and attract global companies to manufacture equipment in Malaysia. Developing IVD manufacturing could potentially lead to a RM72 million GNI impact and creation of 1,200 jobs.

To create a truly world-class med tech industry it is first important to attract anchor MNCs that will work with local companies to manufacture medical devices that can be consumed in the local market and exported abroad. Second, SME grants and enforcement of international certification such as ISO 13485 can enable small local companies in niche medical device sub-sectors to grow into regional and global companies. Lastly, it is important that med tech manufacturing become a priority, both for the domestic healthcare agenda as well for bilateral trade agreements.

Funding

An estimated RM518 million for the establishment of new manufacturing facilities for contract manufacturing will be required. This funding is expected to come from the private sector, mostly from foreign direct investments.

Business Opportunity 2: Seniors Living

The number of Malaysians aged 60 years and older is projected to increase to 3.4 million in the year 2020 (9.9 percent of total population). Few elderly people can escape the accumulation of chronic pathologies due to physiological changes such as ageing kidneys, memory deficit, altered dietary habits and dependence on multiple drugs. This growing segment of consumers is likely to create a need for outpatient care such as seniors living facilities. Seniors living care resides in the middle of the outpatient care continuum between post operative check-ins on one end and acute care nursing homes on the other.

The long-term goal is to create a number of centres offering assistance to people who need help with activities of daily living, but wish to live as independently as possible, for as long as possible. Unlike nursing homes which focus on final stages of care, seniors living promotes active ageing and productive living.

Key services offered under the umbrella of seniors living would be integrated personal assistance, domiciliary, personal and medical care. To address the physical location needs, existing infrastructure would be refurbished in order to develop barrier-free housing, fitted with disabled-friendly features. Other facilities would include wellness, primary and secondary healthcare options.

Though still in the early stages of development we expect the seniors living to deliver 11,400 new jobs and RM1.0 billion in incremental GNI by 2020. The target market is primarily local Malaysians and potentially a small portion of the Malaysia My 2nd Home applicants who come for healthcare purposes.

For Seniors Living to be successful Malaysians should be able to tap into their Employee Provident Fund or other retirement savings to fund a seniors living lease; or that insurance reform occurs to permit coverage of seniors living support. The second initiative is to get support from property developers to view a build-operate-transfer model as an attractive value proposition instead of the current build-and-sell model. We propose that property developers not only build, but work through third parties to manage the properties. Finally, there is a need to manage the cultural shift that will be required for Malaysians and foreigners to outsource care for the elderly to third parties.

Examples in Hong Kong and India validate our hypothesis. As our society develops and ages, there will be a growing demand for seniors living, current efforts in the Iskandar region and moves by private property developers on a small scale show the beginnings of organic growth of such a sub-sector. However we also believe that seniors living represent a much longer-term investment opportunity.

Funding

An estimated RM4.8 billion will be required over the period of 2010 to 2020 to develop elderly-friendly property developments that will offer a range of medical and personal services for assisted living.

Baseline Growth

We project near-steady state organic growth in the pharmaceuticals, med tech and health services sub-sectors. The pharmaceuticals sub-sector is forecast to grow at two percent, below the industry forecast of nine percent, due to anticipated competition from the new manufacturing cluster to be formed under EPP 4 and to avoid double counting domestic and international generics.

