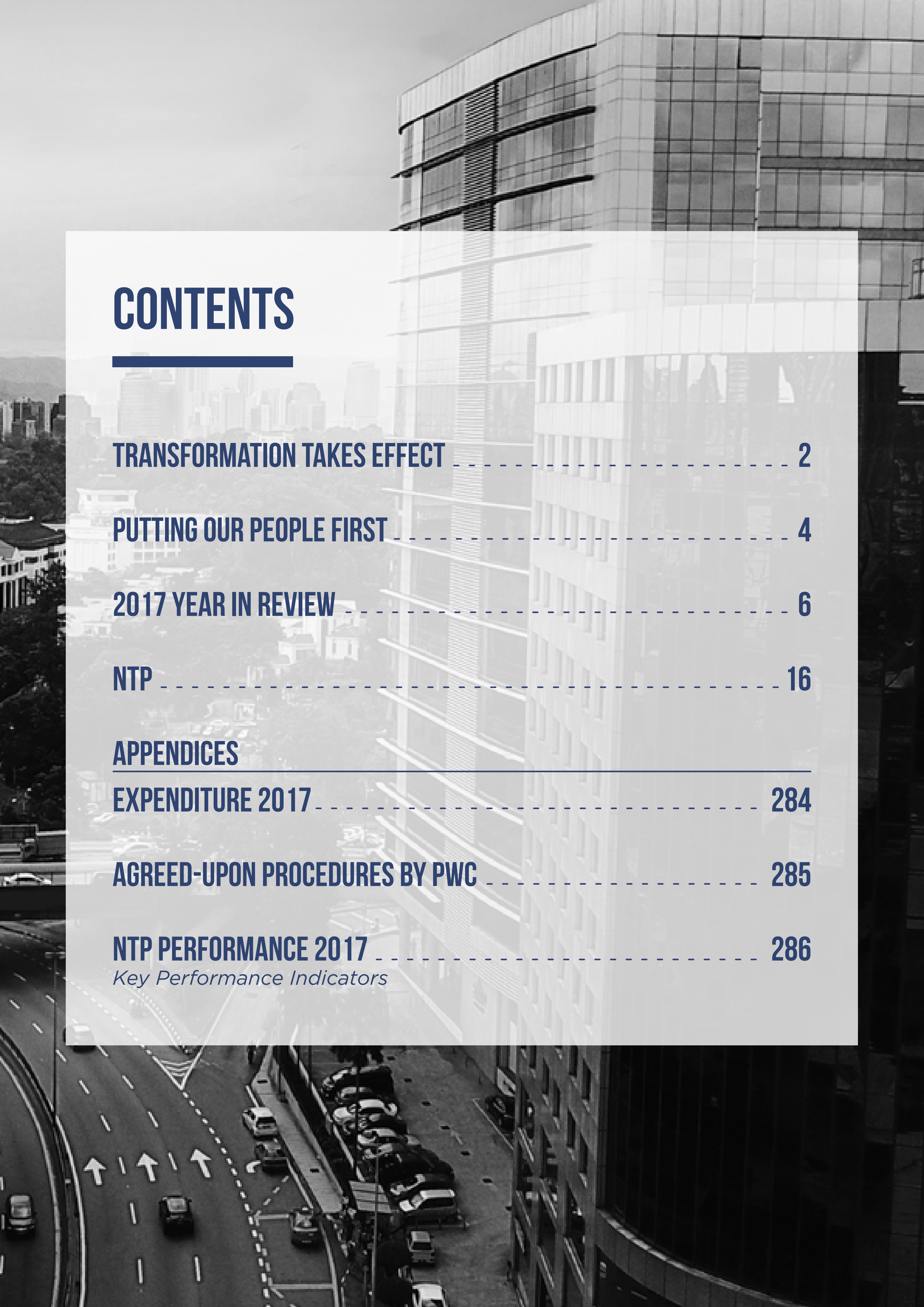
national transformation programme

ANNUAL REPORT 2017



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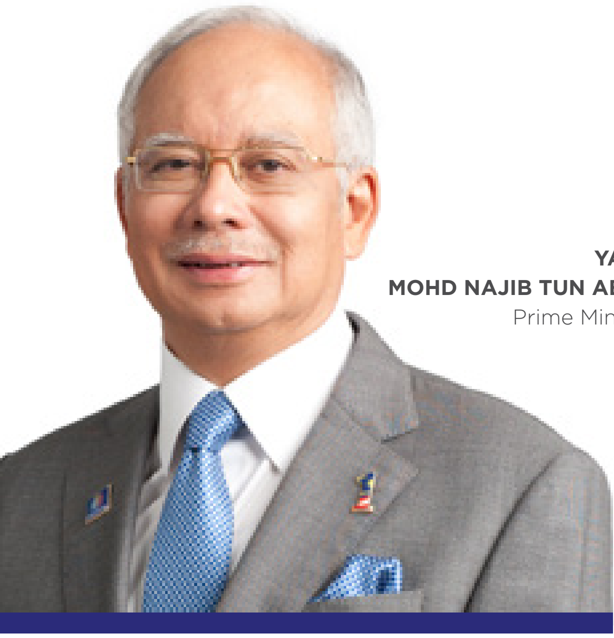


YAB DATO' SRI
MOHD NAJIB TUN ABDUL RAZAK
Prime Minister Malaysia

In 2010, shortly after assuming the Prime Minister's Office, I announced the launch of the National Transformation Programme (NTP) – an initiative aimed at taking Malaysia out of the middle-income trap and towards becoming a high-income economy by 2020. After seven years of implementation, I am pleased to say that the NTP has delivered positive outcomes which have been seen and felt throughout the nation. Many milestones have been achieved along this ongoing journey but, most importantly, our promises to the rakyat are being met.

I am particularly proud that we have decisively moved away from the middle-income trap and are getting ever closer to becoming a high-income nation. This is demonstrated by the narrowing gap between our Gross National Income (GNI) per capita and the World Bank's high-income threshold from 33% in 2010 to 20% in 2017.

It has been a challenging period for many countries, but in Malaysia, our Gross Domestic Product (GDP) expanded by 5.9% in 2017. This was the fastest pace of growth in three years and outpaced our regional neighbours such as Singapore, Indonesia, South Korea and Taiwan. Our economy's bright prospects have been validated by global institutions such as the World Bank, the International Monetary Fund and the Asian Development Bank, which raised their forecasts for our economic growth twice during the year. Additionally, all the major credit ratings agencies have reaffirmed Malaysia's ratings within the "A" band with a stable outlook.

At times, the Government has had to take tough but necessary actions to drive this progress. This has included the rationalisation of non-targeted, blanket subsidies and the implementation of the Goods and Services Tax (GST) to make revenue collection more efficient. We did so in the face of severe opposition and criticism, but remained steadfast knowing that these were the right decisions, and the progress we have made is there for all to see – with our fiscal deficit being reduced from 6.7% in 2009 to 3.0% as at 2017.

On top of these improvements in public finance policy, Malaysia is one of the few countries in the world to put a statutory limit on government debt, further demonstrating the Government's tenacity and discipline to institutionalise reform. Indeed, Government debt amounted to 51% of GDP in 2017, safely below its self-imposed debt ceiling of 55% of GDP. These actions have improved the Government's capacity to invest in social development, allowing us to focus on the rakyat's needs and channel aid to those who need it the most.

In addition to fiscal reforms, the Government has also targeted economic diversification, as well as the rejuvenation of private sector investment. Prior to the NTP, our economy had become too reliant on the oil and gas industry, which is subject to significant volatility in oil prices, and public investments. For instance, in 2009, oil and gas revenue contributed to 41% of government income whereas private investment was below 55% of total investments, posing a considerable economic risk.

Our forward-thinking on this and the diversification efforts we put in place proved to be prudent amid the downward spiral of global oil prices in 2014, and helped to strengthen our economy's resilience, as well as shield it from recession. With the identified 12 National Key Economic Areas (NKEAs), the share of Government revenue from oil and gas was drastically reduced to 15% in 2017. The NTP has also catalysed private investment, whereby private sector investment as a proportion of total investment has surged from 55% in 2010 to 68% in 2017.

The 12 NKEAs contributed to 75% of GNI as at the end of 2017 current prices. This, in turn, has contributed to the addition of 2.68 million employed persons to the nation since 2010 based on CSDU's calculation and methodology, using data from the Labour Force Survey. (For further details on progress of the 12 sectors, please refer to the 2017 Year in Review and NTP chapters within this Annual Report.)

The reforms we have introduced since 2010 have also resulted in growing foreign investor confidence in Malaysia. This is evident with the entrance of various new investors into the country over the past few years. In 2017, the Saudi Arabian state-owned oil and gas company, Saudi Aramco committed a US$7 billion investment in the Refinery and Petrochemical Integrated Development (RAPID) project in Pengerang Integrated Petroleum Complex (PIPC), and another US$900 million for a 50% stake in Petronas Chemicals Group Bhd's polymers business. Huawei, a major networking and telecommunications equipment and services company, has chosen Malaysia as its global operations headquarters, data hosting centre and global training centre. The company invested RM2.2 billion to set up its operations in this country, creating more than 2,370 job opportunities for our home-grown talent.

Another remarkable hallmark for Malaysia is the launch of the Digital Free Trade Zone (DFTZ) in March 2017 with Jack Ma, founder and Executive Chairman of Alibaba Group. The zone will provide 24,700 acres of physical and virtual platforms at Sepang KLIA Aeropolis to help small- and medium-sized enterprises (SMEs) capitalise on the expanding internet economy and cross-border e-commerce activities. The DFTZ is positioned to be the next regional hub for internet-based innovation and is expected to double SMEs' goods export growth rate to US$38 billion, create 60,000 jobs and facilitate US$65 billion worth of traded goods by 2025.

These companies are coming to Malaysia because the policies we have set in place have made the country an attractive destination for those seeking to grow their businesses. These efforts have been recognised by the World Economic Forum, with its Global Competitiveness Report 2017-2018 ranking Malaysia the 23rd most competitive country in the world, behind only Singapore in the ranks of ASEAN countries.

When we first laid out our plans for the NTP, we knew that for the transformation to be complete, its outcomes must be inclusive and sustainable. This will ensure no Malaysian is left behind as we become a high-income nation, and that our societal well-being can endure for the long term. To this end, we have seen our Gini Coefficient, which measures income disparity, decline to 0.399 in 2016 from 0.441 in 2009. We are currently on the right track in narrowing income disparity, and in the longer term, to improve the purchasing power of the rakyat and ensure better living standards for all Malaysians.

Furthermore, we have recorded a stunning reduction in our poverty rate since the start of the NTP. As a result of targeted programmes such as 1AZAM, the national poverty rate has dropped to 0.4% as at 2016, against 3.8% in 2010, with the mean monthly income of the Bottom 40% (B40) households increasing to RM2,848 as at 2016 from RM1,440 in 2009. To help the rakyat manage the cost of living, RM6.31 billion has been distributed via BR1M in 2017 alone to 7.22 million eligible individuals and families. Cumulatively, the Government has disbursed RM25.62 billion via BR1M since 2012.

Meanwhile, development in the rural areas continues to ensure the rural community equally enjoys the fruits of our transformation. To date, 6.8 million rural households have benefited from the NTP's strategic initiatives, including gaining access to treated water, 24-hour electricity and better road connectivity.

Moreover, we successfully delivered the country's first Mass Rapid Transit (MRT) with the launch of the Sungai Buloh-Kajang (SBK) Line in 2017. The completed MRT SBK Line serves as a testament that Malaysia has taken a formidable stride in improving public transportation while demonstrating that excellent management and operationalisation of the project have led to its timely delivery below the allocated budget.

The 51-km line now serves a population of over 1.2 million living along the Sungai Buloh-Kajang corridor, offering significant benefits to the public by reducing household spending on transportation, commuting times and vehicle traffic congestion at the rail catchment areas. Surrounding businesses and properties along the line have also blossomed from the spill-over effect of this mega "infra-rakyat" project.

We are also developing the East Coast Rail Link (ECRL) that will connect Greater Kuala Lumpur/Klang Valley to the east coast of peninsular Malaysia. The project is expected to create 80,000 additional jobs and serve 5.4 million passengers annually by 2030.

Achievements such as the MRT and ECRL projects could only be made a reality through our sustainable economic growth, socio-economic stability and good fiscal governance, as well as the close collaboration and partnership between our civil servants, private sector and the rakyat in supporting the initiatives under the NTP from its onset.

Our civil servants have played a crucial role in helping to ensure the successful and sustained delivery of the NTP. This is why, in March 2017, we established the Civil Service Delivery Unit (CSDU) to take over the role of Performance Management and Delivery Unit (PEMANDU) in facilitating the programme. This move allows the civil service to take full ownership in the last mile of Malaysia's transformation, as well as realises our intent to forge a more competitive and result-oriented system within the Government. To this end, we have witnessed more and more members of our talented civil service taking proactive measures to deliver and lead game-changing initiatives.

With the significant progress we have achieved thus far, I am confident that we will attain our target of becoming a high-income nation by 2020. And that is not all: we have already begun mapping our next phase of transformation under Transformasi Nasional 2050 (TN50). Once we realise our vision of Malaysia becoming a developed nation, we will then move forward with our plans to become one of the top countries in the world in economic development, citizen well-being and innovation by 2050.

A NOTE FROM THE DEPUTY PRIME MINISTER

PUTTING OUR PEOPLE FIRST

YAB DATO' SERI DR. AHMAD ZAHID HAMIDI
Deputy Prime Minister Malaysia

When the Government first embarked on the NTP in 2010, we were clear that in order for Malaysia to become a high-income nation, the Government itself must transform its delivery of public services to support the socio-economic reforms we aimed to achieve. To this end, we rounded up all the Ministries to undertake a broad agenda of change which prioritised the needs of the rakyat.

Now seven years into our transformation, I am pleased to report that the Government continues to address the areas which the rakyat most want and need. Chief among these is the rising cost of living, which is not a phenomenon unique to Malaysia. In fact, the Economic Intelligence Unit's Worldwide Cost of Living 2017 report ranked Kuala Lumpur just 96th out of the 133 cities surveyed, with Singapore, Hong Kong and Zurich identified as the world's most expensive cities to live in. According to the report, the global cost of living in 2017 is at 74% (taking an average of the indices for all cities surveyed using New York as the base city), mainly driven by external factors, such as currency movements. This is also compounded by inflation in the prices of goods and services, which occurs naturally over time in healthy economies.

In view of these realities, we have utilised the Bantuan Rakyat 1Malaysia (BR1M) scheme since 2012 to help cushion the public from the impact of rising living costs. Over seven million individuals and households have benefited from this assistance through RM25.62 billion in direct aid, of which RM6.31 billion was distributed in 2017.

While BR1M represents a critical measure by the Government to provide immediate relief, we have also sought to formulate long-term strategies to address living costs through the Cabinet Committee on Addressing the Rakyat's Cost of Living. The Committee studies the entire supply chain to identify solutions to help minimise the impact of rising costs felt most by the rakyat, such as in the areas of food, housing and transportation.

In 2017, the Committee focused on urban poverty due to the higher living costs in urban areas. As a result, initiatives such as the My Farm Outlet (MFO), Q'Fish Programme, National Food Warehouse, SiswaSave programme and Kad Diskaun Siswa 1Malaysia for university students were implemented accordingly. Allow me to highlight that most of these initiatives are targeted at the Bottom 40% (B40) households, which remain a priority group. Under our administration, Malaysians in the B40 group have been gradually lifted out of poverty, as evidenced by our virtual eradication of poverty to just 0.4% as at 2016. Additionally, various income-generating opportunities provided through programmes such as 1AZAM under the NTP have contributed to a growth in median monthly income of the B40 group to RM3,000 in 2016 from RM2,629 in 2014 and an increase in mean monthly income to RM2,848 from RM2,537 during the same period.

As at 2017, 1AZAM has benefitted 100,420 Malaysians, raising the overall income of participants by at least RM300. We have also formulated a follow-up programme called Beyond 1AZAM, with hopes that successful 1AZAM participants will grow to become job creators through further training, entrepreneurship support and continued access to micro and small business financing. The programme has touched the lives of 5,674 participants as at 2017 after starting with 1,511 participants in 2015.

The Government has also aided the B40 category to leverage on the digital economy to propel themselves out of poverty and harness opportunities of the technological age. To this end, the e-Rezeki and e-Usahawan programmes were introduced to raise the average income of participants through talent-matching and crowdsourcing via online platforms. E-Rezeki aims to produce 500 people who will successfully generate extra income through this platform via crowdsourcing and has currently enlisted a total of 5,898 participants to date, while e-Usahawan has attracted 12,300 participants. E-Usahawan participants have managed to generate income of RM24.3 million from various business ventures through digital means.

Additionally, we have continued to improve the quality of life for rural communities. Since 2010, our rural development efforts have resulted in the construction and upgrading of 6,868 km of rural roads, provided 354,400 households with access to clean water, connected 161,931 households to stable electricity supply, and built and restored 103,033 houses for the rural poor.

Even with low-income households and rural communities representing the Government's priority groups, we have also paid attention to the needs of urbanites to ensure balanced socio-economic development. In this regard, our efforts to upgrade the urban public transportation network lead the way in providing a world-class public service delivery system.

This has not only been achieved through the construction of the Mass Rapid Transit (MRT), of which the first rail line was completed in 2017, but also with improvements in bus and taxi services. Guided by the vision of our YAB Prime Minister to provide affordable, accessible, reliable and safe public transport services that meet international standards, we are systematically transforming all areas of the urban commute, from enabling travellers to plan their daily trips through to the last-mile journey which takes commuters to their final destinations. Through infrastructure upgrades, capacity building and provision of new public transport modes, we have successfully doubled public transport modal share from just 10% in 2010 to 20% in 2015, while average daily ridership continues to increase to 1.21 million passengers in the same year.

Looking ahead to our future generations, we have also put in place education reforms to ensure our youth are globally competitive, starting from the pre-school years. Hence, in 2017 the Government has focused on instilling awareness among parents on the importance of pre-school education to encourage universal enrolment in Malaysia. The national pre-school enrolment rate rose to 84.26% in 2017, which represents 884,983 children aged 4+ and 5+.

At the primary and secondary levels, our focus has been on enhancing the command of the English language among students to raise their global competitiveness. To this end, we have carried out the Dual Language Programme (DLP) and Highly Immersive Programme (HIP) which will cultivate students who are proficient in the English language, enabling them to thrive in the highly competitive realm of employment. In 2017 alone, the DLP was implemented in 1,214 schools, a tremendous increase from 378 schools in the previous year, whereas the HIP was expanded to 5,526 primary and secondary schools nationwide, giving over 2.54 million students greater exposure to the global lingua franca. All these initiatives are to enhance the English language proficiency without sacrificing the National Language.

In further addressing the rakyat's main concerns, the Government continues to ensure the safety and security of the rakyat through combating crime. This is demonstrated by our shift in adopting a more service-oriented approach via the Modern Policing Programme, which engages the public directly to alleviate their fears on crime. As a result of targeted efforts to tackle crime, we have recorded a remarkable improvement of index crime from 352.07 per 100,000 population in 2016 to 306.15 per 100,000 population in 2017, equivalent to a 13% decrease.

Concurrently, we have also intensified our efforts towards curbing corruption through prevention, enforcement and education. I would like to take this opportunity to highlight that we will remain committed in our determination to eliminate corruption within the public and private sectors, but will require mutual understanding and alignment from all parties to reject unethical practices and embrace integrity at all levels.

At this juncture, I would like to record my gratitude to the civil service and all Malaysians for their support and cooperation for our transformation. I am confident that together, we can continue to push boundaries in the delivery of Government services and realise not only our goal of becoming a high-income economy, but also a nation which puts the needs and interests of its citizens above all else.

2017 YEAR IN REVIEW

YB DATUK SERI PANGLIMA ABDUL RAHMAN DAHLAN
Minister in the Prime Minister's Department, Economic Planning Unit

YBHG TAN SRI DR. ALI HAMSA
Chief Secretary to the Government

The National Transformation Programme (NTP) reached a new milestone in 2017, with the baton of transformation passed on to the Civil Service Delivery Unit (CSDU) under the Prime Minister's Department. This transition enables the Government to seamlessly institutionalise best practices and a performance-driven culture in our civil service. Anchored by good governance, socio-economic inclusiveness and sustainability at the same time, we have inched closer to our ambitious and coveted goal year-on-year – to propel Malaysia towards becoming a high-income nation.

The NTP's momentum has allowed Malaysia to escape the middle-income trap, with our GNI per capita reaching US$9,660 in 2017 against the World Bank's current high-income threshold of US$12,087 [1], thus narrowing the gap between our GNI per capita and the World Bank's high-income threshold to 20% in 2017, a commendable reduction from 33% at the start of NTP in 2010.

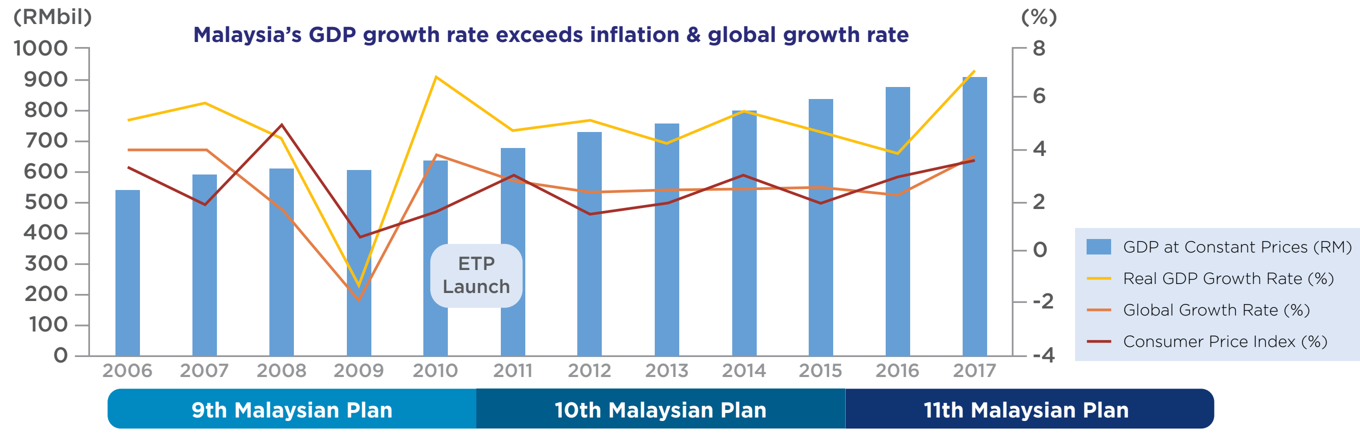
The steady GNI growth is an outcome of the solid economic foundation built upon by the NTP's 12 National Key Economic Areas (NKEAs), where the vibrant momentum for growth across diverse economic sectors shielded one another against volatile market turbulence after the 2008 global financial crisis. Moreover, we have strengthened key policy frameworks via the Strategic Reform Initiatives (SRIs) to spur business competitiveness, liberalisation, talent management, equal opportunities and entrepreneurship.

Moreover, putting the rakyat as a priority, the Government is persistently striving to deliver our promises of raising livelihoods and addressing key public concerns. These aspirations are made possible through the National Key Results Area (NKRAs), in line with the Public Services Delivery Transformation framework and the National Blue Ocean Strategy (NBOS).

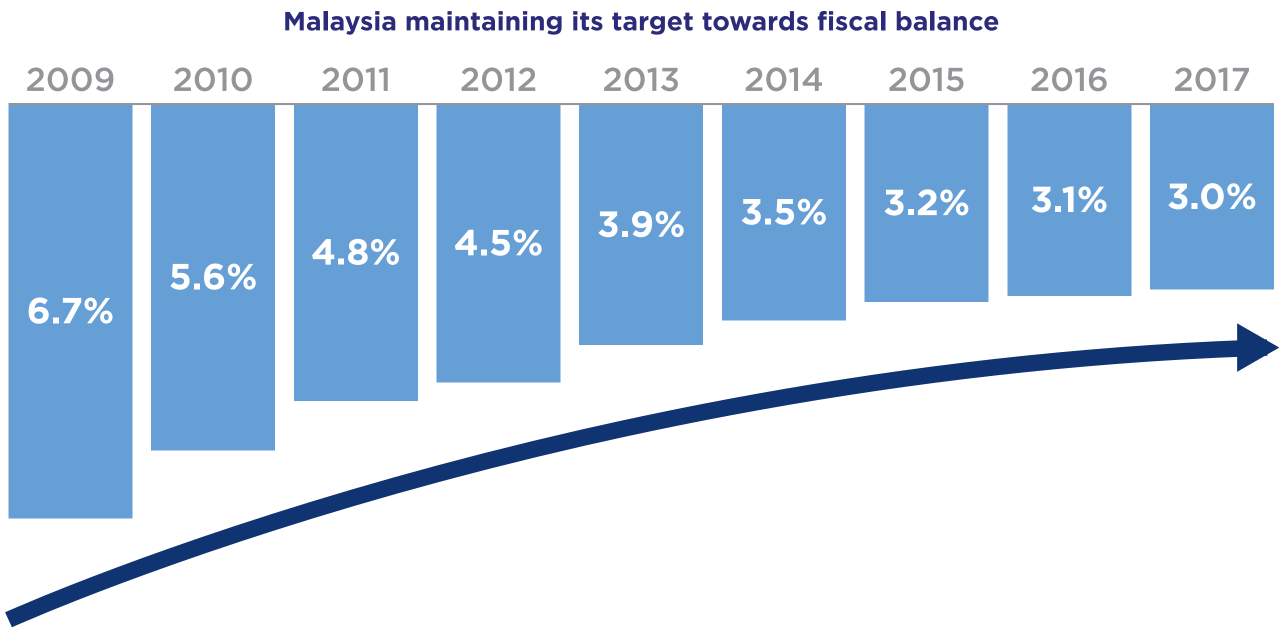
This year, we are proud to announce the launch of the Problem Solving Talent Management (PSTM) Programme that capitalises on the existing pool of talents within the civil service to improve the Government delivery process while complementing the NTP mechanism. PSTM is currently managed by CSDU and it has produced notable recommendations to mitigate critical challenges, such as the setting up of a special task force to improve Malaysia's competitiveness ranking.

The civil service continues to be ardent and proactive in spearheading transformative initiatives and commit to achieving the set targets under the NTP. This underlines the pivotal role of the civil service, together with the private sector and the rakyat, in ensuring successful implementation of national strategic initiatives towards greater prosperity and shared growth for all Malaysians in years to come.

[1] Estimate based on World Bank's GNI per capita calculation (Atlas Method).



Based on World Bank's GNI per capita calculation (Atlas Method), Constant 2005 Prices.



IMPROVING OUR EFFICIENCY AS THE GOVERNMENT

The NTP Roadmaps detailed the Government's socio-economic transformation agenda, focused firstly on enhancing public service delivery and ensuring that we address the rakyat's top priorities. Apart from the economic stimuli required to reach high-income status, we were equally cognisant of the need for the Government to adopt effective policies in this fast growing, globalised market.

In our pursuit of greater efficiency and better outcomes, it takes creativity and innovation to maximise resources. Malaysia has successfully adopted the National Blue Ocean Strategy (NBOS) – a pivotal platform for its National Transformation. With "low cost, high impact and rapid execution" as our mantra, NBOS has successfully fostered closer coordination between Government agencies by reducing overlaps or duplication of work, and breaking down the existing "silo mentality" among the various parts of the Government.

To date, over 100 NBOS initiatives have been successfully implemented to tackle an extensive list of economic and social issues. One of the best examples is the award-winning Urban Transformation Centres (UTCs) and Rural Transformation Centres (RTCs), which serve as one-stop centres in providing a wide range of integrated government services under one location. Recognised by the World Bank as one of the best public service models in the world in 2016, these centres have helped saved up to RM2 billion in government spending, ensured our resources are fully and rightly utilised, and, above all, allowed us to better serve the public.

Aware of communities that have less access to formal services, the Government has also established the Mobile Community Transformation Centre (Mobile CTC) since 2013. This Mobile CTC initiative shortens travel time and logistical barriers for communities in remote and isolated areas to access key services that are otherwise only available in UTCs, RTCs or other Government premises.

Another worthy mention is the 1Malaysia Training Centres (1MTCs) programmes. Acting as a centralised platform for existing government training facilities, 1MTCs reduce the need for Government agencies and Ministries to rent expensive third-party facilities. 1MTCs have also been made available to the general public, the private sector and NGOs for their capacity-building objectives.

These NBOS-led services have been fortified by the Public Service Delivery Transformation (PSDT) programme, introduced in 2013 based on principles encompassing strategic collaboration, cooperation and interdependence among agencies to shape a high-performing, dynamic, people-centric civil service with high integrity. This effort was translated into 1,432 transformation initiatives, of which 216 are classified as high impact. The initiatives have therefore increased the public's convenience in accessing various public services such as healthcare, raising Government revenue and productivity, as well as broadening delivery channels through the participation of NGOs and the community.

The PSDT programme has been undertaken in tandem with the NTP, which identified seven of the rakyat's priority areas, or National Key Results Areas (NKRAs), to be improved upon by the Government through public sector reform.

Highlights of the National Key Results Areas (NKRAs)

Addressing the Rising Cost of Living

Bantuan Rakyat 1Malaysia (BR1M) remains an immediate relief to help manage the rakyat's cost of living. Since 2012, seven million Malaysians have benefited from BR1M by way of easing their payments of expenses such as monthly bills, school fees and medical costs through RM25.62 billion in direct aid. Additionally, through the Special Committee on Addressing the Rakyat's Cost of Living chaired by the YAB Deputy Prime Minister, the Government seeks to formulate long-term strategies to address living costs such as by managing the production cost of food products through the utilisation of programmes under NBOS.

Fighting Corruption

The Government aims to table the Corporate Liability Provision under the Malaysian Anti-Corruption Commission (MACC) Act in Parliament by 2018. The new provision will make companies directly liable for acts of bribery or corruption, unless they can prove definitively that they have adequate procedures to prevent the alleged corrupt activities. Moreover, the MS ISO 37001 Anti-Bribery Management System was introduced in the same year to help organisations enforce measures that meet internationally recognised anti-bribery practices and controls.

Reducing Crime

Since the beginning of our NTP journey in 2010, our index crime has reduced by a phenomenal 53%. Initiatives such as Modern Policing, for instance, are transforming the force from a traditional policing culture to a technologically savvy, service-oriented force. In line with population changes and international standards, the Royal Malaysian Police has started measuring crime incidents per 100,000 population. In 2017, we recorded a crime rate of 306.15 per 100,000 population against the baseline of 352.07 per 100,000 population set in 2016. The Perception of Crime Indicator has also been introduced, allowing the police force and Ministry of Home Affairs to determine the key gaps in safety that need to be ameliorated.

Assuring Quality Education

The Dual Language Programme (DLP) and Highly Immersive Programme (HIP) to elevate our students' mastery of the English language continued to register positive outcomes. The DLP is currently implemented in 1,214 schools while HIP was expanded to 5,526 primary and secondary schools nationwide, reaching 2.54 million students. In ensuring teachers' proficiency of the language, we have increased training for English teachers, bringing proficiency of more than half of the English teachers nationwide to the C1 level, or 'Effective Operational Efficiency', according to the Common European Framework of Reference. At the pre-school level, we have increased enrolment to 84.26%, equivalent to 884,983 new pre-schoolers in 2017.

Raising Living Standards of Low Income Households

As of 2016, Malaysia's poverty rate has declined to 0.4%, contributed by programmes such as 1AZAM which has increased the income of 100,420 individuals, or 91% of the programme's monitored participants to date, by at least RM300. Additionally, the number of 1AZAM participants categorised as poor has declined to 58.69% in 2016 from 89.17% in 2009. Furthermore, successful 1AZAM participants are further empowered by the Beyond 1AZAM programme, with a total of 5,674 participants recorded in 2017. The Government has also introduced the e-Rezeki and e-Usahawan programmes to provide B40 households with access to income-generating opportunities through digital means.

Improving Rural Development

As of 2017, the NTP has built and upgraded 6,868 km of roads in rural areas through the Program Jalan Luar Bandar (JALB) and Jalan Perhubungan Desa (JPD), and provided 354,400 and 161,931 households with water and electricity supply respectively under the Program Bekalan Air Luar Bandar (BALB) and Program Bekalan Elektrik Luar Bandar (BELB). Additionally, 103,033 households have benefited from the construction and restoration of houses via the Program Perumahan Rakyat Termiskin (PPRT). A slew of economic activities such as the Desa Lestari and Rural Business Challenge have also promoted entrepreneurship and strengthened local economies. To date, approximately 6.8 million rural folks have benefited from this NKRA.

Improving Urban Public Transportation (UPT)

The year 2017 was momentous for urban public transportation in Greater Kuala Lumpur / Klang Valley. The launch of the Mass Rapid Transit (MRT) Line 1 on 17 July 2017 signalled the beginning of a new era in our urban transportation system. This has led to increase in total daily average ridership of rail and bus to 1.21 million in 2017 from 1.16 million in the previous year. To enhance first- and last-mile services, Malaysia has become one of the first countries in the world to legalise e-hailing services. Furthermore, developments in the Integrated Common Payment System and the construction of parking facilities at rail stations should encourage the rakyat's switch to public transport.

UPHOLDING OUR ECONOMIC RESILIENCE AND BUSINESS COMPETITIVENESS

The NTP continues to build up the resilience of the Malaysian economy through economic diversification in the National Key Economic Areas (NKEAs). In fact, GDP growth for the year is at 5.9%, reaching the value of RM1,173.6 billion at constant 2010 prices and exceeding many analysts' initial forecasts. In 2017, the NKEAs represented 75% of our GNI of RM1,316.3 billion at current prices.

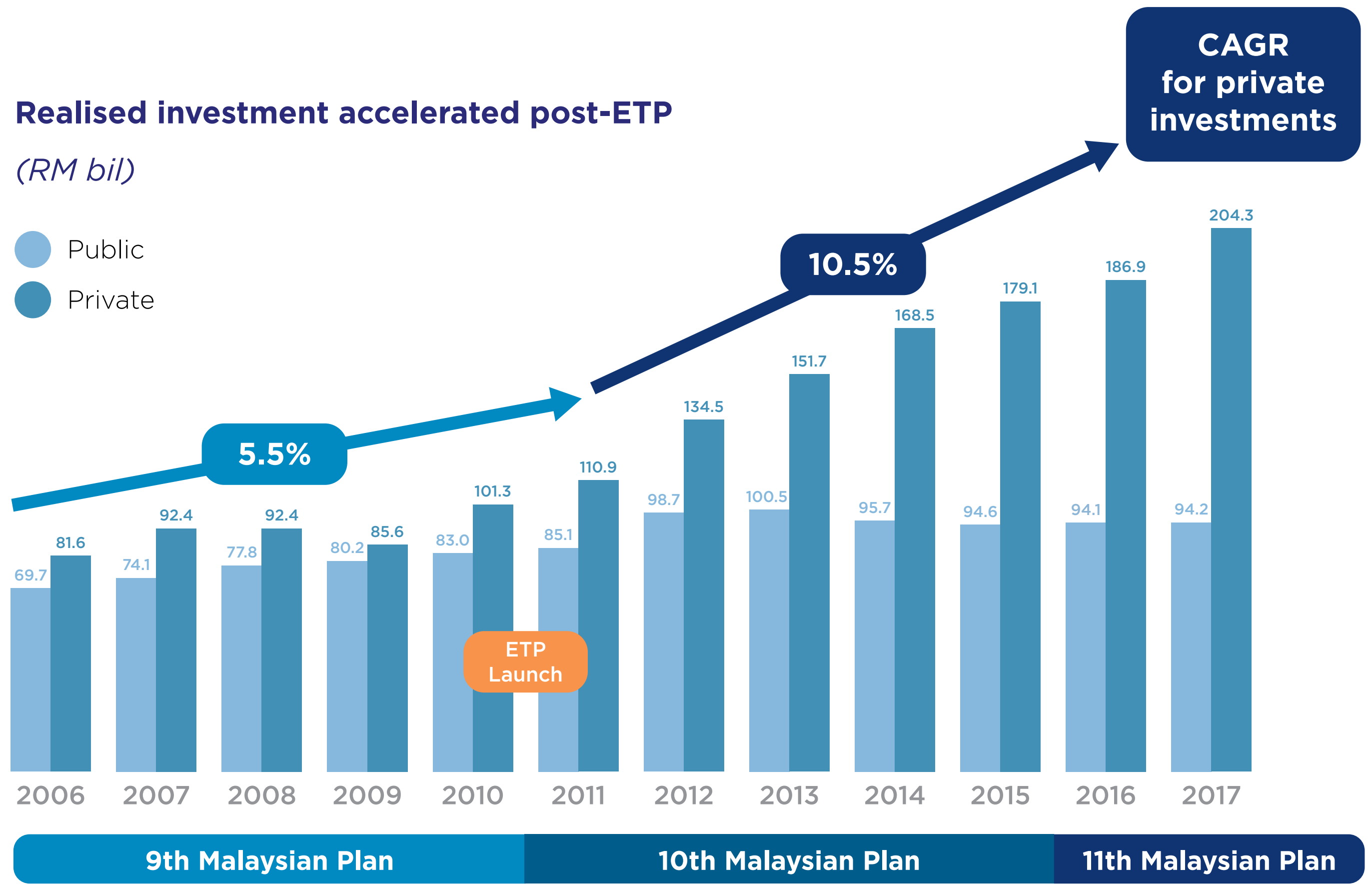
Diversification through the NKEAs is also reflected by decreasing reliance on oil and gas as a source of Government revenue while increasing contribution from other prioritised sectors. In 2017, oil and gas revenue made up 15% of Government revenue, representing a remarkable reduction from 41% in 2009. As a result of optimised revenue sources, Government income surged from RM185 billion in 2011 to RM225 billion in 2017, with a compounded annual growth rate (CAGR) of 3% for that period.

Our economic landscape has been further strengthened by the stability of the Government's finances, with our fiscal deficit reducing more than half from 6.7% in 2009 to 3.0% in 2017. Furthermore, the ratio of our Government debt to GDP remains below our limit of 55%, at 51% in 2017. Collectively, these factors represent the robust economic fundamentals which enable our economy to stand firm against external shocks.

Overall, this has put Malaysia back on the global competitiveness track, rebounding from 25th in 2016 to 23rd in 2017 in World Economic Forum's (WEF) Global Competitiveness Index. This puts us among the top countries in Asia. In terms of ease of doing business, Malaysia is ranked 24th out of 190 economies in World Bank's Doing Business Report 2018, placing us second in ASEAN and fourth within the Asia-Pacific region.

Since the start of the NTP, the private sector has increasingly represented a vital engine of growth, making up 68% share of total investments and growing at a CAGR of 10.5% from 2010-2017. In parallel, positive economic environment and validation from global institutions also contributed greatly to our foreign direct investment (FDI). This is apparent in the investments that have been made by some of the world's largest companies, among the many include:

- Leading semiconductor company Broadcom Limited transferred its Global Distribution Hub from Singapore to Malaysia in 2017;
- Top global Information and Communications Technology (ICT) solutions provider Huawei made Malaysia its regional operations headquarters in 2017;
- Oil giant Saudi Aramco has committed to invest US$7 billion for a 50% stake in PETRONAS' Refinery and Petrochemical Integrated Development (RAPID) in 2017;
- Global banking company HSBC has committed to invest over RM1 billion to build its upcoming regional head office in Tun Razak Exchange;
- Chinese e-commerce conglomerate Alibaba Group has established the Digital Free Trade Zone (DFTZ) in Sepang.



Digital Free Trade Zone (DFTZ)

Malaysia's DFTZ is the first of its kind in the world that was launched in March 2017 to boost the nation's e-commerce growth and position our country as a regional hub for internet-based innovation. The DFTZ will provide physical and virtual zones to facilitate small- and medium-sized enterprises (SMEs) to capitalise on the boom of the digital economy and cross-border e-commerce activities. The physical zone comprises the e-Fulfilment Hub and Satellite Services Hub while the virtual zone consists of the e-Services Platform.

The zone would be located within the KLIA Aeropolis, a 24,700-acre development led by Malaysia Airports Holdings Bhd (MAHB) that is expected to generate more than RM7 billion worth of domestic and foreign investments. The DFTZ sets its 2025 target to double SME's goods export growth to US$38 billion, create 60,000 jobs and facilitate US$65 billion worth of traded goods.

The launch ceremony also witnessed the exchanges of Memoranda of Understanding (MoUs) between four parties:

- Malaysia Digital Economy Corporation (MDEC) and Alibaba Group for strategic collaboration in the development of DFTZ in Malaysia, consistent with the objective of the Electronic World Trade Platform (eWTP); and the development of a regional hub for e-commerce business, trade facilitation, SME onboarding, cloud services for enterprises, and an e-Fulfilment and logistics centre.
- MAHB and Cainiao Network for the development of a regional e-commerce and logistics hub in KLIA Aeropolis.
- Alipay with Maybank and CIMB to launch Alipay barcode payment in Malaysia. This partnership will enable mainland Chinese tourists to make payments using Alipay e-wallet, their most preferred payment method. This will also give Malaysian merchants exposure to the vast China market.
- MDEC and Catcha Group for the collaboration to establish Kuala Lumpur Internet City (KLIC).

To date, over 1,500 SMEs are at various stages of onboarding in DFTZ.

Aside from improving the vibrancy of Malaysia's business environment, these incredible investments have also contributed to local industries' technical knowledge and the job scene. Since 2010, the economy has seen an additional 2.68 million employed persons [2] (as of the fourth quarter of 2017), whereby 27.2% are skilled workers. In addition, income inequality has reduced, as indicated by the Gini Coefficient. In 2016, Malaysia's Gini Coefficient declined to 0.399, marking a significant reduction from 0.441 in 2009, supported by growth in median and mean income, which reached RM5,228 and RM6,958 respectively, in 2016, against RM2,841 and RM4,025 respectively, in 2009.

Additionally, the middle 40% (M40) and the bottom 40% (B40) of household income earners have led median and mean income growth. In 2016, the M40 recorded a growth in median income of 6.9% per annum to RM6,275 from RM5,465 in 2014, while median income for the B40 rose 6.6% per annum to RM3,000 from RM2,629 in 2014. Meanwhile, mean income of the M40 increased 6.9% per annum to RM6,502 in 2016 from RM5,662 in 2014, whereas B40 mean income rose 5.8% to RM2,848 from RM2,537.

The reduction in Malaysia's overall incidence of poverty since 2009 further underscores the country's inclusive development to aid the most vulnerable groups. In 2016, the poverty rate had fallen to just 0.4% compared with 3.8% in 2009, with the incidence of poverty declining in all states. Notably, poverty in rural areas has dropped significantly to 1% from 8.4% in 2009, in tandem with our intensified efforts in rural development put in over the past seven years.

These socio-economic improvements prove the importance and relevance of the NTP, which then cement our fervent and pragmatic ambition of becoming a high-income nation.

[2] Employed persons calculation is based on CSDU's definition and methodology. The data for the calculation is sourced from Department Of Statistics Labour Force Survey.

Highlights of the National Key Economic Areas (NKEAs)

GNI VALUE (RM BILLION) AT CURRENT PRICES	
NKEA SECTOR	**2017**
Agriculture	73.6
Palm Oil/Rubber	79.9
Oil, Gas & Energy	203.5
Electrical & Electronics	63.4
Wholesale & Retail	201.9
Education[3]	58.3
Healthcare[3]	26.0
Communication Content & Infrastructure	58.7
Tourism	81.1
Financial Services	73.9
Business Services	64.0
TOTAL NKEA	984.3
Other Industries	393.2
TOTAL GNI	**1,316.3**

Agriculture

The Agriculture NKEA has sustained the development of the sector through a shift to high value-added agribusinesses. During the year, the sector contributed RM73.6 billion to GNI, exceeding our Roadmap target of RM49 billion by 2020. This is driven by growth of the processed food sector, aquaculture segments and herbal products, in addition to the development of agriculture SMEs which provided income-generating opportunities for smallholders in 2017. Of note, the processed food sector saw the participation of 154 SMEs and RM511.21 million of sales to support anchor companies along the full value chain in 2017, the highest number recorded since 2015 when the SME development programme was initiated.

Business Services

The business services sector continued to provide high-skilled services to the economy and increase the nation's income. The GNI generated from business services in 2017 stood at RM64 billion, contributed by the aerospace, shared services and outsourcing, data centre, shipbuilding and ship repair, and green technology industries. Among the sector's highlights is the significant growth of the aerospace industry, primarily in the aerospace manufacturing and Maintenance, Repair & Overhaul (MRO) sub-sectors, highlighted by the appointment of Composites Technology Research Malaysia (CTRM) Sdn Bhd as a single-source supplier for the manufacture and supply of Airbus A350 fan cowls. Furthermore, UMW Aerospace is the first Malaysian company to be a tier-1 fan case supplier to Rolls-Royce under a contract worth RM830 million, hence positioning Malaysia as a critical supplier of aircraft structural components.

Communications Content and Infrastructure

The communications content and infrastructure sector has been a key focus of the NTP in bridging the urban-rural economic gap. The development of the sector is aimed at opening the digital economy platform to the rural areas, thereby improving their economic participation and increasing the nation's per capita income level. A 3,800-km national submarine cable project, known as the Sistem Kabel Rakyat 1Malaysia (SKR1M), was completed and started its operations on 16 September 2017 to enhance connectivity links between Peninsular Malaysia, Sabah and Sarawak, and lower internet traffic congestion among these three regions. During the year, the NKEA recorded RM58.7 billion in GNI anchored by growing telecommunications penetration as well as production of creative content.

Electrical and Electronics (E&E)

Malaysia's E&E sector continued to record robust growth, capitalising on the rapid advancements in technology and the global digital revolution. In 2017, the industry recorded RM343 billion worth of exports and GNI of RM63.4 billion. The growth was mainly driven by investment in the manufacturing of semiconductors, solar modules, LED products and household appliances, reflecting the success of our efforts through the NKEA to innovate high-value manufacturing. Among the

[3] Include public education and public healthcare.

sector's highlights was OSRAM's first stage investment in the fully integrated LED epitaxy, wafer fabrication and product manufacturing facility, which has been operational since November 2017. Moreover, MIMOS and NCIA have successfully established a human capital development centre serving the field of wafer fabrication and equipment, which offers holistic and industry-driven trainings based on the curriculum co-developed with SFAM.

Education

Malaysia has retained its attractiveness as a world-class education destination. The NKEA registered GNI of RM58.3 billion as a result of continued private sector activity to support international student enrolment, with 170,068 enrolments in higher learning institutions in 2017 as compared to 70,000 in 2010. This is driven by increased marketing efforts by the private sector and the Government and the presence of globally renowned brands in education as well as the offering of multi-disciplinary and specialised offerings to attract international students to study in Malaysia. In addition, Malaysian universities have achieved great strides and have been ranked within the Top 50 in the world in subject areas such as Hospitality and Leisure Management, Electronic and Electrical Engineering, Chemical Engineering, Mechanical Engineering, and Environmental Sciences, among others.

Financial Services

The Government's move to diversify the economy within the services sector has allowed Malaysia to weather the turbulent headwinds of the global economy. Activity in this NKEA remains private sector-led and closely guided by the regulators, ensuring accessibility to financial services and enabling expansion of Malaysia's regional links and innovation through financial technology. The Malaysian financial system has become more regionally integrated to support stronger economic and financial linkages, as reflected by the presence and activity of Malaysian commercial banks in ASEAN. As of 2017, the value of the capital, equity and debt markets amounted to RM3.2 trillion, RM1.9 trillion and RM1.3 trillion respectively, while Assets under Management stood at RM776.2 billion. In addition, Malaysia commands a 30% share of the global market value of Shariah assets and is also the global leader of sukuk issuances. As such, these contributed to the RM73.9 billion in GNI created by the NKEA in 2017.

Greater Kuala Lumpur/Klang Valley

The MRT Line 1 from Sungai Buloh to Kajang was launched on 17 July 2017, two weeks ahead of schedule, marking a significant achievement in our efforts to improve liveability and connectivity of Kuala Lumpur and the Klang Valley. The region also continued to record progress of another iconic project, the River of Life (RoL), to clean and beautify the designated eight rivers with the aim to improve environmental sustainability, catalyse investments and ensure better living quality in and around the country's capital. The RoL project was also given the Award of Excellence by the International Federation of Landscape Architects under the Cultural and Urban Landscape category of the Asia-Pacific Landscape Architecture Awards 2017.

Healthcare

Since the Healthcare NKEA was introduced in 2011, the industry has grown in strength. In 2017, for the third consecutive year, Malaysia was acknowledged by two international publications, The International Living magazine as well as the International Medical Travel Journal (IMTJ), to be one of the world's top countries for healthcare in terms of service quality, accessibility, cost competitiveness and standard of post-procedure recuperation options, and as the "Health & Medical Tourism Destination of the Year" respectively. The sector registered GNI of RM26 billion in 2017. Of note, the year saw the launch of Phase I Clinical Trial Guidelines which enables early-phase trials in Malaysia for drug discovery and development. Additionally, the Private Aged Healthcare Facility and Services Act was passed in 2017 to regulate private nursing homes for the elderly, thus ensuring quality services are provided for senior citizens.

Oil, Gas and Energy

Despite low crude oil prices for most of 2017, Malaysia remained committed in its journey to add value to its oil and gas sector, reporting GNI of RM203.5 billion. Its flagship initiative, the Pengerang Integrated Petroleum Complex, continues a steady construction progression and attracts more investments. The project made headlines in February 2017 with the signing of a Share Purchase Agreement (SPA) by oil giant Saudi Aramco to invest US$7 billion in the Refinery and Petrochemical Integrated Development (RAPID) project in Pengerang, representing the largest ever FDI inflow to Malaysia, while constituting Saudi

Aramco's biggest investment outside the Kingdom of Saudi Arabia to date. Furthermore, new regulations in the upstream segment are slated to promote the sector's vitality and competitiveness, while positive results in the areas of energy efficiency and renewable energy reinforce the country's commitment to the 21st Conference of Parties (COP 21) Paris agreement to reduce 45% of carbon emissions by 2030.

Palm Oil and Rubber

Malaysia's position as a major global plantation and commodities player was sustained in 2017 with total exports of RM77.8 billion for palm oil and palm-related products, while the export of local natural rubber and rubber compounds contributed RM9.36 billion, a tremendous increase from RM5.89 billion last year. Progress was made in promoting the benefits of palm oil nutrients such as tocotrienol and carotenoids for commercial consumption, as illustrated by the RM41 million grants committed to 10 projects in the development of palm-based food, health products and animal feed in 2017. New planting and replanting of rubber, on the other hand, met its target of 8,557 hectares. RM132.7 million has been allocated for the further planting of 8,557 hectares of rubber in Sabah and Sarawak. As a result, GNI contribution by this NKEA reached RM79.9 billion in 2017.

Tourism

The tourism sector remains on track towards achieving our targets of 36 million tourist arrivals and RM104 billion in GNI by 2020, with 25.7 million in arrivals recorded in 2017 following the successful rollout of the e-Visa facility for tourists from 10 countries such as China, India and Bhutan. Tourism receipts for 2017 reached RM81.4 billion, and since 2011, the sector has contributed to RM81.1 billion in the country's GNI. This has been achieved by efforts to improve our tourist offerings and attractions, making Malaysia one of the 17 must-visit destinations in 2017 by CNN Travel, and Ipoh, Perak as one of Lonely Planet's Top 10 cities for travel in 2017. Kuala Lumpur, on the other hand, was also named among the world's top 10 cities in terms of tourism growth by the World Travel and Tourism Council (WTTC).

Wholesale and Retail

The wholesale and retail sector was a key contributor to economic growth in 2017, recording a GDP contribution of RM205.2 billion and generating RM201.9 billion of GNI during the year. Constant efforts in modernising, globalising and revolutionising this sector have resulted in a consumer confidence level of 76.6% according to Nielsen's Global Consumer Confidence Trend Tracker Report, and Malaysia defending its third-place ranking in the AT Kearney Global Retail Development Index for two years in a row. Nevertheless, we continue to support the transformation of small retailers and automotive workshops as well as facilitate the industry's efforts to diversify the shopping experience to drive investment as well as consumption, especially by leveraging new developments in the digital realm.

Highlights of the Strategic Reform Initiatives (SRIs)

The SRIs continue to play a vital role in enabling a conducive environment for business and strengthening Malaysia's international competitiveness, as well as promoting inclusiveness and sustainability of our national transformation.

Narrowing Disparity

This SRI has spearheaded the adoption of "growth with equity" as a key principle to ensure inclusive planning and balanced economic growth. This SRI has paved the way for the development of the Bumiputera community and the implementation of the Bumiputera Economic Transformation Roadmap (BETR) 1.0 in 2011 to mitigate fundamental issues faced by Malaysia's largest community in a holistic manner. As of 2017, BETR 1.0 has created a total of RM122.2 billion business opportunities and in April 2017, the YAB Prime Minister launched the Transformasi Kesejahteraan Bumiputera (TKB) road map as an expansion of BETR 1.0 to focus on uplifting the well-being of the Bumiputera community through improved capacity building and economic participation.

Competition, Standards and Liberalisation

The SRI remains a key driver in raising the nation's competitiveness through the eradication of anti-competitive behaviour, promoting world-class business practices and facilitating a vibrant services sector through a supportive regulatory framework. During the year, a total of 300 out of 327 anti-competitive complaints were addressed by the Malaysia Competitive Commission (MyCC), while five decisions were issued against companies found guilty of anti-competitive behaviours. In improving the quality of goods and services, 5,331 Malaysian Standards have been made available for businesses and consumers, of which 510 standards are being made mandatory by regulators. Meanwhile, Malaysia's sustained position on international competitiveness rankings validates our efforts to enhance our business competitiveness and landscape.

Human Capital Development

As we progress towards high-income nation status, our talent pool needs to advance in tandem to meet the needs of the labour market by modernising our labour laws; creating a labour safety net; strengthening human resource management; conducting labour market analysis; upskilling and reskilling; and leveraging women talent. We are currently on the right track: our global human capital development performance was ranked second in Southeast Asia and 33rd in the world in the Global Human Capital Report 2017 issued by the World Economic Forum (WEF) as compared to ranking 42nd in 2016, with strong scores across the capacity, development and know-how components. The 2017 Corporate Women Directors International Report on Women Board Directors of Asia-Pacific Companies has also ranked Malaysia third out of 20 Asia-Pacific countries for our achievements in raising women directorships. The labour market also saw significant development during the year with the passing of three major laws: the Private Employment Agencies (Amendment) Bill, the Self-Employment Social Security Act 2017, and the Employment Insurance System (EIS) Bill 2017 to provide greater employee protection.

Public Service Delivery Transformation (PSDT)

Under the PSDT SRI, the Government is focusing on transforming the delivery of public health services to the rakyat by introducing LEAN Healthcare initiatives. Significant improvements in reducing waiting time as well as congestion at the hospital prompted the expansion of LEAN Healthcare to all 133 hospitals nationwide in phases. To date, 52 hospitals under the Ministry of Health have implemented the initiative in their various departments, with aims for the Lean methodology to eventually be expanded to other public hospitals. Besides LEAN, more than 100 NBOS initiatives and 1,432 PSDT initiatives have been implemented, addressing a wide range of socio-economic areas and providing game-changing public services to the rakyat. These initiatives include the Urban Transformation Centres (UTC) and 1Malaysia Customer Service of Civil Servants (1SERVE).

Public Finance Reform

This SRI continues to ensure optimisation of Government resources through prudent monetary management as well as widening tax base for fair and effective revenue collection. As a result, our fiscal position remains on track towards a near-balanced budget, with our fiscal deficit narrowing further to 3.0% in 2017. This has also enabled the Government to more effectively channel development spending and public aid to the most in need.

2020 AND BEYOND

Amid the backdrop of criticisms and doubts raised by naysayers, the Government has consistently and successfully progressed along the NTP agenda. The success of the NTP would not have materialised without the unyielding effort by the civil servants in implementing these reforms and ensuring that all changes would positively benefit Malaysians from all walks of life.

With just two short years away to the year 2020, the Government remains resolute and committed to stay on course for the NTP. It has delivered proven outcomes and we are confident our high-income aspiration will be achieved.

True to the spirit of transformation, the NTP's aim was to promote transparency and encourage open dialogue with the public to warrant policy developments that would directly address the needs of the rakyat. As such, the Government has already begun planning for the future by way of the Transformasi Nasional 2050 (TN50) programme to sustain Malaysia's growth from 2020 to 2050. Through engagements with local communities ranging from professionals, students, public and private institutions, many aspirations have been captured and compiled to finalise the framework of TN50 in 2017. The process is in line with the YAB Prime Minister's endeavour of a pro-rakyat, bottom-up approach in creating the country's next vision.

Ultimately, the TN50 programme aims for Malaysia to become a top-20 country in economic development, social progress and innovation. Additionally, the Government will continue improving the delivery of its services to prepare ahead of the upcoming challenges that will arise as we reach out for this new goal. With strong emphasis on excellence and the focus on people and inclusiveness, we are assured that Malaysia will succeed in its transformation and elevate further upon the completion of NTP.

DELIVERING WORLD CLASS URBAN PUBLIC TRANSPORT SERVICES

YB DATO' SRI LIOW TIONG LAI
Minister of Transport

Good public transport networks support economic growth, growing populations and the diverse requirements of urban activity. When we formulated the Urban Public Transport (UPT) NKRA in 2010, we envisioned the creation of an attractive and sustainable public transport network to overcome the congestion on our roads, uneven access to public transport services and perception of unreliable service. Since then, we have doubled the modal share for public transport to 20% from when we started in 2010, serving as testament to the Government's delivery of results in urban public transport.

The demand for public transport is expected to increase further as Malaysia transforms into a high-income nation by 2020. This transformation has been driven by the construction of new public transport infrastructure, such as the game-changing MRT project which was launched in July 2017, as well as the expansion and upgrading of existing rail infrastructure, namely the LRT and KTM networks.

Despite setbacks in some of our major projects, we shall keep moving forward to ensure all these works are delivered on time and ready to serve the needs of the rakyat. A good public transportation system is essential for continued economic development and growth. The UPT NKRA's Delivery Management Office (DMO) has been crucial in ensuring comprehensive planning and implementation that enable all parties to work together effectively. In addition, the DMO has given all parties involved a greater sense of urgency and stronger resolve to take the required actions quickly, which includes regular problem-solving sessions, managing stakeholders better as well as facilitating internal decision-making.

Keeping in mind the Ministry of Transport's vision of spearheading the transformation of an integrated, efficient and safe transportation system, I believe that in time to come, all Malaysians will enjoy world-class urban public transport facilities- a system that we can all be proud of.

YB DATO' SRI NANCY SHUKRI
Minister in the Prime Minister's Department

The Government aspires to see Malaysia's public transport system become the mode of choice for urban commuters and aims to reduce congestion in our cities. This will improve our productivity as well as enhance the quality of life of our urban public and the liveability of Malaysian cities.

In doing so, we have adopted a market-friendly approach which puts the needs of public transport users first. This has been demonstrated through the introduction of new regulation to allow e-hailing services, in response to strong demand for the service from the public, making Malaysia one of the first countries to do so and allowing traditional taxi and e-hailing services to co-exist in a fair and transparent manner. It also contributes towards the improvement of first- and last-mile connectivity.

In recognition of our efforts to modernise our transportation system, in October 2017, the Land Public Transport Commission (Suruhanjaya Pengangkutan Awam Darat – SPAD) received the International Best Practices Award from the International Association of Transport Regulators (IATR) under the Transportation Innovation, Reform and Multi-modal Integration category for the National Land Public Transport Masterplan and the Taxi Industry Transformation Programme.

During the year, this NKRA shifted from reporting AM peak ridership (7am-9am) to daily average ridership, as this is a more accurate and widely used measure of public transport usage globally. The change in reporting metrics will allow us to plan more effective measures for ridership, which accounts for one of the most important dimensions of public transport.

Despite various initiatives undertaken since 2010 to increase overall ridership, raising the daily public ridership target continues to be a challenge, especially as it requires broad mindset change among the Malaysian public. Nevertheless, the overall total daily average of rail and bus combined still rose by 4% to 1.21 million in 2017 from 1.16 million the previous year.

Last-mile connectivity continues to be one of our priorities, although this is not a simple task. For instance, the Bus Rapid Transit (BRT) KL-Klang project has been put on hold after considering that its proposed alignment will overlap significantly with the LRT3 line which is currently under construction. Instead, MRT and LRT rail services will be further enhanced through the provision of a more efficient and comprehensive feeder bus system.

We have also studied the urban public transport ecosystem to identify ways to attract users and enhance the convenience of urban public transport. In view of this, SPAD will be launching the Journey Planner mobile app in early 2018 to facilitate one's journey when using public transport.

As the Government moves toward the completion of major urban public transport projects, more push initiatives are required to encourage further take-up of urban public transport. Nonetheless, I am confident that the results delivered thus far have restored public faith in the quality and reliability of the public transport network in line with our aspiration towards becoming a high-income nation.

IMPROVING THE RAIL BACKBONE OF THE GREATER KL/KLANG VALLEY PUBLIC TRANSPORTATION NETWORK

In every global city, urban rail is the crucial nexus that binds together disparate modes of public transportation. Its range, capacity and reliability means that urban rail must necessarily play a central role in the transportation network of a thriving and vibrant city.

Following the completion of the LRT Line Extension Project in 2016, 35 km of new rail tracks and 23 new stations were added to the LRT network, connecting Kelana Jaya and Sri Petaling to Putra Heights, and uniting the two LRT services of the Kelana Jaya and Ampang Lines into a seamless network. Total LRT daily ridership has since increased by 4% from 439,985 in 2016 to 457,658 in 2017 on both the Kelana Jaya and Ampang Lines, contributing 38% to the overall public transport ridership in 2017.

> ***"The MRT is a greener way to travel, as it lowers carbon emissions by removing up to 160,000 vehicles off the roads in the Klang Valley daily."***

LRT3, a project under SPAD's Urban Rail Development Plan (URDP), aims to connect an additional two million people within the western corridor of Klang Valley from Bandar Utama to Johan Setia, Klang, by the year 2021. The new line, which has commenced construction, will complement other elements of the Greater KL/Klang Valley Master Plan to develop an integrated public transport system. The project owner, Prasarana Malaysia Bhd, is currently awarding construction contracts for the project and finalising the alignment of the line.

The commencement of full operations of MRT Line 1 (Sungai Buloh - Kajang, SBK) has further catalysed urban public transport in Greater KL/Klang Valley. Despite challenges such as land ownership issues, the 51-km mega project was completed ahead of schedule and below budget. The line serves a corridor running from northwest to southeast KL with a population catchment of approximately 1.2 million people. To date, the SBK Line has recorded an average daily ridership of 110,000 rail commuters, an encouraging take-up rate for a new mode of public transport. Similar to other rail transport, the MRT is a greener way to travel, as it lowers carbon emissions by removing up to 160,000 vehicles off the roads in the Klang Valley daily. Following its completion, the MRT SBK Line has already become an important mainstay of the overall rail and bus ridership for Greater KL/Klang Valley.

KTM Komuter services continued to register an on-time arrival rate (within 10 minutes of the scheduled time) of 95% during the AM peak period. Further improvements in terms of headway and frequency are also being evaluated to make rail travel a more convenient option. These will require the completion of the Klang Valley Double Track (KVDT) Project, which began in November 2015, involving track rehabilitation as well as station and signalling upgrades to the oldest railways in Greater KL/Klang Valley.

The project involves the rehabilitation of 40 km of track between Rawang and Salak Selatan, as well as the Sentul and Simpang Batu lines, marking efforts by KTM Berhad (KTMB) to improve the quality of KTM services and alleviate service delays and cancellations. The project is scheduled

Total LRT daily ridership has increased by 4% from 439,985 in 2016 to 457,658 in 2017 on both the Kelana Jaya and Ampang Lines.

for completion in 2019 with KTMB focusing on enhancing 16 stations and upgrading its existing signalling and electrification systems. While passengers are expected to experience occasional disruptions during the upgrade, SPAD is monitoring the performance of the KTM to ensure KVDT works have minimal impact on its operations and on-time arrivals. There also remains work to be done on improving passenger schedule information and safety performance. However, the completion of the project is expected to provide overall improved service for all railway users.

KL Monorail is a key rail feeder for the last mile of travel for many passengers for the Central Business District (CBD) in Kuala Lumpur. However, the service is currently bottlenecked and requires expansion, with ridership reaching capacity and demand expected to rise further. Currently, Prasarana is working to rectify the capacity and safety issues in the existing Monorail system and are providing bus services as an alternative for the rail service. Additionally, five sets of four-car trains, which had been grounded in May 2017 due to safety concerns, have returned to service at the end of the year. Plans are currently underway to procure an additional nine sets of new four-car trains to replace the existing sets of four-car trains by the end of 2019 and add much-needed capacity for the Monorail service.

REVITALISING FIRST- AND LAST-MILE CONNECTIVITY SERVICES

Buses play an integral role in providing first- and last-mile connectivity, enabling public transport users to enjoy the full spectrum of the UPT network to get to and from their destinations.

The Bus Network Revamp (BNR) initiative represents part of the Government's plan to revitalise first- and last-mile connectivity by streamlining stage bus routes to cover more of Greater KL/Klang Valley to improve passenger accessibility and integration with other public transport modes. Six previous bus corridors were restructured into eight corridors, with a more systematic bus route numbering system. Since its implementation in December 2015, the BNR has successfully delivered a 9% increase in ridership for stage bus services in Greater KL/Klang Valley. Additionally, 90% of all operators have improved their bus services with new and upgraded bus fleets under the BNR.

The MRT Feeder Bus enhances first- and last-mile connectivity.

Currently there are 11 stage bus operators in the Greater KL/Klang Valley region, servicing 348 routes daily and contributing to the increase in stage bus ridership. Since the implementation of the BNR, service coverage has increased by 20.4% (from 7,643 km to 9,202 km), with new routes introduced and redundant services streamlined. Bus operators also increased the frequency of buses for routes with high passenger demand.

The introduction of LRT and MRT feeder bus routes to improve transport integration has also supplemented the BNR and enhanced first- and last-mile connectivity. The fare is set at only RM1, with 192 feeder buses now on the road servicing 49 routes. Bus frequencies are between 10 to 15 minutes, depending on traffic conditions. The routes generally do not exceed 10 km, making the feeder buses a convenient and timely service for commuters.

A key challenge faced in enhancing connectivity is a shortage of bus drivers, especially in the Klang Valley, as most drivers with heavy vehicle licences prefer to drive express buses or cargo vehicles. Nevertheless, Prasarana and other bus operators continue to improve efforts to recruit new bus drivers, including the review of compensation and other benefits.

While the BNR initiative has proven successful, efforts to improve bus service coverage must continue. With many new flourishing transport, commercial and residential projects coming up in Greater KL/Klang Valley, there is still room to extend and optimise the bus service network in the city. SPAD is also monitoring current BNR operations in a continuous effort to improve connectivity for commuters using bus services.

> ***"The Bus Network Revamp (BNR) initiative represents part of the Government's plan to revitalise first- and last-mile connectivity by streamlining stage bus routes to cover more of Greater KL/Klang Valley to improve passenger accessibility and integration with other public transport modes."***

To improve bus passenger services and enhance availability of route and schedule information, the Government installed 4,547 bus information panels in all 13 local councils within Greater KL/Klang Valley between 2016 and 2017. Of these, 3,257 were installed in high commuter catchment areas in 2017, exceeding the target of installing 3,000 panels for the year. At the same time, continuous efforts are taken by SPAD to encourage local councils to enhance bus stops, bus lanes, road traffic and pedestrian safety.

In view of this, SPAD has identified 28 priority bus stops to be built by local councils (in particular, MBPJ, MBSA, MPS and DBKL) based on locations with high density and ridership. All the local councils have given their commitment to build these bus stops in 2018 and enhance pedestrian access around the bus stop areas. SPAD has also worked closely with DBKL to enforce bus lanes in the Kuala Lumpur CBD through awareness campaigns and joint enforcement activities. Although 14 bus lanes have been established in KL since 1997, many road users continue to commit offences by driving their private vehicles in the designated bus lanes due to inadequate enforcement and awareness.

As of 2017, a total of eight intra-city terminal hubs, also known as Hentian Akhir Bandar (HAB), have been fully completed to facilitate the flow of traffic from the suburbs into the city. These consist of HAB Pasar Seni, HAB Munshi Abdullah, HAB Jalan Silang, HAB Wira Damai, HAB PJS 3/2 and HAB Section 19. HAB Section 17 and HAB Jalan Othman were completed in 2017. The hubs integrate various forms of public transport including buses and taxis by improving traffic flow at bus staging areas and provide pedestrian facilities and walkways.

The BRT KL-Klang corridor, which was planned for three major thoroughfares; namely, the Federal Highway, Jalan Tun Sambanthan and Jalan Syed Putra, has been put on hold due to its proposed alignment overlapping with the upcoming LRT3 line as well as the project's financial and implementation challenges.

Taxi services are another important element in the ecosystem for first- and last-mile connectivity. In 2016, the Government made the bold move

2,460 new individual taxi licenses approved, with 581 drivers received RM5,000 cash grants to purchase new taxis as part of the Taxi Industry Transformation Programme (TITP) in 2017.

A fleet of double decker buses operated by Prasarana on a few routes in Kuala Lumpur.

to introduce the Taxi Industry Transformation Programme (TITP) to put in place much-awaited reforms to create a level playing field that benefits drivers, operators and passengers.

In 2017, the YAB Prime Minister announced a new RM183 million fund to provide individual taxi drivers a cash grant of RM5,000 in purchasing new vehicles to be used as taxis on e-hailing platform. This new initiative will span five years and is expected to benefit more than 30,000 existing taxi drivers. The TITP recorded the approval of 2,460 new individual licenses, with 581 drivers received the grant.

> ***"The proposed Land Public Transport Act 2010 amendment tabled by SPAD to incorporate e-hailing services was approved by both houses of Parliament on 15 August 2017."***

On 31 March 2017, SPAD put in place a new policy allowing more vehicle types to be used as taxis, providing greater comfort and safety to passengers while allowing taxi drivers to better compete with e-hailing service providers. The TITP has also set the minimum standards for taxi leasing (*pajak*) contracts to ensure fair treatment to both companies and drivers, and introduced improved training programmes for taxi and e-hailing drivers with a greater focus on customer service.

In managing the emerging e-hailing market, the proposed Land Public Transport Act 2010 amendment tabled by SPAD to incorporate e-hailing services was approved by both houses of Parliament on 15 August 2017. Detailed ride-sharing regulations and policies were developed concurrently by SPAD and will be put in place in early 2018, allowing for both taxi and e-hailing services to co-exist. Malaysia is keeping up with the times and is paving the way for positive outcomes for the entire taxi industry by embracing the TITP and enabling the e-hailing system.

Prior to the implementation of e-hailing regulations, SPAD initiated a pre-registration exercise for e-hailing drivers from 26 June to 30 September 2017, performing stringent background checks up-front. Under the e-hailing policy, e-hailing operators such as Uber and Grab are required to obtain Intermediation Business Licences (IBL) from SPAD to operate. IBL licence-holders are required to abide by several operating conditions, such as:

- Providing comprehensive e-hailing insurance coverage for drivers, passengers, vehicles and third parties;
- Ensuring their drivers and vehicles comply with regulations at all times including stringent background screening vis-à-vis criminal records, medical fitness and summonses;
- Possessing a valid digital Driver's Card;
- Undertaking annual vehicle inspections; and
- Providing full cooperation with the authorities with regards to data sharing, incident investigations and random audit checks.

Meanwhile, to align with the industry's new goals, the Centralised Taxi Service System (CTSS), now known as the Taxi Performance Monitoring System (TPMS), has been revised to include e-hailing services. As for traditional taxis, the new scope of the system includes replacing existing taxi meters with smart digital meters. However, e-hailing concepts and policies are still being reviewed to ensure clarity before TPMS implementation can resume, until which time SPAD will internally manage and monitor TPMS.

MAKING PUBLIC TRANSPORT AN ATTRACTIVE OPTION

While a number of high-impact UPT projects have been completed as of 2017, the rakyat must also play their part in ensuring the success of urban public transportation in Greater KL/Klang Valley. In addition to demonstrating responsibility towards UPT assets, the rakyat themselves must choose to switch their preference from private to public transport.

This could mean making a commitment to leave cars at home or at designated parking areas while using public transport. It may also require a more gradual shift such as riding local buses to get around on weekends or taking public transport at least once a week.

Towards this end, SPAD will launch the free Journey Planner mobile app for the public in Q1 2018. The app was developed in collaboration with all bus and rail operators. With Journey Planner, the public can now access unified public transport arrival information, schedules, journey options and real-time notifications using their smartphones. Commuters can also plan their journey based on selected criteria such as the fastest route, fewest transfers or routes that require minimal walking. The Journey Planner app is expected to help boost demand for public transport by providing comprehensive travel information of all public transport networks.

> *"The Integrated Common Payment System will minimise barriers to interchange between public transport modes."*

The continued expansion of the Greater KL/Klang Valley public transport system has resulted in an increasingly complex network requiring better integration across all transport modes. In response to this, the Government has been developing an Integrated Common Payment

Deputy Minister of Transport, YB Datuk Ab Aziz Kaprawi launching the Automatic Fare Collection (AFC) system in conjunction with the Southeast Asian (SEA) Games KL 2017.

Park 'n Ride (PnR) facilities make it easier for private vehicle users to continue their journey via public transport modes.

System (ICPS), a standard ticketing system for all rail and stage bus operators in the Klang Valley. Its objectives are to minimise barriers to interchange between public transport modes and to encourage greater use of public transport through optimised pricing. The first phase of the project (until mid-2019) focuses on urban rail services and will subsequently be extended to stage bus services to enable seamless integration with rail modes in the future.

The initiative, which reached 61% completion in 2017, consists of the development of a central clearing house for transit and integration among transit operators, card issuers and other payment gateway systems. ICPS uses Europay MasterCard Visa (EMV) and Near Field Communication (NFC) technologies, enabling the usage of Touch 'n Go, EMV contactless bank cards, mobile payment and other possibilities that can be tailored for future needs.

Installation and integration work is the most critical phase of the project, requiring 20 months to complete across various stakeholders. This includes the deployment of 6,200 ICPS readers at station automatic gates, ticket vending machines and other equipment across 190 stations as well as system integration between the ICPS core solution and five back-end systems under Prasarana, MRT, KTM Komuter, Touch 'n Go and the payment switch provider under PayNet for bank cards. Each party will need to enhance its own back-end system for this integration, which requires implementation in stages to avoid integration risk and major service disruption. As a result, the official launch of ICPS, which was originally scheduled in 2018, has been moved to June 2019.

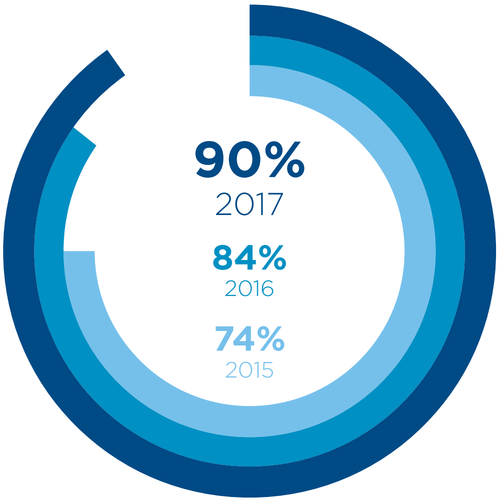
> ***"More PnRs have been built at strategic locations throughout the Greater KL/Klang Valley rail network, with a total of more than 20,000 parking bays to date."***

With ICPS integration work currently underway involving all rail operators, the public can expect to have one common card for Prasarana (including rail and bus) services, MRT and KTMB in 2018, and full integration with the common card, the MyDebit bank card and adoption of mobile payment by June 2019.

Meanwhile, the integration of the Automatic Fare Collection (AFC) system with Touch 'n Go has been completed and was launched on 24 August 2017 in conjunction with the Southeast Asian (SEA) Games KL 2017. 13 stations were involved in the exercise, among them are the KTM Bank Negara, KTM Subang, KTM KL Sentral and KTM Bandar Tasik Selatan which have an interchange to the Ampang, Sri Petaling or Kelana Jaya Lines which leads to the Bukit Jalil stadium.

Park 'n Ride (PnR) facilities have been identified as another important component in attracting public transport usage, by making it easier for private vehicle users to continue their journey via public transport modes. To this end, more PnRs have been built at strategic locations throughout the Greater KL/Klang Valley rail network, with a total of more than 20,000 parking bays to date. During the year, new parking bays were constructed in Klang and Rawang which are targeted for completion in 2018 and 2019, respectively.

CUSTOMER SATISFACTION INDEX



Under MOT, 2,759 parking bays have been constructed at eight PnRs including Salak Tinggi, Taman Bahagia, Taman Jaya, Taman Paramount, UKM and Nilai.

Testimonial From Public Transport User

Nora binti Ahmad

As a working professional at a banking institution, Nora has been using the Mass Rapid Transit (MRT) services for her workplace commute on a daily basis since July 2017. "Prior to using the MRT, I have either been driving, or using the Light Rail Transit (LRT) for my everyday commute," she explains.

While she still needs to drive to the MRT station, the MRT service has made things so much easier for her. She finds the MRT to be a fast, reliable, and affordable way to commute to work. "So far, I've had a great experience using the MRT in general."

Nora believes that while the public transport system in the Greater KL/Klang Valley region has been steadily getting better, there are areas that could be greatly improved, such as the MRT feeder bus routes. "One of the improvements the Government can make is to plan for the feeder bus routes to run both ways for the convenience of commuters as they do not have to make a whole round trip when their stop is only one stop away from the station," she opines.

She is also of the opinion that single drivers who now currently drive to work should definitely consider public transport if available, as they then do not have to pay exorbitant parking fees, especially if working in the middle of KL.

"I hope that there will be more MRT lines and extensions, and I definitely hope that feeder bus planning/routes will be revisited. That way, more people will consider taking up public transport."

Public transport operators have also increasingly taken on the responsibility of providing PnR facilities. As of 2017, Prasarana brought the number of parking bays available on the LRT network to a total of 10,102, with 4,091 completed in 2017. The average occupancy rate for LRT PnRs is 79%, with 15 out of 31 stations recording 100% occupancy rates. For example, LRT PnRs at the Glenmarie (569 parking bays) and Putra Heights (452 parking bays) stations are operating at full capacity and have been effective in attracting commuters from outside of KL to use public transport. With the full launch of the MRT SBK Line in 2017, a total of 14 multi-storey and open-air car parks with 8,000 bays were built at several stations along the line. Also in the pipeline are an additional 5,275 parking bays at 11 stations along the LRT3 Line scheduled for completion in 2020.

Parkway Dropzones (PDZs) are built at high-ridership rail stations for better integration of existing infrastructure such as bus stops with covered walkways, pedestrian linkages for passengers to get to a station, and transit facilities for bus or taxi passengers to board trains and encourage car-sharing. The PDZs are also a transit facility for bus and taxi passengers to board rail services. Three PDZs have been planned with one completed in 2016 (PDZ Kg. Dato' Harun) and another completed in 2017 (PDZ Serdang). PDZ Batu Tiga will be completed in 2018, with delays due to coordinative and cooperative challenges among different parties involved in planning and implementation.

Regular coordination meetings with different agencies, local authorities and other stakeholder involved in planning and implementation have been held to resolve this, while relevant issues are also escalated at the DMO level to the Secretary-General of the Ministry of Transport to expedite procedures and obtain approvals. Additionally, local residents and commuters are constantly engaged to gain their feedback and cooperation when facing inconveniences such as traffic and pedestrian congestion, noise and dust during the construction period.

The Gombak Integrated Transport Terminal (ITT), which will serve as the hub for all inter-city buses operating KL-East Coast routes, is now recording progress after facing technical challenges and land matters. Relocation of utilities and earthworks started in 2017, while MRR2 road widening was required to alleviate traffic congestion and ease bus accessibility into the ITT. Gombak ITT is scheduled for completion in 2019.

The Government has approached public transportation adoption in a sequenced manner whereby the first step taken was to increase capacity through the development of public transport infrastructure. The Government is now further accelerating the utilisation of the public transport capacity by encouraging more users to switch from private modes to public transport through the adoption of push factors.

In 2017, public transport agencies and local authorities began adopting recommendations from the 2016 Travel Demand Workshop to gradually introduce push factors such as the review of public parking rates and reduction of street parking bays, as well as the strengthening of parking enforcement in the KL CBD. DBKL has also created several 'car-free' zones such as on Jalan Petaling and Jalan Masjid India and introduced KL Car-Free Mornings on every first and third Sunday of each month for major streets in Kuala Lumpur. This is a step in the right direction to ensure strong adoption of public transport in the KL CBD and help improve traffic congestion. In addition, SPAD continues to work closely with DBKL to strengthen enforcement on motorists abusing bus and taxi lanes, which will help to reduce congestion on city roads by facilitating mobility for public transport vehicles.

A Ridership Workshop was also held in May 2017 to identify more ways to increase public transport ridership in Greater KL/Klang Valley. The workshop outlined initiatives to attract and retain users by improving service reliability, convenience and affordability of rail and bus services in Greater KL/Klang Valley. The workshop resulted in the formulation of 13 initiatives. Five of the initiatives were implemented in 2017, including the introduction of attractive fare packages and collaborations with local businesses and communities for first- and last-mile connectivity to promote public transport services. In August 2017, Prasarana and ERL launched the enhanced KL TravelPass transport ticket which allows passengers to enjoy KLIA Ekspres airport transfers at a discounted price, with two-day unlimited rides on Rapid KL rail services. To bridge the first- and last-mile gap for rail services, rail and e-hailing operators have also worked together to roll out various promotions and discounts for public transport users.

SPAD will continue its efforts to ensure all 13 initiatives are successfully implemented, thus delivering improved public transport ridership and hence improve utilisation for all public transport modes in the Greater KL/Klang Valley area. For 2018, initiatives which are being considered include tax relief for public transport users, as well as upgrading of bus stops and payment systems.

Planning Urban Public Transport Trips Made Easier With SPAD's myJourney App

Part of the efforts undertaken by the Land Public Transport Commission (SPAD) to make public transport easier to use for commuters is the creation of its journey planner application 'myJourney'. Conceived in 2015, the app aimed to assist commuters in planning their journeys using the public transport network in the Greater KL/Klang Valley area. It covers all stage buses and rail services, featuring real-time information.

Nurul Asyikin Abdul Razak from SPAD's Mobility Division is the project team lead for the myJourney app. Aside from administrative duties, she has also taken the lead in engaging with stakeholders to gather feedback on the app, and working closely with the app developer to rectify issues found within the app. "I also designed the look-and-feel of the app that you see today, which is then translated into the Journey Planner website and mobile app," she explains.

As Nurul highlights, the myJourney app's main features include journey planning, schedule viewing and service alert updates. "The 'journey planning' feature is the key feature of myJourney. To use this, users may key in their desired destination and the app will then show the best journey options, which can also be sorted by quickest journey time, cheapest fare or least walking distance. Users can also view the schedules of their selected mode of transport under the 'schedule' function. In addition, the app features a 'Service Alerts' function, where operators can update any major service disruptions via an operator console developed by SPAD. If the service disruption affects a user while in-journey, the app will provide an option to detour."

Developing the journey planner app has had its challenges. Chief amongst which was ensuring that the routes planned were the optimal ones for every journey. As the app takes into account all modes from all operators, there are hundreds of combinations of results that are possible. There were other technical challenges as well, as Nurul explains: "Obtaining scheduled data from operators was relatively easy, but getting real-time data required a bit more work. All bus stops in Greater KL/Klang Valley are identified and tagged with unique IDs. SPAD also developed a Performance Monitoring Hub System (PMHS) located in our headquarters, which main objective is to monitor the performance of all stage buses. All the data from the PMHS then is pushed to the myJourney platform. SPAD has also directly integrated myJourney with KTMB servers to obtain real-time data on the KTM Komuter service."

Nurul and the SPAD team in charge of the myJourney app will continue to develop it as more public transport data comes in, especially from the LRT3 extension, the MRT SSP line, and all other new bus and rail services. "My hope for SPAD's myJourney app is that it will become the number one app of choice for commuters to use for their journey planning purposes, and a tool that plays a major role in gathering data for public transport users in Malaysia, for the betterment of SPAD's future plans for public transport." The app is expected to be launched to the public in 2018.

Testimonial From Public Transport User

Nurul Fatiah Abdul Aziz

23-year-old Nurul Fatiah Abdul Aziz, a recent University Malaysia Sabah graduate, frequently uses a combination of ride-sharing services – including the LRT, the MRT, as well as buses – to commute to the environmental NGO where she currently volunteers. "Previously, I used to carpool or have my brother send me down, but I no longer have any colleagues living near where I do, so it is easier for me to take public transport," she explains.

Compared to carpooling or having her brother drop her off, Fatiah finds taking public transport to be more predictable and reliable in terms of accurately estimating her arrival times. "For example, if I'm taking the MRT, I know the minutes between each station, so I get to estimate how long it takes me to get to my destination. If I'm driving there, sometimes I get stuck in unexpected jams."

Fatiah also finds taking public transportation easier on her purse. "It's more cost-efficient for me as using either the LRT or the MRT is a cheaper option. When I do occasionally drive to work, petrol takes up a large chunk of my travel budget. By using public transport, I don't have to get stuck in traffic jams or worry about parking," she elucidates.

While Fatiah finds using the LRT and MRT to be a generally pleasant experience, she feels that there is much room for improvement when it comes to bus services, especially in other states. "We could do with more buses in the Greater KL/Klang Valley region which will enable more people to use public transport. In other parts of Malaysia, I hope that the bus services will be improved and become more efficient: they actually still use the olden-day buses in Sabah, for example, or even vans."

> ***"I have many colleagues who live outside of the Klang Valley. A lot of them prefer to use the LRT/MRT because it's way cheaper."***

She thinks that more people in Greater KL/Klang Valley should start using public transport more often. "Switching to public transport would do a great deal for the environment: it would help improve our air quality, reduce noise pollution and improve our health. Additionally, I have many colleagues who live outside of the Klang Valley. A lot of them prefer to use the LRT/MRT because it's way cheaper than using a car where they would have to pay over RM50 each week for petrol. Using public transport cuts that figure by half."

MOVING FORWARD

Many high-impact projects have been completed and significantly reshaped the urban public transport landscape in Greater KL/Klang Valley. The Government aspires to increase public transport modal share and has done so with modal share rising from just 10% in 2010 to 20% in 2015. However, further increasing the public transport modal share against private transport will be highly dependent on changing the public mind-set around public transportation.

Public transport modal share

Year	2010	2015	2020	2030
PT Modal Share	10%	19.6%	25% (target)	40% (target)

Source: 2015 GKL LPT Survey (SPAD)

SPAD's next Public Transport Survey, slated to be conducted in 2018, is expected to provide a clearer measure of the overall impact of urban public transport initiatives in Greater KL/Klang Valley after seven years of NTP progress. The target to achieve a modal share of 25% by 2020 and 40% by 2030 remains challenging. SPAD, which serves as the main regulatory body overseeing this NKRA, has also identified a targeted average daily ridership in the Greater KL/Klang Valley public transport network of 1.6 million by 2020 and will continue efforts towards various initiatives, including capacity expansion as well as travel demand management, that will help to make this target a reality.