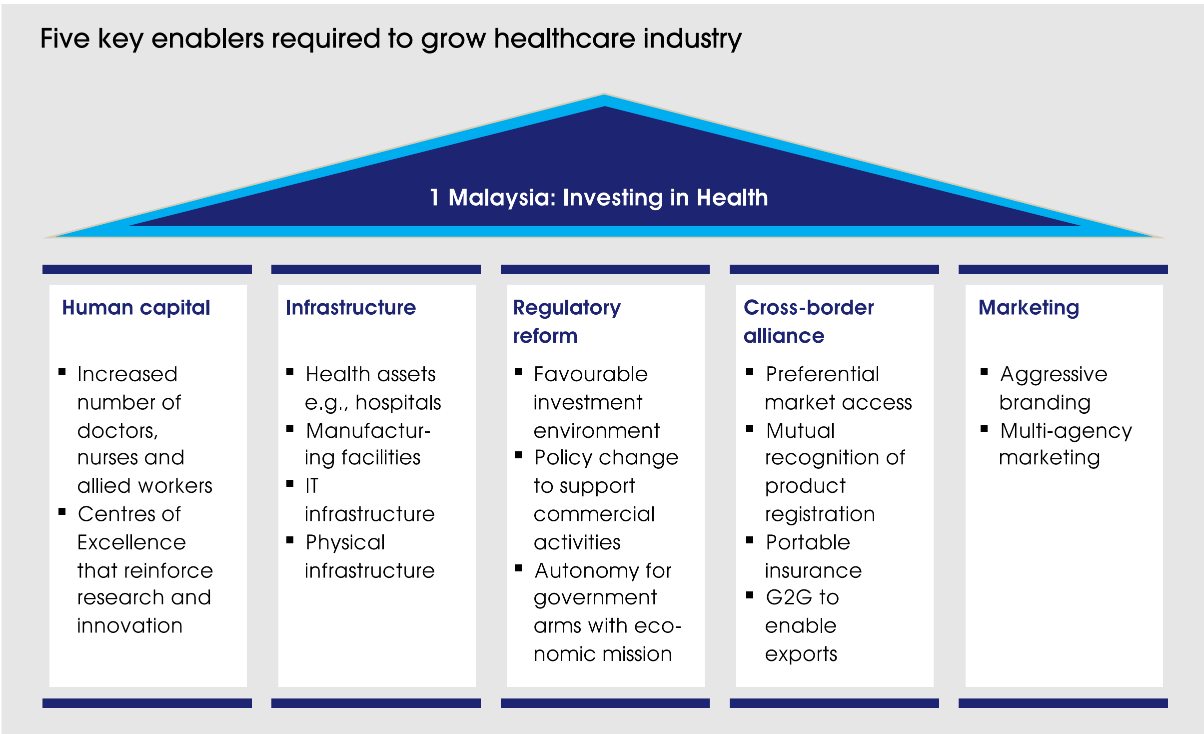
The med tech sub-sector is projected to grow at eight percent, above historical growth of six percent given the consumables growth strategy into high-growth markets China and India.

Finally the health services sub-sector, which comprised domestic expenditure and health travel, is projected to grow at seven percent, below historical growth of 11 percent due to the belief that healthcare expenditure growth is likely to be managed down due to domestic healthcare reform. Although health travel will grow at a double-digit rate the starting base is small (less than RM325 million) and the incremental upside is being counted in the health travel EPP.

COMMON ENABLERS

The enablers described for each EPP can be grouped into human capital, infrastructure, regulatory reform, cross-border alliance and marketing. Collectively they represent the foundation upon which the initiatives rest. *Exhibit 16-12* shows these enablers.