Cooperation from the rakyat is essential to fully realise the ambitions of the UPT NKRA. The rakyat should engage their local representative and public transport operators to demand greater accessibility to public transport through measures such as the provision of more frequent services, as well as the construction of new bus stops, park and ride facilities and better pedestrian walkways and lighting around stops and stations. The rakyat also has a shared responsibility to look after public amenities provided, such as bus info panels and the public transport assets themselves to maintain the network and infrastructure for future generations.

As the public transport system becomes more reliable, comfortable and accessible with greater connectivity, more travel demand management will need to be accelerated to enhance the attractiveness of utilising public transportation over private vehicles. New strategies moving forward will look into the issue of reducing private vehicle usage and addressing Malaysians' penchant for driving. The tasks ahead will not be easy, but will need to be undertaken to achieve the UPT NKRA's aspirations for 2020 and beyond.

FORGING INCLUSIVE TRANSFORMATION

YB DATO' SRI ROHANI ABDUL KARIM
Minister of Women, Family and Community Development

Low poverty levels signal a healthy and thriving nation. As a key agenda under the NTP and in line with the country's transformation into a high-income nation, the Government is committed to improve income equality by ensuring economic inclusion of low-income households and eliminating poverty. Since the implementation of this NKRA, Malaysia has recorded a stunning reduction in poverty to just 0.4% in 2016 against almost 4% in 2009.

This has been contributed by programmes such as 1Akhiri Zaman Miskin (1AZAM), which seeks to encourage entrepreneurship among low-income households to improve their income. Currently, 100,420 individuals, who account for 91% of all monitored participants to date, have recorded an increase in income by at least RM300 in any three month period of the assessment year. Furthermore, results from the 1AZAM 2016 Outcome Assessment Study commissioned by the Ministry of Women, Family and Community Development (MoWFCD) showed that the number of 1AZAM participants who were categorised as "poor" decreased from 89.17% in 2009 to 58.69% in 2016, a reduction of 30.48%.

Successful 1AZAM participants are further empowered by the Beyond 1AZAM programme, which enables further business expansion by providing training and entrepreneurship support, access to micro and small business financing and additional mentorship. The programme was launched in 2015 with 1,511 participants and has now recorded a total of 5,674 participants.

Additionally, the e-Rezeki and e-Usahawan programmes, launched in 2016 and 2017, respectively, enable participants to earn additional income through digital platforms and provide them with access to opportunities in the digital world especially in digital economy.

The journey to eradicate poverty is never easy and I applaud all partner agencies who have taken proactive roles in assisting the country's most vulnerable communities. Their relentless support has resulted in new and improved opportunities for the B40 group to break the cycle of poverty. With challenges along the way, the Government will continuously embrace innovation and technological advances to realise the objectives of this NKRA.

PROVIDING LOW-INCOME HOUSEHOLDS WITH INCOME GENERATING OPPORTUNITIES

One of the main KPIs for the 1Akhiri Zaman Miskin (1AZAM) programme is to increase the monthly earnings of programme participants, the progress of which is measured by comparing the participants' incomes before and after receiving the various types of support provided by the programme. Participants are considered to have benefited from the 1AZAM programme if their earnings increase by a minimum of RM300 in any three month period of the assessment year. In 2017, 5,708 out of the targeted 5,150 participants successfully increased their earnings by at least RM300, bringing the total number of successful participants to 100,420 since 2012.

Successful 1AZAM participants are further empowered through the Beyond 1AZAM programme, a follow-up programme for successful 1AZAM participants that is designed to expand their businesses through further training, entrepreneurship support, access to micro and small business financing and additional mentorship. This year, 695 participants were involved in the Beyond 1AZAM programme, all of whom went on to successfully increase their income by at least 20%. In total, 5,674 participants have undergone the Beyond 1AZAM programme, a significant increase from the initial number of 1,511 participants when the programme launched in 2015.

Be that as it may, the quantitative achievements from the KPIs alone are not a full measure of the desired outcome, as the real objective of the initiative is to produce self-sufficient participants who will diligently commit to the 1AZAM programmes and subsequently will be able to lift themselves out of poverty and are prepared to face the unpredictable and challenging realities of the business world. Programme implementers thus play a key role in providing support, motivation and direction to the participants to guide them towards a globally competitive mind-set and to ensure that participants build the confidence to pursue new avenues once they have graduated from the 1AZAM and Beyond 1AZAM programmes.

Distribution of 1AZAM programme equipments in Kapit, Sarawak.

LEVERAGING TECHNOLOGY TO BREAK THE CYCLE OF POVERTY

The Government has identified Digital Economy as a key agenda to drive the country forward beyond its high-income aspirations. To ensure inclusiveness and that citizens from all backgrounds will benefit from this agenda, it is critical that low-income households are provided access to digital platforms which can create income-generating opportunities and act as a gateway to global business.

As such, the e-Rezeki and e-Usahawan programmes were launched in 2016 and 2017, respectively, as digital components of 1AZAM. Implemented by Malaysia Digital Economy Corporate (MDEC), both programmes propel the Government's technology-embracing approach, backed by successful case studies and positive transformation observed in high-growth nations. To especially encourage low-income households from amongst the B40 to utilise these digital platforms to raise their income above the poverty line, the Government has allowed more than one person from each household to participate in the programmes.

Ms. Sharifah binti Dun, 1AZAM participant.

1AZAM catalyses higher income for food stall operator

"My name is Sharifah binti Dun and I operate a food stall, Gerai Chik Pah in Desa Pandan, Kuala Lumpur. I got to know about the 1AZAM programme from friends and customers, and I chose to apply for this programme as it's an aid and not a loan. In 2013, I received the 'Pakej Gorengan' aid worth RM3,000, which includes a stall, wok, ladle, cooking oil, gas and other materials including raw materials.

The aid I allowed me to increase my menu to include fried food. My gross income increased from RM70 per day and now could even reach RM2,000. On average, my daily gross revenue is around RM1,000 and I aim for a comfortable daily gross revenue of around RM5,000 to RM6,000 per day.

In the short-term, I have a plan to get a food truck to expand my business. Once I have the food truck I would like to introduce it and spread the word about it in the "Nasi Lemak Kopi O" television programme. My long-term goal will be to have my own restaurant.

My advice to other participants of the 1AZAM programme is to please try your best to expand your business. Work hard and don't give up.

To those who wish to increase their household income, I would advise them to attempt to venture into new businesses and opportunities. We must work hard to find new opportunities so that we increase our income. If we don't look for opportunities, they would not come by itself."

Improving the Programmes That Improve Livelihoods

Nor Salimah Binti Musa, Head of Delivery Management Office (DMO).

Nor Salimah Musa, Head of the Ministry of Women, Family and Community Development's Delivery Management Office (DMO) for the Raising Living Standards of Low-Income Households NKRA, is the person in charge of 1AZAM Niaga and 1AZAM Khidmat – programmes designed to lift the poor, the extreme poor and the B40 out of poverty by offering small-business starter kits and monitoring support. A total of 39,545 participants have participated in both programmes between January 2012 until November 2017.

"The core part of my work is to plan the 1AZAM Niaga and 1AZAM Khidmat Programmes based on the budget allocation received (from the Government) and ensure its effective implementation", shares Nor Salimah. "After figuring out the allocation available for the year together with my officers, we figure out how to give them to the qualified participants effectively. We also work out the KPIs we would like to achieve for the year.

"Throughout the year, my team and I meet the participants on the ground and perform interviews with those who are interested and eligible for 1AZAM programmes. To those who are eligible, we give out 'starter kits' – packages that help people to start a small scale business. The idea is for participants to receive tools, equipment and raw materials, enough for them to start operating and use the profits to pump it back into their business."

The DMO benchmarks the success of the 1AZAM programme as the increase of household income of more than RM300. Based on an Impact-Assessment Survey conducted in 2016, almost 60% of participants achieved this.

Since taking up the role in June 2017, Nor Salimah has identified three main challenges to the current success rates: lack of an entrepreneurial mindset among participants, smaller profit potential for participants living in rural areas and poor financial management among programme participants.

"These three challenges are tricky to address, but we have some ideas to mitigate it," she shares. "For example, we could award the packages to the persons in the family who show the highest entrepreneurial drive. That might give better business sustainability.

"As for participants in rural areas without many customers with disposable income, we have started thinking of ways to help them sell online, to do e-commerce. We have to adapt to the mentality of future customers, where they expect products and services to come to them instead of the other way around.

"To address the challenge of participants' business sustainability due to poor money management, we have to do more beyond the current financial awareness course built in to the programmes. There are participants who had depleted their whole profit on new smartphones without earmarking a portion of the money to be reinvested in their business. This challenge can be partly mitigated by prioritising the right applicants."

Another part of the role also involves removing as much red tape as possible so her officers can do their jobs effectively, thus serving potential 1AZAM Niaga and 1AZAM Khidmat participants better. "Our goal is to help. From time to time, I revise and improve procedures, forms and processes," she says. Under her lead, the DMO also removed a requirement which excluded those without salary declaration slips, such as farmers and fishermen, from applying for 1AZAM Niaga and 1AZAM Khidmat programmes.

> ***"To address the challenge of participants' business sustainability due to poor money management, we have to do more beyond the current financial awareness course built in to the programmes."***

The DMO also considers feedback received from its stakeholders to further optimise the implementation of the 1AZAM Niaga and 1AZAM Khidmat programmes.

An example of incorporating feedback, packages under the 1AZAM Niaga and 1AZAM Khidmat will be reduced to just 15 pacakges in 2018. "We started with 27 packages originally before finding out some packages were unsuitable or not as profitable to the participants. Therefore, we combined some packages, added some packages, and removed some packages. We didn't have the kedai runcit (sundry shop) package before this, and now we do."

Moving forward, the DMO plans to roll out a new 1AZAM programme – AZAM Belia. "Unlike 1AZAM Niaga and 1AZAM Khidmat Programmes, AZAM Belia will offer mentoring support in addition to aid packages and monitoring," says Nor Salimah. The pilot project will start in 2018 with 100 youths.

Stressing the importance of planning years in advance, Nor Salimah hopes to witness the multiplier effect from successful implementations of all 1AZAM programmes under her purview, that will enable 1AZAM participants to get out of poverty, leveraging the financial support provided by the Government.

The e-Usahawan is a digital entrepreneurship development programme targeted at youth and microentrepreneurs. The programme was made available online in July 2017, and by the end of 2017, 12,300 participants had joined the programme against the targeted 8,110. To date, the programme has generated a total income of RM24.3 million.

> *"It is critical that low-income households are provided access to digital platforms which can create income-generating opportunities and act as a gateway to global business."*

As the e-Usahawan programme only began operations this year, the Ministry has prioritised attracting participants to join the programme. Beginning 2018, however, the Ministry will begin monitoring the number of participants who have successfully generated income through the e-Usahawan programme, with the target set at 2,000 successful participants.

One of the challenges of the e-Usahawan initiative will be to ensure that the programme can be optimised by its participants who come from diverse backgrounds and technological literacy of various levels. Moreover, some participants are not yet fully educated on the effective strategies of online marketing. In this respect, MDEC will continue its efforts to ensure participants are given exposure

1AZAM programme applicant verification session in Lingga, Sarawak.

1AZAM programme applicant verification session in Penaga, Penang.

to technological literacy and online marketing programmes to improve their competitiveness in online entrepreneurship.

Meanwhile, the development of a digital crowdsourcing platform, the e-Rezeki platform, targeted to offer digital-based services to generate income has successfully enlisted a total of 5,898 participants, exceeding the goal of enlisting 5,000 new participants in 2017.

However, the full potential of the e-Rezeki programme has yet to be fulfilled as not all participants have been able to utilise the e-Rezeki programme as a launching pad to garner an increased income that would propel them above the poverty line. MDEC will be intensifying its efforts to educate all e-Rezeki participants on the value of maintaining the programme as a steady extra source of income.

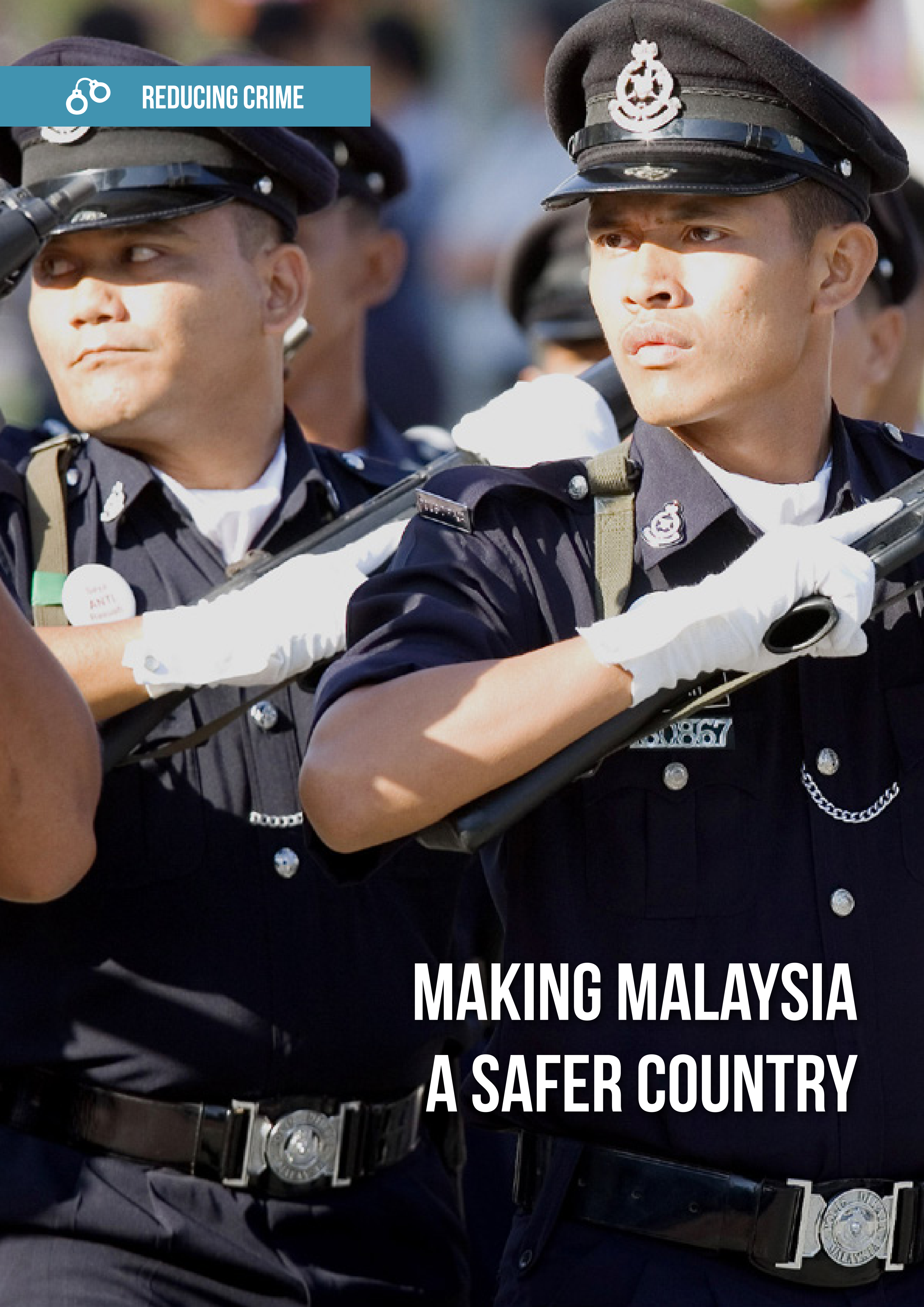
In expanding this NKRA, MDEC expects to train 13,000-14,000 more individuals from the B40 group through both e-Usahawan and e-Rezeki programmes in 2018.

MOVING FORWARD

Future efforts will continue to focus on taking a holistic approach to address and alleviate the struggles faced by financially vulnerable groups in the Malaysian society. Following the Low-Income Households Lab in 2012, the Government has pushed to provide financial literacy education for 1AZAM participants, through collaboration with NGOs, universities and the corporate sector. This has elevated the lives of 5,340 citizens in 2017.

Through these efforts, those in the low-income brackets have managed to increase their income and experience a better quality of life, exemplified by those who have managed to break out of poverty thanks to 1AZAM. Some of these participants have shown exceptional growth and interest in entrepreneurship, and have since moved on to give back to the community through their capacity to create job opportunities, hence ensuring a perpetual cycle of eradicating poverty.

Additionally, the digital agenda will be a key enabler to generate income for the B40 group and eradicate poverty by bringing global business opportunities to their fingertips. To this effect, the Government has demonstrated its commitment by pledging RM100 million in the Budget 2018 to further develop both the e-Usahawan and e-Rezeki programmes. This is in line with the Government's commitment to drive the digital economy, which it expects will contribute more than 20% to Malaysia's GDP by 2020 and ensure inclusive economic growth.



MAKING MALAYSIA A SAFER COUNTRY

YAB DATO' SERI DR. AHMAD ZAHID HAMIDI
Deputy Prime Minister and Minister of Home Affairs

Since the inception of the Reducing Crime NKRA, we have intensified our efforts in reducing overall crime. Our initiatives, when coupled with the commitment and dedication of agencies under the Ministry of Home Affairs have demonstrated much success, as reflected in the staggering 53% decline in index crime over the year 2010 up until 2017.

To get an accurate reflection of crime rates on the ground, the Royal Malaysian Police in 2016 have institutionalised a new, international parameter for index crime calculations. The new method calls for index crime to be calculated per 100,000 population; which enables us to take into account any increase in population. In 2017, we recorded an index crime rate of 306.15 per 100,000 population against the baseline of 352.07 per 100,000 population set in 2016.

In tandem, the Royal Malaysian Police has also taken to utilising the Perception of Crime Indicator (PCI) to better address and measure the effectiveness of crime prevention efforts. In 2017, we recorded a 39.8% reduction in the public's fear of being a crime victim in Kuala Lumpur, Selangor, Penang and Johor.

Recognising that crime must be dealt with from the ground up, we have begun to undertake more holistic approaches in terms of prison inmate rehabilitation and reintegration to reduce the rate of reoccurring offenders and thus directly reduce the rate of potential crimes. Hence, we will continue upskilling prisoners for better chances of resettlement post release, and revise our approach to drug offenses. To further ensure that crime rates are controlled, new initiatives such as the Modern Policing programme and enhanced border security have also been implemented.

In our battle against crime, I would like to thank the Royal Malaysian Police; the rakyat, who are now increasingly involved in community policing; and other NKRA stakeholders such as the Malaysian Prisons Department and the National Anti-Drugs Agency on a job well done. 2017 has emerged as a banner year for this NKRA, but to ensure that progress is maintained, we must remain vigilant. Here, I call for the media to play a greater role in crime prevention, and spreading information regarding deterrent sentences to inhibit potential crimes. Media coverage also builds towards gaining the trust of the rakyat through communicating the effectiveness of our security forces and how they too can be involved. This is especially important towards managing the fear of crime amongst the rakyat.

Moving forward, we will continuously engage with multiple agencies across the criminal justice system, local and national governments, as well as the private sector to encourage them in playing more active roles in combating crime. These efforts, alongside community policing by the rakyat will lead to a safer future for all citizens.

REDUCING INCIDENCES OF CRIME AND MAINTAINING A POSITIVE IMPRESSION

The Royal Malaysian Police (RMP) has continuously worked to reduce the index crime rate on a yearly basis. Since the launch of the NTP, the Government recorded an improvement from 486 reported crimes per day in 2010 to 307 reported crimes per day in 2016. In 2017, the average number of reported crimes per day was 272, showing a continuous reduction of such incidences. Index crime in Malaysia takes into consideration 13 types of crimes which occur with regularity and collectively represent an overall picture of Malaysia's crime landscape. These crimes are divided into property theft (car theft, motorcycle theft, van theft, lorry theft, heavy machinery theft, snatch theft and house break-ins) and violent crimes (murder, rape, armed robbery, unarmed robbery, armed assault, unarmed assault and battery).

> *"The number of reported crimes per day has dropped to 307 in 2016, as compared to 486 in 2010."*

In 2017, the RMP converted its measurement of index crime from the average reported crime per day to crime incidences per 100,000 population, in line with the United Nations Office on Drugs and Crime (UNODC) standards. This measurement method is a more accurate reflection of index crime rates, as it takes into consideration criminal records for a given population size. This new method allows Malaysia to benchmark its statistics against other countries in the world, particularly against other UNODC member states. According to Global Peace Index 2017 produced by the Institute for Economics and Peace, Malaysia is ranked at 29th out of 163 countries. The 2016 result of 352.07 crime incidences per 100,000 population is now used as a baseline value for future measurements. In 2017, the crime rate was recorded at of 306.15 per 100,000 population nationwide, a 13% decrease from 2016.

To ensure continued improvement to the Perception of Crime Indicator (PCI), RMP will continuously assure the rakyat that security within the country is firm and that public safety is the priority of the police force. Following the launch of PCI survey in Kuala Lumpur in 2016, in 2017, the survey was expanded to three additional states – Selangor, Penang and Johor – to receive more substantial data on the rakyat's perception towards crime in other states in the country. As a result of initiatives undertaken above and beyond this NKRA, the PCI has improved from 61% in 2016 to 37% in 2017, with Kuala Lumpur recording a reading of 42%, Penang at 33%, Johor at 35% and Selangor at 37%.

TRANSFORMING POLICING TO BETTER SERVE THE RAKYAT

The Modern Policing programme launched by the RMP in 2015 has contributed to the progress in curbing criminal activities and improving the public's perception of crime. The programme changes traditional policing into one that is service-oriented and people-friendly, with strong reliance on technology and efficiency by streamlining and simplifying decades of old processes and work practices. Additionally, the programme aims to improve the rakyat's confidence in safety and security with the deployment of more officers on the ground and increase the convenience of lodging police reports.

Among the initiatives under the Modern Policing programme are:

- Redevelopment of the simplified police reporting system (sPRS);
- Implementation of a customer rating system in police stations under the Kuala Lumpur Police Headquarters (Ibu Pejabat Polis Kontinjen Kuala Lumpur - IPK KL);
- Establishment of an online checking system (https://sso.rmp.gov.my) which has improved investigation processes by facilitating the timely reporting of each investigation stage;
- Full implementation of Mobile Data Terminals (MDT), a portable computer installed in police mobile patrol vehicles connected to RMP systems that enable officers to perform ground checks on certain individuals in situ;
- Establishment and implementation of an

i-Quarters system for the monitoring of quarter assignment and occupation for police officers;
- Utilisation of mobile tablets for the lodging of police reports at the crime sites, replacing the traditional practice of physically writing out crime reports in the Special Report logbook and Emergency Report logbook in accordance with Section 107 of the Criminal Procedure Code.

Currently, Modern Policing initiatives are carried out on a pilot basis in two police stations in Kuala Lumpur - the Taman Tun Dr. Ismail and Pantai police stations. These police stations have carried out the full list of initiatives with a total of 360 officers positioned on the ground. Moving forward, the programme is planned to be deployed to all 24 stations under IPK KL by 2018 where 11,500 police personnel, or about 10% of the police force, will be engaged on the ground.

The RMP's Investigation and Traffic Enforcement Department (JSPT) also continues to deal strictly with traffic offences with the issuance of POL 257 summons, which are issued directly by police personnel to traffic offenders on-site when the infraction is detected. As of December 2017, the RMP issued 1,941,799 POL 257 summonses, of which 803,561 have been collected. In the year 2018, the RMP will pursue a higher target summons collection of at least 42% from 40% in 2017. The enforcement of summons collection is crucial as it serves as a penalty to offenders, besides educating them on the consequences of their erroneous actions and discouraging traffic offences.

To this effect, RMP has also put in place various measures to ease summons payments such as online channels via MyEG Services, card payments via Maybank automated teller machines (ATMs), numerous computer on-line payment system (COPS) traffic counters found in shopping malls as well as contingent and district headquarters and selected Department of Road Transport counters.

The RMP has determined the strategic direction and action plan for the Modern Policing initiative towards achieving world-class law enforcement standards by 2020. Following the completion of phase two of the initiative in 2017, RMP will focus on its implementation throughout the police force in Kuala Lumpur to ensure holistic safety measures are provided to the people.

E-Reporting Launch at Taman Tun Dr. Ismail Police Station on 10 March 2017.

New Light for Inmates

Khairul Zakran and M.K Manogaran are two men who have emerged successful from the inmate upskilling programme. For both, the programme represented a new lease on life. Khairul, who spent a large part of his youth in prison cherished the programme as it gave him a clean slate. "Once you cross the prison gates, you leave the good and the bad behind. You leave all your credentials, achievements, and grudges at the door"; the time spent in incarceration was spent working on his discipline, focusing on his spirituality and honing his soft skills.

The upskilling programme encompasses activities ranging from baking, wood carving, tailoring, to songket and batik making. For the first few months in prison, Manogaran involved himself in various activities such as pipe packaging and grass cutting, however the impactful change came after enrolling in a driving course offered by the prison in collaboration with Metro Driving Academy.

"The entry requirements are lenient," he said, "which is great because most inmates don't have much to begin with". Metro provides training on how to handle a diverse range of vehicles, from motorcycles and cars to heavier machineries such as lorries and buses.

PKP Haji Wan Ramzan Wan Ahmad, the Assistant Commissioner of Prisons, said the objective of the inmate upskilling programme is to create pathways for prisoners to change their lives upon release from prison. According to him, most prisoners are from the B40 segment, and the Department tries to give them a chance to get out of that segment once they leave. "Many of them earn more than RM2,500 with the jobs they are able to secure with the certification under Metro Driving Academy," he added.

Kajang Prison, Selangor.

What made Khairul and Manogaran stick through the gruelling six months is the fact that the people in Driving Programme treated them as people first, not inmates. "We learn a lot more than how to change windshield wipers and how the engines work, we learn about our bodies – how our body time clocks work, why long-haul drivers get sleepier when its warmer. The programme produces great graduates, we know better than chugging down coffee to keep ourselves awake, we understand how to prioritise the safety of our passengers and cargo," states Manogaran.

Khairul highlighted how inmates are allowed room to think in prison. What they had no time for on the outside, they had plenty of time for in prison. Hence, every upskilling programme he was involved in not only honed his technical skills but also trained his soft skills; "the misconception about prison is that you're not allowed to communicate. But the reality is that you're not walled off from humanity".

This misconception is what adds towards the stigma attached to former inmates once they leave prison and start applying for jobs, society tends to assume that they are one dimensional creatures, shaped by the singular mistake which landed them in prison.

"The vocational unit in the Prisons Department is looking at new methods to help prisoners once they leave prison," said Haji Wan Ramzan. "In the past, training used to be skills driven, but the current training programmes are more holistic and focused on creating career paths for the trainees. Since 2007, we have trained 13,000 inmates."

Having been participants in the programmes, both Khairul and Manogaran attested to the fact that it is easier to get jobs; with the certification. At the end of the upskilling programmes, participants are given a Sijil Kemahiran Malaysia certification. The certification gives them an advantage in their chosen fields. For example, the majority of drivers in Malaysia do not have certification – aside from a licence – to testify for their skills in driving but those who underwent the programme do.

Several years out of prison, and both have moved on from their initial jobs of working with Metro Driving Academy. Khairul, who started off as an administrative clerk at Metro Driving Academy has now made it into the field of private security and is working on programmes where he can give back to the community and create launching pads for those who are seeking to upskill themselves. Manogaran, who began as a driver in Metro has now risen through the ranks to become Chief Driver.

Although the programme brings an abundance of benefits, it is also riddled with challenges and setbacks. "The implementation of training programme as such requires support from the Government, especially in terms of funding," said Haji Wan Ramzan. "Funding is required to bring in professional instructor and develop infrastructure."

The most disheartening thing perhaps is the attitude of fellow Malaysians towards ex-inmates. Both Manogaran and Khairul stated that usually, family and friends turn their backs on ex-inmates when they need the support the most. "The main inhibitor is how people perceive us," says Khairul, "I came out of prison with dignity, but when people treat you like castaways, that's what demotivates you."

The society needs to change their mentality and remove their ill judgments towards ex-prisoners. Instead, they should support them as best as possible to re-adapt the society. "Prison is the last place you want to go, and everyone in the society play a role in reducing the rate of recidivism," stated Haji Wan Ramzan. "Prison changes a person," says Manogaran. "I call out for more people to accept us in the working world. Give us a chance to prove ourselves".

Khairul Zakran (left) and M.K Manogaran (right), participants of the inmate upskilling programme.

ENGAGING THE PUBLIC ON THEIR SAFETY NEEDS

To further understand the public's concerns about crime and safety, the Government has completed the development of a Community Engagement Index (CEI). The CEI aims to restructure and streamline the way the RMP engages with the public by measuring three criteria: percentage of engagement (footprint); intensity of engagement (contact hours); and effectiveness of engagement (thumbs up).

Inspector General of Police, Tan Sri Dato' Sri Mohamad Fuzi Harun observing PDRM's newest asset, the Kawasaki KLX250 scrambler.

This initiative consists of two community engagement platforms - the 'Talk to Us' programme in Kuala Lumpur, as well as the Hari Bertemu Pelanggan rolled out in 13 states. The purpose of these two platforms, particularly the 'Talk to Us' programme, is to get feedback from the public on how the police can improve their performance to improve the public's sense of security. Among the feedback received from the public include for the police to patrol certain areas more often at night as well as improving the friendliness and approachability of the police. These programmes are aligned to the RMP motto, "Polis dan Masyarakat Berpisah Tiada" (there is no separation between the police and the community). In 2017 alone, RMP carried out 1,687 engagements nationwide.

ADOPTING A HOLISTIC APPROACH TO COMBAT DRUG OFFENCES

Substance addiction remains a major concern in the country and the Government has continued its relentless effort to eradicate this social problem. In 2017 the police uncovered 18 drug-processing laboratories and detained 73 members of drug syndicates. Drugs worth about RM198.54 million were seized during the police operations.

Under the NTP, the Government has adopted a new approach to drug treatment and rehabilitation programmes to combat addiction. Spearheaded by the National Anti-Drugs Agency (AADK), the following measures are among those which have been undertaken to address this:

- Establishment of drug rehabilitation centres (PUSPEN) to identify and separate drug users according to their type of addiction and treatment needs. NGOs are encouraged to scale up operations by running selected PUSPEN or halfway houses, enabling them to apply their professional experience and provide higher rehabilitation rates to a larger number of drug users;
- Upgrading two Cure & Care Service Centres (CCSC), formerly known as Narcotic Addiction Rehabilitation Centres, into Mini Cure & Care 1Malaysia Clinics (Mini C&C) in Blackspot areas; and
- Amending the Drug Dependents Act 1983 to make non-compliance a seizable offence to reduce the time taken to arrest non-compliant People Under Supervision (Orang Kena Pengawasan – OKP), as no warrant will be necessary.

The battle against drug abuse should be a combined effort of both the Government and the community. Towards this end, the Community Empowerment Programme (CEP) seeks to enlist the community in the fight against substance abuse. The primary vehicle for the CEP is the Community Battery – Drug Abuse Prevention Strategies (COMBAT-DAPS), a product of a collaboration between Universiti Sains Islam Malaysia, the Asian Centre for Research on Drug Abuse (ACREDA) and AADK.

The goal of COMBAT-DAPS is to provide the community with knowledge on drug abuse prevention. Information shared with participants during these sessions include the types of drugs and its respective effects, law and policies in Malaysia pertaining to drug usage and abuse as well as the state of drug addiction in Malaysia.

> ***"The previous methodology of 'arrest, incarcerate and quit cold turkey' is being replaced with a health-based system."***

Drawing from the practices of COMBAT-DAPS, an Empowerment Expansion Framework was developed and implemented in additional districts. The Empowerment Expansion Framework focuses on active community participation at the district level within each state, capacity-building for community leaders in terms of programme management, as well as building a supportive environment. The process of creating a supportive environment involves eight strategic partners (Government agencies and associations) and six smart partners (NGOs) to participate in programmes and activities.

The strategic partners comprise of the Ministry of Youth and Sports, the RMP, the People's Volunteer Corps (RELA), the Department of Islamic Development Malaysia (Jabatan Kemajuan Islam Malaysia - JAKIM), the Department of Welfare, the Ministry of Education and the Department of National Unity and Integration. Smart partners consist of PEMADAM, Pengasih Malaysia, alliances consisting of youth associations such as Belia 4B, private entities, SKUAD 1Malaysia, various NGOs and other associations.

The target for 2017 was to roll out the Community Empowerment Programme in 50 high-risk areas out of the 178 areas identified. As of 2017, AADK had implemented this programme in 64 high-risk areas, surpassing its target by 28%.

Initiatives to decriminalise drug addiction are also under way. The previous methodology of 'arrest, incarcerate and quit cold turkey' is being replaced with a health-based system which emphasises community involvement and provides end-to-end treatment. Following the success of a pilot project in the district of Besut in Terengganu in 2016, where 54% of those who registered for treatment managed to stay off drugs, AADK is now empowered with an enforcement role under Section 3(1) of the Drug Dependants Act (Treatment and Rehabilitation) 1983 (Act 283) in a total of 106 districts nationwide. This empowers AADK officers to take any person reasonably suspected as a drug dependent into custody. The person in custody can then be detained for a period not exceeding 24 hours at any appropriate location to undergo urine tests.

The legislation enables AADK to act immediately with the goal of curbing drug abuse. Among operations carried out under this legislation are Ops Cegah, Ops Bersepadu and Ops Sepayang through collaborative efforts between AADK and RMP. In 2017, AADK executed 5,431 operations and conducted 40,800 urine tests. Out of the total number of tests, it was found that 21,941 (54%) of those detained tested positive for drugs.

GUIDING PRISONERS TO A BRIGHTER FUTURE

Since the launch of the NTP, prison-related initiatives have focused on increasing support to prisoners upon their release to start a new life. To this end, the Prisons Department of Malaysia has been taking proactive and pragmatic measures in the rehabilitation of convicts through the Human Development Programme.

Rehabilitation programmes were developed for the inmates after taking into consideration criteria such as crime categories, level of education, age and level of religious practice among the inmates to provide inmates with a sense of structure, belonging and purpose. The adoption of the rehabilitation approach is based on the philosophy of "potential prisoners to recover with integrated assistance and guidance".

The selection process for potential skills training programme participants is based on the completion of two structured rehabilitation phases; namely the orientation phase (first phase) which restores the inmates to optimal physical and mental health, shapes and builds their discipline and helps inmates adapt to prison life; followed by the character building phase (second phase) which cultivates good behaviour through worldly and spiritual knowledge.

Kajang Women's Prison, Selangor.

The inmates are then enrolled in their respective skills training programmes which equip them with skills to increase their employability and registers them in job placement schemes which will help ensure that they have the means to support themselves upon release.

This year, the Prisons Department continued its certified skill training programme, a technical and vocational skill certification under the 'Sistem Latihan Dual Nasional' (SLDN) in conjunction with the Construction Industry Development Board (CIDB). The programme is certified by the Ministry of Human Resources' Department of Skills Development and Department of Manpower as well as the Ministry of Works. This training programme is designed for Malaysian inmates in their third phase of the Human Development Programme, which prepares prisoners for re-integration into society.

The SLDN programme offers training courses endorsed by the Department of Skills Development. The training and certification are conducted in-house, with 47 National Occupational Skills Standard (NOSS)-based courses offered in 42 prison institutions and community rehabilitation centres in the country. It is supervised by officers from the Department of Skill Development who are the coaches and trainers, SLDN coordinators and External Certification Officers. Among the courses offered under the programme include those in the field of food preparation and baking, sewing, fabrication, furniture-making, wood-carving, basic landscaping and construction works, mechanical engineering, automotive services, pottery, plumbing, metalworking and farming.

The CIDB programme is a training and examinations based programme assessed by educators from the Construction Academy of Malaysia. CIDB offers four construction related courses; these are fixed ceiling installation, wet trades, landscape construction and wiring installation for buildings.

In tandem, short-term courses (Sijil Asas Kemahiran Jangka Pendek) are offered to inmates with shorter sentences and those otherwise ineligible for the other two types of skills training. Through these short-term courses, inmates can learn vocational skills which will serve as a foundation to build a career after they have served their time in prison. Among these courses are basic construction, air conditioner repair and maintenance, pickle and sauce making, traditional cake-making, mushroom farming, bee farming, vegetable farming, site preparation for planting seedlings and vegetables, reflexology as well as hair-cutting.

> *"Inmates are equipped with skills to ensure they have the means to support themselves upon release."*

As of 2017, 2,854 have participated in the skills training programmes against 2,265 inmates in 2016. Out of the total 2,854 participants, 2,073 are enrolled under the SLDN programme, 141 under CIDB and 640 under the Sijil Asas Kemahiran Jangka Pendek.

Budgetary considerations remain a challenge for the Department of Skills Development, as the development of infrastructure and the assignment of resources to provide the training requires budget allocation from the Government.

To improve the correction process, the Prisons Department will seek to strengthen its rehabilitation programme and enhance post-release support, which is to increase the number of personnel and respective Government agencies involved in the process of deporting immigrant convicts.

The Prisons Department has also developed a standard operating procedure (SOP) in accordance to the Offenders Compulsory Attendance Act 1954 which enables the Department to divert eligible prisoners to rehabilitation centres, instead of undertaking immediate imprisonment for their drug-related or minor offenses. The Act allows for minor sentences to be served outside prisons via community sentences under the supervision of the Prisons Department if the offender is a first-time offender, or has been charged with less serious crimes. Community sentences for rehabilitation are opted for to deter re-offending and recidivism. This initiative is in line with the Government's effort to move towards alternative sentencing and streamlined criminal processes.

> ***"AKSEM has implemented 145.8% of the quick-win border security initiatives at our borders fronting Southern Thailand."***

In addition, the recent Prisons Lab concluded in 2017 recommended the amendment to the Criminal Procedure Code, Compulsory Attendance Act 1954 and drug-related Acts for dependents to attain treatment outside of prison by the year 2020.

The Department of Prisons also aims to improve the correction process to achieve a 5% recidivism rate from the current 8.9% rate by year 2020. The current recidivism rate has caused overcrowding in prisons, with an average overcapacity rate of 17%. By the year 2020, the Prisons Department targets to reduce prison overcrowding by diverting two-thirds of eligible prisoners by requiring eligible prisoners to undergo effective rehabilitation programmes.

ENSURING THE SAFETY OF OUR BORDERS

The Border Security Lab, which was conducted in 2016 and involved 16 Government agencies, was aimed at developing an amiable framework for border relations and a programme to secure Malaysia's land borders (primarily with Thailand) against illegal border crossings and smuggling. The programme encapsulates 21 specific initiatives, including the formation of the Border Control Agency (AKSEM) in 2017 to drive the overall programme.

The 21 initiatives are categorised under six focus areas as follows:

- Streamlining Border Processes and Policies;
- Changing Border Community Mindset and Culture;
- Improving Physical Infrastructure, Manpower and Technology;
- Strengthening Border Personnel Capabilities;
- Fostering Greater Inter-Agency Cooperation; and
- Inculcating a Culture Which Emphasises Integrity and Honour.

As of 2017, AKSEM has implemented 145.8% of six quick-win initiatives at several Immigration, Customs, and Quarantine Security Complexes (ICQS) located at the Kedah and Kelantan borders fronting South Thailand. The quick wins achieved are border security personnel accreditation training and development, introducing and implementing due diligence and integrity testing, quarterly team-building sessions, stricter enforcement on border communities, job rotation every six to 12 months at the border and a border awareness programme. These were made possible with the passing of the Malaysia Border Control Agency (AKSEM) Act 2017 as well as the amendment of National Security Council Directive No. 15, where the new framework will be enforced at the Malaysia-Thailand, Sarawak-Kalimantan and Sabah-Kalimantan borders.

Aside from AKSEM, the main agencies involved in border security include the police, General Operations Force, Customs Department, Immigration Department and AADK. Based on the National Blue Ocean Strategy (NBOS), RELA may also be deployed, especially in Sarawak, where there are many illegal pathways to cross along the long and porous Kalimantan border. Moreover, RELA has been lending extra manpower to the police, the CIQ (Customs, Immigration and Quarantine) and to guard border posts.

RMP Paves the Way for A Holistic Approach to Crime-Fighting

The Royal Malaysian Police (RMP), which has been steadily improving its community outreach efforts, should be applauded for its various engagement activities, according to Choo Lub Khung, Secretary-General of the BK5 Bandar Kinrara Puchong Residents' Association. "The people are now aware that at the various Control Centres, RMP officers work round-the-clock to ensure that their safety is secured at all times," Choo elaborates. He believes that given this increased awareness, the people are more willing to become the RMP's eyes and ears on the ground.

This is a good sign, as it is Choo's opinion that crime prevention involves all parties – individuals, communities, businesses, non-government organisations, and all levels of Government agencies. As Choo sees it, the recently developed Perception of Crime Indicator (PCI) and Community Engagement Index (CEI) are benchmarks on people's perceptions towards crime, but results show that the RMP still has a long way to go as far as this is concerned.

"The fear of crime happening and reality of crime happening are two separate issues. The people feel that the crime rate is getting worse, as most of them hear more of crimes happening via news media, but do not check the facts. Then they amplify the news of the crimes by sharing to their group of friends via the social media," he says.

Nonetheless, Choo acknowledges the work that the RMP has put into transforming itself into a community-oriented organisation. "The RMP today is more caring towards the community, and has become a service-oriented organisation looking after crime prevention and community safety," he adds.

However, Choo believes that there is still room for improvement in this regard. "This transformation should not only be from top to bottom, but also bottom-up. The RMP must be more proactive; using new media to amplify crime prevention tips to the crime prevention pillars of society identified in the various districts. Through them, such tips will reach the rakyat at a faster speed," he elaborates.

Indeed, both the PCI and CEI provide valuable feedback on the community's feelings, which the RMP can then take into account as it works towards a safer Malaysia, Choo points out. "The community deserves to not only be safe but feel secure as well. Our quality of life would also be improved, as whether we feel safe or unsafe impacts our quality of life."

BK5 Bandar Kinrara Puchong Residents' Association with the Royal Malaysian Police (RMP).

MOVING FORWARD

The Reducing Crime NKRA has achieved great strides in lowering Malaysia's index crime rate over the course of the NTP. Meaningful change was made possible through concerted efforts across the criminal justice system. In upholding this progress, the public as well as the agencies under the Ministry of Home Affairs, such as the RMP, Prisons Department and AADK, must play their part in the combat and prevention of crime, detection and arrest of offenders, bail and remand, case preparation, and resettlement and rehabilitation, amongst others.

This NKRA will continue to strengthen Malaysian borders to effectively halt illegal smuggling activities. Additionally, the RMP, in assuring the safety of the rakyat, will continue with community-oriented policing which focuses on building ties and working closely with the community. Proactiveness in addressing public safety concerns will be continued to cement sustainability against the country's landscape of growing urbanisation and inter-state migration.

To ensure a year-on-year curtailment of crime in the country based on the given populace, all Malaysians must be involved. The public must play its role in practising greater vigilance and keeping a watchful eye over happenings within their neighbourhood. In addition, forging a two-way relationship between the public and the police will strengthen efforts in combating crime.


FIGHTING CORRUPTION
RAISING THE
STANDARDS
OF INTEGRITY

YB SENATOR DATUK PAUL LOW SENG KUAN
Minister in the Prime Minister's Department

The Malaysian Government remains firmly committed to eliminating the scourge of corruption. This has necessitated tough reforms which require buy-in from all parties. While further efforts are needed for corruption to be eradicated within our country, we must also acknowledge that significant strides have been achieved since the Government made fighting corruption a priority under the NTP.

This is reflected by the drafting of the Corporate Liability Provision in the MACC Act, which marked an important step in holding companies accountable for corrupt practices, as well as the introduction of the MS-ISO 37001 Anti Bribery Management System to help organisations enforce measures that meet internationally recognised anti-bribery practices and controls. I have no doubt that these developments will contribute towards enhancing a culture of honesty and integrity in the nation.

I am also pleased to note that the Malaysian Anti-Corruption Commission (MACC) has been intensifying efforts in investigating and resolving corruption cases. In 2017, MACC completed investigations and secured conviction for 80.7% of corruption cases. The MACC will continue to strengthen its enforcement in battling corruption as long as it exists.

In tandem to the initiatives above, the National Integrity and Governance Division (BITU), which was established in 2015, has been upgraded to become the Jabatan Integriti dan Tadbir Urus Negara (JITN) to strengthen the institutional infrastructure for anti-corruption. This will support and sustain the NKRA through better coordination of stakeholders and capacity-building of civil servants to further improve the delivery of good governance, integrity and compliance in human rights practices. JITN is also collaborating with external organisations such as the Business Integrity Alliance (BIA) and Malaysian Institute of Corporate Governance (MICG) to promote good governance initiatives within the private sector, and improve knowledge and exposure to best practices in corporate governance.

These initiatives are critical to improving our score on Transparency International Corruption Perception Index (CPI). Malaysia was ranked 62nd out of 180 countries worldwide in 2017, with our stated goal to be among the top 30 countries by 2020. As such, a workshop was conducted in September 2017 to improve Malaysia's CPI ranking, following which seven initiatives concerning prevention, enforcement and perception are currently being pursued.

With strong political will and determination to curb corrupt activities, fraud and other abuses in a much more pragmatic and holistic approach, I am confident that Malaysia will achieve a higher level of integrity by 2020.

TAKING A STRICT STANCE AGAINST CORRUPT PRACTICES

The NTP Roadmap has identified stricter enforcement and compliance as key elements to reduce corruption in Malaysia.

In 2017, 58.9% of corruption cases were successfully disposed within a year of registration in 2016. The Court also convicted 80.7% of the total number of cases. These achievements can be attributed to the effectiveness of the Special Courts for Corruption and MACC investigations. Additionally, 1,405 of the 1,695 cases listed in the 2015 Auditor General's (AuG) Report were resolved in 2017, giving a resolution rate of 76.5%.

The integrity of enforcement agencies is another focus area identified under this NKRA. As outlined by the GTP Roadmap in 2010, the effectiveness of these agencies, such as the Royal Malaysian Police (RMP), Royal Malaysian Customs Department (RMCD), the Immigration Department and the Road Transport Department (RTD) had come under scrutiny due to an increase in crime and apparent inaction towards offences at that time. This paved the way for the establishment of the Enforcement Agency Integrity Commission (EAIC) in 2011 to strengthen the integrity of the various enforcement agencies under its purview, with the goal of building public confidence in these authorities. As of 2017, 343 cases have been resolved, representing 64% of total registered investigation papers between 2012 to 2017. During the year, the EAIC held two public hearing on the death of detainess while in custody.

> ***"MACC successfully completed investigations on 58.9% of corruption cases within a year of registration and convicted 80.7% of the total number of cases."***

Meanwhile, to better understand issues faced by the agencies and forge closer cooperation with them, the EAIC visited 32 agencies in 2017, including the Penang National Anti-Drug Agency,

Special Corruption Court Judges Seminar held in November 2017.

Sabah Police Contingent Headquarters and the Johor RTD.

Parallel with the responsibilities of anti-corruption authorities, the rakyat also plays a pivotal role in fighting corruption. The Whistleblower Protection Act 2010 (Act 711) encourages reporting of alleged crime, corruption as well as abuse of power amongst others. The protection afforded by the Act encompasses confidentiality of information and protection from lawsuits. It also protects against detrimental action, a term generally used to describe negative repercussions that arise from revealing information. Such repercussions can range from the threat of physical harm to discrimination at the workplace.

Hence, the Act offers a trusted channel which protects those who reveal information, thereby encouraging more whistleblowers to come forward. This helps foster an environment of zero tolerance towards corrupt practices and any other forms of wrong-doing. However, efforts need to be strengthened to increase the public's willingness to come forward to provide information on integrity and corruption issues.

To further encourage public participation in anti-corruption, an online reporting system called the Complaints Management System (CMS) was set up for the public to lodge complaints or provide information on corruption. Public officials may also be rewarded for reporting corrupt practices. The Anti-Corruption Revolution Movement (Gerakan Revolusi Anti-Rasuah, GERAH), a public anti-corruption campaign and engagement platform which promotes and encourages the public to report corruption, has also been established. Since the 4th GERAH campaign, MACC has successfully signed up 160,000 individuals. The efforts undertaken by GERAH are supported by Sahabat GERAH, members of the public who register as friends of GERAH and are willing to support MACC in the battle against corruption.

Finally, the Corruption-Free Pledge (Ikrar Bebas Rasuah, IBR) initiative was also introduced, which consists of a written open pledge by individuals from public and private organisations to express anti-corruption sentiments and to report such activities as well.

STRENGTHENING THE FRAMEWORK AGAINST CORRUPTION

Fighting Corruption, Together

Combating corruption will require the commitment of all stakeholders. With this in mind, the Government has worked diligently to include the business community and civil society in its anti-corruption efforts. Both private and Government-linked companies are encouraged to sign a Corporate Integrity Pledge. Public-private collaborations to promote integrity and good governance in private entities are based on the Corporate Integrity System Malaysia (CISM) framework which is modelled to support the corporate integrity initiatives in Malaysia. These include enhancing corporate governance, business ethics and corporate social responsibility. These efforts will require long-term commitment and a deep sense of ownership from all stakeholders for the objectives of the CISM to be fully met. To date there are 1,119 CISM signatories.

> ***"223,167 integrity pacts have been signed involving 8,681 projects worth RM13 billion as part of the initiatives to promote transparent Government procurement processes."***

It has also been mandatory for companies participating in Government Procurement to sign the Integrity Pact. The Integrity Pact is an initiative of the Fighting Corruption NKRA under the Government Transformation Program (GTP) that began in 2010, which aims to enhance transparency in the Government procurement processes as well as to help combat corruption. Up to 31 December 2017, 223,167 integrity pacts have been signed, involving 8,681 projects worth RM13 billion.

Ensuring the Integrity of Corporations

The proposed introduction of a Corporate Liability Provision as part of the amendment in the MACC Act 2009 aims to dissuade companies from directly or indirectly abetting its employees to engage in corrupt practices. The provision would make companies liable for acts of corruption by its employee unless the company in question is able to prove that it has adequate procedures in place to prevent such acts. It will also strengthen the MACC Act which currently cannot hold board members, chief executive officers and corporate bodies directly liable for the corrupt practices of their employees. In some cases, the employee is caught and punished, although it was the company that gave the offending instruction to the employee. The Corporate Liability Provision aims to address such occurrences and has been recommended by the Organisation for Economic Co-operation and Development (OECD) as one of the best legislations in curbing corruption. This new provision is scheduled to be tabled in Parliament in 2018.

The Corporate Liability Provision is to be introduced by 2018 and is supported by the adoption of the ISO 37001 standard into Malaysia's Anti Bribery Management System (ABMS – MS-ISO 37001), which will further support existing anti-bribery controls. It was launched on 27 October 2017 and will help bring Malaysia in line with the United Nations' Conventions Against Corruption (UNCAC). The standard prescribes a specific series of measures to help organisations prevent, detect and address bribery. Among the prescribed measures are adopting an anti-bribery policy and appointing a person to oversee anti-bribery compliance, training and risk assessments.

For now, compliance to MS ISO 37001:2016 is being implemented on a voluntary basis until the standard is gazetted or referred to in relevant Acts or regulations. To date, 11 organisations including corporations, public agencies and local authorities have been awarded MS ISO 37001:2016 certification by SIRIM QAS International Sdn Bhd.

Increasing Oversight into the Political System

Reforming the governance of political financing has been a priority to fight corruption under the NTP, with the rakyat calling for greater transparency in sources of political funding over the years. Heeding this call, the YAB Prime Minister formed the National Consultative Committee on Political Financing (NCCPF) on 14 August 2015 to construct a regulatory structure which comprehensively addresses political financing.

> ***"The passing of the Political Financing Bill will signal a revolutionary transformation to improve the integrity of the Malaysian political system."***

2017 saw the formation of a Special Committee for drafting the Political Financing Bill. This draft law takes into consideration feedback received from all parties during the NCCPF engagement period held since 2016. Once the Bill is tabled and passed in Parliament, it will signal a revolutionary transformation to improve the integrity of the Malaysian political system. 32 recommendations are being considered in the new Bill including political donations and its administration, expenditure, disclosure and state-funding. The drafting of this Bill is currently being undertaken by the Malaysian Institute of Integrity (IIM).

The Corruption Perception Index (CPI) Workshop is conducted with the aim of improving Malaysia's CPI score.

19 judges from 14 states attended the Special Corruption Court Judges Seminar.

TAKING PRIDE IN GOOD GOVERNANCE

The effectiveness of the country's efforts against corruption requires compliance to anti-corruption controls and enhancement in integrity standards. This in turn requires improvements in awareness and training of related officials in organisations, especially those engaged in processes with high risk of corruption and bribery. In light of this, the Government is collaborating with groups such as the Malaysian Institute of Corporate Governance (MICG) and the Business Integrity Alliance (BIA) to provide guidance for organisations to improve governance and prevent corruption in their ranks. In 2017, MICG and BIA successfully trained 53 public-listed companies (PLCs) and government-linked companies (GLCs).

In the area of training for the courts, Special Corruption Courts Judges Seminars have been held annually since 2011 with the aim of enhancing the comprehensive understanding of the law provisions as provided in the MACC Act 2009. Training for judges on corruption includes a range of topics from writing legal reasoning to the intricacies of dealing with several types of challenges in handling corruption cases. From 2011 to 2018, a total of eight courses have been held to train Special Corruption Court Judges and involved 152 judges throughout the country. This course is generally focused on the application of national law on issues dealing with corruption. In 2017, 19 judges from 14 states attended a three-day course held in Shah Alam, Selangor.

JITN's crusade against corruption

Zaeidah Mohamed Esa, Director-General, National Integrity and Governance Department.

In the fight against corruption, the National Integrity and Governance Department (JITN) stands at the forefront. Originally established as the Integrity and Governance Division (BITU) of the Prime Minister's Department, prior to its upgrade as a standalone department in November 2017, JITN is the Delivery Management Office (DMO) monitoring the implementation of the Fighting Corruption NKRA initiatives, acting as the central agency for the management of integrity, governance, and human rights in both public and private sectors.

As Director-General of JITN, Zaeidah Mohamed Esa's responsibilities include overseeing and monitoring the overall implementation of JITN's core functions, based on its principles of preventing corruption through the transformation of Malaysian mindsets and attitudes. This involves establishing good governance practices, procedures, and regulations that contribute to the reduction of corruption in this country.

"JITN is committed to carrying out its responsibility to monitor all NKRA initiatives and ensure they are successfully implemented. These include setting up the Corruption Perception Index (CPI) Workshop, with the aim of improving Malaysia's CPI score from 49 in 2016 to 55 by 2020; and promoting the Anti-Bribery Management System (ABMS) to encourage companies to undergo MS ISO 37001 certification, amongst others," Zaeidah explains.

She also stresses that although JITN is the vanguard in the fight against corruption, it does not stand alone. Within the civil service, the heads of the various integrity units in all government ministries, departments, and agencies are responsible to help drive change towards strengthening integrity and good governance internally. "They serve as transformation agents within their respective government bodies, and are answerable to me, as the Director-General of JITN. This new chain of command will help to foster a strong organisational culture of accountability, with zero intolerance towards abuse of power and corruption."

Beyond this, courses for judges serving in the Special Courts for Corruption were held in collaboration with the Federal Court of Malaysia's Chief Registrar's Office. JITN also worked together with the Malaysian Anti-Corruption Commission (MACC) to maintain the Corporate Integrity System Malaysia (CISM) web portal.

"Corruption happens in the private sector as well. Through strategic collaborations with Business Integrity Alliance Berhad and the Malaysian Institute of Corporate Governance, the agenda of empowering integrity and private governance in the private sector can be implemented more effectively. JITN is also involved in funding Malaysian representatives to the United Nations Convention Against Corruption, and the International Anti-Corruption Academy; both of which provide solid avenues for multilateral cooperation in various corruption prevention initiatives," Zaeidah highlights.

The Director-General acknowledges that corruption is not found only in Malaysia, or only in public or private sectors. "It exists everywhere, whether in international institutions, religious institutions, voluntary bodies, or sports organisations. I personally think that the effort to fully curb corruption at all levels is the ultimate challenge for JITN. However, fighting corruption should begin with a proactive solution; hence, it is JITN's duty to ensure that integrity and good governance is successfully incorporated and cultivated, especially in all government systems and policies."

All of these efforts and planned initiatives are believed to contribute to the reduction of corruption in Malaysia, and at the same time, aligning people's mindsets with Malaysia's NTP goals of becoming a high-income developed nation. "The NTP's aim is not just about achieving a higher growth rate, but also one that is sustainable and inclusive. It has made the economy more resilient and sustainable, in my opinion; Malaysia's aim of achieving developed-nation status by the year 2020 is not too far to reach."

MOVING FORWARD

In the coming years, we can expect renewed efforts to improve Malaysia's CPI ranking and ensure stronger improvements in transparency and integrity from the public service delivery. The newly established Jabatan Integriti dan Tadbir Urus Negara (JITN) will be the lead agency to monitor and coordinate activities related to the Fighting Corruption NKRA.

To ensure that Malaysia's CPI ranking improves in the years ahead, a workshop was held from 5 to 7 September 2017 to address the decline in the nation's CPI ranking. The key outcomes from this workshop include seven priority initiatives that were identified to address 13 major issues highlighted concerning prevention, enforcement and perception. In 2018 we will implement these initiatives with the relevant stakeholders.

Aligned with the introduction of the Corporate Liability Provision under the MACC Act and as a safeguarding measure to reduce corruption and promote good governance, the Government will also encourage companies to obtain the certification of MS-ISO 37001. As the standard can be used as anti-corruption compliance guidelines for all parties in line with the inclusion of the Corporate Liability Provision in the MACC Act 2009, it is expected to encourage more companies to obtain certification to show compliance with the new provision.

AIDING THE RAKYAT IN MANAGING LIVING COSTS

YAB DATO' SERI DR. AHMAD ZAHID HAMIDI
Deputy Prime Minister and Minister of Home Affairs

Over the course of the NTP, we have had to review our fiscal measures to allow for sustainable socio-economic growth, while ensuring that this growth is not achieved at the expense of those in need. In view of this, the Government has introduced measures to help cushion the public from the impact of living costs.

Managing the cost of living is not unique to Malaysia. It is a phenomenon faced by citizens all over the world. According to the Worldwide Cost of Living Survey 2017 by the Economic Intelligence Unit, the global cost of living has risen to 74% while taking an average of the indices for all cities surveyed using New York as base city, mainly due to deflation and currency devaluations. Singapore remained the world's most expensive city for the fourth straight year, followed by Hong Kong and Zurich. Kuala Lumpur, meanwhile, was ranked 96th out of the 133 cities surveyed.

The disbursement of Bantuan Rakyat 1Malaysia (BR1M) serves as the Government's primary tool to help manage the cost of living for Malaysians. Since 2012, RM25.62 billion in direct aid has assisted over 7 million individuals and families to ease payments of expenses such as monthly bills, school fees and medical costs.

In addition to providing immediate relief through BR1M, the Government also seeks to formulate long-term strategies to address living costs. In 2016, the foremost agenda was focused on enforcements to prevent price hikes in staple products by unscrupulous traders following the introduction of GST, whereas in 2017, urban poverty was made our main priority as living costs are often higher in urban areas.

The Government has also listed several medium- and long-term strategies to manage the production cost of food products which would be carried out jointly by various public and private sectors via the National Blue Ocean Strategy. One of the strategies is to optimise production to ensure enough supply meets demand particularly for farm outputs, livestock and fisheries. A committee has been formed to study costs throughout the supply chain to prevent price manipulation by middlemen. Concurrently, various initiatives have been put in place to ease the rakyat's financial burden on food expenses such as the My Farm Outlet (MFO), Q'Fish Programme and the National Food Warehouse. To help mitigate the impact of living costs for local university students, especially those in big cities, the Government has introduced the SiswaSave programme and the Kad Diskaun Siswa 1Malaysia.

In ensuring that the Rakyat has continued access to affordable housing, the Government has identified household needs, house pricing trends and specific locations as fundamental factors in implementing housing schemes and initiatives which are based on the Rakyat's needs. The Projek Perumahan Rakyat (PPR), PPR Rent-to-Own, Housing Loan Scheme (SPP) and MyDeposit are among such initiatives which are targeted at the low- and middle-income group.

It is my hope that with our holistic approach, we will be able to provide better targeted channels to aid those in need.

EXTENDING A HELPING HAND TO THOSE IN NEED

Bantuan Rakyat 1Malaysia (BR1M) accounts for the Government's primary method to deliver immediate relief to the public to manage living costs, which rise naturally over time.

Since its implementation in 2012, BR1M has put a total of RM25.62 billion in cash directly into the hands of over seven million individuals and families. In ensuring inclusiveness of the aid initiative, BR1M is available for eligible Malaysians nationwide, with 1.4 million beneficiaries from Sabah and Sarawak.

> ***"Since 2012, BR1M has provided over seven million individuals and families with RM25.62 billion in direct cash assistance."***

In 2017, RM6.31 billion was disbursed to 7.22 million eligible individuals and families. The recipients comprise 3.84 million households earning below RM3,000 per month which received RM1,200 for each household; 392,319 households earning between RM3,001 and RM4,000 per month which received RM900 for each household; and 2.98 million unmarried individuals earning less than RM2,000 per month which received RM450 each.

Photo from Utusan Online

Seven million individuals and families have benefited from BR1M.

Photo from Utusan Online

BR1M helps cover individual and family expenses.

Although detractors may argue that monetary handouts only provide temporary relief, BR1M has proven helpful in alleviating the financial burden of those in the lower income bracket. This is because the money can be used for various purposes such as purchasing groceries for the family, paying monthly bills or help cover some of the expenses for their children's schooling. A study by the World Bank and Stanford University has also validated targeted cash distributions through programmes such as BR1M, finding that a majority of the recipients invest in their children's education or use it for other purposes for the benefit of their families.

The BR1M Upliftment Programme was launched in 2017 in collaboration with Bank Simpanan Nasional (BSN), Proton and Uber to aid the B40 segment in earning higher incomes. Instead of cash payments under BR1M, members can choose to allocate the funds towards a deposit to Proton for purchase of a car to provide Uber services. It will cater to two segments: those with qualifying cars and those without qualifying cars. For the former, BR1M members get to become an immediate Uber driver partner after satisfying the mandatory Uber driver partner background check and vehicle requirements. A Proton/Bank Simpanan Nasional Malaysia collaboration will support those without qualifying cars.

Aside from job creation and income generation, the BR1M Upliftment Programme will feature other benefits, such as helping Malaysia reach its public transportation targets as well as address peak hour transportation reliability, the cost of transportation and traffic congestion. Last but not least, the implementation of this programme is expected to reduce BR1M expenditure in the long term.

Low-Cost Housing Unit, High Life Satisfaction

The Projek Perumahan Rakyat (PPR) under the Ministry of Urban Wellbeing, Housing and Local Government has benefitted thousands of families by providing low-cost shelters. Fadzillah Shaari, 54 and her family of four is one of them.

"Before we moved to our PPR unit, our family rented a squatter's home at Datuk Keramat," she shared, "We constantly feared flooding, fires and landlord evictions. It was not uncommon in the area."

Now, Fadzillah and her family is proud to call Block C, PPR Hiliran Ampang their home. They rented the unit for a low monthly rental of RM124 per month since 2006 and in 2010, decided to purchase the unit for RM35,000. The family received a rebate of RM2,500 for making the full payment thus lowering the total cost of the house even further to just RM32,500.

"We really like living here. The environment is comfortable and the house is near my working place and is easily accessible," said Fadzillah. Her three-bedroom, two-bathroom unit at the housing area comes with a plethora of amenities, including a children's playground, a kindergarten, a surau, an internet centre, an elderly centre, a health centre and a sheltered multi-purpose hall. The residents' club has more than 100 members and frequently organises beneficial activities for the youth and the elderly. A multi-storey parking area is currently being developed to address residents' parking problem.

Fadzillah was introduced to the PPR by Kuala Lumpur City Hall officers. They were completing surveys at the Datuk Keramat area, where her family used to live. Upon inquiry and finding out that her family is eligible for the assistance, she applied and was subsequently selected. During the process, Fadzillah shared that she was pleased that families with children and elderly are given priority for the limited units.

PPR provides the rakyat an opportunity for fulfilling housing.

After she received the house keys, the family moved into the basic unit which came with a functional electrical system and running water. Many of Fadzillah's friends and family members congratulated her and asked about PPR themselves. "They told me it's hard to cope with the cost of living, and it is hard to find places with low rental costs," said Fadzillah, "My rent (before I purchased the unit) was just RM124 per month. Some of them pay RM600, RM700, RM800 every month for one, two-bedroom houses. It's especially hard for big families."

Fadzillah hopes that more units will be available in the future for families like hers. She is happy that more PPR units – multi-storey flats, walk-up flats and terrace houses – are being built each year. Acknowledging that she was 'lucky' to have found out about PPR by chance from the Kuala Lumpur City Hall officers, Fadzillah noted that more awareness about the programme could be created so more people will have the chance to rent or purchase the low-cost units.

"(As a beneficiary,) I will continue to promote PPR so other low-income families may benefit, as ours did," she said.

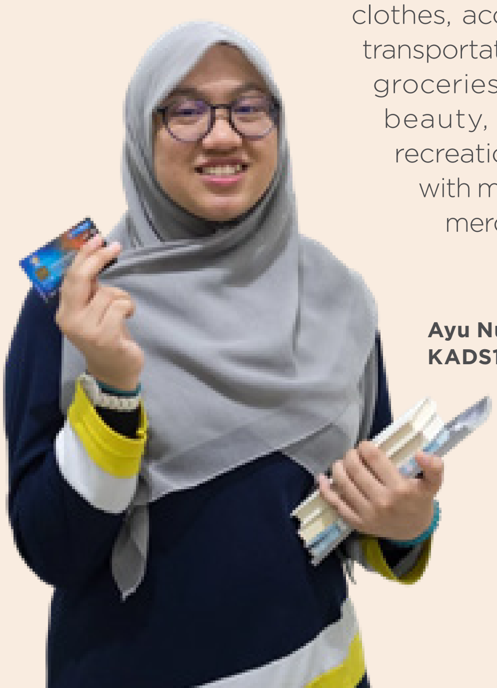
KADS1M – A Student-Approved Financial Assistance

Ayu Nur Hani Azman, a 21-year-old student pursuing a Bachelor in Business Management in Transportation at UiTM Puncak Alam is a big fan of KADS1M offered by Bank Rakyat. Abbreviated from Kad Debit-i Diskaun Siswa 1Malaysia, or 1Malaysia Student Discount Debit-i Card, KADS1M is a contactless Syariah-compliant 3-in-1 discount, ATM and debit card. It does not impose any additional foreign transaction fees and provides SMS notifications upon suspected suspicious transactions.

"I've received other government-initiated student discount cards and book voucher programmes, and KADS1M is my favourite one to use so far," she said enthusiastically, "Upon receiving the card with RM250 deposited inside, we (students) can use the amount for anything. It really helped with my expenses at university."

Sharing that she used the money to pay for petrol, food and books, Ayu also regularly makes use of the merchant discounts offered to get more savings. "I can get 10% discount from MPH with the card, as well as discounts from fast food outlets like KFC and Marry Brown. It's great to get discounts, as it helps reduce cost on school supplies especially."

KADS1M holders can enjoy merchant discounts from a wide variety of categories, including automotive, books and stationaries, medical clinic, food and beverages, optometry, education, printing and souvenirs, clothes, accommodation, transportation and travel, groceries, saloon and beauty, sports and recreation, and others with more than 2,000 merchants enlisted.



Ayu Nur Hani Azman, KADS1M user.

The process to apply and receive the card was straightforward if a tad lengthy, Ayu shared. Upon word-of-mouth recommendations from her friends and seeing advertisements of KADS1M on mass media, she completed the card application online in early 2017 and waited for its approval. It was ready for collection at the nearest Bank Negara branch in mid-2017.

Having used the card, Ayu shared some pointers for first-time applicants. "I would advise my peers to start the application process early because you do have to wait for the card to be ready," said Ayu, "Bank Negara will send an email to notify the card approval, but in my case it took months, so you have to be patient."

Many of Ayu's friends are also recipients of KADS1M and they have also enjoyed the financial benefits offered by the card. She emphasises students to implement prudent money management upon receiving the financial assistance. "It's good if one can plan to use the money effectively. Some of my peers have blown their RM250 assistance purely for entertainment purposes. KADS1M is supposed to help us with our studies, and we should make the best use (of the money)."

With the help of KADS1M as well as other support given to students, Ayu hopes to graduate in 2020, succeed in her career path and contribute to the nation.

MOVING FORWARD

When the NTP was implemented in 2010, the Government had set out to ensure that the socio-economic improvements were inclusive and sustainable. Over the past 7 years, the proportion of people living in poverty has declined in a consistent fashion to under 0.4% (as of 2016). Malaysian households have enjoyed a median income increase of 6.6% from RM4,585 in 2014 to RM5,228 in 2016. Wages had also seen a marked improvement for the B40 in real terms due to the implementation of the minimum wage.

Malaysia is so often driven by the anxiety behind its current debate on cost of living that many forget that global influences also affect the rakyat's state of being. Thus, maintaining fiscal discipline in good times to expand support for the economy when needed and to meet long-term obligations to the rakyat is vital. However, the results of transformation are clear: a more durable, growing economy; annual deficit cuts; rising wages, falling poverty; affordable healthcare; and better education. Investments into the country has also been consistent. As of December 2017, the nation's GDP stood at RM1,352.5 billion.

For all the work that remains, a new foundation has already been laid to manage our cost of living. With socio-economic sustainability and inclusiveness making up the main thrusts of the NTP, the Government will increasingly seek to facilitate income-generating opportunities for the rakyat to improve their well-being and help manage the cost of living that will continue to be influenced and impacted by the global market. Opportunities under the NTP will sustainably empower the public to better contend with living costs, as monetary aid and subsidies are limited over the longer term – economic improvement must be one that is not only sustainable but shared. To achieve it, Malaysia must remain competitive and continue to attract strategic investments to strengthen its economy for many generations to come.

TRANSFORMING RURAL LIVELIHOODS

YB DATO' SRI ISMAIL SABRI YAAKOB
Minister of Rural and Regional Development

When we first embarked on the NTP, we had identified that more was needed to be done to serve the rural population which made up about 35% of Malaysians. At the time, many villages in Sabah and Sarawak remained unconnected by roads, while more than 25% of households did not have access to electricity. Additionally, more than 40% of households in Sabah and Sarawak and 12% of those in Peninsular Malaysia lacked access to clean or treated water.

The Improving Rural Development NKRA sought to improve these outcomes, catalysing inimitable change to the lives and economies in rural areas. The goals of this NKRA are to ensure rural communities are provided with access to infrastructure and achieve sustainable living through economic opportunities with a vision of narrowing the urban-rural divide and achieving inclusive and balanced economic growth.

Since 2010, this has been achieved by building or upgrading roads in rural areas, connecting rural households to clean or treated water and 24-hour electricity supply, and building or restoring houses for the rural poor. Additionally, the Ministry of Rural and Regional Development (Kementerian Kemajuan Luar Bandar dan Wilayah – KKLW) has introduced economic programmes to raise the incomes of the rural population to ensure they enjoy the benefits of modernisation. Approaching the end of 2017, these efforts have benefited 6.8 million people.

It is important to note that while the Rural Development NKRA has since exceeded its targets as set out in the NTP Roadmap launched in 2010, KKLW remains steadfast in implementing rural development initiatives in accordance with the national agenda. Although land acquisition remains a key challenge faced by rural development projects, close cooperation among stakeholders ensures projects continue to be implemented efficiently and effectively.

Moving forward, KKLW will enhance efforts to implement the Government's policies in line with Transformasi Nasional 2050 (TN50). The Ministry and its agencies will continue to serve as the agent of transformation for rural communities to realise TN50 and warrant the prosperity of our nation.

PROVIDING UNIVERSAL ACCESS TO INFRASTRUCTURE

The provision of rural infrastructure has focused on managing the polarity in the Government's investments in urban and rural areas to ensure Malaysia's transformation reaches all parts of the country. Since 2010, the NTP has accelerated the development of rural areas through various road building programmes as well as through the provision of electricity and water.

> *"Between 2010 and 2017, 6,868 km of roads have been built and upgraded through JALB and JPD, benefiting 3.7 million villagers."*

KKLW oversees two construction programmes: Program Jalan Luar Bandar (JALB) and Jalan Perhubungan Desa (JPD). JALB aims to upgrade and increase the coverage of rural highway systems, focusing on remote areas to encourage growth of industry in those areas. This initiative eases the movement of commercial and heavy vehicles, widening their reach and spurring economic development in surrounding areas. This complements KKLW's aspirations to widen the coverage of basic infrastructure in villages throughout Malaysia.

A completed project under Program Jalan Luar Bandar.

Meanwhile, JPD involves roads which connect one village to another or to the main highways to improve access across villages, enabling travelling options and therefore better quality of life for the rural population. The roads also enable connectivity to health centres and clinics, schools, religious and community centres as well as other public amenities. JPD projects focus on building new roads as well as upgrading existing dirt or laterite roads to premix/tar, semi-grout or concrete roads.

Between 2010 and 2017, 6,868 km of roads have been built and upgraded through JALB and JPD, benefiting 3.7 million villagers. This is almost the distance between Putrajaya and Mumbai, India by road.

Another vital service provided through the Government's rural development initiatives is water supply, which is undertaken through the Program Bekalan Air Luar Bandar (BALB). The programme provides the rural population, including Orang Asli communities, with supply to clean, treated water. The water is supplied through reticulation or alternative water source systems and new water treatment plants, while existing water treatment plants are also upgraded.

BALB acts as an impetus for rural economic development, especially in the agriculture, tourism and industrial sectors. In ensuring clean and treated water reaches rural communities in a comprehensive and timely manner, the Ministry has provided 354,400 households with water supply, touching the lives of 1.8 million individuals from 2010 to 2017. This brings the total coverage of water supply in Malaysia to more than 90%.

Meanwhile, the rural electrification programme, Program Bekalan Elektrik Luar Bandar (BELB), has been vital in providing rural populations with 24-hour electricity by connecting villages to the grid and alternative systems such as solar hybrid and micro-hybrid. The installation of Lampu Jalan Kampung is also carried out to ensure steady and reliable electricity supply, especially in remote areas. Projects involve the construction of transmission, distribution and service lines up to households' meters. Since 2010, this initiative has connected 161,931 households with electricity supply, benefiting 809,655 rural folks living in 85% of the villages throughout Malaysia and bringing the total coverage of electricity supply in the country close to 100%.

Solar hybrid stations under Program Bekalan Elektrik Luar Bandar.

Despite the substantial achievements of these initiatives, the Ministry continues to face challenges in land acquisition, which recur on an annual basis. As some of the land involved in rural infrastructure projects are privately owned, the Ministry takes the initiative to go on the ground to negotiate land acquisitions with the land owners.

An elevated water tank under Program Bekalan Air Luar Bandar.

PROVIDING RURAL VILLAGERS WITH A HOUSE TO CALL HOME

In line with Malaysia's transformation into a developed nation, the Program Perumahan Rakyat Termiskin (PPRT) is implemented to eradicate poverty in rural areas and achieve inclusive and balanced growth on a national level. The project involves the construction of new houses and restoration of existing houses to provide villagers with safer and more comfortable dwellings.

The project targets the hardcore poor who are enrolled in the e-Kasih database, with priority given to the old, infirm and handicapped, as well as single mothers with many dependents. In 2017, the size of houses built was expanded to 660 sq ft from 600 sq ft previously, while the design of the houses was also improved. Between 2010 and 2017, 103,033 houses were built or restored, providing homes or improving the living conditions of 515,170 people.

In ensuring the housing is provided to those who are truly in need, the Ministry will visit and assess proposed recipients from the e-Kasih recipient list to confirm their eligibility.

Perlis Entrepreneur Moves Up After Taking On Rural Business Challenge

When Mohd Syafiq bin Drahman applied for the Rural Business Challenge (RBC) programme in 2015, little did he know how much it would mean for his business.

Syafiq, who runs Ameqin Sepakat Sdn Bhd, an automotive painting and supply business in Arau, Perlis, applied for the RBC after finding out about the competition that aims to develop youth entrepreneurs in rural areas from a friend.

In 2017, 87% of RBC winners from 2015 achieved an increase in income by more than 30%. The 30-year old says the competition, which is run by the Ministry of Rural and Regional Development (KKLW) under the Improving Rural Development NKRA, was a tough experience.

"Sometimes, I felt depressed," he shares. However, those feelings dissipated after receiving support and encouragement from friends. His perseverance paid off when he was selected as an RBC winner.

As part of his prize winnings, the Ministry paid for new machines and building renovations to expand his workshop. "The RBC grant has helped to grow my business," says Syafiq. "I can build a new building to house my business expansion as well as add extensions to existing buildings."

Support from KKLW did not just come in the form of financial assistance but also advising and networking opportunities. "I received advice on how to grow my business," says Syafiq. "I also met with other entrepreneurs from various other types of businesses. Through these meetings, we could share our experience and exchange opinions."

Having successfully come through the RBC experience, Syafiq has seen conditions for his business notably improve. His profile has been raised, allowing him to win new customers and even apply for loans more easily. He has also seen an improvement in his bottom line, growing income from under RM300,000 before entering the RBC competition to approximately RM600,000 in 2017.

"This programme has changed my life and my business," says Syafiq. "Previously my company was not as well known. Nowadays I get more business opportunities as I am better known. Business loans are also easier to apply for."

The RBC winner also has some good advice for rural youth entrepreneurs looking to win the RBC in the future. "My advice to those who want to join the RBC is to strengthen yourself and your determination," he says. "Always be confident when facing the jury panels. Make sure your business plans are solid and don't give up. Success will not come easily without effort, prayer and tawakal to Allah swt."

The Perlis-based entrepreneur says he now has his sights set on becoming the first choice for customers in the state in the near-term while expanding to other states over the longer-term.

RBC winner, Mohd Syafiq bin Drahman.

EMPOWERING COMMUNITIES THROUGH ENTREPRENEURSHIP

In line with the goals of the NTP, the development of rural economies is crucial to the transformation of the Malaysian economy as a whole. To this end, the Desa Lestari and Rural Business Challenge initiatives form the main thrust of KKLW's efforts to elevate rural economies.

The Desa Lestari programme aims to transform villages into modern and economically active areas which enable residents to generate higher income. It is implemented through the establishment of cooperatives which act as a platform for development and enable communities to plan and operationalise development projects. The programme also provides employment opportunities to villagers including single mothers and the elderly. Since its implementation in 2013, 88 villages have succeeded in stimulating economic activities to raise the income of its residents, recording 95,832 individual beneficiaries.

Among Desa Lestari projects which have been undertaken since 2013 include a bee farming project and a farm services project in Kampung Paloh 1, Gua Musang, Kelantan. For 2017, an additional 15 villages were selected to participate in Desa Lestari.

Under the Rural Business Challenge (RBC), youth aged 18 to 40 years are invited to compete by proposing profitable and sustainable business plans for the development or expansion of businesses in rural areas. This also aims to encourage rural youth to choose entrepreneurship as a career of choice, create job opportunities and catalyse rural economies while making villages an attractive place to reside in.

"88 villages have succeeded in stimulating economic activities to raise the income of its residents, recording 95,832 individual beneficiaries."

In 2017, 87% of RBC winners from 2015 recorded an increase in income of more than 30%. For RBC 2017, the Ministry promoted the entrepreneurship development programme through Reality Rural Business Challenge, a reality TV show highlighting the achievement of RBC winners to attract rural youth to its entrepreneurship programmes. The TV show as well as exhibitions organised by the Ministry form its dynamic and modern approach to attract youth to entrepreneurship via interactive and engaging platforms. The challenge, however, is selecting projects which are able to generate high returns and finding participants who are capable of operating businesses well.

The Desa Lestari programme aims to transform villages into modern and economically active areas which enable residents to generate higher income.

Setting the Foundations for a Thriving Rural Community

Ahmad Firdaus Baharuddin, Under Secretary of the Infrastructure Division under the Ministry of Rural and Regional Development is a man committed to his work.

"My schedule is hectic and involves a lot of meetings and travel to rural areas around Malaysia," he shares, "Even though many of these areas are difficult and time-consuming to reach, there is simply no substitution for personal visits. The visits help us understand the real scenario happening 'on the ground', which allows us to do our work more effectively."

Under his direct purview are six types of programmes related to rural area development: the Village Road Programme, Rural Road Programme, Rural Water Supply Programme, Rural Electricity Supply Programme, Village Road Lights Programme and the Social Amenities Programme. These programmes work towards closing the urban-rural divide by creating a solid foundation for rural-community growth, thus allowing every Malaysian to succeed regardless of location.

The direct and positive correlation between infrastructural upgrades and a better quality of life is easy to witness in rural areas. For example, constructing and lighting up kampung roads in rural areas leads to an increase in economic, educational and social activities, lowers crime rates, reduces accidents and improves access to healthcare and educational opportunities, among others. Connecting rural areas to dependable, 24-hour electricity supply opens up a host of opportunities and activities previously impossible, time-consuming and unaffordable.

However, not all projects run smoothly. "Often times, I need to work with multiple parties to get a project completed. Projects might be delayed or halted due to land issues and bureaucracy," Ahmad Firdaus shares. "I also have to manage the available funding, with the aim of stretching it as much as possible." He shares that this is when managing both beneficiary and stakeholders' expectations and costs plays an important role.

Construction in progress for rural road development.

Ahmad Firdaus believes that, in the context of inclusive growth for the nation, infrastructural upgrades in rural areas are essential but need to be part of a broader, multi-pronged strategy. "Our one-off projects in villages are definitely not enough. Our villagers may get access to electricity and water, but they are still unable to join the digital economy due to lack of financial, logistical and internet infrastructure. They still need access to banks and post offices, which might be far away. If we want to ensure inclusive growth, these developments must go hand-in-hand."

Despite work-related challenges, Ahmad Firdaus is proud of his team's work. The results speak for themselves; four out of the six programmes within the Infrastructure Division have exceeded targets. The top-achieving programme, the Rural Water Supply Programme (RM632.40 million allocated) have successfully supplied 5,326 rural households with clean water. The programme boasts a commendable 177.53% completion rate from its original target of 3,000 households.

Another high achiever is the Social Amenities Programme (RM60 million allocated), which completed 1,222 projects, equivalent to a 152.75% completion rate from a target of 800 projects. Some of the projects in the Social Amenities Programme include new jetty constructions, surau and hall upgrades, drain installations and other planned and as-requested infrastructural upgrades.

The Rural Road Programme (RM887.82 million allocated) and the Village Road Programme (RM284 million allocated) achieved 111.74% and 102.91% of its targets, covering 245.82 km and 582.45 km of new roads, respectively. Among the remaining programmes close to the finish line is the Rural Electricity Supply Programme (RM447 million allocated). At 98.05%, the programme has lit up 8110 households in rural areas.

Asked about long-term rural area development, Ahmad Firdaus reaffirms his commitment to improving the standard of living for residents in rural areas. "Ultimately, we want the standard of living in rural areas to be as good as urban areas, so people don't have to move to enjoy good amenities. And we will continue to work with partners and agencies to make it happen."

Ahmad Firdaus on the ground to ensure smooth roll out of rural development projects.

Lighting up the Bario Community

For residents living in urban areas, it is easy to take access to electricity for granted. However, for residents living in rural areas, particularly in Sabah and Sarawak, electricity is a luxury. It is only available to residents who are rich enough to purchase generators for their homes or residents who are lucky enough to live in areas connected to electricity grids.

For residents belonging to neither categories, this is where the Rural Electrifications Scheme comes in.

Dayang Nalin, 54, of Kampung Arur Dalan in Bario district, Sarawak has been a full-time farmer since 2007. Her family earns a living by planting rice, pineapples and coffee. "Kampung Arur Dalan was the first in Bario to enjoy solar hybrid electricity," the mother-of-two says. "It was not 100% good in the beginning, but as of December 2017 we started enjoying 24-hour electricity (thanks to the Rural Electrification Scheme)."

Now, Dayang's home, along with hundreds of households in Bario, are connected to the Bario Central Solar Hybrid Power Station. It is a solar hybrid power system and the biggest solar project under the Government's alternative rural electrification initiative in Sarawak. The two energy sources are solar photovoltaic (70%) and diesel generator (30%). Constructed in 2010 and launched in October 2016, the Central Solar Hybrid Power Station now provides affordable and renewable electricity to Bario residents. Bario is located at 3,200 feet above sea level and surrounded with mountainous terrain, which made electricity connection to the state's traditional electricity grid all but impossible.

"Almost all kitchen and daily tasks were hard before having electricity," shares Aminah. "There was no activity after dinner. One needs to light the firewood for cooking and we use 'damar' or kerosene lamps as lights (at night)."

The reliable access to electricity has eased daily tasks for residents like Dayang and collectively created a positive impact on villagers. The improved standard of living has led to an increase of economic activities as well. "Since electricity is available 'at the fingertips', activities such as baking and pineapple jam-making (using electrical appliances) is possible," she says.

Dayang looks forward to further development in her village, including tourism and agricultural activities. "(I would like it if) the 55-year-old longhouse can be fitted with new roofing and tiles. Aside from that, the Arur Dalan clear water stream can also be turned into a tourist attraction, bringing economic activities right to our doorsteps," she suggests. "Additionally, I hope idle land in the kampung can be planted with durian and Arabica coffee, among others (for additional income)".

Solar farm for rural electrification programme in Bario.

MOVING FORWARD

As KKLW continues to carry out rural infrastructure programmes to ensure socio-economic inclusiveness, attention will be given especially to rural areas in Sabah and Sarawak, where development has lagged behind peninsular Malaysia due to the remoteness of some villages and geographical conditions affecting development plans, including cost. Overall, the Ministry will enhance its strategy and efforts to implement the Government's rural development plans.

EDUCATION

CREATING A HOLISTIC EDUCATION SYSTEM FROM THE GROUND UP

YB DATO' SERI MAHDZIR KHALID
Minister of Education

Under the NTP, we have identified the need to improve student outcomes to guarantee that our children are able to compete globally and contribute to our national economic growth. As such, we have focused on initiatives that raise the quality of our education system, resulting in a steady stride towards a performance-oriented culture of teaching and learning since 2010. This is a stark contrast to the situation prior to the NTP's Education initiatives in 2009, when it was found that our students were lagging behind their regional peers in ASEAN, based on the Trends in International Mathematics and Science Study (TIMSS) and Programme for International Student Assessment (PISA).

To ensure that our students are competent in their mastery of the English language, the roll-out of the Dual Language Programme (DLP) and Highly Immersive Programme (HIP) have continued to show positive results. In 2017 alone, the DLP was implemented in 1,214 schools, a tremendous increase from 378 schools in the previous year when the programme started as a pilot project. Moreover, the HIP was expanded to 5,526 schools nationwide (3,693 primary schools and 1,807 secondary schools), giving 2.54 million students greater exposure to the global lingua franca.

Knowing the importance of English language proficiency in teachers as well, the Ministry of Education (MOE) is focused on conducting more rigorous training sessions for English teachers. To date, 34% of English teachers nationwide have attained the minimum C1 level proficiency.