Exhibit 16-12

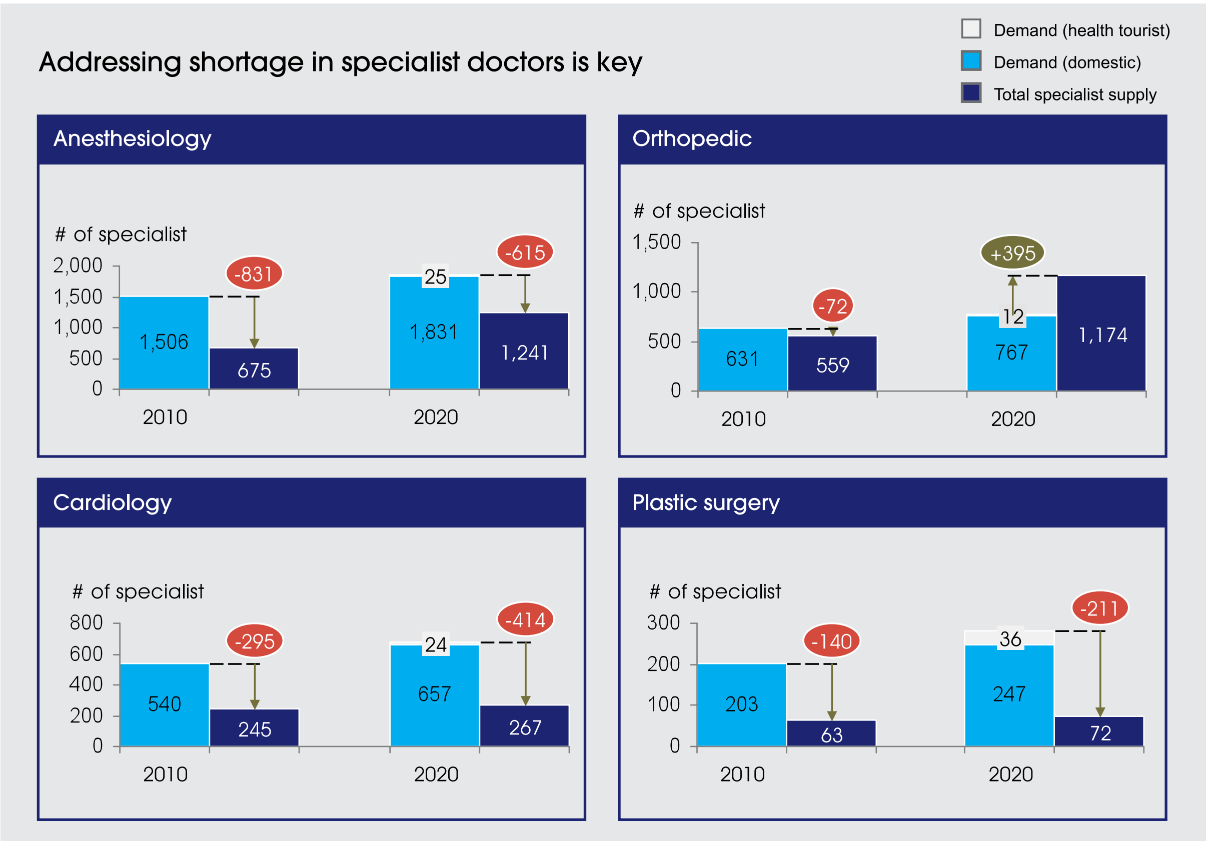


Secure the Right-Skilled Human Capital

Overview

Access to skilled human capital is paramount to the success of the Healthcare NKEA. In 2009, the healthcare industry is estimated to have employed 160,000 people which, through both baseline and EPP driven growth, will increase to a total of 340,000 by 2020. Although we will see a potential surplus in the number of healthcare professionals, we expect that the current gap in specialists (for example general surgeons) and sub-specialists (for example hepato-biliary surgeons) will continue into the foreseeable future. *Exhibit 16-13* shows the projection for four main specialties which predicted mostly shortages and an instance of oversupply. Currently the training of specialist and sub-specialist doctors is done in isolation, which means that there is little planning to meet actual demand in specialist fields; to compound this is the fact that although the private hospital sub-sector has a large population of practicing specialists, it plays no role in training doctors.

Exhibit 16-13



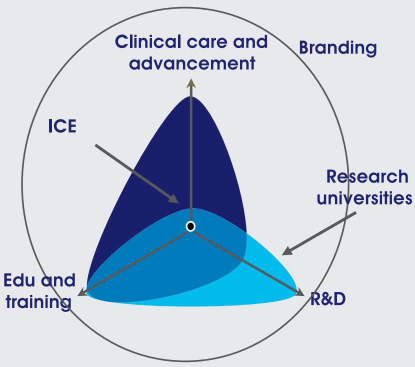
SOURCE: Lab projections, interview with industry experts

Actions

We need to ensure that these facilities work together to alleviate this shortage of specialist doctors. MOH and MOHE will consider the model of International Centres of Excellence (ICE), for different specialties. We need to put in place systems and structures to develop specialised medical manpower (sub-specialists, specialised allied health professionals and specialists, under certain instances) by combining research, innovation in care and training. As shown in *Exhibit 16-14*, the ICE will partner with leading local or foreign research universities to expedite the training of specialised manpower and to elevate the standard of care and outcomes in Malaysia through research and innovation. Such centres, which would leverage on existing physical infrastructure and human resources in MOH, MOHE and the private sector, will consolidate our efforts to propel Malaysia to becoming a regional leader in selected specialties.