As we sought to provide our children with a proper head-start at an early age, intensified initiatives for pre-schools participation have led to a stellar 84.26% enrolment rate, or equivalent to 884,983 new pre-schoolers in 2017. Although the 5+ age group has almost reached universal enrolment at 90.89%, more can be done to improve the 77.8% enrolment rate of the 4+ age group. The Government thus plans to continue offering fee assistance to eligible families and stepping up awareness efforts on the benefits of pre-school education for the 4+ age group.

Thorough planning and a multi-faceted implementation structure are still imperative to fix systemic issues and nurture a sustainable learning environment for future Malaysians. As we progress towards enhancing our education system, the initiatives under the NTP will require multiple stakeholders to achieve the goals of the Malaysia Education Blueprint (MEB). With this in mind, I am confident that the synergy between the public and private sectors will go a long way in our journey to realise the aspirations of the MEB.

YB DATO' SERI HAJI IDRIS JUSOH
Minister of Higher Education

The NTP has identified the education sector not only as a driver of human capital development and productivity, but also as one of the engines of economic growth through the private education sector. To achieve this, the Education NKEA focuses on strengthening private education services by encouraging private consumption, enabling investments into the sector and expanding our education exports – in essence, establishing Malaysia as a global education hub.

Through the marketing, promotion and other associated activities carried out by both public and private institutions of higher learning (IHLs), Malaysia has become a choice destination for international students, with 170,068 enrolments in 2017 as compared to 70,000 in 2010. Indeed, with 11 renowned foreign IHLs establishing branch campuses and collaborations here, Malaysia is on its way to become a global leader for international education.

In contributing to the development of our talent pool, we have also achieved good progress in the establishment of discipline clusters. These discipline clusters aim to establish a network of academic institutions and industry players to improve offerings and raise standards in specialised education fields by allowing both academic institutions and industry players to collaborate and develop quality curriculum and education programmes for students.

Key discipline clusters that have been developed include hospitality and tourism, Islamic finance and business education, games development and professional accountancy. These discipline clusters have been progressing well, with an increase in enrolment every year.

In addition, Malaysian universities have been ranked top 50 in the world in subject areas such as Hospitality and Leisure Management, Electronic and Electrical Engineering, Chemical Engineering, Mechanical Engineering and Environmental Sciences, among others.

Catalysing our private education sector based on our transformation goals has not been an easy job, especially amid stiff competition from other international education centres. This has required us to improve coordination and cooperation with other Ministries, such as the Ministry of Home Affairs and the Ministry of Health to improve student visa processing and increase international student enrolment. In 2017, we also conducted an International Student Lab with public and private sector representatives to improve international student visa processing and ensure a facilitative environment for them during their studies here. We have also recognised the need to streamline efforts to market Malaysia as an attractive education hub, which Education Malaysia Global Services (EMGS) has been tasked to coordinate.

This collaborative approach to increase coordination and dialogue between the departments, divisions and agencies of the various Ministries involved has been the foundation in delivering outcomes under the Education NKEA and this will continue to be encouraged to promote collegiality and commonality among stakeholders. This alignment with the goals of the Ministry of Higher Education (MOHE) will ensure our higher education ecosystem continuously improves, in line with our motto, "Soaring Upwards".

SUSTAINING FOR THE EDUCATION TRANSFORMATION

The Malaysia Education Blueprint (MEB) was introduced in 2013 as an expansion of the transformation of Malaysia's education system catalysed by the NTP. The Blueprint is currently being implemented in three Waves: Wave 2 of the MEB commenced in 2016 following the completion of Wave 1 in 2015 and Wave 3 is scheduled to begin in 2021.

In Wave 2 of the MEB, continuing innovations in parental, community, and private-sector involvement are being explored through public-private partnership (PPP) initiatives aimed at empowering communities across Malaysia to support and motivate schools to raise their performance. Education PPP can come in different forms which range from light PPP such as one-off sponsorship programmes, to full PPP whereby the private sector may fully manage a public school. As of 2017, there was a 178% increase in overall sponsors to 4,093 from 1,473 in 2016.

However, currently PPP initiatives are more inclined towards 'private-sector-supported' rather than 'private-sector-led'. As a first step to attract more private sector participation in education programmes, MOE conducted a feasibility study on privately run public schools this year. A new PPP model has also been devised following the PPP Lab conducted in 2016 involving public and private sector representatives. The new model is expected to commence implementation in 2018.

To ensure that participants of the PPP are kept informed on the PPP initiatives, a PPP icon was established as a link in the MOE website in 2017 (https://www.moe.gov.my). This acts as an electronic one-stop centre for PPP-related matters.

Malaysia Education Blueprint (MEB)

Wave 1 of the MEB was focused on delivering quick wins that would kick-start the transformation of the education system. During this period, initiatives were centred on raising teaching quality by upskilling the existing pool of teachers, raising school leadership quality by improving the appointment and training of principals as well as improving student literacy (in both Bahasa Malaysia and English) and numeracy through intensive remedial programmes. The Ministry also sought to strengthen and empower state and district offices to improve the quality of frontline support provided to all schools.

Wave 2 will see the Ministry rolling out structural changes aimed at accelerating transformation. This will include moving all 421,000 teachers and 10,000 principals onto a new career package, providing options for increased English language exposure and introducing revised primary and secondary curricula which address the knowledge, skills and values needed to thrive in today's global economy.

The focus of Wave 3 will be on accelerating the performance improvement of Malaysia's education system, moving it into the top third internationally. To embark on the journey to excellence, the Ministry will focus on increasing operational flexibility to cultivate a peer-led culture of professional excellence, capable of innovating and taking achievements to greater heights by enhancing school-based management and autonomy around curriculum implementation and budget allocation for most, if not all, schools. The goal is to create a self-sustaining system that is capable of innovating and taking achievements to greater heights.

Highly Immersive Programme Raises Students' Exposure to English

The Highly Immersive Programme (HIP) supports the development of a highly-immersive English language environment in schools, and features four main activity types: In-Class, Out-Of-Class, Extra-Class, and Outreach. The English Language Teaching Centre (ELTC), as part of the MOE, acts as the HIP secretariat. It oversees HIP implementation as well as programme monitoring and sustainability. Moreover, ELTC conducts support visits and evaluates the success and impact of the HIP. It engages with state- and district-level English language officers in problem-solving HIP challenges and discussing the way forward. These language officers also assist ELTC in monitoring HIP in schools.

As Work Stream Leader for the programme at ELTC, Dr. Kalminderjit Kaur d/o Gurcharan Singh's role is four-fold: planning the funding, activities and rollout of the programme in schools; providing orientation to schools; planning strategies for monitoring and evaluation; and organising engagement activities such as colloquiums, symposiums and discourses which serve as a platform for HIP schools to meet and share best practices as well as discuss strategies for long-term programme sustainability.

Dr. Kalminderjit, as she is commonly addressed, believes that the success of HIP at any individual school depends on the commitment and support from the school head, teachers, students and the surrounding community. "We must ensure that the correct information about HIP is received by schools. Then, the entire school community must buy into HIP for its success. This means that school heads and teachers especially must be committed to the programme's outcomes. Additionally, continuous monitoring must be carried out at the state and district levels."

Dr. Kalminderjit believes that HIP has been showing positive results. "It has seen the development of an immersive, language-rich environment in the implementing schools. Students have developed confidence and a positive attitude in using the language in a fun and non-threatening environment. The entire school community is engaging in English language activities in and out of class and parental involvement in students' language-learning activities in school has been enhanced."

Through the various HIP activities, students are now more exposed to the English language. "Studies have shown that increased contact to a language directly impacts language proficiency improvement," Dr. Kalminderjit points out, adding that increased student participation in activities involving the English language signified that students are more confident in using English.

There are, however, some aspects of HIP that could be further improved. Dr. Kalminderjit believes that the students' use of English could be better tracked, and that the school heads who spearhead the programme could demonstrate greater continuous and sustaining support.

"My hope is that our education system produces students that are able to communicate competently in English internationally, demonstrating critical and creative abilities using the language."

Speech and Drama Course Gives Innovative Spin to Learning English

One hallmark of the HIP is its use of innovative ways to keep students engaged in learning English. Among these innovative activities is a speech and drama course conducted in a non-classroom setting with students in 20 schools across four states. Enfiniti Academy of Musical Theatre & Performing Arts (ENACT) in collaboration with the Sime Darby Foundation brought this week-long workshop to students who would otherwise have little exposure to using English. ENACT is part of Enfiniti Vision Media, an internationally-recognised production company.

Enfiniti Vision Media Course Director, Joanna Bessey, designed the workshop and is one of its instructors. According to her, the workshop was designed to enhance communication and soft skills, and to present exercises that boost the students' confidence to speak in English. "ENACT's highly-experienced teachers and methods as well as our award-winning theatre professionals ensure students can follow the specifically-designed drama toolkit," Bessey explains.

The drama toolkit is part of a speech and drama activity workbook that Bessey also developed. The workbook acts as a teacher's guidebook while the workshop is conducted. "With the book, schools can eventually establish their own speech and drama clubs to continue the programme," Bessey enthuses.

As part of the workshop, the students plan, produce, and put on their own skits. In the process, the students learn how to adjust to change, work together as a team, deal with time pressure, share their own ideas, tell stories and speak grammatically-correct English — all with clarity, confidence, and emotion. "And they do all this while having fun," says Bessey.

Mohd Jamil bin Ismail, father of Nurul Huda Najihah who is a student of SK Pengkalan Baharu in Perak, agrees. "My daughter found that this workshop made it easy for students to learn English. She enjoyed herself attending the workshop." SK Pengkalan Baharu is one of the 20 schools that participated in the ENACT workshop, and Mohd Jamil thinks that the workshop is a valuable programme which he hopes can be extended and be held after school hours as well. "Although her English is good, my daughter does not have many opportunities to speak in English. This workshop gave her a great chance to be able to express herself in English."

Richard Mark s/o Ricky, a student from SK Runchang in Pahang, found the workshop enjoyable and wishes there could be more such activities in English. "Most of my English practice is in speaking with my school friends, but we don't do that often," he explains. His adoptive mother, Rohaya, believes that he has shown definite signs of improvement in his English skills. "He never used to sing in English, but now I hear him doing so every so often at home." Rohaya hopes that he will be able to better understand English through this and other initiatives in school.

Students enjoying activities by Enfiniti Academy of Musical Theatre & Performing Arts.

STRENGTHENING THE EDUCATION MODEL

An individual's road to learning begins almost from infancy and Malaysia's education system has been designed to cater to that need through its efforts to encourage enrolment in early childhood care and education (ECCE). These initiatives also aim to complement efforts that will enable women to return to the workforce after entering motherhood, which are currently carried out under the Human Capital Development Strategic Reform Initiative.

> ***"The national childcare enrolment rate rose from 4% in 2010 to 6.92% in 2017, accounting for 177,228 out of 2.5 million children aged 4 and below."***

Fee assistance makes up the Government's key initiative in encouraging ECCE enrolment. During the year, the Government allocated RM3 million for fee assistance for private childcare, helping to alleviate childcare costs for 1,030 families. It also channelled RM18 million in fee assistance to 32,378 children from low-income families to enrol in private pre-school centres where there are no public pre-schools available. Additionally, RM88,521 was provided to the ECCE Council and RM20,000 to the National Child Care Association to conduct advocacy programmes and registration drives.

As a result, the national childcare enrolment rate rose from 4% in 2010 to 6.92% in 2017, accounting for 177,228 out of 2.5 million children aged 4 and below. Moreover, the national pre-school enrolment rate rose from 72.4% in 2010 to 84.26% in 2017, which represents 884,983 children aged 4+ and 5+. Enrolment across the age groups is however still uneven with only 77.8% of children aged 4+ enrolled in pre-schools, while the enrolment rate among children aged 5+ is almost universal at 90.89%. In an effort to address this disparity, MOE will prioritise easing the registration process, rules and regulations to set up new private pre-schools and continue providing fee assistance.

In addition to financial aid, the Government is focused on raising the standards of pre-school education and in 2016 announced a new policy requiring diploma qualifications or higher in ECCE for pre-school teachers. 32.85% of 34,740 private pre-school teachers now meet those requirements. The policy will take full effect by 2020, whereby all teachers will be required to meet those qualifications. This will not only improve the quality of pre-school education, but is also expected to spur public and private institutes of higher learning to provide ECCE diploma courses. The Government will support private pre-school teachers in the process of obtaining their ECCE diplomas by 2020 by utilising Teacher Training Institutes (Institut Pendidikan Guru, IPG) capacity to train private pre-school teachers. MOE and the Ministry of Higher Education (MOHE) will also ensure that private institutions of higher learning (IHLs) offer high-quality ECCE diplomas.

Additionally, the development of an integrated ECCE hub in Kota Kemuning by SEGi Education Group will assist with providing the required education and training for ECCE professionals. Development of the hub now is underway following approval from the Public Private Partnership Unit (Unit Kerjasama Awam Swasta, UKAS) in 2017.

The National Pre-school Quality Standard self-assessment is another measure introduced by the Government to ensure high-quality pre-schools. Since its introduction in 2015, 23,285 pre-schools have participated in the assessment in 2017, of which

The Ministry aims to ensure all students are literate and numerate.

98.86% have met the minimum quality standards. The Inspectorate of Schools (Jemaah Nazir dan Jaminan Kualiti, JNJK) together with other agencies — namely the Department of Community Development (Jabatan Kemajuan Masyarakat - KEMAS) under the Ministry of Rural and Regional Development, the Department of National Unity and Integration (Jabatan Perpaduan Negara & Integrasi Nasional, JPNIN) and MOE's Private Education Division — coordinated verification activities of the self-assessment tool on 95 private pre-school centres. Of these, 82 or 86.32% met the minimum quality standards.

At the primary school level, the Literacy and Numeracy Screening (LINUS) programme, which aims to ensure all students obtain basic literacy (Bahasa Malaysia and English) and numeracy skills by end of Year 3, has run for eight years. The 2017 rates for Bahasa Malaysia literacy, English literacy and numeracy were recorded at 98.3%, 95.7% and 98.8%, respectively. Its implementation over the past eight years has made the programme an integral part of classroom teaching and learning. To expand on this and ensure that all primary school students master literacy and numeracy skills not only at the basic level but also at a more advanced level, a new programme will be developed in 2018 with the aspiration of providing students from Years 4 to 6 the required literacy and numeracy skills in line with the school syllabus.

TRANSFORMING MALAYSIAN STUDENTS INTO GLOBAL CITIZENS

As part of the efforts to nurture globally competitive Malaysians through a high level of English proficiency, in 2016 the Government introduced the Dual Language Programme (DLP), where a pilot programme was implemented involving Year 1, Year 4 and Form 1 students in 378 schools. The programme has since expanded to 836 more schools in 2017 bringing the number of schools implementing DLP to 1,214 schools (consist of of 585 primary schools and 629 secondary schools). To date, a total of 129,859 students have participated in the DLP.

YB Dato' Seri Mahdzir Khalid launched the new ELTC campus and the second HIP Colloquium on 14 August 2017.

A comparison of DLP students' achievement in their 2016 year-end assessment and their 2017 mid-term assessment showed that 36.38% of 14,794 primary school students and 46.4% of 22,965 secondary school students demonstrated an improvement in their English examinations.

In an effort to ensure effective implementation of the DLP, the English Language Teaching Centre (ELTC) conducted an online teacher training course to support Science and Mathematics teachers in delivering these subjects in English. By the end of 2017, a total of 709 DLP teachers completed the online modules. Additionally, several private education institutions collaborated with the MOE to support a few schools where teachers and students found the programme challenging. This initiative included the Teach English and Create Hope (TEACH) programme conducted by Universiti Putra Malaysia's Faculty of Educational Studies for SK Bandar Tasik Kesuma and SK Saujana Impian, an English support programme by the International School of Kuala Lumpur (ISKL) for DLP teachers in six Kuala Lumpur schools, English teacher training by Berjaya University College of Hospitality for two DLP schools and a DLP support programme by Sri UCSI for two schools in Selangor.

To expand the DLP further without risk of dilution, the MOE will select more schools based on the fulfilment of four criteria, namely, the institutions must have sufficient resources, competent teachers, parental consent for the implementation of the DLP and meet or exceed the national average in Bahasa Malaysia (BM) scores.

Moving forward, the DLP programme will also focus on expanding to more schools in rural areas. Hence, priority will be given to train DLP teachers to ensure competency in teaching Mathematics and Science in both BM and English. Additionally, there is an urgent need for secondary schools to start offering DLP to ensure that DLP students from primary schools can seamlessly transition to a secondary school where the programme is offered.

The Highly Immersive Programme (HIP) is another effort to increase students' English proficiency and provides increased immersion in the English language through in-class and out-of-class activities, extra classes and outreach programmes. In 2016, Phase 1 and Phase 2 of the HIP was rolled out, with 58% of schools involved achieving an immersiveness level of 3 and above. Phase 1 of the HIP was implemented in 94 primary schools in six states beginning March 2016, namely: Perlis, Pahang, Perak, Negeri Sembilan, Sabah and Sarawak. Meanwhile, Phase 2 started in July 2016, involving a total of 1,106 schools nationwide. Phase 3 was rolled out in 2017, with 4,326 schools enrolling in the HIP, bringing the total number of schools enrolled to 5,526. By 2018, the Ministry targets for 10,000 schools to enrol in the HIP.

To improve the effectiveness of the HIP, the second HIP Colloquium was conducted at the ELTC in August 2017, serving as a platform to discuss HIP best practices in schools, its impact, challenges and way forward. Strategies on increasing the involvement of the whole school, parents and the community to maximise students' outcome in English were also discussed. 178 schools across the country as well as 11 outreach partners involved in the programme participated in the colloquium.

Several educational bodies and companies within the private sector have facilitated intervention programmes for HIP schools that needed assistance with seeking outreach partners to carry out English-language activities. These programmes included a six-month English Programme conducted by SOLS 24/7 for SMK Seri Tasik and SJKT Vivekananda; the English Speech and Drama Programme conducted by Enfiniti Academy and sponsored by Yayasan Sime Darby for 20 HIP schools in Selangor, Perak, Negeri Sembilan and Pahang; an English drama programme conducted by Taylor's University, sponsored by Mah Sing in collaboration with The Edge Education Foundation; and English, Science and ICT programmes conducted by Universiti Tunku Abdul Rahman (UTAR) for SK Sungai Lesong, Perak, which is both a DLP and HIP school.

"Several educational bodies and companies within the private sector have facilitated intervention programmes for HIP schools that needed assistance with seeking outreach partners to carry out English-language activities."

To ensure teachers meet language proficiency requirements, MOE has set a target for all English teachers to meet a minimum proficiency level of C1, based on the Common European Framework of Reference for Languages (CEFR). To date, approximately 34% of 42,105 English teachers have attained C1 level proficiency. Regulations setting a minimum English language proficiency criteria of Band C1 for new English teachers will be put in place by 2020.

MOE is also continuing its efforts to increase the proficiency of in-service English teachers who do not meet the minimum requirements by providing the Professional Upskilling of English Language Teachers (ProELT) course. 16,000 teachers have been trained under the course since 2012. In 2016, the Ministry commenced the course internally through the ELTC. Currently, the centre's capacity for teacher training is 650 teachers annually.

The ProELT programme is not planned as a permanent initiative as the Government seeks to introduce minimum English proficiency requirements for new teachers by 2020. In 2017, 60% of teachers graduating from IPG achieved C1 before their postings. IPGs have also tightened selection criteria to require a minimum of 5As in the SPM (Sijil Pelajaran Malaysia), with English pre-service teachers required to obtain an A or A+ for the English examination.

Common European Framework of Reference for Languages (CEFR)

LEVEL			GENERAL DESCRIPTION
Proficient user	C2	Mastery	Highly proficient - can use English very fluently, precisely and sensitively in most contexts
	C1	Effective Operational Proficiency	Able to use English fluently and flexibly in a wide range of contexts
Independent user	B2	Vantage	Can use English effectively, with some fluency, in a range of contexts
	B1	Threshold	Can communicate essential points and ideas in familiar contexts
Basic user	A2	Waystage	Can communicate in English within a limited range of contexts
	A1	Breakthrough	Can communicate in basic English with help from the listener

EMPOWERING SPECIAL EDUCATIONAL NEEDS (SEN) STUDENTS

In 2016, the YAB Prime Minister launched an action plan for persons with special needs covering 10 main strategies. One of these is to empower the economy of persons with special needs by involving them in vocational training and administrative jobs provided by the Government, NGOs and the private sector. In support of this, a mini-lab was conducted in May 2017 to develop a framework to help SEN students transition from the completion of secondary school to employment.

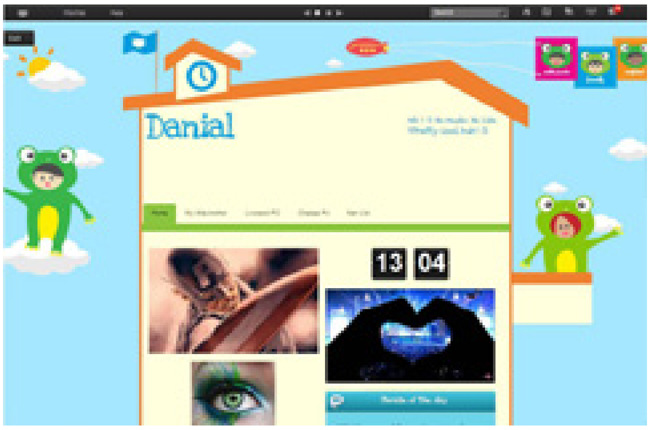
The framework divided SEN students into two categories, namely those with a Disabled Person (OKU) card and those without. The lab suggested that the two transition modules for primary and secondary SEN students be developed in 2017 and implemented in May 2018, championed by the Ministry of Human Resources (MOHR) and supported by MOE, MOHE, the Ministry of Women, Family and Community Development, Ministry of Rural and Regional Development, Ministry of Youth and Sports, the Department of Social Welfare and JobsMalaysia.

EQUIPPING STUDENTS WITH WORLD-CLASS LEARNING TOOLS

The MOE introduced 1BestariNet in 2011 to equip schools with the Frog Virtual Learning Environment (VLE), an integrated platform allowing teaching, learning, collaboration and administrative functions through the internet. Phase 2 of the programme kicked off in 2016 and continued through 2017.

To encourage take up of the VLE platform in schools, the Ministry has been working to boost connectivity by reducing the number of schools connected to the slower internet connection systems of Asymmetric Digital Subscriber Line (ADSL) and Very Small Aperture Terminal (VSAT) and instead connect all schools to faster internet speeds between 2-10 Mbps by 2020. In 2017, 92.6% out of 9,732 schools were connected to internet of speeds between 2-10 Mbps, whilst the number of schools connected to ADSL and VSAT combined has been reduced significantly to 3,357. The improvement in connectivity has resulted in an increase in the use of VLE among students. This year, a monthly average of 865,738 number of students utilised VLE in at least one lesson session per week, as compared to the targeted monthly average of 660,000 students.

The Ministry will develop more learning content to encourage more students to utilise the Frog VLE platform. The Ministry is also studying the possibility of introducing policies and guidelines allowing students to bring mobile devices to school to enhance VLE usage.



Frog VLE supports 21st century learning in schools.

THE ROLE OF PRIVATE INSTITUTIONS OF HIGHER LEARNING

In line with the MEB - Higher Education's (MEB (HE)) aspirations to embrace public and private IHLs to enable Malaysia to compete globally, the private sector is considered as the engine of growth for Malaysian higher education. This is because private IHLs host approximately 693,322 students from the total of 1.34 million tertiary students enrolled in the country.

Private IHLs are integral to the Malaysian higher education system. In the NTP, private IHLs have been identified as the key drivers of the initiatives under the Education NKEA. MOHE, through MEB (HE), envisions a harmonised higher education regulatory framework for both public and private IHLs through policies that support the expansion of higher education especially via high-quality undergraduate programmes at private IHLs. In other words, the Ministry promotes institutional growth without compromising the quality of the private higher education sector.

There are many strategies and initiatives that are relevant to both public and private IHLs, for example, the Redesigning Higher Education initiatives that consist of key initiatives from the MEB (HE). There is also greater focus on outcomes, performance and quality standards through the use of rating instruments such as SETARA and MyQuest. The focus on performance and outcomes is used as part of the criteria for policy decisions such as obtaining licences to recruit international students by private IHLs.

ESTABLISHING MALAYSIA AS AN INTERNATIONAL EDUCATION HUB

In making Malaysia globally prominent by attracting quality international students, MOHE has rolled out an extensive plan as laid out in Shift 8: Global Prominence of the MEB (HE). Under MEB (HE), MOHE pledged that it would improve the coordination of all activities related to the management of international students to enhance Malaysia's capacity to host international students with the target of 250,000 students by 2025. In 2017, 170,068 international students enrolled in programmes offered in Malaysia (136,293 in IHLs, 33,031 in schools and language centres and 744 in technical and vocational institutions).

The Ministry will collaborate with all stakeholders, from IHLs to the Immigration Department, to ensure a seamless experience for students from the time they apply through to the completion of their studies. The Ministry also seeks to build greater global visibility and trust in the Malaysian higher education brand. To achieve the former, the Ministry will partner with relevant agencies to develop and implement high-impact promotional activities. The latter will be achieved through the provision of high-quality innovative programmes that appeal to a wider student base and the enrichment of student experiences.

Attracting globally renowned names in academia

In line with the aforementioned strategies, the number of international schools operating in the country has now reached 132. Both MOE and MOHE strictly monitor the performance of these schools and institutions and have also adopted a more stringent approach towards approving new licences to ensure the presence of only renowned and established operators. The updated guidelines for the establishment of new international schools are now available on MOE's website.

To further support the country's status as an education hub, the Government facilitates the entry of Tier One institutions to establish foreign branch campuses in the country. Malaysia is currently home to world-class university branch campuses from Australia, China and the UK. From the UK alone, there are five institutions: Nottingham University, Reading University, Newcastle University of Medicine, Heriot-Watt University and Southampton University which is its largest outside of the UK. Malaysia is also home to the Asia School of Business, a collaborative set-up between the Malaysian Central Bank and MIT Sloan School of Management. Its inaugural MBA class began in September 2016 and out of 47 students, 31 are foreign students from all over the world. The presence of these international branch campuses shows external confidence in the higher education system and the potential of Malaysia as a higher education destination.

> ***"Malaysia is currently home to world-class university branch campuses from Australia, China and the UK."***

Meanwhile, the EduCity@Iskandar (EduCity) initiative, Asia's first multi-varsity educational complex, further marks Malaysia's strategy to distinguish itself as an education hub at the tertiary level, housing universities and higher learning institutions, academia, industry action and R&D centres, student accommodation, recreational and sports facilities in a single location that is the first of its kind in Asia. Conceived in 2011, EduCity now counts over 4,500 students and 600 alumni in its ranks. In 2017, EduCity saw an enrolment of over 4,393 students. Efforts are ongoing to ensure that EduCity continues to attract students to study within the education hub.

Infrastructure and facilities upgrades will continue at EduCity to ensure it continues to attract students. A number of infrastructural plans aimed at enhancing the student experience are now in the pipeline, including a student union centre expected to commence construction in mid-2018 and a planned expansion of its gymnasium in the first quarter of 2018. Other upgrades include a rugby field which started preliminary work in late 2017. Following feedback on the Student Village (the student hostel) received from residents and partners, a phased refurbishment and enhancement of the Student Village will also be undertaken.

To widen its reach for potential students, EduCity collaborated with Education Malaysia Global Service (EMGS) to hold roadshows in Kazakhstan, Indonesia, China and South Korea. The roadshows received 57 potential entrants for the 2017/2018 academic year and their applications were forwarded to respective universities. Marketing efforts will be a key driver to increasing student enrolment within EduCity in the years moving forward.

Facilitating Malaysia's international education hub

EMGS is Malaysia's umbrella organisation for higher and tertiary education, operating under MOHE to market the Malaysian education brand as well as manage applications, processing and renewals of international student visas.

EMGS received 51,464 new visa applications from public and private IHLs, language centres and accredited training centres as of 2017. The overall turnaround time for the issuance of Visa Approval Letters (VAL) once visa application documents have been reviewed and verified has been significantly reduced from 20 working days in 2016 to seven working days in 2017 for complete applications. This is primarily due to a task force established at the Cyberjaya Immigration Office from 24 January to 8 February 2017 to clear a backlog of over 7,000 applications.

The Immigration Department also hired additional officers to process VAL applications. With the addition of these new officers, the total visa processing time, i.e. from visa application to visa issuance for inbound international students was reduced from a maximum of 77 days to 14 days. This is a significant reduction as lengthy visa processing was a significant barrier for the enrolment of international students in previous years.

EMGS has also implemented Big Data Analytics (BDA) through its Business Intelligence Dashboard. This tool provides MOHE and other stakeholders such as the Ministry of Home Affairs and the Immigration Department with greater insight into international student trends in Malaysia by enabling convenient access to data on students and institutions. EMGS's big data tool currently has real-time data available for 646,153 application records. EMGS has also customised a dashboard using BDA for MOHE which provides greater insights into its daily operations.

> ***"EMGS has implemented Big Data Analytics to gain greater insight on international student trends in Malaysia."***

To verify student identities during pre- and post-arrival medical screening, EMGS has implemented biometric authentication measures (fingerprint readers) across all 108 EMGS panel clinics within Malaysia. This ensures the validity of the medical screening results, avoiding fraudulent activities at the clinics such as students standing in for each other and reducing the risk of the spread of communicable diseases. It also ensures that the student who arrives in Malaysia is the same individual who attended the medical screening overseas. As of end August 2017, EMGS has captured 26,672 sets of biometric data for registration and future verification in Malaysia.

Currently, the pre-arrival medical screening in EMGS Panel Clinics is only compulsory for Indian, Bangladeshi and Sri Lankan students, which may lead to non-compliance amongst students of other nationalities in undergoing the medical screening thus posing a health risk. Medical Examination Report (MER) forms submitted by students from other countries are either incomplete or submitted in languages other than English. In some instances, students' fingerprints are not captured and clinics in Malaysia are unable to verify them during post-arrival medical screening. Moving forward, EMGS will review the need for all international students to conduct their medical screenings at EMGS Panel Clinics only. This will ensure that all MER submissions are complete as EMGS will ensure that the clinics adhere to its standards for submission.

In August 2017, an International Student Lab was held to identify ways to improve Malaysia's competitiveness and attractiveness as an international student destination. The Lab was attended by more than 80 representatives from the public and private sectors.

The recommendations of the International Student Lab included:

- Improving health screening processes;
- Introducing a student profiling mechanism;
- Allowing international students to work in Malaysia during their studies;
- Improving international student identification (iKad);
- Allowing automatic visa extension upon graduation for international students; and
- Implementing coordinated marketing efforts among education institutions and relevant agencies.

Moving forward, marketing initiatives for EMGS in 2018 will involve more vigorous student recruitment activities through participation in over 60 international events, such as the British Council's Going Global 2018 event which will be co-hosted by MOHE in May 2018. The coming year will also see solo roadshows being held in key markets like China, Indonesia and India which will allow for a higher branding visibility. EMGS will also intensify engagements with professional education consultants and recruitment agents via international platforms like ICEF in Germany, Brazil, Korea, Japan, and Vietnam; and St. Alphe in Thailand and Russia as a means to tap into new markets, while maintaining the traditional focus markets on Indonesia, China, Central Asia and South Asia.

EMGS will also take the lead in coordinating marketing efforts between Ministries, departments and agencies, such as MATRADE and MOTAC, with the education institutions to ensure synergy in promoting Malaysia as a hub for international education. EMGS will be working to ensure that the educational institutions involved move from promoting their own bodies towards adopting a holistic approach to promote Malaysia as an attractive education hub.

Perak Primary School Rises to the Challenge to Increase Students' English Proficiency

A rural school in the district of Batang Padang, Perak, Sekolah Kebangsaan Sungai Lesong (SKSL) was a pilot school for the Dual Language Programme (DLP) and the Highly Immersive Programme (HIP). Former SKSL headmaster, Zamri bin Abdul Rani, took on the challenge of implementing both initiatives positively. "It required a paradigm shift by all stakeholders, especially the students, to see English as a viable language to be taught outside of urban and suburban schools," he says.

As the school's chief administrator, Zamri did not find it easy to build up confidence among teachers and parents. Financing the DLP and HIP initiatives was also a challenge: SKSL had to approach the Parent-Teacher Association for assistance to purchase the necessary teaching and reference materials.

Zamri recounts providing constant help and support to his teachers, right down to attending their classes to demonstrate solidarity and show his commitment to them. "I had to expose them to the bigger picture, academically speaking." He also brought the students' parents around, calling them in for meetings and discussions to convince them that those learning Science and Mathematics in English have a brighter future.

He attributes the initiatives' success to the help and support of the district education office and the state's education department. He pointed out that following a visit from the HIP Secretariat, the English Language Teaching Centre, SKSL was connected to Universiti Tunku Abdul Rahman, which also provided significant assistance.

SKSL rose to the challenge, becoming the third-best HIP school nationwide in 2016, by having the students use English beyond the classroom. "We've used Scrabble as a basis for our Word Attack game to help increase student vocabulary; we've also created a 'HIP-Zonia' area with all sorts of English educational games for students to play with during recess and other break times." In 2017, SKSL had DLP classes in Year One, Two, Four, and Five, and 2018 will see the inaugural DLP class sitting for the UPSR. The DLP classes have a 100% pass rate for English and Science, while the official weekly school assembly is conducted exclusively in English.

Personally, Zamri feels these initiatives are important towards achieving Malaysia's goal of becoming a developed nation by empowering students with proficiency of the English language to face the challenges of a more globalised world. However, financing the HIP could be further improved. "In order to create an environment that is conducive towards learning English in an immersive manner, rural schools require adequate financing, so that they can provide sufficient English materials to the students."

It is Zamri's hope that HIP and DLP can be further extended and expanded to all schools, and that these programmes can be made more self-sufficient.

Zamri (middle), former headmaster of Sekolah Kebangsaan Sungai Lesong, actively engages the Ministry and parents to support HIP and DLP activities.

BUILDING A COMPETITIVE TALENT PIPELINE THROUGH DISCIPLINE CLUSTERS

The establishment of private higher education clusters aims to develop a pool of talents in specialised areas. The initiative ensures Malaysia possesses a highly skilled talent pool in line with the country's high-income aspirations by leveraging on the existing networks of education institutions, international institutions and related industries to co-collaborate and develop relevant academic offerings.

Islamic finance and business education cluster

The Islamic finance and business education cluster is being developed through the leadership of the International Council of Islamic Finance Educators (ICIFE). Under its new President appointed in March 2017, the Council is focused on strengthening both local and foreign memberships among individuals and institutions, with the objective of formalising a professional body of accredited Islamic finance educators comprising academics and industry professionals.

To boost its membership, ICIFE participated in various regional Islamic finance conferences, such as the 14th Kuala Lumpur Islamic Finance Forum 2017 (KLIFF) and the 5th Global Waqf Conference in Indonesia, both of which were held in October 2017. Following participation in these conferences, a total of 16 bodies and institutes applied for ICIFE membership.

ICIFE also worked on refining the current curriculum on Islamic economics and finance by holding the 2nd Roundtable on Islamic Economic and Finance from 21-22 September 2017. Attended by academics, heads of departments and deans of faculties from 18 universities across Malaysia and Indonesia, the objective of the Roundtable was to improve the content and design the best practices in the implementation of the curriculum.

Health science education cluster

The UCSI University Teaching Hospital (UCSI Hospital) is being built to provide medical students with state-of-the-art facilities and opportunities to work with world-renowned medical experts to optimise their practical experience and ensure employment upon graduation. The construction of the UCSI Hospital reached 80% completion as of December 2017, with construction estimated to be fully completed at the end of March 2018. Built in phases, UCSI Hospital is expected to receive its first patients in July 2018 and will begin with a capacity of 130 beds. During its initial operations, UCSI Hospital's core services will include internal medicine, cardiology, accident and emergency medicine, general surgery, orthopaedics, gynaecology, as well as plastic and reconstructive surgery.

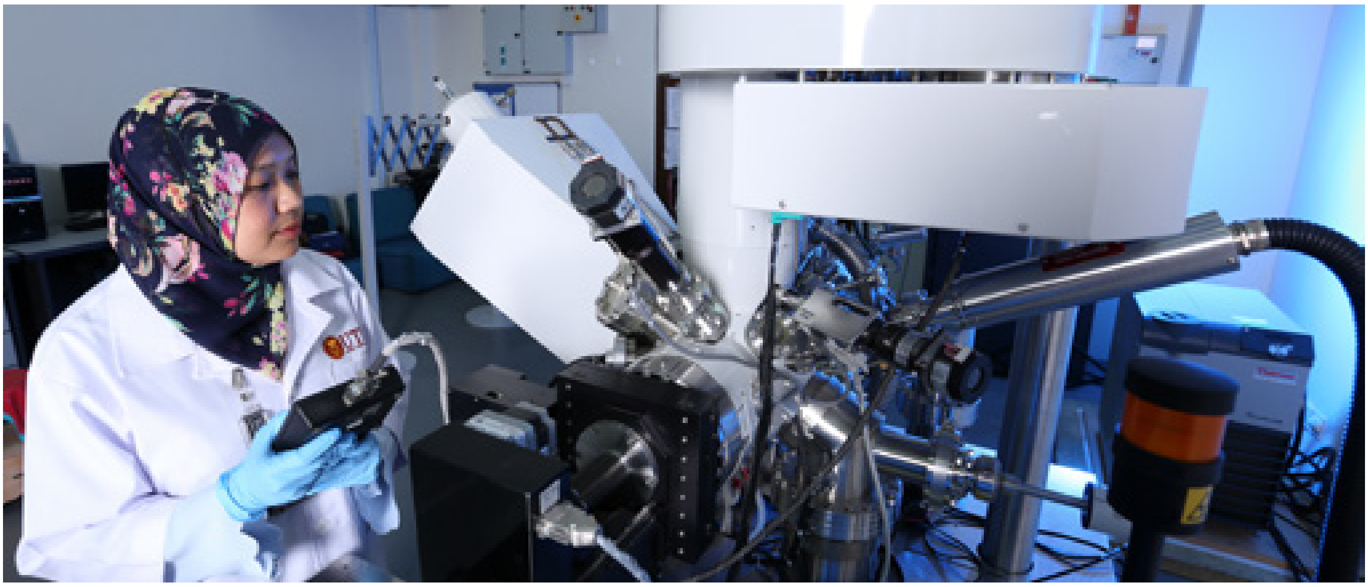
> ***"UCSI Hospital is collaborating with world-renowned medical professionals to bring expert knowledge to its students."***

To boost its national and international standing, UCSI Hospital has begun communicating with Harvard University to establish clinical collaborations in the fields of cardiology, cardiothoracic surgery as well as plastic and reconstructive surgery. UCSI is also working on avenues for research collaboration with Harvard. Both parties are already collaborating on other fronts: to date, five UCSI University students have been selected to advance high-impact research at Harvard on year-long arrangements.

UCSI Hospital is also collaborating with world-renowned medical professionals to bring expert knowledge to its students. For example, Professor Dr. Gordon Harold Williams – a world-renowned endocrinologist who leads the Hormonal Mechanisms of Cardiometabolic Injury Programme at Harvard's Brigham and Women's Hospital and has published more than 500 papers in top journals – is serving as a visiting professor at UCSI University's Faculty of Medicine and Social Sciences. UCSI has also secured the expertise of leading academics from King's College London and the Baker IDI Heart and Diabetes Institute as visiting professors.

Hospitality and tourism cluster

The NTP aims to support the tourism industry by increasing the number of hospitality and tourism graduates from 20,000 in 2009 to 50,000 to 2020. Through initiatives led by The Malaysia Centre of



Higher education clusters aim to develop a pool of talents in specialised areas.

Tourism and Hospitality Education (MyCenTHE), 24,280 students enrolled in hospitality and tourism courses in private institutions in 2017 against the target 26,000.

In 2017, MyCenTHE, together with Sunway University, Taylor's University and KDU University College, formed the EPP10 Committee to jointly plan and execute the National Awareness Campaign on Hospitality and Tourism. The campaign was executed to market and increase awareness of hospitality and tourism courses to spur student enrolment. It also sought to address issues on hospitality and tourism graduate employability by advocating a focus on developing transferable skills, as it is generally accepted that poor marketing as well as low salaries offered by the private sector discourage interest in the hospitality and tourism industry.

MyCenTHE has also seen an expansion in its membership, growing from 15 members and seven cluster leaders in 2016 to 19 members, nine cluster leaders and four discipline leaders from institutions across Malaysia in 2017, demonstrating yet again the close partnership between the Government and the private sector in developing Malaysia's education ecosystem. With more leading institutions on hospitality and tourism courses joining forces under MyCenTHE and the EPP10 Committee, it is expected that an increasing number of institutions will start participating and that there will be a significant increase in enrolments in hospitality and tourism courses.

Games development cluster

In an effort to ensure a continuous flow of talent into the game development industry, engagement activities have been identified as an important tool to penetrate the student and school audience through school career talks, workshops and events. This is aimed at educating school counsellors on the global and local game development industry as well as opportunities within the industry.

Since 2013, institutions such as KDU University College, Tunku Abdul Rahman University College, Universiti Teknikal Malaysia Melaka and Universiti Tunku Abdul Rahman (UTAR) have engaged with secondary school counsellors in the Klang Valley and Melaka. Activities included providing school counsellors the opportunity to visit the Kuala Lumpur office of Streamline Studios, a major US-based game development studio, and Codemasters Studios KL, one of the oldest games development studios from the UK. This allowed the counsellors to gain insights into games development while enabling the games development cluster project champions to visit secondary schools and engage directly with students.

As part of activities under this cluster, secondary school engagements via workshops and competitions are also held to raise student awareness on the game development industry and its processes and to demonstrate that game development is a technical career with great growth possibilities. One of the biggest events of this nature is TableTop, an activity geared at educating and equipping secondary-school students with knowledge about the game development pipeline using board games. Using a given theme, participants would be tasked with creating a table-top game that is fun and innovative. Similar exposure activities include the Global Game Jam, a game development workshop for secondary-school students, and the Smartmob Mobile Game Competition which has been held in Selangor and Melaka annually since 2015.

These competitions and workshops have sparked the interest of secondary-school students and have given them the opportunity to try their hands at the game development process: in 2017 alone, 36 schools and 251 secondary school students were involved in the events under this discipline cluster. Since the introduction of the TableTop competition in 2013, 718 students have participated from 128 schools. The trend shows a yearly increase in the number of students participating.

A key challenge to the development of this discipline cluster lies in gaining the initial support from both the schools and district education offices for these engagement activities due to the lack of awareness on the games development cluster. However, support has usually been overwhelming once the officers are made aware of the opportunities within the discipline cluster. Moving forward, the initiatives of the games development cluster will be expanded to other states, beginning with Penang and Sabah in 2018.

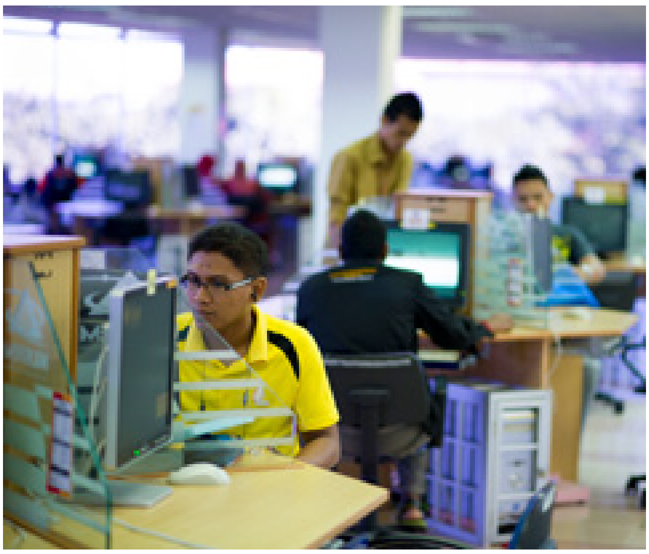
Accounting cluster

Championed by Sunway TES Sdn Bhd, the Sunway TES Centre for Accountancy Excellence (CAE) is aimed at building the accountancy talent pool by incorporating professional accounting qualifications into existing accounting degree programmes offered by public and private institutes of higher learning.