Exhibit 16-14

Key to accelerate formation of International Centre of Excellence (ICE) is to tie up with leading research universities



Key Roles of ICE

- Clinical care advancement and innovation
  - Dedicated national champion in improving all aspects of clinical care with respect to the specialty
  - Improving treatment modalities to achieve better cost and benefit; and
  - The regional standard of reference, and key opinion leader
- Education and training
  - National training centre for medical and allied health professionals in the specialty and particularly sub-specialty areas
- R&D
  - Translating discoveries of the research universities into new and enhanced therapies for patients

Key Roles of research universities

- R&D
  - Basic science, engineering and medical research
- Training
  - Joint award of masters with ICE

R&D

Basic science/ Discovery → Preclinical development → Clinical trials phase I/II/III → Applied research → Clinical care

Research universities | ICE

Education and training

Basic medical → Doctors: Specialists Allied health: Specialisation → Sub-specialists → Clinical care

Universities/quality colleges | ICE

Utilise Infrastructure Efficiently

Overview

Although there are approximately 130 public and 210 private sector hospitals in Malaysia and a growing culture of clinical research, there needs to be a more comprehensive effort to create greater information system connectivity and coordination across the care settings. Without this, Malaysia's existing infrastructure will remain sub-optimally deployed. Only by redeploying our assets can we hit our target of 1,000 annual clinical trials, an active outsourced diagnostic services hub and a more seamless customer experience for health travellers. Dedicated physical assets such as specialist sites will be required, as well as stronger virtual connectivity such as data sharing networks.

Actions

Efforts for improving infrastructure will include relatively minor but valuable tasks such as comprehensive databases providing health travellers helpful information and a robust search engine for sourcing health providers (*Exhibit 16-15*). They also include fundamental investments in manufacturing sites and information and communication technology data infrastructure and servers as detailed in each EPP.

Exhibit 16-15

Example of an infrastructure quick win - comprehensive hospital database will provide quick matches of health tourists' needs

Change Regulations and Policies

Overview

Although significant regulatory policy shifts are already proposed as part of the Tenth Malaysia Plan, the Healthcare NKEA believes that creating more autonomous, commercially focused organisations and modifying regulation to drive greater exports will be critical for EPPs to succeed.

Actions

We have identified changes to regulatory policies required to facilitate the success of the EPPs, which are detailed under each and cut across the various Ministries: MOH, MOHE, MOHR and MOHA. There are ongoing efforts to make these regulatory changes happen, which the Ministry of Health will champion. In addition, to facilitate the growth of the med tech sector, MOH will ensure that the Medical Device Act be tabled in Parliament.

Create Cross-border Alliances

Overview

Our ambition through the EPPs is to position Malaysia as a global healthcare participant and regional healthcare leader. The feedback from a number of private sector companies has been that to succeed, Malaysian healthcare must establish stronger alliances within the domestic value chain and across borders with leading companies in other countries.

Actions

MOH will make active government efforts through MITI and MATRADE to allow for stronger reciprocal agreements with neighbouring countries. These cross-border alliances have been detailed by EPP and the government will factor these initiatives into future government-to-government talks.

Co-ordinate Better Targeted and More Aggressive Marketing

Overview

Today there are two streams of marketing activity conducted in parallel: promotion by government agencies and trade bodies that represent industry sectors and marketing by individual companies that advertise to create awareness and differentiation. This duplication and lack of coordination leads to mixed messages, less than crisp brand positioning statements and wasted resources.

Actions

We need to fundamentally change the current state of affairs and this can be achieved by introducing a coordinated marketing effort for each initiative across both public sector trade bodies and individual industry stakeholders. With the vast number of overseas trade agencies, tourism, hospitality and airline partners, a single umbrella marketing campaign, overseen by MOH, would be far more successful. The relevant ministries and agencies, MOH, MHTC, MOTOUR, MITI and MATRADE will work together with private entities such as pharmaceutical companies, health service providers and med tech companies to achieve this goal. In addition to creating more tailored messages this coordinated approach will permit this sectors to invest in non-traditional media such as the Internet and viral marketing.