In November 2015, Sunway TES CAE began collaborating with the Polytechnic Education Department (Jabatan Pendidikan Politeknik, JPP) to upgrade the quality of the syllabus for the three-year Diploma in Accountancy and ensure the qualification aligns with industrial requirements. This is an aspiration to bridge polytechnics' teaching methodologies to be on par with professional certification programmes and to enhance students' readiness for employment. On 14 June 2016, an MoU was signed between Sunway TES CAE and JPP.

Following the signing of the MoU, Sunway TES CAE developed a teaching model, which it then deployed at Politeknik Port Dickson to start with. The teaching model incorporated a one-week Train-the-Trainers (TTT) programme, where the trainers had their paradigms shifted from an academic to a professional perspective. The teaching model also included a two-week Intensive English programme to enhance students' English proficiency in preparing to study ACCA F5 (Performance Management) and F6 (Taxation) subjects; a six-month study course of ACCA F5 and F6 subjects with on-going Intensive English classes to ensure students remain ready to study the ACCA subjects; and a module to teach students how to write in the ACCA F5 and F6 final examinations.

The six-month study course was conducted from January to June 2017 by Sunway TES CAE and 18 students from seven polytechnics were selected to study in this special programme in preparation for the final exams in June 2017. Following the study course, the pass rate for the F5 and F6 exams was 1% and 41% respectively, with one student not having entered the final exam. Challenges identified by lecturers as reasons for this sub-optimal result included poor discipline among the students and their lack of language skills. Subsequently, from 4 to 8 August 2017, a TTT Programme was provided to 10 lecturers of Politeknik Port Dickson on the F5 and F6 syllabi.



The Government collaborates with IHLs to champion the education discipline clusters.

CREATING ALTERNATIVE EDUCATION PATHWAYS

The Malaysian Government has consistently championed Technical Vocational Education and Training (TVET) to provide alternative pathways for students to attain professional qualifications. This focus area aims to rapidly scale up and increase the quality of private skills-training institutions and attract international vocational students. This will be achieved by increasing PPPs with technical and vocational schools, and facilitating industry investment in training to provide students with an alternative option for learning and to establish closer ties with the industry.

In 2017, under the 18 different agencies tracked, a total of 8,380 students were trained through an industry-based approach. This helped to minimise skill gaps and contribute to higher employment rates for TVET graduates. Moving forward, the Government will continue to support PPPs to ensure that TVET graduates are industry-ready.

Efforts are also focused on ensuring the quality of TVET instructors based on six e-profiling competencies. To date a total of 15,471 TVET instructors have completed a competency evaluation on the e-profiling system. The Centre for Instructor and Advanced Skill Training (CIAST) under MOHR is currently monitoring and coordinating the agencies involved to implement staff training through provisioning and upskilling assignments based on the results of competency analysis conducted in e-profiling to ensure that truly necessary training is carried out.

MOHR has also taken steps to increase TVET levels, namely by requiring at least 30% of the total intake in all public skills training institutes to undergo the National Dual Training System (NDTS), having industry-led bodies to become supervisors to NDTS training modules and raising financial incentives for apprentices from RM300 to RM500 to increase the number of students trained under the NDTS.

Table-setting demonstration by Mercure Kota Kinabalu to students from Ascot Academy.

MyCenTHE Rebrands for Greater Industry Relevance

According to Professor Dr. Kashif Hussain, Dean of UCSI University's Faculty of Hospitality and Tourism Management, Malaysia currently earns over RM100 billion in tourism receipts, which is expected to grow to RM168 billion by 2020 and RM295 billion by 2027. "In 2016, the hospitality industry directly supported 639,500 jobs, and indirectly supported 1,700,500 jobs or 12% of total employment. By 2027, the industry will directly lead to the employment of 956,000 people (5.4% of total employment) and indirectly support 2,564,000 jobs (14.5% of total employment).

As part of the initiative under the NTP to build a hospitality and tourism cluster, the Malaysia Centre for Tourism and Hospitality Education (MyCenTHE) was launched in 2010 with the aim of equipping Malaysia's expanding tourism and hospitality industries with quality human capital. Its primary objectives are to increase the annual output of tourism and hospitality personnel to 50,000 by 2020, and increase the share of graduates with diplomas or degrees in the industry to 50%. UCSI University was appointed by MOHE to lead this initiative.

Currently, 24 private institutes of higher learning (IHL) in Malaysia are working together with MyCenTHE to promote tourism and hospitality education, with nine cluster leaders representing the states of Sarawak, Penang, Negeri Sembilan, Melaka, Sabah, Johor, Pahang, Kedah, and Perak. Dr. Kashif, who is also the President of MyCenTHE, points out that the hospitality and tourism cluster is a diverse field. "Educational institutions offering tourism and hospitality education have a great opportunity to develop new and unique programmes, equipping graduates to work in hotels and resorts, F&B outlets of all classes, airlines and other transportation enterprises, cultural venues and venues catering to the events industry, amongst others."

MyCenTHE aims to see an increase in the industry's average monthly salary from RM2,000 to RM4,000 so that graduates may have sustainable careers and better livelihoods ahead. This entailed ensuring that tourism education is relevant to the needs of the tourism industry. "All of the MyCenTHE cluster leaders have implemented work-based learning in their offered curriculums. This approach has provided students with the required professional skills in accordance with industry trends, real-life experience, and viable employment opportunities, which has significantly increased graduate employability and industry engagement," Dr. Kashif notes.

Dr. Khashif Hassan, Dean of UCSI University's Faculty of Hospitality and Tourism Management and President of MyCenTHE.

In 2017, MyCenTHE, along with its IHL partners, established a working committee of the four major players of the education sector (UCSI University, KDU University College, Sunway University and Taylor's University) to raise the quality of the workforce with the combined efforts of its member institutions across the nine states. "We reorganised our key strategies and plans moving forward. We also increased our branding and promotion efforts by running a National Awareness Campaign 2017, as well as reaching out to the youth and public using social media to create heightened awareness regarding the future of the hospitality and tourism industry, as well as related career areas," Dr. Kashif explains.

The National Awareness Campaign 2017, with its "We Want You In Hospitality and Tourism Industry" tagline, took place in October and November 2017 in Kuala Lumpur, Selangor, Penang, Kedah, Perak, Pahang, Negeri Sembilan, Johor, Sabah and Sarawak. "The objective of the nationwide campaign was to promote the hospitality and tourism industry to 3,000 students from 100 local schools, bringing them to various hotels, resorts, theme parks, convention centres and tourism companies in order to allow them to explore the nature, working lifestyle, and culture of the industry. We hoped that through this campaign, we would be able to help bridge the gap between academia and the industry."

"As higher education providers, we need to ensure that we produce the best graduates not only in the industry, but for the industry. The industry demands quality human capital that possesses the ability to anticipate and exceed their customers' or 'guests' needs, and deliver high quality service. We are keen to ensure that hospitality and tourism education does not only positively impact the national economy but also help nurture our existing and upcoming talent pool."

MOVING FORWARD

A more thorough approach to policy formulation and de-clogging processes will be crucial to take the Government's NTP education initiatives, such as ECCE enrolment, upskilling of teachers and promotion of the DLP and HIP forward following the achievements and challenges faced in 2017. The rakyat can also expect an exciting year ahead with the implementation of new guidelines and outcomes from the various labs held this year, most notably from the special education needs students mini-lab and the International Student Lab.

In terms of promoting Malaysia as a premier destination for education, international marketing activities with relevant stakeholders will be enhanced and processes improved to make Malaysia globally competitive. Each discipline cluster will focus on improving marketing and branding by consolidating and creating new partnerships between industry players and education providers to increase enrolment in the disciplines and raise awareness on the opportunities within the related industries. Meanwhile, EduCity@Iskandar will continue to improve its infrastructure and step up its local and international marketing activities to increase enrolment of local and international students into EduCity institutions.

REJUVENATING THE URBAN LANDSCAPE

YB DATUK SERI TENGKU ADNAN TENGKU MANSOR
Minister of Federal Territories

The Greater Kuala Lumpur and Klang Valley (Greater KL/Klang Valley) region is rapidly increasing in connectivity, bringing wealth and prosperity to its residents in line with the goal of the Greater KL/KV NKEA to improve its liveability and become a competitive commercial centre in the global arena. Its GNI contribution is expected to increase from RM248 billion in 2010 to RM693 billion by 2020, with its progress on track towards creating 320,000 jobs in the same year.

To improve its liveability and regional competitiveness, the Greater KL/Klang Valley NKEA has implemented initiatives to improve the region's connectivity, revitalise its rivers and protect its green spaces, enhance its commercial attractiveness and ensure proper management of its waste and water resources to meet the needs of its growing population and drive economic activity. According to the Economist Intelligence Unit's (EIU) Global Liveability Report 2017, Kuala Lumpur has improved its liveability ranking to 70th out of 140 cities from 78th in 2010 and remains the second most liveable city in Southeast Asia.

To this end, many projects first embarked upon in 2010 have reached significant milestones over this year, representing not only achievements for this NKEA but also serving as cornerstones for Malaysia's transformation under the NTP. These include the completion of the full MRT Line 1 on 17 July 2017. The project, which was delivered two weeks ahead of schedule and saved RM2 billion below budget, is now recording an average ridership of 110,000 commuters daily, and the number is expected to grow higher as the MRT continues to provide valuable connectivity within the Greater KL/Klang Valley region.

Other significant initiatives include the River of Life project, which aims to transform the Klang and Gombak Rivers and its surrounding areas into thriving recreational activity spots and enhance its economic value, as seen in other world-class cities. The project marked the launch of the River of Life Heritage Quarter on 28 August 2017, a new premium attraction across 2.7-km-worth of riverside within the heart of the city, delighting residents and tourists alike. It has also gained international recognition with AECOM, the infrastructure firm that designed the overall river beautification, receiving the Award of Excellence by the International Federation of LANDSCAPE Architects and the Asia-Pacific Landscape Architecture Awards 2017 under the Cultural and Urban Landscape category.

The success of this NKEA is attributed to the close cooperation among the relevant ministries and agencies as well as public support in ensuring the sustainability of the enhancements in Greater KL/Klang Valley. As we approach the 2020 mark, all stakeholders must increase their efforts to ensure that the completion of projects are in line with our targets for the country.

CREATING CONNECTIVITY WITHIN THE CITY AND BEYOND

Klang Valley Mass Rapid Transit Project

As a flagship project under the NTP, the MRT project was formulated to add much-needed capacity to the Greater KL/Klang Valley's growing public transport system and catalyse economic activity. The MRT also contributes to the liveability of Greater KL/Klang Valley by providing a low-pollution travel option for residents to move around the city, enabling an estimated 160,000 vehicles to be taken off the roads and a reduction of 34,400 tonnes of carbon dioxide emissions per year.

MRT Line 1 commenced full operations on 17 July 2017.

The project reached a significant milestone when the full MRT Line 1 (Sungai Buloh - Kajang, SBK) was launched on 17 July 2017, improving connectivity within Greater KL/Klang Valley; pushing it closer to becoming a fully connected region. The line encompasses 31 stops from Sungai Buloh to Kajang, serving a population catchment of 1.2 million individuals. The Line's connectivity is further enhanced with its integration to the region's existing rail backbone comprising of the LRT, Monorail, KTM Komuter, KLIA Express and KLIA Transit services.

YAB Prime Minister officially launching MRT Line 1 at the Tun Razak Exchange station.

The second phase of the MRT project (Sungai Buloh - Serdang - Putrajaya (SSP) Line) is under construction, with a ground-breaking ceremony at the Putrajaya Sentral Station by the YAB Prime Minister on 15 September 2016. As of 2017, work packages related to viaducts, underground works, electrical and mechanical systems have been awarded accordingly. As of 31 December 2017, the progress of the SSP Line reached 19.13% and is on track to complete as scheduled by 2022. The first phase of the MRT SSP Line is slated for operations by the second quarter of 2021, while the full line will be operational in the succeeding year.

Together, the SBK and SSP Lines will provide extra capacity to transport 900,000 commuters daily. In tandem with these lines, plans are underway for the third phase of the project (the Circle Line). The Circle Line will loop around Greater KL/Klang Valley, hence completing the full MRT project.

The MRT urban rail network is a complex project which involves extensive construction in a highly congested urban area. Hence, best practices will be used to increase workforce efficiency while reducing the risk of damage and injury. To this effect, common disruptions caused by construction sites such as noise and air pollution, road closures, and potential damage to neighbouring properties will be better managed through putting up sound barriers among others. Safety in construction sites and its surrounding areas will be prioritised, especially at locations in close proximity to pedestrians, busy traffic, and buildings. To ensure compliance, impact assessments and stakeholder engagements will be conducted at regular intervals.

To obtain the latest information and progress on MRT development, the public can access various offline and online MRT touchpoints, such as information centres located at Viva Mall in Kuala Lumpur and Atmosphere Putrajaya, as well as mobile information centres and kiosks located at other shopping malls. The public can also provide feedback on the MRT development via http://www.mymrt.com.my/en/feedback-form.

Kuala Lumpur-Singapore High-Speed Rail project

The Kuala Lumpur - Singapore High-Speed Rail (KL - SG HSR) is another project aimed at improving the connectivity of Greater KL/Klang Valley. The project aims to create socio-economic multipliers through economic clusters which are expected to blossom along the rail line.

The railway, which will cut the journey time between KL and Singapore to just 90 minutes, will serve eight stations: seven in Malaysia and one in Singapore. Beginning from Bandar Malaysia, the HSR route will cover Bangi - Putrajaya, Seremban, Melaka, Muar, Batu Pahat and Iskandar Puteri before reaching Jurong East, Singapore.

The increased connectivity between two of Southeast Asia's major economic engines is expected to further facilitate cross-border businesses by providing them access to a broader market place. At the same time, the public will enjoy shorter travel time and a more comfortable ride through the HSR's city-centre-to-city-centre connection along the corridor.

In 2017, two international-level Industry Briefings were held with Land Transport Authority (LTA) Singapore to prepare a tender in 2018 for the establishment of a privately financed HSR asset company (AssetsCo). The results of the HSR AssetsCo tender are expected in 2018, after which the appointed parties will be responsible for designing, building, financing and maintaining

MRT Line 1 seen here is expected to serve a population catchment of 1.2 million individuals.

all rolling stock and rail assets. On 17 October 2017, MyHSR Corp also unveiled the Station Concept Design and the Ground Control Point Survey Works launched by the YAB Prime Minister.

A project of this scale will require a significant workforce with expertise in the high-speed rail industry, which is in short supply in Malaysia as it is a relatively new industry in the country. To address this, initiatives have been identified to develop and upskill local talent with the required technical skills through: academic programmes and modules, Technical and Vocational Education Training (TVET) modules, professional redevelopment and reskilling; and the Young Engineer Programme. These initiatives will provide on-the-job training as well as continuous assessments and evaluations through collaborations with institutions of higher learning and TVET institutions as well as project partners.

> *"The increased connectivity between two of Southeast Asia's major economic engines is expected to further facilitate cross-border businesses by providing them access to a broader market place."*

In addition, MyHSR Corp together with the Economic Planning Unit developed the Socio-economic Development Programme (SEDP) to accelerate inclusive growth in the cities along the HSR corridor in the same year. The SEDP will be implemented with a focus on three components: economy, inclusivity and sustainability. Each component is supported by a set of enablers to maximise benefits for local communities and ensure meaningful participation in its development. As such, an SEDP Delivery Kick-Off and CTP (Cities Transformation Programme) Plenary was organised in February 2017 to share an overview and updated progress of the SEDP. The events also acted as a platform to kick-off the SEDP delivery programmes – the Economic Acceleration Programme (EAP) and the Cities Transformation Programme (CTP).

YB Datuk Seri Abdul Rahman Dahlan officiating the SEDP Delivery Kick-Off and CTP (Cities Transformation Programme) Plenary in February 2017.

Pedestrian Network and Bicycle Lanes Masterplan

Since 2010, 49.8 km of pedestrian walkways around Kuala Lumpur have been re-paved, anti-climb fencing has been installed and greenery has been added as part of a project to improve pedestrian linkages with major developments in the city and boost commercial and leisure activities. These changes have enhanced pedestrian comfort and safety which in turn, encourages more on-foot travel around the city.

Following the successful completion of bicycle lanes which connect Mid Valley to Dataran Merdeka in 2015, DBKL will foster public mobility through incorporating a pedestrian network and bicycle lanes masterplan in current and future developments. The masterplan will be completed in 2018, and will incorporate public views and focus group discussions.

The masterplan will include pedestrian networks and bicycle lanes as a guide for DBKL and local councils to upgrade bicycle lanes. This will complement new services such as bike sharing around the Greater KL area which encourages low carbon transportation for its citizens. The introduction of the masterplan is also targeted to guide local and city councils in rethinking the allocation of road space, which is currently vehicle-centric.

BOOSTING ECONOMIC ACTIVITIES IN GREATER KUALA LUMPUR AND KLANG VALLEY

Despite a challenging global economic outlook in 2017, InvestKL persevered in its efforts of facilitating the establishment of 100 multinational corporations (MNCs) in Greater KL/Klang Valley by 2020. Progress is attained through engaging with C-level decision makers and solidifying alliances with various partners. As a result, InvestKL recorded the entry of 12 MNCs in 2017.

Stakeholder engagement sessions were undertaken throughout the year in close partnership with the Ministry of International Trade and Industry as the main regulator of foreign direct investment. The sessions enable the agency to better facilitate the entry of MNCs, gain better understanding of individual MNC needs and concerns as well as ensure continued support towards existing MNCs to encourage their long-term presence in Malaysia. Sessions conducted during the year include a French Delegation roundtable with The Movement of the Enterprises of France (MEDEF), the largest employer federation in France, as well as a luncheon in conjunction with the French President's visit to Kuala Lumpur.

"InvestKL recorded the entry of 12 MNCs in 2017."

Strategic partnership initiatives with the Big Four accounting firms and international chambers of commerce, amongst others, will also be leveraged to engage potential investors and secure the remaining MNCs needed towards the 2020 target. At the same time, continuous promotional campaigns on the advantages of the Greater KL/Klang Valley region will be carried out across local and international media platforms through both traditional and digital means.

InvestKL will also participate and host various roundtable initiatives for different sectors and regions. Among events planned are an Oil and Gas Roundtable, as well as a Belt and Road Conference and Tax Symposium. These engagements will take place all over the world, including in major cities in the US, Europe, China and Japan. On the local front, InvestKL also hosted an industry roundtable for insurance companies and Central Bank of Malaysia (Bank Negara Malaysia) to discuss mutually beneficial policies and regulations to ensure long term growth. The continued success in attracting large MNCs to Greater KL is testament to the effectiveness of these numerous initiatives.

Meanwhile, TalentCorp continued to attract and retain high-skilled talents in Malaysia to support the talent needs of Greater KL/Klang Valley. As of 2017, the Scholarship Talent Attraction and Retention (STAR) programme registered 1,206 Public Service Department (JPA) scholars.

Under the Returning Expert Programme (REP), 405 applicants have been successfully approved as of 2017. To ensure continued success, marketing must be intensified to increase interests among returning Malaysian professionals from their stints abroad. Meanwhile, the Residence Pass-Talent (RP-T) programme (which is meant to retain highly skilled expatriates in Malaysia) approved 1,049 applicants in the same year, further enhancing the high-skilled talent pool, and rate of knowledge transfer in Malaysia.

It is important to ensure employment pass applications are processed in a convenient and timely manner to attract interested applicants, especially as human resource constraints may impact the efficiency of the application process. In 2017, MyXpats Centre successfully processed 97% of employment passes within its five-day charter, while the Expatriate Service Division (ESD) online system has registered 13,000 companies and processed 106,000 applications since 2014.

DEVELOPING A WORLD-CLASS CITY

River of Life

In light of the region's increasing population, ensuring that Greater KL/Klang Valley continues to be a liveable environment is critical. Thus, from 2011, significant efforts have been channelled to improve the region's rivers under the River of Life (RoL) project. Following the launch of Phase 1 in 2017, the environment-centric project is on track for completion by 2020.

As part of the river cleaning process, work continues to be undertaken across eight river tributaries, spanning 110 km to improve water quality to Class IIb. Water quality is measured in classes; Class I denotes the highest water quality while Class V rivers are extremely polluted. Prior to the RoL project implementation, the WQI for rivers within the RoL project was a harmful Class IV-V, but all eight tributaries have since improved to Class III.

Since 2011, a total of 27 sewage treatment plants and 136.33 km of sewerage pipe networks have been upgraded and installed, with the construction of one more sewage treatment plant and an additional 7 km of sewerage pipe networks under construction to date. To prevent the risk of effluent overflow or malfunction that would exacerbate river contamination, old and existing small-capacity treatment plants are also being upgraded, with 13 re-engineered into regional sewerage treatment plants and 267 plants currently on schedule to be completed.

The agencies involved have identified wastewater produced from wet markets as one of the main sources of river pollution. As a countermeasure, four wastewater treatment plants for wet markets in Kuala Lumpur have been built with an additional five in Selangor at the final stages of construction. A total of 504 gross pollutant traps, trash rakes and log booms have also been installed, while 13 river treatment plants have been built and two more under construction.

Rehabilitation works along Sungai Kerayong's 13 km riverbank stretch and riverbank enhancing works at selected locations in Sungai Klang and Sungai Gombak have also been completed. Additionally, interceptor systems have been installed at the 10.7 km river stretch under the project's river beautification component. The system is designed

CURRENT READING*

The aim is to achieve **Class IIb** (safe for skin contact and water recreational activities) **by 2020**

Water quality index for ROL rivers as of 2017.

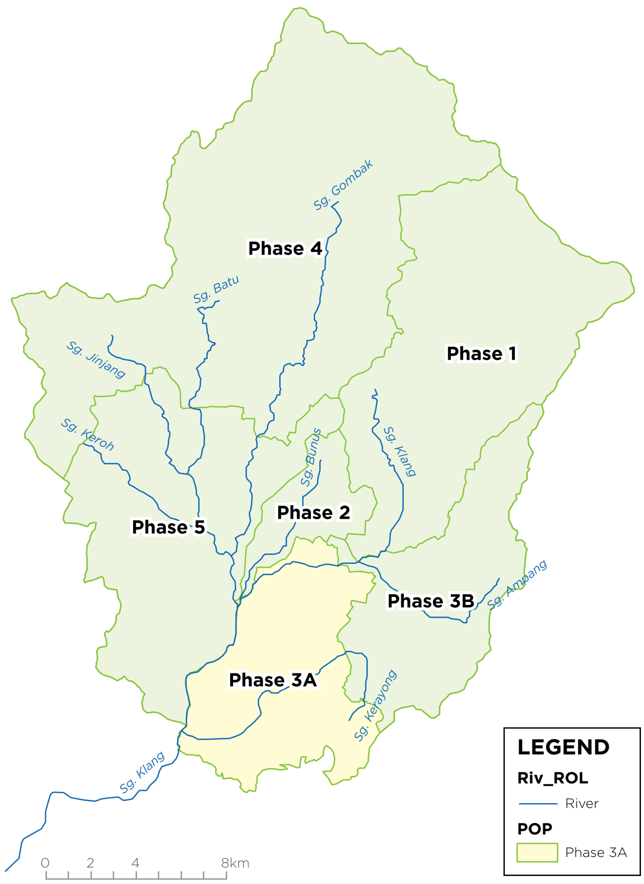
to intercept street debris not captured by sewage or wastewater treatment facilities and redirect it to eight sullage treatment plants before the water is released to the river. This additional measure will help ensure the water quality along the 10.7km of rivers can achieve Class IIb. Presently, four interceptor systems have been completed with the remaining still under construction.

The river beautification component has achieved significant milestones in 2017 following the upgrading of the areas surrounding the 10.7 km river stretch from Titiwangsa to Brickfields, with Masjid Jamek at its focal point. Restoration and renovation of Masjid Jamek have been completed and the area has been made more accessible and attractive to patrons, visitors and pedestrians.

The fountain-and-lights feature of the Kolam Biru at Masjid Jamek was launched simultaneously with the ROL Phase 1 beautification project on 28 August 2017 by the YAB Prime Minister. Beautification works have commenced since 2014 at areas around Dataran Merdeka, Masjid India, PWTC and Brickfields, while a contract is in the process of being awarded for works at Taman Tasik Titiwangsa. Beautification of all areas are expected to be completed in 2019. The Ministry of Federal Territories will continue to work together with DBKL to ensure the completion of Phase 2 of river beautification works. Projects are closely managed with regular progress reviews of each node and package.

Dumping of foreign materials into the region's water channels hinder and can potentially inhibit river cleaning efforts. As such, further engagement with the public is imperative. To help with this, a five-phase Public Outreach Programme (POP) was devised. Each POP Phase is catered to one area of Kuala Lumpur and Klang Valley, which target the local communities (school children and food traders, among others) living within 300 m of riverbanks to increase awareness on river cleanliness. POP also fosters civic-mindedness to ensure the sustainability and maintenance of the improved river quality.

Although substantial improvements have been recorded, the RoL project can be hampered by construction works, geographical constraints and soil conditions. However, constant collaboration between the Government and private agencies will ensure that delays to the project are minimal. Ongoing efforts in educating the public must be continued to ensure that the upgraded facilities will not be vandalised.



Coverage of the Public Outreach Programme.

Preserving green spaces

Tree Planting and Park Adoption initiatives to plant 100,000 trees in Kuala Lumpur by 2020 was achieved in the year 2013, seven years ahead of schedule. Nevertheless, there have been continued efforts to increase this number to ensure a greener, and more liveable Greater KL/Klang Valley.

Following Wilhelmsen Ship Services and Wilhelmsen Ship Management's tree planting initiative in 2016, four additional parks were adopted in 2017 by private corporations and community organisations. The demand was encouraged by a partnership with Yayasan Hijau which allows adoption funds to be exempted from taxation.

A collaborative effort between Think City and Seksan Design to redesign and repurpose existing spaces resulted in the launch of the Tun Perak

The upgraded Tun Perak Pocket Park adds greenery to a busy city intersection and utilises river boulders from the nearby River of Life project.

Pocket Park. The pocket park also features recycled rocks taken from river boulders removed from RoL project areas.

Naza TTDI's KL Metropolis City also committed to a large-scale corporate adoption initiative worth RM20 million over 15 years. Additionally, a fern conservation garden was set up at YTL Stripes Hotel on Jalan Kemuning, Kuala Lumpur, while AIA Group adopted a portion of Metropolitan Kepong Park.

Promoting iconic places

Ongoing work to develop heritage trails is progressing as per the Heritage Trail Master Plan. Heritage Trails 5 to 8 are undergoing work development, despite facing challenges including the relocation of nearby utilities.

Heritage Trail 5, or Jejak Pahlawan, which connects Precinct 7 of the RoL project to Jalan Parlimen, remains under construction due to the challenges of working in a confined space coupled with heavy traffic. Heritage Trail 6, or Jejak Rimba Bandar, is on track for completion in 2018, where the 1.2-km-stretch along Jalan Ampang and one of the entrances to Bukit Nanas Forest Reserve will be upgraded, allowing visitors access to the only remaining virgin rainforest in Kuala Lumpur city. Heritage Trails 7 and 8, or Jejak Bijih Timah, will have its pedestrian walkways upgraded and two new pocket parks established at Jalan Sultan and Jalan Panggong respectively. The project is expected to be completed in 2018. The famed tourist area of Jalan Petaling and its vicinity will encourage more visitors to learn about Kuala Lumpur's colourful history of tin mining and tin merchants.

Management of solid waste and water

Solid waste management (SWM) is another area of focus identified under the NKEA. In

Peninsular Malaysia, SWM for states under the Solid Waste & Public Cleansing Management Act 2007 (Act 672) is governed by the Ministry of Urban Wellbeing, Housing and Local Government's National Solid Waste Management Department. Act 672 targets to reduce the amount of solid waste sent to landfills by 40% by 2020. However, the initiative requires innovative solutions and private sector participation to reduce reliance on the Government, which is heavily funding investments in SWM currently.

As such, the Catchment Area Needs Statement (CANS) initiative, conceived during the Solid Waste Management Lab in July 2015, aims to encourage private sector participation by providing a platform with relevant information for tonnage diversion needs and charting the waste flow of any particular location. This information will aid the private sector in delivering suitable proposals to address tonnage diversion and at the same alleviate the Government's capital and operating expenditure. This initiative sends a clear invitation to the private sector to be involved in SWM. By proposing locality-tailored solid waste management solutions, the private sector can assist the Government to achieve its target for waste diversion and unlock the local waste-recovery industry while reducing the Government's financial burden.

While the National Solid Waste Management Department seeks to work with the private sector to explore solution-focused partnerships, the department previously did not have suitable tools and capacity to evaluate proposals received from the private sector. In view of this, the Business Evaluation Pipeline (BEP) was developed to evaluate SWM proposals from the private sector. Version 1.0 of BEP was rolled out in February 2017, streamlining the format and evaluation criteria for initial adoption. BEP version 2.0, which will include a holistic evaluation criteria, is expected to be ready for adoption by the end of 2017. BEP will be integrated with CANS once it is fully operational.

The Ministry of Energy, Green Technology and Water (KeTTHA) is leading the Langat Centralised Sewage Treatment Plant (LCSTP) project, which will enable the treatment of 207,000 m^3 sewage daily, or 920,000 population equivalent (PE), to improve the quality of treated effluent and reduce ammonia pollution into Sungai Langat – an important water catchment area servicing the population of Greater KL. The project will also establish additional space for recreation and facilities for the public as the majority of the project will be built underground.

Covering the Langat catchment average area of 61.72 sq km ranging from Mile 11 Cheras to Kajang, the design also took into consideration the rationalisation of 164 small treatment plants from Mile 11 Cheras, Desa Baiduri, Cheras Jaya, Kajang 1 and Kajang 3 including Kajang Prison. The project is scheduled for completion by October 2020.

Other ongoing projects include the Upper Kerayong Sewage Treatment Plant which is expected to complete in 2018 covering the Cheras and Ampang areas. Pipe network and rationalisation projects in Puchong and Kajang are also expected to be completed in 2018 following the successful completion of pipe network and rationalisation in Petaling Jaya Utara and Klang in 2017. These projects will help ensure increased sewage and effluent from a larger population is captured and treated to protect environmental quality in the Greater KL area.

The Bunus Sewage Treatment Plant is part of the larger effort of improving river water quality at Sungai Bunus.

MRT's strategic solutions: changing the face of construction

The Klang Valley Mass Rapid Transit (KVMRT) project is Malaysia's largest infrastructure undertaking to date. Thus, when engaging the Project Delivery Partner (PDP) to build it, the Government entrusted MMC Gamuda KVMRT (PDP) Sdn Bhd (MMC Gamuda) to act as a single point of accountability.

Maslan Othman, Deputy Project Director of MMC Gamuda, attributed the MRT's success to paying close attention to planning the alignment of the MRT line, design management, procurement, and construction management.

In terms of alignment, a key challenge was Kuala Lumpur's congestion, outlines Maslan. "Additionally, the alignment (route) had to run through certain must-serve townships and business hubs, such as KL Sentral and Bukit Bintang. The alignment selection had to balance between optimising ridership and integrating the MRT to the existing transport systems, while ensuring the need for minimal land acquisition and minimal social impact to the surrounding communities".

In-depth knowledge of the industry's supply chain gave MMC Gamuda the ability to structure a procurement strategy that ensured an optimal spread of works to the different tiers of the construction industry, concentrating on local industry players to improve their capabilities and skillsets. The PDP was involved at every stage jointly with its client, MRT Corp (MRTC), and the Independent Consulting Engineers (ICE).

Given the need for effective construction management, the PDP was provided the authority to step in when issues arose that could hinder the timely delivery of the project. "Thus, we could proactively deploy experienced personnel and physical resources when it was apparent that contractors were faced with possible delays. The contractors responded positively by co-operating with us, which succeeded in getting the work back on track," Maslan pointed out.

The entire MRT project went smoothly with proactive corporate communication and stakeholder engagement.

One of the challenges faced was with health, safety and environmental considerations, as Malaysian contractors were new to the stringent, world-class standards imposed by MRTC and MMC Gamuda, which was independently overseen by the ICE. It was imperative that a project of such a massive scale had cohesion in addressing the safety of everyone working on the project.

"We set up the KVMRT Training Centre to make safety training mandatory among all vendors, contractors and workers via a passport system. Ultimately, the training resulted in a positive change in mindset and behaviour towards a safer working culture," Mazlan elaborated. Hence, workplace injuries and deaths were reduced significantly, compared to other similar projects in the past.

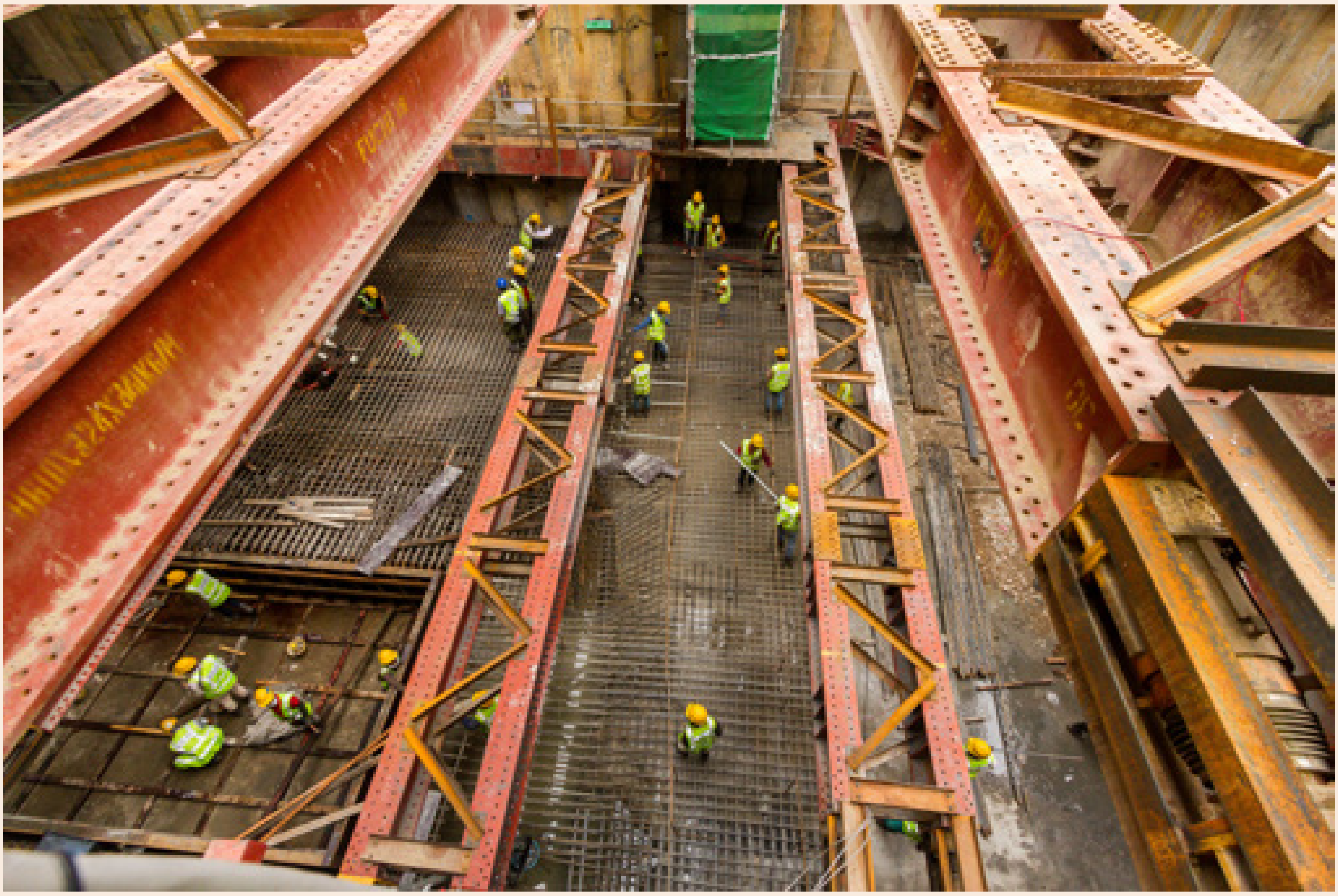
As a result of this primary role played by MMC Gamuda, in conjunction with MRTC and the ICE, the MRT project managed to be delivered on time and on budget, as HSS Integrated Sdn Bhd (HSSI) Executive Director/Chief Executive Officer Dato' Ir. Nitchiananthan a/l Balasubramaniam highlighted.

HSSI, an associated entity of HSS Engineers Berhad, was first involved with the MRT project in 2011 for Line 1, and continued working on the MRT Line 2 as the ICE in 2015. "We were brought on board for governance purposes. This is the first large-scale PDP project in the country, costing around RM20 – 30 billion. The whole structure of governance required an independent party to audit both the PDP and the project as a whole; this also included cash flow management of the DanaInfra bonds, which funded Line 1 of the MRT," Dato' Nitchiananthan explained.

He opined that overall, the entire MRT project went smoothly as there was proactive corporate communication and stakeholder engagement via social media and town hall meetings. "Overall, there was good teamwork between MRTC, PDP, and the ICE, which continued into Line 2 as well." Dato' Nitchiananthan noted that the project came first for everybody involved; hence, all parties played their roles synergistically.

The multiplier effect of the MRT project had been significant. "At least 30 percent of the systems – rolling stock, communications, signalling – had to be from local players. Railway players have been working to develop local skillsets in people and capabilities of companies in anticipation of ongoing work on MRT Lines 2 and 3, not to mention the High-Speed Rail and the East Coast Rail Link, and double-tracking in the southern sector. The MRT project is helping to develop the railway industry and expertise in Malaysia," Dato' Nitchiananthan enthused.

The impact of the MRT project has been huge in the Klang Valley in terms of modal shift. Dato' Nitchiananthan reported that ridership on Line 1 has been doing very well. "That does not mean it cannot be doing better: once other strategies and policies such as area road pricing, congestion charging, and higher car parking rates are in place, I think we will see ridership of the MRT move to the next level."



Construction of the Merdeka station.

Malaysia Scores with UK's Sports Direct

The UK's largest sporting goods retailer, Sports Direct, has identified Malaysia as a vital location for expanding its Southeast Asian presence, and is currently working with InvestKL and the British High Commission to make Malaysia its regional hub.

"We are in the business of sports. With Malaysia as our regional hub, we will offer the widest variety in sporting goods and best value for authentic brands to some 648 million people in ASEAN," says Paul Gibbons, Managing Director of Sports Direct Malaysia. The company, which has already invested approximately RM120 million during its seven-year presence in Malaysia, plans to leverage its Malaysian operations as a springboard into neighbouring Singapore, Thailand and Vietnam among others in the next three years.

Calling Malaysia "the right place to set up and expand from", Gibbons cites the lower operating costs, geographically central location, similarity in judicial systems, good infrastructure and connectivity, centralisation of ports and ease in conducting business as key reasons why Malaysia was chosen as Sports Direct's regional hub.

Although currency fluctuations and several changes in policies have caused some short-term disruptions to its business, Gibbons still claims that "there is no better country which can handle expansion into Southeast Asia and Asia Pacific than Malaysia."

The company is also riding on key retail trends, particularly the demand for experiential retail and rapid e-commerce adoption. In October 2017, Sports Direct Malaysia launched a new five-storey, 26,000-sq-ft flagship superstore in Bukit Bintang with the capacity to stage fitness classes on the rooftop level. The sporting goods giant will also start a domestic web business and add more product offerings on the Lazada e-commerce platform.

Meanwhile, Gibbons is also proud of the low staff attrition rate in Sports Direct Malaysia, which is currently less than 2%. He also notes that many of its 700-plus staff members are talented sportspersons and sports enthusiasts themselves, contributing to the excellent customer experience that Sports Direct is known for.

To fill up key senior-level roles, the company favours internal staff training, development and promotion rather than recruitment via head-hunters. Management trainee courses are available and staff members from the Sports Direct Malaysia headquarters will also be nurtured to head its planned regional expansion.

Gibbons is thankful for the support received from InvestKL and the British High Commission in facilitating the company's growth and presence in the ASEAN region. On track to become the fourth largest economy in the coming decade, many big brands are looking to tap into this key market with a rapidly growing middle-income population. With more than 72 international sporting brands available under Sports Direct and a focus on new and larger stores designed to attain enhanced levels of excellence to its customers, the company is well-positioned to not only be Malaysia's No. 1 sports retailer, but also in amongst the ASEAN countries.

Paul Gibbons, Managing Director of Sports Direct Malaysia.

MOVING FORWARD

The Greater KL/Klang Valley NKEA has come a long way since its inception from the NTP Labs held in 2010. Many initiatives have now been completed while a number of the key longer-term construction projects have achieved steady progress, beginning with the completion of MRT Line 1 and RoL river beautification Phase 1. Despite the challenges faced in completing the projects, the implementers behind the NKEA have consistently kept a close eye on its 2020 targets and the NKEA is on track to fulfil its target of transforming the region into a magnet for investments and high-skilled jobs, improving connectivity, creating new iconic places and enhancing basic services.

The NKEA is committed to ensuring that the benefits of the projects under its purview will continue to reward current and future generations through initiatives such as tree-planting, park adoption, and the ROL Public Outreach Programme. These initiatives not only will imbue the rakyat with a greater sense of ownership over the city, but also enhance environmental sustainability. Indeed, Kuala Lumpur's inclusion as a member city into the C40 Cities Climate Leadership Group in 2016 reflects its commitment to addressing climate change in line with the NTP's sustainability agenda and will help strengthen Greater KL/Klang Valley's ambition to be economically competitive and ensure liveability for all its citizens.

EMPOWERING ECONOMIC DIVERSIFICATION

YB DATUK SERI PANGLIMA DR. MAXIMUS JOHNITY ONGKILI
Minister of Energy, Green Technology and Water

Malaysia's electricity demand is met through a diversified fuel mix to ensure sustainability of supply and affordability for the rakyat. In 2017, gas and coal made up 46% and 42% of the total electricity generation respectively, leaving 11% of that from hydro power.

In line with our commitment to the 21st Conference of Parties (COP 21) in Paris to reduce 45% of greenhouse gas emissions by 2030, Malaysia is aggressively promoting the use of renewable energy, especially solar power, through the introduction of initiatives such as Feed-In-Tariff mechanism, Large Scale Solar programme and Net Energy Metering. This results in our renewable energy achieving 22.5% of the total capacity mix to date, against the ASEAN target of 23% by 2025.

Besides renewable energy, the Ministry of Energy, Green Technology and Water (KeTTHA) has taken steps to stimulate investments in cost-effective energy efficiency measures in buildings through the Energy Performance Contracting (EPC) mechanism. To assist Energy Service Companies (ESCOs) in obtaining funds from commercial financial institutions and strengthening their financial credit profile, the EPC Fund was set up in August 2017.

On the oil and gas (O&G) front, global oversupply in the recent decade continued to exert downward pressure on oil prices. As such, the Government must ensure growth in the industry through new, high value-added activities while sustaining domestic production. In 2017, the OGE NKEA contributed 15% of the total GNI in Malaysia (RM203.5 billion).