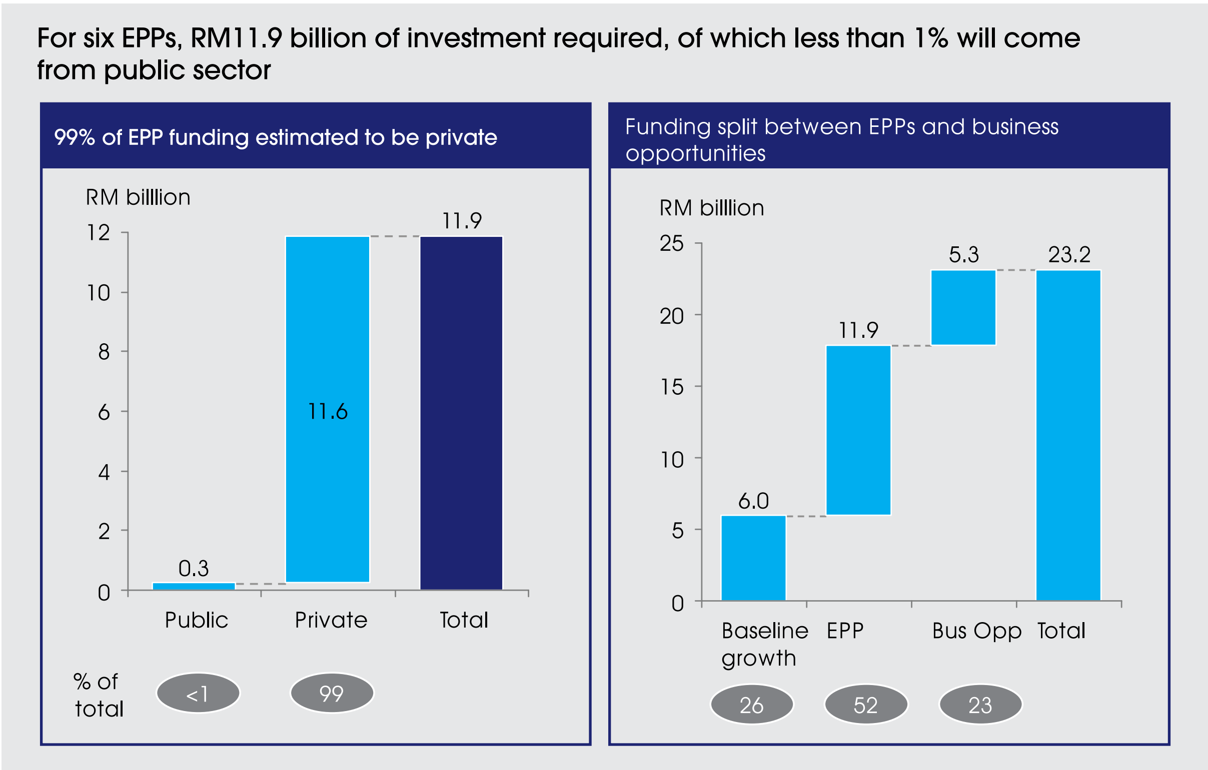
FUNDING

Given our ambitious target to grow the healthcare industry and treble its contribution to GNI from RM15.2 billion in 2009 to RM50.5 billion by 2020, a significant amount of investment will be needed.

As shown in *Exhibit 16-16*, the healthcare industry will require RM23.2 billion cumulatively from 2011 to 2020 to fund growth. Notably, we estimate that less than one percent of the investment required for EPPs will be public, while the remaining 99 percent will be funded by the private sector. Likewise, total investment required is less than one percent from public sources.

In addition, the vast majority of the funds (99 percent) will be for capital expenditure, in order to build longer-term capabilities for Malaysia's healthcare industry; operating expenses will account for only one percent of the required funds.

Exhibit 16-16



The predominance of private investment for healthcare industry growth is in line with the paradigm shift from healthcare as a social service and consumer of wealth to healthcare becoming a private sector-driven engine for economic growth.

The high percentage of capital expenditure versus operating expense is indicative of the aim of these investments to lay the groundwork for growth beyond 2020.

The six EPPs and the two business opportunities are expected to be catalytic projects that will jump-start and drive growth within the healthcare industry. In order to successfully implement these eight initiatives, a total of RM17.2 billion additional investment will be required between 2011 and 2020 and is forecasted to deliver RM35.3 billion of annual GNI impact by 2020.

Baseline growth

A total of RM6.0 billion of investment will be required to fund baseline growth, with an estimated annual GNI value of RM13.6 billion by 2020. Of the investments, RM3.2 billion is estimated to be required for the baseline growth of the med tech sub-sector and RM2.8 billion is estimated to be required for the organic growth of the entire healthcare services sub-sector.

Looking at the healthcare industry as a whole and taking into account the baseline growth requirements, funding needs totalling RM23.2 billion are spread across 2010 to 2020. Peaks are to be expected in 2011, 2017 and 2019 due to the significant ramp-up of generics export capacity. Investment required for the next three years will account for 30 percent of the total funding needs from 2010 to 2012, with RM3.2 billion, RM0.9 billion and RM1.1 billion required for 2011, 2012 and 2013, respectively.

GOVERNANCE AND DELIVERY

Successful implementation of the various projects and opportunities hinges on ownership and accountability. To ensure proper ownership and accountability, a dedicated owner has been identified for each. In addition, a detailed delivery plan consisting of implementation details, KPIs and targets as well as a risk and mitigation plan has been developed for each for the EPPs. An overview of the agencies in charge of the various initiatives is shown in *Table 16-1*.

Table 16-1

EPP	Lead initiative owners	Other key agencies, companies and organisations
EPP 1: Mandating private health insurance for foreign workers	Ministry of Health	Ministry of Human Resources Persatuan Insurans Am Malaysia (PIAM) Ministry of Home Affairs
EPP 2: Creating a supportive ecosystem to grow clinical research	Ministry of Health	Ministry of Higher Education Clinical research organisations Pharmaceutical companies
EPP 3: Pursuing generics export opportunities	Ministry of Health	Ministry of International Trade and Industry Malaysia External Trade Development Corporation Malaysia Investment Development Authority (MIDA) Intellectual Property Corporation of Malaysia Pharmaceutical companies
EPP 4: Reinvigorating health travel through better customer experience, proactive alliances and niche marketing	Malaysian Healthcare Travel Council	Ministry of Higher Education Tourism Malaysia MATRADE Immigration Department Malaysia Medical Council (MMC) Talent Corporation
EPP 5: Creating a diagnostic services nexus to achieve scale in telemedicine for eventual international outsourcing	Ministry of Health	Ministry of Higher Education Telecommunication service providers Association of Private Hospitals of Malaysia (APHM)
EPP 6: Developing a health metropolis: A world-class campus for healthcare and bioscience	Ministry of Higher Education	Private sector investor University of Malaya (UM) Ministry of Health Economic Planning Unit Ministry of Finance Ministry of International Trade and Industry