The O&G upstream sector is carefully optimised through various initiatives by PETRONAS and this has yielded commendable results in our production. PETRONAS has also carried out extensive promotional efforts to attract Exploration & Production (E&P) players to invest and operate in Malaysia's O&G field.

Despite challenges faced by the Oil and Gas Services and Equipment (OGSE) sector after oil price depreciation, Malaysia continues to attract high-profile OGSE multinational corporations (MNCs). Indeed, our country has been the centre of OGSE activities in the Asia Pacific region since 2011, with 18 out of 50 top OGSE MNCs setting up headquarters here. Meanwhile, local OGSE companies are also venturing past Malaysian borders, testifying to an already strong O&G ecosystem for our players to thrive.

To pave the way for natural gas market liberalisation in Peninsular Malaysia, the Gas Supply Act (Amendment) 2016 was finally enforced on 16 January 2017. The passing and enforcement of the Act is timely, as global gas prices are converging amid an increase in liquefied natural gas (LNG) trades. The liberalised gas market, in turn, will witness more alternative gas supplies under the Third-Party Access arrangement and thus create a competitive natural gas market for Peninsular Malaysia. Furthermore, Peninsular Malaysia's electricity tariffs and natural gas tariffs will be market reflective, consistent with other high-income nations.

It is no doubt that the OGE industry remains critical to push Malaysia into high-income status by 2020, whilst not forsaking de-carbonising efforts to tackle climate change. These are, ultimately, only made possible via a robust collaboration between Government and private sectors.

PETRONAS Tangga Barat Central Processing Platform.

ENSURING SUSTAINABILITY OF PRODUCTION

Upstream initiatives under this NKEA aims to extend the life cycle of existing resources by optimising exploration, development and production activities to address declining domestic oil and gas (O&G) production. These efforts are led by PETRONAS and are closely tied to global market trends.

Globally, oil demand is expected to fall due to fuel efficiency improvements, the rise of renewable energy and its associated technologies, as well as weaker global economic growth. In the meantime, excess natural gas supply in the global market led to shifting new liquefied natural gas (LNG) contracts towards shorter durations and smaller volumes, making it difficult for oil companies to sanction large LNG projects globally. While natural gas demand is expected to grow, coal will likely remain a major competitor, being a cheaper fuel alternative for power generation. Additionally, LNG buyers are also becoming sellers, and collaborations among buyers are expected to intensify. The market will be challenging for traditional LNG sellers and O&G companies.

Meanwhile, in the upstream O&G exploration and production arena, low oil prices have heavily impacted the viability of projects to rejuvenate existing fields through Enhanced Oil Recovery (EOR) technologies, due to their smaller production volumes and higher production costs vis-à-vis non-depleting oil fields. In addition, the increased complexity of EOR projects requires specialised expertise and advanced technology. Low crude oil prices have pushed down the development of new marginal O&G fields due to reduced economic feasibility, compounded by the fact that production volumes typically decline faster than bigger fields. On the other hand, due to the current oil price environment, production sharing contract (PSC) contractors are cutting their spending on exploration activities, especially in low prospectivity areas.

Despite the challenging landscape, PETRONAS achieved significant milestones in 2017 for five EOR projects in Malaysia, while exceeding its targets for O&G production volume in marginal fields. In order to sustain domestic O&G production, PETRONAS will continue to competitively market exploration blocks through domestic bid rounds and international roadshows, and will ramp up promotional efforts to attract O&G exploration and production players to invest in Malaysian exploration activities.

THIRD-PARTY ACCESS ENABLING ENERGY MARKET LIBERALISATION

Current global market conditions impacting natural gas prices and the changing structure of LNG contracts have set the stage for the industry to cater to the latent demand for natural gas. This has enabled Peninsular Malaysia's natural gas market liberalisation through a gradual shift to applying market pricing and the entry of more third parties into the gas market.

To this end, the Energy Commission (EC) has introduced Third-Party Access and is focused on establishing the supporting framework to ensure its successful enforcement. The Gas Supply Act (Amendment) 2016 was enforced on 16 January 2017 and new licences have been issued to existing and new players. This marked the start of the liberalisation of the natural gas market in Peninsular Malaysia. Existing players who own regasification terminals are required to apply for regasification licences from the EC, while new players interested to import the gas molecules need to apply for shipping licences. The EC has also finalised the tariff determination guidelines for regasification, transmission and distribution facilities, which will be open for TPA under the new arrangement.

However, as TPA is a new concept in the Peninsular Malaysian natural gas market, one of the biggest challenges for the EC is to secure buy-in from existing and potential new players who are less aware of the new regulations and hence will require more time to adapt to the new regime. The EC is also facing challenges in streamlining the rules for access to natural gas facilities across the value chain (i.e. regasification terminal, transmission and distribution), which is a tremendous undertaking given Peninsular Malaysia's closed market structure.

In this respect, the EC has been engaging with existing and potential players on the TPA arrangements while streamlining the rules to create more flexibility in the utilisation of the gas facilities to cater for spot LNG cargoes and third-party supply. In the medium and long term, the creation of new gas demand remains as the utmost priority to attract new players to participate in the domestic market.

EXTRACTING GROWTH FROM THE DOWNSTREAM SEGMENT

Malaysia's experience and expertise in the O&G industry has enabled the development of a thriving downstream segment. Still, there remains plenty of room for growth, especially in capturing value from increasing international flows of crude oil, refined products and natural gas. There are also opportunities to extract value from demand for natural gas, which has been weighed down by a lack of supply.

To this end, the Pengerang Integrated Petroleum Complex (PIPC) is being constructed in Pengerang, Johor, representing the single largest downstream investment project in Malaysia. It currently houses PETRONAS' Pengerang Integrated Complex (PIC) and Pengerang Deepwater Terminal (PDT).

> ***"To this end, the Pengerang Integrated Petroleum Complex (PIPC) is being constructed in Pengerang, Johor, representing the single largest downstream investment project in Malaysia."***

Effective functionality of the PIPC can only be achieved when the necessary supporting infrastructure and public amenities are in place. In this respect, the Federal and State Governments have planned 25 critical PIPC infrastructure projects worth approximately RM2.49 billion to meet the needs of the Complex. In order to ensure the effective delivery of these projects, the Federal Project Steering Committee (FPSC), chaired by the Chief Secretary to the Government, has been set up to provide the necessary support to Johor Petroleum Development Corporation (JPDC), the implementing agency for the development of infrastructure and public amenities, as well as to nine other implementing Federal Ministries and Federal/State support agencies. The governance structure enables effective issue escalation and intervention to ensure timely completion of all infrastructure projects.

PIPC infrastructure development reached significant milestones in 2017. These include the completion of a police station in Taman Bayu Damai at the end of the year and the construction of a dual-carriageway, four-lane road which enables road connections between Kampung Bukit Gelugor and Kampung Pengerang, which will enable safer and more comfortable commuting on that route. The upgrading of the road from Bandar Penawar to Sungai Rengit, located in and around Pengerang and the upgrading of Klinik Kesihatan Sungai Rengit to cater for more patients and provide better services for local citizens are expected to be completed in 2018.

As the agency in charge of promoting and securing investments to realise PIPC's vision as an integrated downstream O&G hub, JPDC in 2017 secured potential downstream investments amounting to RM2.3 billion via letters of intent (LOIs) from local and foreign companies.

As part of the efforts to elevate the competencies of the current skilled workforce to meet industry requirements, JPDC has also been working with the National Youth Skills Institute (Institut Kemahiran Belia Negara – IKBN) in Bandar Penawar to provide training for more than 300 students on site safety; scaffolding; health, safety and environment (HSE); welding; supervisory roles; and rigging and slinging. Trainees who complete this training are certified under the Industry Accreditation Programme, with the programme recording a 90% employability success rate.

Pengerang Integrated Complex pioneering large-scale downstream investment

PETRONAS's PIC is being constructed with the aim of boosting the Malaysian O&G downstream sector and reached 84% completion as at end-2017. It remains on track to begin operations in the first quarter of 2019.

The project made headlines in February 2017 with the signing of a Share Purchase Agreement (SPA) by oil giant Saudi Aramco to invest in the Refinery and Petrochemical Integrated Development (RAPID) project in PIC. The investment is historic for the industry due to the unique structure of two professionally run national oil companies in

YAB Dato' Mohamed Khaled Nordin, Chief Minister of Johor, Tan Sri Mohd Sidek Hassan, Chairman of PETRONAS and Tan Sri Wan Zulkiflee Wan Ariffin, President and Group Chief Executive Officer of PETRONAS officiated the Pengerang Co-generation Plant (PCP).

partnering on a world-scale greenfield project. It will create significant spin-off effects and boost the reputation of the PIPC, which will help in attracting further investments into the Complex.

Saudi Aramco is investing approximately US$7 billion in RAPID, representing the largest ever foreign direct investment (FDI) inflow to Malaysia, while constituting Saudi Aramco's biggest investment outside the Kingdom of Saudi Arabia to date. This is a unique transaction, an integral part of which is equity participation in an integrated refining and petrochemical complex in RAPID. As such, it involves Saudi Aramco buying an equal equity interest in PETRONAS' units PRPC Polymers Sdn Bhd and PRPC RC Sdn Bhd.

Under this partnership, Saudi Aramco will supply up to 70% of the crude feedstock requirements of the refinery, which is expected to commence operations in 2020, with natural gas, power and other utilities to be supplied by PETRONAS. Having Saudi Aramco, a company with the largest reserves in the world, as a partner will help to ensure the security of crude supply to the refinery.

Indeed, Saudi Aramco, co-owner of SADARA Chemical Company (the largest petrochemical complex in the world), is one of the world's leading oil companies, with significant expertise in low-cost production. This partnership gives PETRONAS access to Saudi Aramco's vast experience in execution, implementation and operation of similar large-scale and integrated petrochemical projects, making it a highly valuable partner to PETRONAS.

Apart from the investment from Saudi Aramco, PIC also achieved several operational milestones during the year, including the arrival of two modularised furnaces, or crude heaters, on 20 January 2017. The furnaces are an important component of the crude distillation unit within the refinery and are critical in providing feed for other process units of the refinery. The furnaces were also certified as the biggest heaters to ever land on Malaysian shores, with each weighing about 1,000 tonnes and possessing a processing capacity of 150,000 barrels per day (bpd).

Additionally, two modularised waste heat boilers were installed at the refinery on 21 March 2017. The boilers are an important component of the Residual Fluid Catalytic Cracking (RFCC) unit within the refinery, which function to crack hydro-treated atmospheric residue into feedstock for the Steam Cracker facility. Each waste heat boiler weighs about 2,000 tonnes and are the largest in Malaysia. The Complex also installed Malaysia's biggest Crude Distillation Unit (CDU) column on 10 June 2017. The CDU column is designed to process 300,000 bpd of medium-heavy sour crude oil in a single distillation column. The column also represents the heart of the refinery, as it is the first process unit to receive crude and is among the biggest single CDU column installations in the refining industry. The column was designed by Sinopec Engineering and fabricated by KNM Process Systems Sdn Bhd in Gebeng, Pahang. It spans almost 10 metres in width and 66 metres in height and weighs 1,300 tonnes.

RAPID comprises the Refinery, Steam Cracker and Petrochemical Complex, and is 82% completed with the major facilities having been installed. The petrochemical complex comprises various production units to add value to C2 and C3 from the refinery and steam cracker complex. It will capitalise on the region's high-growth differentiated commodity petrochemical products market, and will strengthen PETRONAS' position in the competitive petrochemicals industry.

The refinery is the main source of feedstock for the downstream Petrochemical Complex within RAPID and, as such, will be the cornerstone of the integrated nature of RAPID. The facility will position Malaysia as a leader in Asia's chemical products market and provide opportunities to venture into premium differentiated and specialty petrochemicals, as well as the rapidly developing automotive, pharmaceutical and consumer products markets. The refinery is poised for start-up within the first quarter of 2019.

The refinery, among the best in its class with a Nelson Complexity Index of 9.5 out of a possible score of 15, will be capable of producing large volumes of high-value products from crude oil. The index provides a simple metric for quantifying and ranking the complexity of refineries and units. A higher number on the index can be attributed to greater value of its end product. The Rapid refinery's capacity will be the largest in Malaysia and the fourth-largest in Southeast Asia.

> ***"The RAPID refinery will position Malaysia as a leader in Asia's chemical products market."***

Progress for the 1,220 MW Pengerang Co-generation Plant (PCP) is similarly encouraging, with the first unit of four co-generation units having commenced operations in mid-October 2017, where 400 MW has been supplied to Peninsular Malaysia national electricity grid. To facilitate transmission to Tenaga Nasional Berhad (TNB), a 275-kV overhead Pengerang Transmission Line is in place, spanning 52 km from PCP to the TNB substation at Tanjung Langsat. PCP is designed as a stand-alone utility provider to RAPID, while also supplying 400 MW of power to TNB. Besides electricity generation, PCP will also provide reliable and continuous supply of steam of up to 1,480 tonnes per hour for plants within the Complex. The large amount of steam needed for process requirements in RAPID presents a unique opportunity to create the most efficient electricity production process in a co-generation configuration.

The Regasification Terminal 2 (RGT2) started commercial operations in October 2017 to provide primary gas supply to RAPID, PCP and the Peninsular Gas Utilisation (PGU) grid in a bid to augment the availability of gas in Peninsular Malaysia. It will offer facilities for LNG unloading/reloading, storage, handling, and regasification. The Terminal's regasification unit has a capacity of 3.5 million tonnes per annum (approximately 700 MMscfd) and will be connected to PGU via the Pengerang Gas Pipeline. It also includes two units of 200,000 m^3 of LNG storage tanks, and one LNG Jetty Topside with LNG unloading/reloading facilities. RGT2 will not only play a critical role in Peninsular Malaysia's energy security, but also act as an additional entry point for third-party gas suppliers to penetrate the Peninsular Malaysia gas market, bringing it another step closer towards becoming a fully liberalised natural gas market.

Pengerang Deepwater Terminal expansion

The second phase of Pengerang Deepwater Terminal (PDT) is currently under construction and will add 2.1 million cubic m^3 to the existing capacity of 1.3 million cubic m^3 from PDT Phase 1. In September 2017, PDT's two crude tanks achieved Ready For Start-Up (RFSU) status. As of December 2017, PDT received more than 1,458 vessels with a total of 7 Very Large Crude Carriers (VLCCs) and has handled a total of 1.5 million tonnes (discharge/load) of petroleum products. In an effort to further expand the realised capacity of the oil storage terminals, the Government is working closely with the terminal storage operators to explore potential opportunities.

Meanwhile, the oil storage terminals in Southern Johor are benefiting from the newly introduced zero-rated GST policy which exempts services supplied to customers overseas, performed in connection with goods for export. This incentive underscores Malaysia's commitment in becoming a regional O&G storage hub. In 2016, the oil storage terminals located in Southern Johor such Tanjung Bin, Tanjung Langsat, Far East Oil Terminal One (FEOTO) in Pasir Gudang, and Pengerang were admitted under the new FOB Straits pricing index by S&P Global Platts, recognising Malaysia's growing presence in this market.

The second phase of Pengerang Deepwater Terminal (PDT) will add 2.1 million m^3 to the existing storage capacity in Pengerang.

CATALYSING OGSE ACTIVITY

To establish Malaysia as an Oil and Gas Services and Equipment (OGSE) hub, Malaysia Petroleum Resources Corporation (MPRC) has embarked on several initiatives, including facilitating local OGSE companies' expansion into Asia Pacific and beyond; building Malaysia's reputation as a regional hub by establishing a Malaysian presence in prominent O&G exhibitions globally; and attracting OGSE MNCs to set up regional headquarters in Malaysia. At present, the regional headquarters of the top five global OGSE MNCs and 18 out of the top 50 global OGSE MNCs are already in Malaysia. The Government targets to have half of the top OGSE MNCs' regional headquarters in Malaysia by 2020.

OGSE companies' investments, either as FDI or domestic direct investments (DDI), have been encouraging. As of December 2017, RM724.5 million has been netted, exceeding the year's target of RM650 million, while the cumulative figure from 2012 until December 2017 stood at RM7.7 billion, putting the sector on track to achieving its 2020 target of RM10 billion.

While the low oil price environment proved a dampener for upstream players, it enabled downstream players such as petrochemical refineries as well as methanol and LNG production facilities to thrive as operating costs stayed low and profit margins continued to improve. Of note, MPRC undertook a strategy recalibration and adjusted its focus to facilitate investments in the downstream segment, allowing it to exceed its aim of securing RM736 million in investments in 2017. Notable investments in the year came from Hengyuan Refining Company Bhd (formerly known as Shell Refining Company Bhd) with RM609 million and Innochems Technologies Sdn Bhd with RM12 million. Despite the challenging environment, MPRC remains committed in supporting investments by upstream OGSE companies.

First-time bidders for international projects in new market segments are a good barometer of the competitiveness of locally domiciled firms. In 2017, eight companies successfully bid for global projects (see table for more details), bringing the cumulative total to 54, close to the 2020 target of 60.

Marketing/trade facilitations by MPRC via trade shows and specialised marketing missions with key Government agencies were actively organised in previous years, leading to reputational gains for Malaysian OGSE firms. Southeast Asia and the Middle East continue to present a trove of opportunities for OGSE companies to tap into, hence MPRC remains committed to assist OGSE companies in their venture to SEA and the Middle East. In recent months, OGSE companies are also looking to venture into South America, particularly Mexico and Brazil. With these two South American countries opening their markets to international OGSE companies, MPRC will also direct Malaysia's export development efforts to that region.

However, with the budget constraints among Government agencies, international export development activities such as trade missions and exhibitions at major conferences declined in 2017. This had some bearing on the robustness of MPRC's pipeline, impacting international awareness of

Company	Country	Solutions
Dyna Segmen Sdn Bhd	Iran	Online pipe repair (own technology/ Malaysian-manufactured)
Flytech Engineering Sdn Bhd	Thailand	Rubber flexible hose (own technology/ Malaysian-manufactured)
IEV Group Sdn Bhd	Iran	Marine growth control (own technology/ Malaysian-manufactured)
MISC Bhd	Brazil	FPO leasing and operations
MIT Innovation Sdn Bhd	Saudi	ICWD drilling tools (own technology/ Malaysian-manufactured)
MIT Innovation Sdn Bhd	Oman	ICWD drilling tools (own technology/ Malaysian-manufactured)
Sylmax Technology Resources Sdn Bhd	Vietnam	Helideck friction test
TRK Resources Sdn Bhd	Vietnam	Helideck Inspection Services (including helideck friction test)

Malaysia's OGSE capabilities, while Malaysian OGSE players continue to have insufficient information of middle to long-term views on international markets and projects.

In mitigating the above, plans are in the pipeline to leverage on MATRADE and Malaysia-based MNCs' international presence to identify global OGSE business opportunities, which will then be shared with local companies. MATRADE and MPRC will foster closer collaborations with Malaysian OGSE players to steer them to global clients in targeted markets. Promotional and marketing efforts to raise awareness of Malaysia's OGSE capabilities to global clients will also be ramped up.

During the year, MPRC observed an influx of OGSE companies from Europe, Australia, and China. At the same time, a growing number of engineering companies are setting up regional headquarters to capture downstream opportunities in Malaysia as well as capitalise on Asia Pacific's move into the downstream business.

In recent years, Malaysia has steadily attracted a growing number of services-based MNCs, as opposed to manufacturing firms. This is in line with the nation's transformation from a manufacturing economy to a service-based and high-income country. In terms of MNC investment in Malaysia either through merger or joint venture opportunities, all six targeted companies had set up shop in Malaysia in 2017, bringing the cumulative figure from 33 to 39 companies, close to the target of 50 by 2020. MNCs setting up regional headquarters in Malaysia in 2017 included an offshore and onshore welding company from France, Serimax which relocated from Singapore. Three companies also established new headquarters here: Global SCS, an asset integrity inspection services company from Aberdeen; Maire Tecnimont, a construction engineering firm from Milan; and EM&I, an asset integrity inspection and specialised maintenance firm from the UK. Additionally, Serba Dinamik Holdings Bhd has signed an agreement with Monadelphous, an Australian engineering group, to establish a joint venture for a shutdown and turnaround business.

The Government has long emphasised the need for the industry to diversify its product range and head further downstream. With oil prices staying in the doldrums, more international and local OGSE companies that were hitherto predominantly in upstream businesses are training their focus on downstream opportunities in Malaysia.

With the reduction in operator-led projects, the OGSE industry will need to embrace scale, innovation and cutting-edge technology, higher standards, as well as integrated and value-added services to be more competitive. There is also acknowledgement among market players that the O&G downturn will weed out non-competitive players, while stronger firms will adjust and survive. To ensure longer-term sustainability, OGSE companies will need to regularly review and restructure their strategies, organisations and financials to adapt to the new realities of lower oil prices over the longer term.

YB Dato Seri Hamzah Zainudin, Minister of Domestic Trade, Co-operatives and Consumerism, and Hengyuan officials at the groundbreaking ceremony of its new complex for Euro 4M gasoline production in August 2017.

ENSURING ENERGY SUSTAINABILITY

The Government remains committed to promote energy efficiency in line with environmental concerns and ensuring sustainability. In 2017, the Government successfully encouraged 500 energy-intensive companies with electricity consumption of 3 million kWh to be more energy efficient via the Efficient Management of Electrical Energy Regulations (EMEER) 2008. The companies have since reduced their total consumption to 14,455.86 GWh in 2017, which is 2.67% or 355.42 GWh lower than the baseline 2015 annual consumption of 14,811.28 GWh.

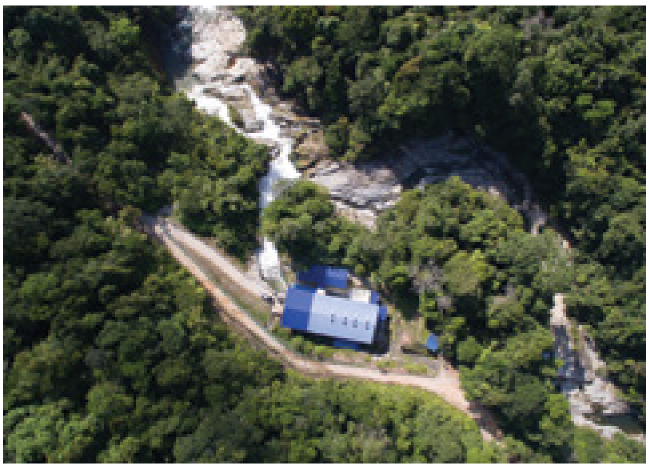
Under the 11th Malaysia Plan, KeTTHA also reduced the Special Industrial Tariff (SIT) by 2%, continuing the effort from the previous year to incentivise the energy-intensive industries to be more energy efficient by implementing appropriate conservation measures. Furthermore, the Government continues to promote conditional energy audit grants for industrial and commercial buildings to spur the adoption of energy-efficient measures in the private sector. In 2017, 25 commercial and 30 industrial buildings underwent the energy audit, exceeding the target set by the Ministry. Approved grant applications registered at 65 commercial and 90 industrial buildings for 2016 and 2017. The energy audit and retrofitting exercises to be conducted by the applicants will enable energy savings of 295 GWh, or RM106 million, which would also translate 218 ktCO2, which measures the amount of carbon that would be saved from the retrofit and audit exercise.

At the Green Technology and Climate Change Council (MTHPI) 2017 event held on 2 March 2017, the YAB Prime Minister approved the establishment of the Energy Performance Contracting (EPC) fund to catalyse growth in the nascent local energy-efficiency service industry. Malaysia Debt Ventures Bhd (MDV), a Minister of Finance Incorporated entity, has provided up to RM200 million in financing and is tasked to manage the financing programme. Meanwhile, the EPC will also be supported by a credit guarantee fund contributed by KeTTHA and the JKR-Building Sector Energy Efficiency Project (BSEEP) funded by the United Nations Development Program-Global Environment Facility (UNDP-GEF). Additionally, KeTTHA will provide an interest rate subsidy of 1% per annum to successful applicants. To date, RM20.7 million funds have been committed with 10 EPC projects financed. The fund will spur the implementation of energy-efficiency projects in the building sector and assist energy service companies (ESCOs) to overcome difficulties in securing financing from commercial financial institutions.

> ***"Since its inception in 2011, the Feed-in Tariff Programme (FiT) has continued to contribute to the increase in renewable energy capacity, where a cumulative total of 528.06 MW has been installed as of December 2017."***

The Government hopes that the success of this EPC financing model will enhance commercial financial institutions' confidence in financing ESCOs' implementation of more energy-efficiency projects through the EPC method, thereby growing the industry.

Adding to ongoing efforts to decouple Malaysia's electricity generation from conventional fossil fuels is the Government's expansion of total renewable energy capacity to 7,271.74 MW, ranging from large hydro-power plants to off-grid solar panels, which comprises 21.67% of total installed electricity capacity in Malaysia. Since its inception in 2011, the Feed-in Tariff Programme (FiT) has continued to contribute to the increase in renewable energy



Amcorp Perting Hydro 6MW, Bentong, Pahang.

PIPC – upskilling the community, raising living standards

The Pengerang Integrated Petroleum Complex (PIPC) mega project, under the Oil, Gas and Energy NKEA, is not just making waves for the value it is adding to the downstream oil & gas value chain in Johor and Malaysia, but is also changing for the better of everyday lives of many in the district and state.

With the numerous job opportunities being offered by the Complex throughout its various stages of completion, the mega project serves as a catalyst for the upskilling of talent in its surrounding areas, directly and effectively supporting the Government's drive to raise the competency levels of the country's labour force. Johor Petroleum Development Corporation Berhad (JPDC) is, in this respect, a close partner and enabler of the PIPC project, supporting its talent needs through its provision of a variety of training and development courses that aim to upskill the human capital needed for the project's smooth running.

Nurul Amri Sa'adon, 38 years of age, is one such beneficiary of JPDC's talent improvement initiative. The Pengerang resident undertook the Site Safety Course, an oil and gas industry-oriented skill development training led by JPDC at Kolej Komuniti Bandar Penawar, and has successfully secured employment with PIPC as a Site Safety Supervisor.

"I am most grateful for the world of opportunities opened up to me by this Site Safety Course. Aside from serving as a refresher course for the job aspects I have already been exposed to, I learned various new concepts and became more proficient in the area of ensuring site safety," said Nurul Amri, who previously held project and safety management roles in other prominent firms. Thirty-year-old Mohd Suffian Mohd Yunos, who is part of Nurul Amri's cohort, also gained his current employment upon completing the same course. Having worked 10 years in the building and oil and gas industries, the native from Sungai Rengit, Johor found the course enlightening as it provided him with the exact competencies required for employment as a Site Safety Supervisor.

Both Johorians' assessment of the Site Safety Course were also positive because it was conveniently conducted in Johor. "Prior to JPDC's provision of training, oil and gas industry-oriented skill development training could only be more commonly found in other states like Institut Teknologi Petroleum PETRONAS (INSTEP) in Terengganu," Nurul Amri shared.

Regasification Terminal 2 (RGT2) in Pengerang started commercial operations at the end of 2017.

PETRONAS Refinery and Petrochemical Integrated Development (RAPID) in Pengerang.

In terms of content, Nurul Amri sees the course as having achieved an enviable balance between exploring theoretical concepts and implementing those concepts in practical ways at the workplace. "This balance is crucial in ensuring that course participants not only gain an appreciation for the theoretical frameworks that underlie their job functions, but are also able to perform at a higher level in the workplace with the knowledge gained from the course," Nurul Amri explained. This sentiment was shared by Mohd Suffian, who added that the benefits accrued to course participants "would be compounded with self-motivation and focus – two key elements for success in many other endeavours."

Nevertheless, Nurul Amri believes that the training can still be improved in several ways. "It would be good if JPDC could offer more sponsorships to enable locals to undertake oil and gas-related professional education in Johor. This way, there is no need for them to leave for other states, which could help mitigate the brain drain in the state's oil and gas sector," he explained. Additionally, the provision of official course certificates could serve as documentary evidence of course participants' improved proficiencies and hence lead to greater employability in the international job market. Whilst Mohd Suffian views the current training as sufficiently meeting its objectives, he believes that its continued success requires having dedicated and suitably qualified trainers to conduct the training programme.

Mohd Suffian opines that industry-academia alignment is crucial. "Talent needs are great and will only increase going forward as Malaysia forges ahead in the competitive world of oil and gas. Industry competency needs must be met, and the academic world would do well to facilitate this outcome through frequent engagements and/or collaborations with industry players."

Both Johorians credit their present occupations to JPDC's training and are banking on it to continue providing a solid foundation for their future career prospects. Nurul Amri specifically pointed out his optimism in securing a permanent position after his contract expires later this year. "I am confident that with the training by JPDC that I have undertaken, combined with the practical experience I am gaining at my present position that in itself was made possible by the aforementioned training, will enable me to secure a permanent occupation upon the expiry of my contract," he shared.

capacity. A cumulative total of 528.06 MW has been installed as of December 2017. Under FiT, the number of solar PV service providers overseen by SEDA grew from only 30 players before the formation of SEDA in 2011 to 120 players by 2017. With their formidable experience, financial backing and expertise gained from their participation in FiT, some of these service providers have ventured into solar farms in local and overseas markets.

Launched in October 2016 and implemented in November 2016, Net Energy Metering (NEM) paved the way for Malaysian consumers to take part in the movement towards greater adoption of renewable energy. NEM has come a long way since the first year of its implementation, with total approved NEM capacity for 2017 standing at 6,114.48 kW. However, adoption by the public and businesses is lower than for FiT projects, despite a comparatively generous allocation of 90 MW and 10 MW for Peninsular Malaysia and Sabah, respectively. The low adoption is mainly due to users' unfamiliarity with this new initiative and the lower sell-back tariffs to TNB, as NEM encourages self-consumption of the electricity generated via the solar PV instead of selling the self-generated energy. Hence the Ministry is working with the EC and other agencies to strengthen the NEM operating model and increase promotional efforts to improve the NEM take-up rate in the coming years.

Meanwhile, the Large-Scale Solar (LSS) programme has completed its first year of implementation. The 2-MW LSS, a direct award in Sabah was completed on 15 September 2017, while another 48-MW project in Sabah and 200 MW in Peninsular are expected to be completed in 2018.

Fortune 11 Sdn Bhd's 5 MW solar farm in Sepang, Selangor.

The EC has also conducted two cycles of open bidding for LSS for commercial operation in 2017 to 2020. The first cycle of open bidding for the 2017-2018 period was concluded in December 2016 with a total capacity of 401 MW offered to 18 developers throughout Peninsular Malaysia, Sabah and Labuan. The first plant is expected to be commissioned on 1 January 2018, and more projects are expected to be completed throughout the year such as LSS Fast Track Semenanjung – Quantum Solar Park (Malaysia) Sdn Bhd, with installed capacity of 150 MW; LSS Fast Track Semenanjung – Edra Solar Sdn Bhd, with installed capacity of 50 MW; LSS Fast Track Sabah – Tadau Energy Sdn Bhd with installed capacity of 48 MW; in addition to the 401 MW LSS First Cycle Open Bidding project.

The second cycle of open bidding for 2019-2020 period is in the final evaluation stage and is scheduled to be concluded by end of 2017.

However, successful bidders faced difficulties in securing financing from commercial financial institutions due to the latter's unfamiliarity with the LSS programme, causing delays in the implementation of LSS projects. With the collective effort by KeTTHA, Bank Negara Malaysia, and other related agencies, Malaysia successfully introduced green sukuk to address funding gaps in green financing. KeTTHA is also working closely with the EC to monitor and ensure the timely completion of the LSS projects. In July 2017, the Securities Commission (SC) introduced the first green sukuk under its Sustainable & Responsible Investment (SRI) initiative to address the funding gap in green financing. The framework underlying this green sukuk was the result of collaboration between the SC, Bank Negara Malaysia and the World Bank Group. The fostering of a conducive funding ecosystem is an important part of the Government's efforts to fulfil Malaysia's commitment towards the reduction of its greenhouse gas emission intensity, in accordance with the COP 21 Paris Agreement. On 27 July 2017, the world's first green sukuk worth RM250 million was issued by Tadau Energy Sdn Bhd, followed by the world's largest green sukuk issuance of RM1 billion by Quantum Solar Park Sdn Bhd. Both sukuk are to finance the construction of large-scale solar photovoltaic projects in Malaysia.

MOVING FORWARD

Although oil prices gradually recovered in the fourth quarter of 2017 following the output-cut extension by OPEC and non-OPEC producers, it is widely believed that oil prices will maintain at the current level for the near future. Nevertheless, Malaysia's experienced O&G players are better positioned than before to weather this challenge, having built up their competencies and expertise over the years.

As aforementioned, the Peninsular Malaysia natural gas market liberalisation will be supported by low global natural gas prices. However, all parties need to step up their efforts to establish the supporting framework for the enforcement of TPA and facilitate the entry of new players into the Peninsular Malaysia natural gas market. This is crucial, as a liberalised market will contribute to stronger energy security and economic prosperity.

Moving forward, an upgrade of the PIPC Development Masterplan may consist of a plastic and fine chemicals park, a downstream finished products zone, as well as a medium and light industries hub with the overall investment target rising from US$29.5 billion to US$84.6 billion. Pengerang Deepwater Terminal's (PDT) total storage capacity is expected to increase to 3.2 million m^3 by 2020, and discussions have been in place to explore its potential as a strategic oil reserve storage. In the long-run, the growth of infrastructure, investments in storage facilities and the new petrochemical refining complex is expected to realise Malaysia's vision of becoming a regional O&G downstream hub, complementing Singapore's capabilities as one of the world's oil refining and trading hubs.

Marketing efforts will be intensified to attract MNCs to relocate or establish their regional operations in Malaysia. New O&G investment, especially large-scale investments from China, Russia and the Middle East; as well as high-quality investments such as high-end manufacturing and centres of excellence for complex engineering will establish Malaysia as an OGSE hub. Nevertheless, awareness of Malaysia's home-grown technologies and expertise in the international market remains crucial to realise Malaysia's aspiration.

The Government will continue to focus on energy efficiency and renewable energy initiatives to meet the 11th Malaysia Plan's targets as well as fulfil the country's commitment to COP 21. All parties need to embrace energy-efficient measures and join the green movement, preserving the environment for the future generations so that Malaysia can be on par with other developed and developing countries globally in moving towards cleaner energy for the nation.

MODERNISING MALAYSIA'S SHOPPING EXPERIENCE

YB DATO' SERI HAMZAH ZAINUDIN
Minister of Domestic Trade, Co-Operatives and Consumerism

For the past seven years, the wholesale and retail industry has revolutionised Malaysia's consumer experience through initiatives spearheaded by the private sector. Coupled with the exploration of new retail concepts such as e-commerce, the sector has been liberalised, increasing the level of competition and choice for customers. Wholesale and retail has risen to become a main contributor to our overall GDP, recording a GDP contribution of RM205.2 billion in 2017, a 10.14% increase from 2016's RM186.3 billion.

Our constant efforts in modernising, globalising and revolutionising this sector have resulted in an increase in consumer confidence to 94 percentage points according to Nielsen's Global Consumer Confidence Report, an increase from 2016's 84 percentage points.

An even bigger mark of success is that Malaysia's rank in the AT Kearney Global Retail Development Index (GRDI) is at its highest in the past 10 years. Retaining its place in third position from 2016 and second only to consumer mammoths India and China, we have risen to be a worthy contender despite being in a hotbed of retail activity, among Singapore, Indonesia, Thailand and Hong Kong.

The success is accredited to the tenacity and resilience of the sector. The continuous reviewal of existing projects ensures that our strategy remains relevant, and can reinvigorate Malaysia's wholesale and retail. To succeed, we saw the injection of new players into the Makan Bazaar, Big Box Boulevards, Virtual Malls and Wellness Resorts to maintain a globally competitive sector.

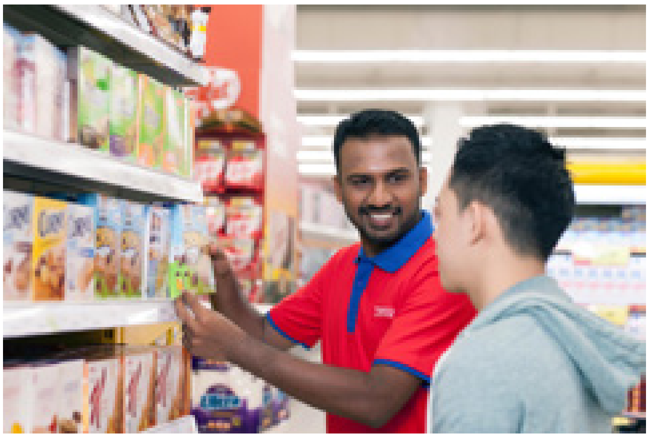
Moving forward, extra focus will be given to the e-Commerce industry to fulfil domestic and international consumption demand. This has already resulted in the launch of BizTrust, a business certification awarded to online business entities, in June 2017 in line with the National E-Commerce Strategic Roadmap.

In light of the upcoming emphasis on the e-Commerce sector, and the overall progress of the wholesale and retail sector; I call upon all Malaysian traders to continue contributing and gaining from this upwards trajectory.

INNOVATING LARGE-FORMAT STORES

The development of large-format stores was identified as a focus area under this NKEA to expand retailers' scale and capabilities. This, in turn, was targeted to encourage private investment, increase competitiveness of the stores, provide more choices for consumers and create employment opportunities. Significantly, as at 2016 the sector employs 1.7 million people, an increase of 13% as compared to 1.5 million in 2010.

To date, this has resulted in the establishment of 44 hypermarkets and 56 superstores, facilitating investments including RM1.27 billion from Abu Dhabi's Lulu Group which aims to set up 10 hypermarkets across Malaysia by 2020. In 2017, Tesco launched two superstores in Batu Pahat, Johor and Bertam, Pulau Pinang. Additionally, Giant opened another superstore in Tunjong, Kelantan. AEON opened another hypermarket in Bandar Dato' Onn, Johor in September 2017.


Consumer confidence has increased in 2017, as compared to 2016.

In tandem with a shift in consumer trends, hypermarket and superstore operators have moved towards a new strategy of opening small-format stores in 2017. Malaysian consumers have demonstrated a preference for smaller-sized convenient stores, situated in locations closer to their neighbourhoods. In response to this, the Ministry of Domestic Trade and Consumer Affairs (KPDNKK) is liberalising the sector by reviewing and approving foreign-owned stores which are 2,000 square metres in size, as opposed to enforcing the conventional requirement of a 3,000-square metre minimum for retail hotspots such as Klang Valley, Ipoh, Johor Bahru and Penang.

> *"As at 2016, the wholesale and retail sector has employed 1.7 million individuals, an increase of 13% as compared to 1.5 million in 2011."*

Development of the sector is also planned with balanced growth in mind. Hence, to ensure a level playing field in the small-format industry while facilitating knowledge transfer, KPDNKK has enforced specific local shareholding thresholds for small-format stores. Following this trend, Giant has launched its subsidiary, G Ekspres. Currently, there are eight G Ekspres outlets in the Klang Valley. Giant has also received approval from KPDNKK to open 500 small-format outlets. Meanwhile, Tesco has also introduced Tesco Xpress, and there are currently nine outlets: two in Penang, four in Selangor and three in Kuala Lumpur. These activities, in addition to facilitation from KPDNKK, ensure continued investment in the sector, with the operators committed to retaining their large-format stores while investing in smaller stores.

BUILDING UP SMALL- AND MEDIUM-SIZED RETAILERS

The Small Retailer Transformation Programme (TUKAR) and Automotive Workshop Modernisation (ATOM) initiatives were formulated to help smaller retailers modernise and move their businesses up the value chain by helping them improve their profitability. This is being achieved by enhancing their human capital and expertise through training, providing new equipment, improving product displays through new marketing strategies and introducing better inventory tracking systems.

To date, 2,367 shops have been transformed under the TUKAR programme, with participants recording an increase in revenue of at least 40%* after 12 months. Under ATOM, 864 shops all over Malaysia have been transformed, resulting in 80% of participants reporting at least a 40%* increase in revenue.

In 2017, the focus of the programmes shifted to enhancing and sustaining the performance of existing TUKAR and ATOM participants who performed well throughout the first phase of the programme, a period spanning between ATOM and TUKAR's launch in 2011 to 2016.

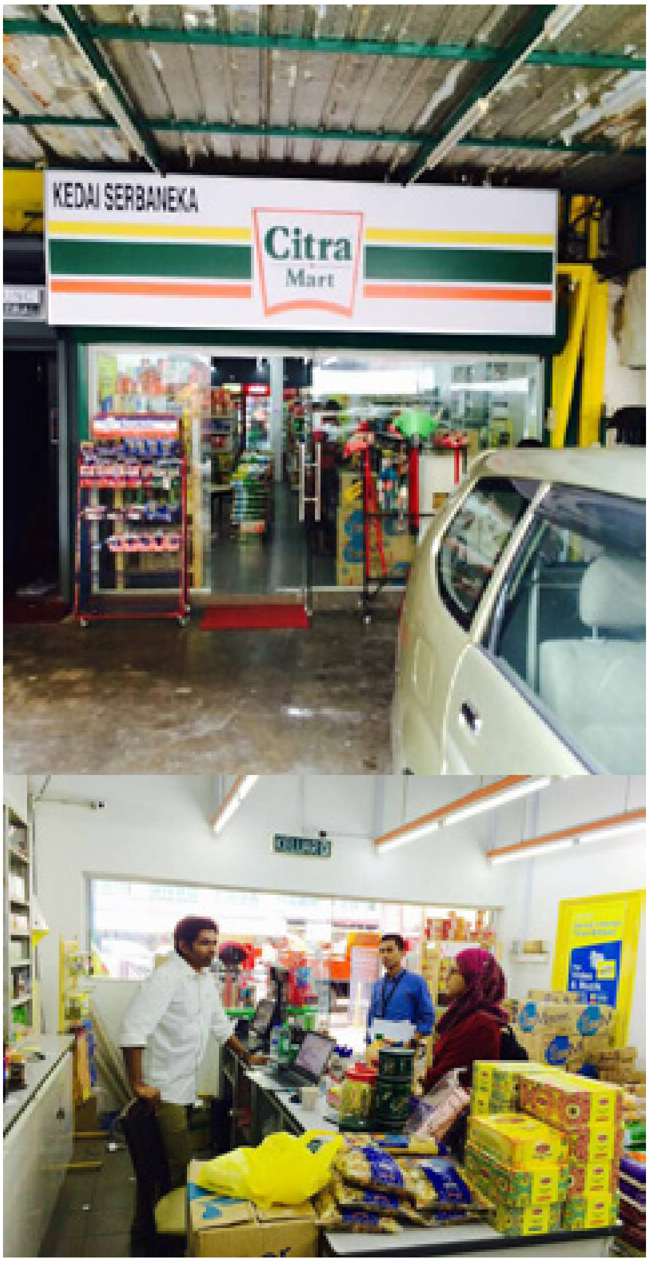
In the second phase of the TUKAR and ATOM programmes, which were launched in 2017, 28 and 21 existing TUKAR and ATOM participants respectively qualified for loans to further expand their businesses. Qualified participants are required to show high potential for growth based on their sales records and the locations of their establishments, possess a good record in the CTOS and CCRIS databases and have no arrears. Most importantly, to ensure their continued success, the potential participants need to show commitment to expand their business.

The programmes are self-sustaining due to the nature of the funding system utilised. The loan operates on a revolving basis, whereby the loans repaid in the first phase will then go towards funding expansion projects in phase two.