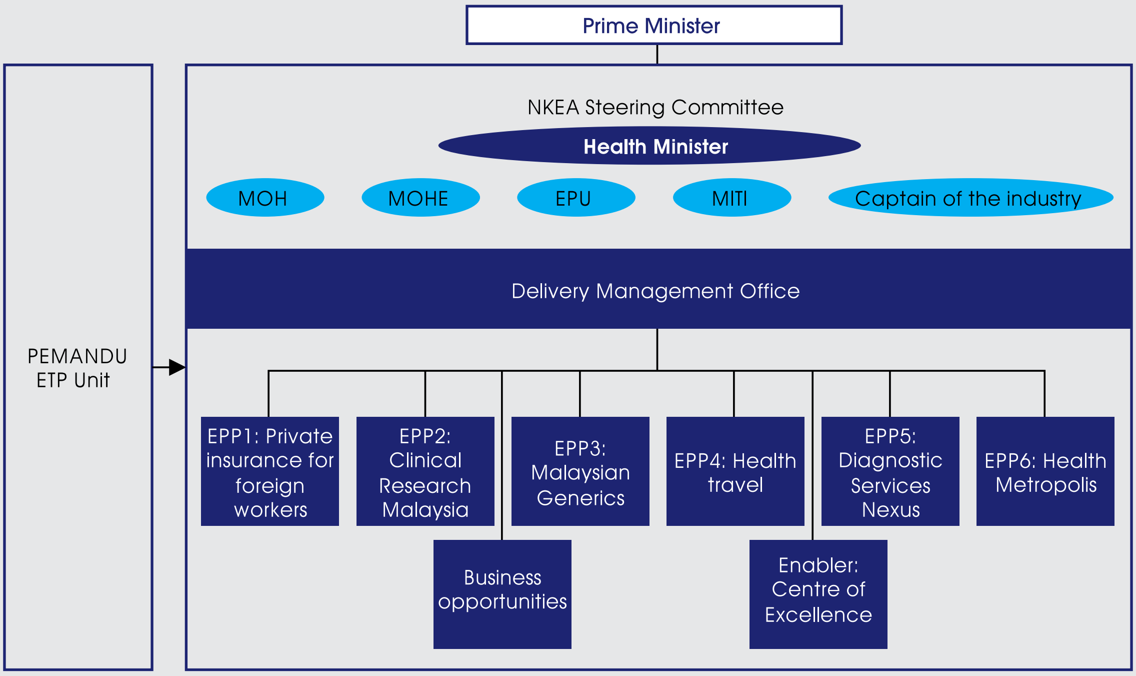
Effective Governance Model

To ensure effective implementation of the EPPs and a seamless transition between planning and execution, a governance model will be established in two phases. An interim structure will oversee the immediate implementation of the EPPs in the near future and a steady-state structure will take over thereafter to continue developing Malaysia's healthcare industry.

Exhibit 16-17 presents the interim structure, in which a steering committee chaired by the Minister of Health and comprising MOH, MOHE, EPU, MITI and private sector leaders will oversee the Delivery Management Office (DMO) and private sector champions. The DMO will be formed from a dedicated team of MOH staff. It will work hand-in-hand with private sector champions to drive day-to-day implementation of the EPPs.

Exhibit 16-17

Interim governance for Healthcare NKEA will ensure seamless transition between planning and execution



The MOH will establish a Healthcare Industry Development Corporation (HIDC) reporting directly to the Minister of Health. This new organisation which will be set up in stages in the coming years, will be responsible for developing and driving the economic agenda for Malaysian healthcare. Headed by a CEO, the HIDC will comprise three divisions that drive overall sub-sector development (pharma, med tech and services) and bring the EPPs and business opportunities to fruition. The HIDC will also house two corporatised entities (MHTC and CRM) that will spearhead growth in healthcare tourism and clinical research.

Extraordinary Results Lie Ahead

The six identified EPPs and two business opportunities represent a departure from the past. We are moving away from a traditional product-focused strategy that serves just the needs of the domestic market. Instead we are navigating towards a broader product, services and customer value proposition that will enable Malaysia to compete more actively in the global market and create differentiated solutions for the local market.

By 2020, we envision Malaysia healthcare as a robust wealth-creating industry, delivering GNI impact in addition to providing quality care to the people. The impact of these EPPs and business opportunities will be RM35 billion of incremental GNI and approximately 181,000 new jobs. Malaysia will be able to provide higher standards of clinical care for the *rakyat* and will continue to move from strength to strength.

Summary of Healthcare NKEA	
• **Incremental GNI impact in 2020**	RM35.3 billion
• **Additional jobs in 2020**	181,000

- **Critical targets / milestones within 6 to 12 months**
  - Amendment to Workers Compensation Act to enforce health insurance for all foreign workers
  - Corporatisation of Clinical Research Centre - creation of One-Stop Centre dedicated to enabling private sector clinical trials
  - Corporatisation of the Malaysia Healthcare Travel Council
  - Appointment of pharmaceutical and med tech advisors and health travel ambassador
  - Ground breaking for construction of UM Medical Metropolis