> ***"Under ATOM, 864 shops all over Malaysia have been transformed, resulting in 80% of participants reporting at least a 40% increase in revenue."***

To ensure the viability of TUKAR and ATOM and to help participants manage their finances, KPDNKK and Bank Rakyat have continuously engaged with participants through various programmes to offer financial guidance and advice. To further facilitate this, KPDNKK through the Credit Counselling and Debt Management Agency (Agensi Kaunseling Pengurusan Kredit – AKPK) held two Open Days in 2017 to conduct financial management sessions, where participants were given advice on restructuring or rescheduling of repayment of their loans under Bank Rakyat. Furthermore, during Open Days, participants were also given professional advice on stock keeping and budgeting, among others, by industry professionals such as Tesco, the Malaysia Automotive Institute and AKPK.

As a follow up measure, the Delivery Management Office and AKPK have also gone to the ground to monitor the well-being and progress of the participants.



The TUKAR programme has helped to modernise business practices of small retailers.

* Based on the TUKAR and ATOM Programme Impact Study conducted in 2013. A new study will be conducted in 2018.

The ideal local economic environment creates a great platform for Tesco to expand their business.

Empowering our Retailers

UK grocery and general merchandise retailer Tesco marked its 15th anniversary in Malaysia in 2017 and now operates 57 outlets nationwide. "To our UK parent company, expanding to Malaysia seemed like the right step," says Azliza Baizura Azmel, the Corporate Services Director of Tesco Malaysia, noting that the company had seen a need to grow its presence in Asia. Malaysia's politically stable environment, growing pool of skilled workers, its status as a growing nation and an accommodating policy framework and legal system made the country a good platform for Tesco to expand into the region.

From the opening of its first outlet in Puchong in 2002, Tesco's continued growth in Malaysia has also been supported by facilitative policies and the Government's efforts to increase the ease of doing business the country. Additionally, over the years, the Malaysian Government has enforced competition and data protection laws to ensure a level playing field in the retail sector, thus attracting more foreign companies.

Tesco has also collaborated with the Ministry of Health to ensure that goods sold by the retailer are MeSTI compliant. "Compliance to MeSTI ensures that our products meet certain standards and level of quality," says Azliza.

> ***"KPDNKK's recent decision to allow foreign-owned stores to expand with smaller premises have allowed Tesco to penetrate the lucrative small-format sector."***

The company also finds that the Ministry of Domestic Trade, Cooperatives and Consumerism (KPDNKK) is supportive of its needs. "At the end of the day, it's always about the conversations we have with KPDNKK; who have always been attentive to our concerns," says Darshan Singh, the Head of Government Relations and Corporate Services for Tesco, Malaysia.

The company will be further expanding its presence in Malaysia following KPDNKK's recent decision to allow foreign-owned large-format stores to open smaller premises, which will allow Tesco to penetrate the lucrative small-format sector. This is in line with current retail trends, where consumers prefer to shop in smaller stores located near their homes. In 2017 Tesco launched its chain of new generation stores which focus on time saving, increased value for money and the incorporation of technology such as self-checkout counters.

"Malaysia's solid talent pool aids with ease of business in Malaysia for Tesco."

The company is also keen to leverage Malaysia's talent pool for its staffing needs. "We're always looking to diversify our talent pool. We look at Malaysians first to reduce our dependency on foreign workers," says Azliza. In a collaboration with the Ministry of Education, the company trained and upskilled young talents who are keen on working after completing secondary school to improve their employability. Further adding value to Malaysia's economy, Tesco works alongside homeless shelters such as Anjung Singgah in Kuala Lumpur to provide jobs to the homeless and other marginalised members of society, such as people with disabilities and retirees.

Moving forward, Tesco will utilise technology to further enhance its services and expand its footprint in Malaysia. To remain current in this day and age, Azliza emphasises on the importance of having both a virtual and physical presence. In line with this, Tesco now offers real-time delivery through e-commerce platforms such as LAZADA and Happy Fresh in addition to its own delivery service. This also follows thriving growth in Malaysia's e-commerce, which the Government is increasingly seeking to drive inclusive economic activities and income-generating opportunities.

Additionally, Tesco uses social media sites such as Facebook to carry out fluid interaction with its consumers, allowing the chain to share information and receive feedback; ensuring services which are in tandem with their stores in Europe and the US.

Azliza Baizura Azmel, Corporate Services Director, Tesco Malaysia.

The Zen5es Wellness Report is expected to attract 60,00 commuters travelling between Johor Bahru and Singapore daily.

PREPARING FOR THE FUTURE OF RETAIL

The establishment of wellness resorts is aimed to revolutionise the wholesale and retail sector to attract higher value consumers and tourist spending through game-changing lifestyle concepts. To this end, the Zen5es Wellness Resort in Iskandar Johor is currently under construction and, upon completion, will create a new landmark in the Southern corridor of Iskandar Malaysia. It is projected to contribute RM718 million to the sector's overall GNI, attract RM1 billion in investments and create 4,300 career opportunities for Malaysians from all levels of skill and expertise. The resort is also expected to create a ripple effect among locals and international healthcare travellers alike through the promotion of healthcare awareness.

Due to its location at Malaysia's Southern gateway, the resort is well-positioned to attract the 60,000 commuters travelling between Johor Bahru and Singapore daily. Moreover, the resort will also be located adjacent to the future Bukit Chagar Rapid Transit System (RTS), hence easing mobility for future clients.

The integrated development will have 53,000 square feet of lettable retail area which is divided into three major blocks. The first block contains 729 units of family housing, while the second block will be made up of 987 apartment suites available for purchase under lifetime lease. The third block will consist of a private 529-bed hospital, of which 322 beds are reserved specifically for elderly care and confinement care. The residential units will be available for sale from 2021, following the completion of the resort in the same year.

> *"The Zen5es Wellness Resort is projected to contribute RM718 million to the sector's overall GNI, attract RM1 billion in investments and create 4,300 career opportunities for Malaysians from all levels of skill and expertise."*

Completing this massive development is not without its challenges, as the current soft market sentiment leads to difficulties in obtaining financial support for construction. Nevertheless, the persistent effort to seek alternative financial resources has ameliorated the risk of delays.

A Wellness Resort City Like No Other

Malaysia is an ageing nation. The number of senior citizens is expected to double to 5.8 million or 15.3% of the population by 2030. Sensing a ripe opportunity, innovative property development company Leadmont Group is venturing into the wellness resort industry to cater to the growing need for quality healthcare and medical services.

"Zen5es Wellness Resort is a one-stop integrated wellness resort city," said Brendan Soh, Sales and Marketing Manager of Leadmont Group, "Located a mere 5-minutes' drive away from the rapidly-growing Iskandar City, Zen5es Wellness Resort will leverage on Malaysia's superb reputation as a cost-effective healthcare and medical destination and as a retirement haven."

Positive signals all around

With its close proximity to Singapore and Indonesia, connections to major existing and future transportation hubs, and favourable currency exchange rate, the wellness resort is expected to draw significant interest from Malaysians, the expat community and regional and international medical tourists. In 2016, the medical tourism industry in Malaysia exceeded RM1 billion in revenue from one million healthcare travellers. Sherene Ali, CEO of Malaysia Health Travel Council expects RM4 billion in revenue by 2020.

The Johor State Government is supportive, as demonstrated by Menteri Besar YAB Dato' Mohamed Khaled Nordin's expressed intention for Iskandar Malaysia to follow into South Korea's footsteps and emerge as the leading medical tourism destination in ASEAN. Brendan and his team work with multiple government agencies such as the Ministry of Domestic Trade, Co-operatives and Consumerism (KPDNKK), Malaysian Investment Development Authority (MIDA) and the Ministry of Finance (MOF) and receives advice, guidance and – if all goes well – tax incentives.

Understanding the needs of medical tourists

Leading the visionary, first-of-its-kind project is Mimi Asche, Chief Operating Officer of Leadmont Group's Health and Wellness Division. "Zen5es Wellness Resort will feature three blocks in the same compound, with amenities such as cafes, retail shops and supermarkets at the ground level. The first block will offer integrated multi-generational residences suitable for families while the second block is the 'apartments for life' catering to retirees seeking a safe, secure environment that fosters community and companionship. It will also offer a high-care nursing home and confinement care centre. The third block is a specialist private hospital," she explained, "What makes us different is our holistic approach. The whole compound is designed to accommodate not just senior citizens, but also medical tourists of any age. We call this the 'intergenerational approach'."

Passionate about senior care, Mimi develops Zen5es Wellness Resort's model of care following best practices from other senior care facilities worldwide. "The Zen5es Wellness Resort will take the best approach possible, and incorporate localisation twists into the mix."

Introducing Malaysians to a whole new specialisation

The project will require a significant number of skilled human resources and will provide ample job opportunities. "Malaysia has the right talent and skillsets. However, we do not have enough (in the country)," said Mimi, referencing the high number of skilled Malaysians who have migrated overseas, "To supplement this and to provide an international feel, we will also recruit talent from ASEAN countries, especially in the medical and hospitality sector. At the same time, we hope that Malaysians with specialisation in senior care will be encouraged by this project and return to pursue their passion in their home country."

Upon completion of the flagship project in Iskandar Malaysia, the company plans to replicate and offer cost-efficient alternatives all over Malaysia, in cities such as Penang, Sabah, Kota Kinabalu, Ipoh and Melaka. "We found from our research that Malaysians have low expectations for senior care, which is very sad. I want us to improve the way we look after the elderly," said Mimi passionately, "That's what drives me."

Preparing Small Business Owners for Modern Consumers

Intan Shahirah Ramli, Senior Assistant Director in the Delivery Management Office Division within the Ministry of Domestic Trade, Cooperatives and Consumerism (MDTCC) has been involved in the Wholesale & Retail National Key Economic Area (NKEA) since July 2013. Under her purview are two projects: the Small Retailer Transformation Programme (TUKAR) and the Automotive Workshop Modernisation (ATOM).

Targeting traditional sundry shops and local automotive workshops respectively, both programmes aim to increase the competitiveness of small businesses in Malaysia, which can no longer sustain in the open market without catering to rapidly changing, technology-centric consumer demands. TUKAR and ATOM programmes are designed to drive growth and accelerate business modernisation.

Results and Transformation Efforts

"Since the implementation of both programmes, as of December 2017, 2,367 traditional sundry shop owners have participated in TUKAR and 864 local automotive workshop owners have participated in ATOM," said Intan Shahirah. "Based on our 2013 Impact Studies, four out of five participants have increased their shops' sales as direct results of the programmes. About a quarter of successful participants have managed to increase their sales by 80% and more."

Under the TUKAR and ATOM programmes, local retailers undergo two types of transformations: physical and mental. "Physical transformations are material transformations such as the shop's outlook, usage of point-of-sale system at the cashier counter to record daily sales, usage of chiller and freezer to reduce loss from damage of fresh items like fish and vegetables, usage of computerised machines to identify vehicle problems and many others," explained Intan Shahirah, "While mental transformation is our effort in changing the way retailers manage their business from the traditional way to a more organised manner."

Incorporating corporate social responsibility initiatives in the programmes, MDTCC received positive cooperation from the private sector. Local and foreign hypermarket owners and main players of automotive workshop services shared their expertise to participants in a variety of areas, including standard operation procedures, shop management and customer handling, stocks and inventory management and more.

Accelerating Mindset Changes

The experienced civil servant notes the biggest challenges in implementing the TUKAR and ATOM programmes are challenges related to mental transformation – how to transform local retailers' mindset to stay consistent after their businesses were modernised. "The majority of local retailers (in the programmes) have not received any formal education in managing a shop," said Intan Shahirah, "They have been running the business either using their own logic, or following routines passed down by first- or second-generation family members who ran the business before them."

To overcome these challenges, consistent effort is required from both the retailers and the Ministry. On MDTCC's end, shop visits and monitoring are conducted periodically. There are also free Ministry-conducted refresher courses that shop owners can attend to refresh their skills and knowledge. The courses also enable participants to meet other participants to exchange ideas and experiences. The responses received from these efforts were positive, with some participants grouping together and initiating bulk buying to enjoy better margins for their businesses.

The demands of the market changes and develops rapidly with the growth of current technology. For example, bigger retailers operating in Malaysia such as Tesco have seen success by riding on the rapid e-commerce adoption in Malaysia, which enables them to expand their market instead of depending on foot traffic. In the future, the wholesale and retail sector will face increased competition from cross-border retail e-commerce platforms offering items with cheaper prices. "As such, (Malaysian) businesses need to make full use of innovative solutions and pivot into value-added services in order to stay ahead, failing which it could be rendered obsolete when competitors catch up," concluded Intan Shahirah.

MOVING FORWARD

As a key economic sector which has grown in size over the past seven years, the wholesale and retail sector has achieved great strides in contributing to Malaysia's GNI, investments and job creation. The sector achieved its 2020 GNI target of RM156 billion ahead of schedule in 2015 and as at 2017, contributed RM201.9 billion to GNI. It is now one of the country's fastest growing sectors, with its rate of expansion outpacing GDP growth since 2011.

In addition to ongoing initiatives, the steady growth of this sector has been contributed from projects which have been completed or where the private sector has taken their rightful reins. This includes the establishment of the virtual amaxMALL which attracted more 646 retailers to utilise the platform.

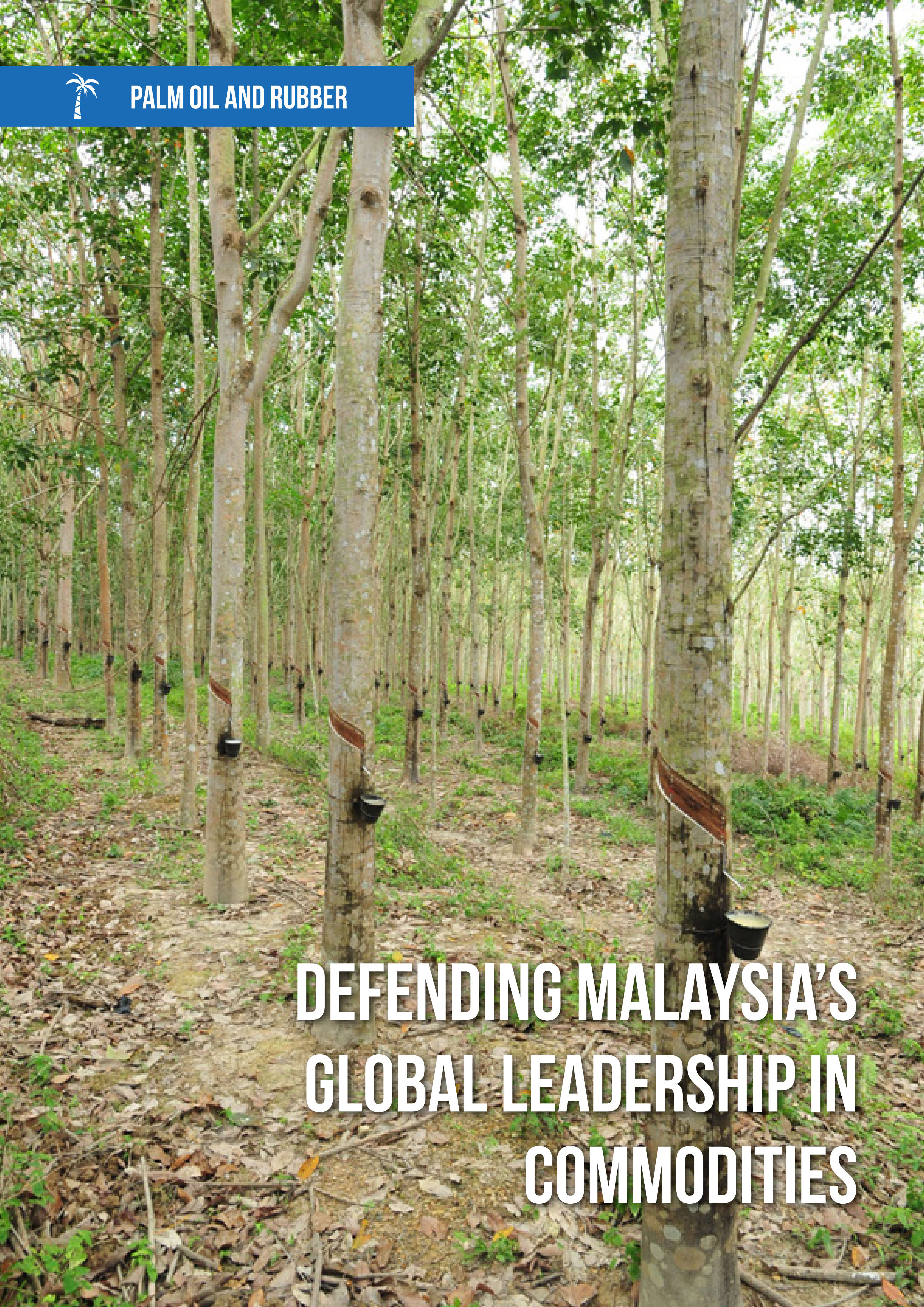
To ensure diverse consumer offerings, the NKEA also facilitated the establishment of Big Box Boulevards (BBB), large-scale integrated outlets which house large-scale retailers in a single location. The outlets are homes to hypermarkets, furniture superstores, digital product malls and sporting-goods stores. The Government targeted for one Big Box Boulevard to be operational by 2014. Currently, existing players BBB include Oasis Damansara by Sime Darby Brunsfield; the Kuala Lumpur Logistics Centre; and Nilai 3 by Hatia Properties.

Other projects which the private sectors are now leading include the Makan Bazaar initiative which combines hawker stalls, quick-service restaurants, cafés, bars and fine dining restaurants under one roof in strategic locations nationwide. Three Makan Bazaars have since been opened, with another one in the development stage. The three operational Makan Bazaars are located in Oasis Square in Ara Damansara, Medini Mall in Nusajaya, Johor and KLCC. Another project, transforming KLIA2 into a retail hub, has also been completed in 2014, with retail space of over than 350,000 square feet of which 118 lots have been allocated for retail offerings, 81 lots for food and beverages (F&B) and 26 lots for services. The target of developing 55,000 square metres of additional retail space in KLIA2 by 2020 has also been achieved ahead of target.

Online platforms will become an increasingly valuable tool for retailers to reach a wider consumer base, although a brick-and-mortar presence is seen to remain vital to the business. Hence, retailers around Malaysia should consider having both physical and online channels for greater sales and distribution.

To this effect, efforts to expand Malaysia's e-commerce and online retail sectors have been supported by the launch of BizTrust, a safety certification launched in June 2017 to bolster consumer confidence in dealing with online business entities. BizTrust can be obtained by online businesses, including those on social media via the Companies Commission of Malaysia to certify that an entity has complied with the characteristics of the established trust principles and criteria, such as business registration, online security and data protection. The certification will enable Malaysian online business entities to capitalise on the rapidly growing e-commerce industry, in line with global trends as well as the country's focus to develop the digital economy through the Digital Free Trade Zone (DFTZ).

Moving forward, it is hoped that the developed projects will continue to thrive and spur continued progression for the wholesale and retail industry.



DEFENDING MALAYSIA'S GLOBAL LEADERSHIP IN COMMODITIES

YB DATUK SERI MAH SIEW KEONG
Minister of Plantation Industries and Commodities

The Palm Oil and Rubber NKEAs have provided the platform for the palm oil and rubber industry to move up the value chain. The total export value of palm oil and related products was RM77.8 billion in 2017. While the export value of natural rubber and rubber compounds was RM9.36 billion, a significant increase from RM5.89 million in 2016. The export of local latex was RM17.45 billion, 19% higher than 2016.

The focus in 2017 was strengthening sustainable palm oil production. In this regard, several initiatives were introduced including the mandatory implementation of Malaysia Sustainable Palm Oil certification by end 2019. In addition, progress was made in the integration of palm oil with other activities mostly benefitting the independent smallholders who constitute 17% of the oil palm planted area. This has increased productivity and increased incomes.

I am glad to note that RM132.7 million has been allocated for the planting of 8,557 hectares of rubber in Sabah and Sarawak. Sabah Rubber Industry Board and Sarawak Department of Agriculture will be actively executing the replanting and new planting programme, which has benefited 2,890 smallholders as per the 2017 target.

ENSURING SUSTAINABLE EXTRACTION OF VALUE

Productivity and yield have been identified as focus areas for the NKEA in view of the strong global demand for commodities. Efforts have also focused on improving industry best practices to enhance yield and quality of production to drive exports. This has resulted in the NKEA exceeding its 2020 target of planting and replanting 110,844 hectares of oil palm and 62,000 hectares of rubber. To date, the industry has recorded 126,290 hectares of new planting and replanting of oil palm and 215,634 hectares of new planting and replanting of rubber. The rubber industry had also generally performed well in 2017, as the export of local natural rubber and compound rubber had contributed RM9.36 billion, a vast increase compared to RM5.89 billion last year. Meanwhile, the export of local latex products recorded a revenue of RM17.45 billion, an increase of 19% from 2016.

Activities in 2017 were, however, weighed down by internal and external factors. The crude palm oil (CPO) price has fluctuated between a range of RM2,300 to RM3,300 throughout the year, though it should be noted that CPO price was comparably higher than the price in 2016, which was in the range of RM2,257 to RM3,200.

In addition, the production of fresh fruit bunch (FFB) increased by 18% in 2017 to 101.74 million tonnes from 86.33 million tonnes in 2016. However, the oil extraction rate (OER) this year has not been at optimum level, at a rate of 19.7% against the 2017 target of 21.5%. The low OER rate is due to three main factors, namely the use of low quality oil palm clones in planting, poor farm planning and infrastructure, and sub-standard harvesting practices, such as the harvesting of unripe fruit.

Mature plantation requires new planting.

> ***"To date, the industry has recorded 126,290 hectares of new planting and replanting of oil palm and 215,634 hectares of new planting and replanting of rubber."***

The Ministry will mitigate low OER by encouraging the selection of superior, high-yielding seeds as well as high quality oil palm clones for planting. The Ministry is also working on educating planters and harvesters on the best planting, farm management and harvesting practices. With regards to harvesting practices, the Ministry will especially emphasise the long-term value of picking only ripe fruits as opposed to indiscriminately harvesting fruits.

Meanwhile, progress in 2017 for new planting and replanting of oil palm has been slow due to delays in obtaining approval from the Sarawak State Government in using the Native Customary Rights (NCR) land that had been allocated for oil palm plantation. The 2017 target was eventually achieved, however, with 7,982 million hectares of new planting and 4,838 million hectares of replanting recorded for oil palm against the total target of 12,000 hectares. To mitigate any potential delays in new planting and replanting in 2018, land that has been allocated for future oil palm development has been cleared for planting activities.

On the other hand, new planting and replanting of rubber, has met its target of 8,557 hectares this year. For 2018, RM132.7 million has been allocated for the further planting of 8,557 hectares of rubber in Sabah and Sarawak, and is being overseen and executed by Sabah Rubber Industry Board and Sarawak Agriculture Department. A total of 2,890 smallholders are expected to benefit through this programme.

GROWING THE DOWNSTREAM SECTOR

The NKEA aims to realise the full potential of available downstream opportunities and tap into a more lucrative part of the value chain under the palm oil and rubber sectors. The move of going downstream has been incentivised by a total allocation of RM280 million in grants under the 11th Malaysian Plan. In this respect, the Government is not only assisting the big players but also the small- and medium-sized enterprises (SMEs).

Government grants in the palm oil sector are divided into two categories: the commercialisation grants for companies interested in the development of palm-based food products, health-based products, animal feed and high-value oleo-derivatives; and clinical research grants on the nutritional advantage of palm oil and its phytonutrients.

Progress was made in promoting the benefits of palm oil nutrients such as tocotrienol and carotenoids for commercial consumption, as illustrated by the RM41 million worth of grants committed to 10 projects in the development of palm-based food, health products and animal feed in 2017. Similarly, RM2.7 million worth of grants was committed to three projects in creating high-value oleo-derivatives in 2017. As such, RM97.5 million worth of investments were achieved for the commercialisation of palm oil products in 2017, amounting to a total of RM2.7 billion for 57 projects since year 2011.

With regards to encouraging clinical trials on palm oil phytonutrients and potent oleochemicals, RM11.9 million worth of clinical research grants were awarded in 2017, bringing the total number of grants allocated for clinical trials to RM158.5 million for a total of 16 trials conducted since 2011.

The Ministry of Plantation Industries and Commodities (MPIC) and Malaysian Palm Oil Board (MPOB) will continue to increase its marketing efforts to attract grant applicants. At the same time, MPIC and MPOB will explore strategic coordination with similar government agencies such as the Malaysian Investment Development Authority (MIDA) and SME Corp to promote the grants further.

In the rubber sector, the Malaysian Rubber Board (MRB) has established standards for Malaysian rubber and rubber products in an effort to increase their export value as well as secure their use domestically. The five standards for Malaysian rubber and rubber products are ISO 3146, ISO 4074:2015, ISO/DIS 20163 and ISO/FDIS 2930. These standards are focused on development testing of rubber products such as polymers, packaging of Technically Specified Rubber (TSR), condoms, compounded rubber, cup lumps and crepe rubber.

> ***“RM97.5 million worth of investments were achieved for the commercialisation of palm oil products in 2017.”***

Additionally, support from the Government has enabled local companies to continue an aggressive expansion of Malaysian dry rubber products in the global market, focusing on industrial hoses, rubber automotive parts, re-tread tires and other specialised products.

With the drop in crude oil prices in recent years, petrochemicals have since become a cost competitive alternative to rubber derivatives, in particular ekoprena and pureprena, in the production of various commercial goods. To encourage the use of ekoprena and pureprena, MRB collaborated with six new companies in 2017 to leverage their partnership in encouraging the use of alternative rubber derivatives for rubber product applications. These companies are Silverstone Berhad, M-Xell Chemicals Sdn Bhd, Polymer Engineering Product & Construction Sdn Bhd, Proton Berhad, FT Hose and Mitsubishi Chemical Corporation (MCC) from Japan.

The Government is also poised to step up promotional activities to position ekoprena and pureprena as a green and biodegradable option to improve their marketability, in line with the target to generate more than RM5 billion of total revenue for rubber derivatives by 2020.

The export of local rubber products contributes to national income.

ADVOCATING ENVIRONMENTAL SUSTAINABILITY

Launched in January 2015, the Malaysian Sustainable Palm Oil (MSPO) Certification is a voluntary-based certification scheme implemented by the Malaysian Palm Oil Certification Council (MPOCC), introduced to address concerns about management practices, transparency, compliance with legal requirements, social responsibility, new plantings and the environmental sustainability of the palm oil industry. The certification is awarded to oil palm plantations run by smallholders, companies and corporations, as well as palm oil processing facilities that comply with standards and practices set and adhered to within the global sustainable palm oil industry. Branding with MPSO's standards will thus increase the value and demand of Malaysian palm oil as a premium edible oil, following global demand for sustainably sourced products.

Currently, 30 palm oil mills in Malaysia are certified by MPOCC. In 2017, MPOCC awarded the certification to a total of 296,007 hectares worth of new palm oil areas.

To expedite the implementation of the certification across the Malaysian palm oil industry and consistently elevate the industry to the next level, MSPO certification has been made mandatory to all oil palm plantations in Malaysia by 2019, as the voluntary nature of the certification may have delayed some stakeholders from starting the process. In February 2017, the Ministry had laid out a compliance timeline for the MSPO certification that will be executed in stages. MPOCC is also in the process of training more qualified and accredited Certifying Bodies (CB) and auditors to improve the certification process and speed up the audit and certification for applicants.

Meanwhile, briefings and dialogue sessions with smallholders, associations and plantation groups were also conducted to sensitise their understanding on the MSPO certification and encourage compliance with the standard. Local smallholders may lack capacity and resources to commit to the lengthy compliance and completion process needed for MSPO certification and are conventionally driven by quantity rather than quality of FFB. To encourage their adherence to MSPO standards, the Government has allocated RM130 million to help smallholders to transition the initial steps towards meeting the requirements for certification as well as helping them bear the costs of the audit and certification processes. At the same time, MPOCC is working with its stakeholders to create the MSPO Supply Chain Standards to ensure strict quality controls for the entire MSPO supply chain. Thus, quality control protocols at the mills and further downstream should impose pressure on smallholders at the upstream to comply with rigid FFB standards, aligned with MSPO certification itself.

"Currently, 30 palm oil mills in Malaysia are certified by MPOCC."

Moving forward, the Ministry will ensure that the MSPO certification achieves international recognition. Palm oil entities that are already certified against the current and internationally recognised Roundtable on Sustainable Palm Oil (RSPO) standards will need to complete MSPO certification by 2018, while palm oil entities without RSPO certification and independent and organised smallholders will need to obtain MSPO certification by 2019. The Ministry is targeting for the MSPO certification to be eventually integrated with the RSPO standards, and for Malaysian palm oil entities to have dual certification of the RSPO and MSPO.

In the area of sustainable energy, five new biogas plants have been completed in 2017. Along with generation of electricity, the plants will contribute towards reducing carbon footprint from palm oil production.

Big demand for healthy snacks

Healthier snacks have been dominating consumer demand trends of late, and one company is working to satisfy this. Haliza Industries Sdn Bhd (HISB) specialises in the production of healthy snacks such as potato chips, cereals, and food seasoning made from organic ingredients. In 2017, thanks to the Commercialisation Grant for the Development of Food and Health-Based products under the Palm Oil and Rubber (POR) NKEA, HISB has been able to expand its offerings to include corn-based snacks.

"In August 2017, we received a grant worth RM2.5 million from the Government, which we matched with our own funding. We used the money to purchase high-technology, fully automated machinery," said Datin Hajah Nor Haliza, founder of Haliza Industries. "The machines are not available in Malaysia and had to be imported from overseas. Aside from creating higher quality products, the machines also improved our production from 100 kg of cereal per hour to 200 kg of cereal per hour."

The grant has accelerated business growth, leading to Datin Hajah Nor Haliza forecasting higher revenues. She now plans to expand her workforce from 15 employees to 35 employees by the end of 2018. The proud founder is looking to finalise the procurement of warehouses in China to use as its international distribution hubs. Currently, the company currently exports 90% of its food products to countries such as Saudi Arabia, China, Singapore, Brunei and Japan.

Its success in these countries stem from the large demand for halal-certified products, especially in China and Japan. "We provide the type of quality, halal food products that these markets look for," says Datin Hajah Nor Haliza, adding that the official website for Haliza Industries (www.haliza.com.my) displays the various licences and certificates awarded to the company. Moving forward, the company plans to enter the American, Australian and New Zealand markets.

HISB's continued success also relies on its promotion of its nutritious snack food products. The company's products are not only natural and MSG-free, but also contain a palm-based phytonutrient called tocotrienol, which is linked to health benefits such as improved heart health and a reduced risk of cancer.

Haliza Industries at Halal Fest 2017.

Under the POR NKEA, funding is also provided for clinical research of the nutritional benefits of palm oil and its phytonutrients in the areas of renal disease, neuroprotection, arthritis, cardiovascular diseases, cancer, fatty liver disease, macular degeneration, pancreatic disease, radioprotection and child nutrition.

To promote public awareness on the health benefits of tocotrienol, the 100% Bumiputera-owned company, devoted to healthier snack food products, invites educational institutions and organisations for tours. Interested parties may send requests directly through its website. "In 2017, 64 schools and ten higher educational institutions visited and learned more about tocotrienol, along with other aspects of food production," said Datin Hajah Nor Haliza, "Along with public education, we hope to increase local distribution as well. We would like our products to be offered in Kedai Rakyat 1Malaysia, petrol stations and supermarkets."

The founder bears responsibility for creating quality food products and urges other food entrepreneurs to commit to the same vision. In 2018 and beyond, she hopes for additional help and support from government agencies and related private institutions to speed up processes and scale bigger in the domestic and international markets. "We are looking for ways and funding to build more factories and distribution channels to cater to the growing demand," said Datin Hajah Nor Haliza, sharing priority business strategies for the upcoming years. "We also want to focus on our supply chain and optimise revenue generated from our products."

With a visionary leader and a growing worldwide demand for halal high quality and nutritious food products, the future of Haliza Industries looks bright.

Malaysia's Journey Towards Zero Biogas Emission by 2020

Biogas, a by-product of the palm oil milling process is produced after palm oil mill effluent (POME) is treated anaerobically to remove organic pollutants. It is a source of renewable energy heavily explored in palm oil-producing nations such as Malaysia, which produced approximately 63.4 million tonnes of POME in 2015. Capturing and using biogas can reduce the palm oil industry's environmental impact and reliance on petroleum-based fuel as well as adding an extra monetisation incentive to millers through the selling of excess energy.

However, endeavours to capture and use biogas as a source of energy can be improved upon, said Dr. Loh Soh Kheang, Head of Energy & Environment Unit within the Engineering and Processing Division in the Malaysian Palm Oil Board (MPOB). Uncaptured biogas releases high levels of methane in the atmosphere – a compound which accelerates global warming. This environmental issue also taints the image of the palm oil industry and reduces the attractiveness of Malaysian palm oil and its products in environmentally-sensitive markets such as the European Union and the United States.

To address this issue, the Palm Oil and Rubber NKEA focused its attention on developing biogas capture or methane avoidance facilities at palm oil mills through one of its projects. This effort has successfully sped up the previously slow adoption of nationwide biogas implementation by palm oil mills – as of December 2016, there are 92 completed biogas plants, with a further nine under construction and an additional 145 in the planning phase. Furthermore, all new and existing mills applying for throughput expansion must include biogas capture or methane avoidance facilities. Facilitating these are various national-level incentives such as the introduction of feed-in-tariff (effective 1 January 2014), Green Technology Financing Scheme and the fiscal incentives for renewable energy. On the international front, as a signatory of the Kyoto Protocol, industry players in Malaysia are able to transform greenhouse gas into cash value through the Clean Development Mechanism.

However, according to Dr. Loh and her team's research paper entitled 'First Report on Malaysia's experiences and development in biogas capture and utilisation from palm oil mill effluent under the Economic Transformation Programme, current and future perspectives', Malaysia faces many issues and challenges towards a nationwide biogas implementation, due to problems 'relating to technology, finance, governance and grid connectivity'. One such example is cost-effective solutions for biogas capture in Malaysia, which is 'difficult to completely achieve' due to highly volatile processing volumes and extreme weather patterns. Current solutions could not harness POME's full potential. However, there are many areas to explore which may nudge the industry towards the coveted zero-emissions scenario.

For example, there must be more research and development for innovative and creative solutions to biorefinery approaches as 'more often than not there is no one-size-fits-all solution'. There is also a need for a holistic value chain management as the economic viability and sustainability of the project cannot be guaranteed without the establishment of a tangible biogas utilisation aspect. Furthermore, various relevant stakeholders, agencies and renewable energy players currently lack alignment due to 'vested interests and restricted information sharing culture'. More must be done to encourage transparent and continuous experience and knowledge-sharing so the whole ecosystem can advance together.

Going forward, Dr. Loh calls for a more concentrated government effort to process applications, facilitate and coordinate nationwide biogas implementation via a practical one-stop centre. This will hopefully lead to Malaysia's full compliance with national and international sustainability frameworks while tapping and monetising biogas, an abundant source of renewable energy readily available in our palm-rich nation.

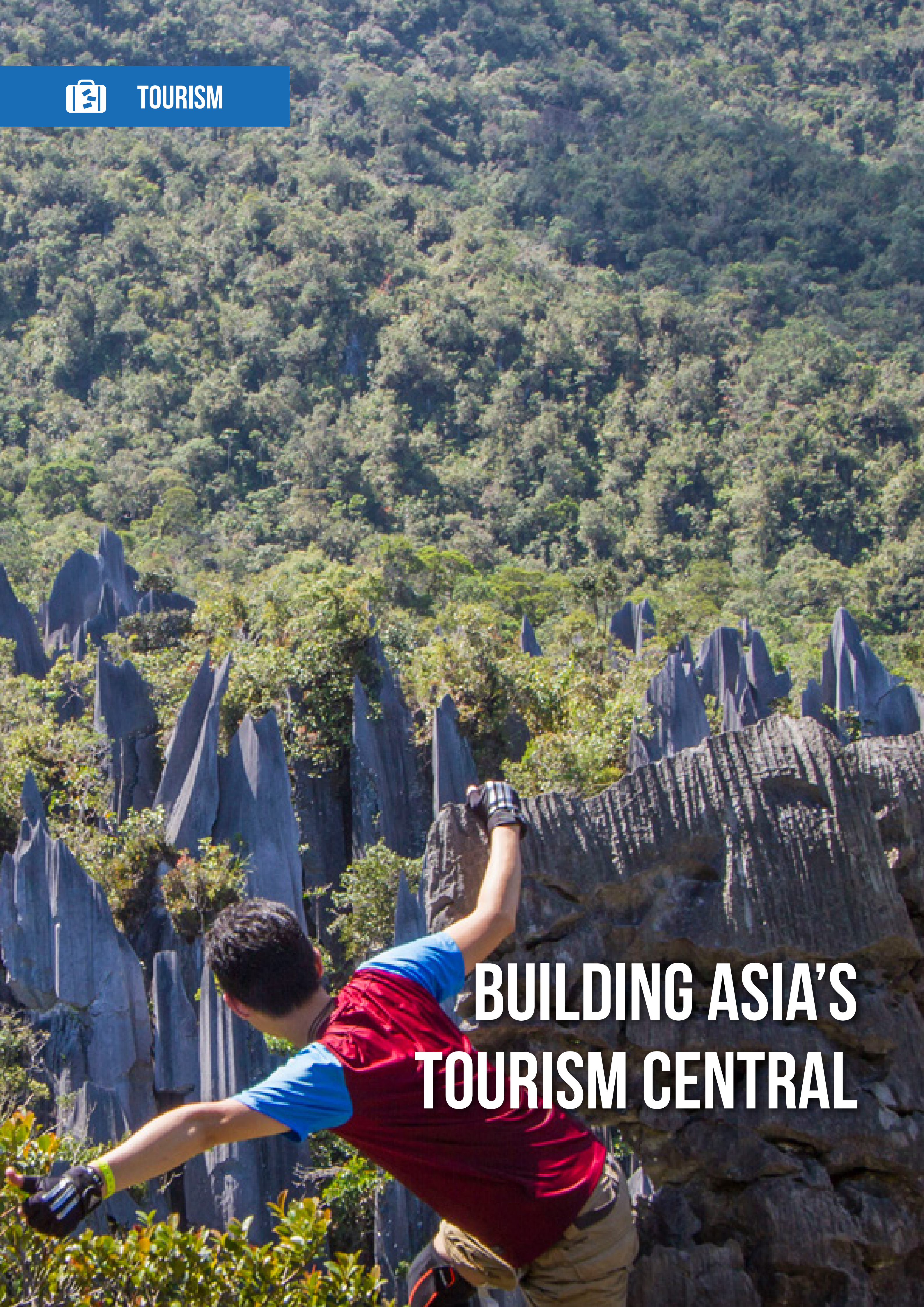
Biogas plant is a contributor to the source of electricity to the nation.

MOVING FORWARD

New and existing initiatives will continue under the Palm Oil and Rubber NKEA to overcome the fluctuations within the global market, including steps to improve both the upstream and downstream sectors of the palm oil and rubber industries. The NKEA is committed to boost the take-up rates of commercialisation and technology acquisition grants. MPIC and MPOB will continue to engage with industry players interested in expanding to the downstream segment of palm oil through NKEA grants and ramp up promotional efforts to increase grant awareness.

The NKEA will also be working on increasing number of MSPO certification issued to palm oil entities. The MSPO certification, of note, will be crucial in ensuring that the Malaysian palm oil industry is able to present itself as an environmentally friendly industry and hence widen its export base, especially to resistant markets in Europe.

BUILDING ASIA'S TOURISM CENTRAL



YB DATO' SERI MOHAMED NAZRI ABDUL AZIZ
Minister of Tourism and Culture

Tourism remains a mainstay of the Malaysian economy and important developments in 2017 ensure that it will continue as an important economic growth driver for years to come – with the sector remaining on track towards achieving our targets of 36 million tourist arrivals and RM104 billion in GNI by 2020.

The year saw the sector received 25.7 million in arrivals in 2017. Tourism receipts reached RM81.4 billion in 2017, up from RM56.5 billion in 2010. Thus far tourism has contributed to RM81.1 billion in the country's GNI against RM37 billion in GNI in 2009.

The year, Malaysia continues to receive international accolades in tourism, with Penang being named one of the 17 must-visit destinations in 2017 by CNN Travel and Ipoh, Perak as one of Lonely Planet's Top 10 cities for travel in 2017. Kuala Lumpur, on the other hand, was also named among the world's top 10 cities in terms of tourism growth by the World Travel and Tourism Council (WTTC). All these serve as a testament to the commitment and work put in by the Ministry of Tourism and Culture (MOTAC) and the private sector in achieving the targets for tourism.

Following the successful rollout of the e-Visa facility for tourists from China, India, Bangladesh, Pakistan, Nepal and Myanmar in 2016, 2017 saw the facility being extended to citizens of Sri Lanka, Bhutan, Serbia and Montenegro, bringing the total number of countries eligible to ten, further contributing to the number of tourist arrivals.

The reopening and refurbishment of world class event venues such as Malaysia International Trade and Exhibition Centre (MITEC) and the Bukit Jalil Complex have upgraded the country's overall event hosting capacity and puts us in a better position to win the right to host more prestigious and influential events that will draw large international crowds. It also reinforces the country's already strong standing as one of the premier destinations for major events and business events. The efforts of the Malaysia Convention and Exhibition Bureau (MyCEB) has done much in ensuring that Malaysia continues to grow into one of the region's top destinations for world-class events by welcoming a total of 120,528 international delegates throughout the year, delivering RM1.4 billion in estimated economic impact to the country.

In order to achieve our 2020 targets, we will conduct a high-level review of existing initiatives and focus on game-changing and last-mile initiatives to push us towards our 2020 targets.

POSITIONING MALAYSIA AS A VIBRANT SHOPPING DESTINATION

Malaysia has long recognised the importance of shopping to drive yield from the country's tourism industry. It is indeed a lucrative component of the nation's tourism industry and efforts in promoting Malaysia as a vibrant shopping destination has resulted in shopping tourist spend of RM26 billion as of 2017, amounting to 32% of total tourism receipts against 28% in 2009.

This has been attributed by annual retail events such as the National Sales event launched on 1 March 2017 at Suria KLCC, the "Miss SHOPhia Shop" campaign, the Snap & Win online contest in conjunction with the 1Malaysia Super Sale 2017 and the "Malaysia Mega Sale – A Luxury Shopping Experience" with the Melium Group and Pavilion. Efforts have also gone a long way towards designating Kuala Lumpur City Centre-Bukit Bintang as a vibrant shopping precinct. The vicinity recorded 124 million footfalls in 2017, against the target of 105 million.

In addition to retail promotion, the industry has identified Malaysian crafts as a retail opportunity to widen the country's unique offerings. In a bid to help popularise local arts and crafts among tourists and provide an avenue for local craftsmen and entrepreneurs to access the market, Kraftangan Malaysia has opened outlets at Kompleks Kraf Johor, Tangs Melaka and Plaza Sungai Wang in Kuala Lumpur. Products and items available at these outlets include locally made batik, pewter, wicker and wood, ceramics and songket souvenir items. During the year, craft sales from these three outlets have recorded cumulative sales of RM1.2 million, whilst craft industry sales reached a total of RM500.5 million.

Total craft industry sales reached a total of RM500.5 million.

MAKING MALAYSIA A TOP TOURIST DESTINATION

Building on Malaysia's growth as an internationally recognised tourist destination, the tourism industry remains on track to achieve its targets of attracting 36 million tourists to the country, and hitting RM168 billion in tourist receipts by 2020. Arrivals have grown to 25.7 million in 2017. Total receipts have also seen growth to RM81.4 billion in 2017, an increase of 44% compared to RM56.5 billion in 2010.

"Total receipts have also seen growth to RM81.4 billion in 2017, an increase of 44% compared to RM56.5 billion in 2010."

In 2017, the roll out of the e-Visa facility was extended to tourists from Sri Lanka, Bhutan, Serbia and Montenegro. This brings the total number of countries eligible for the e-Visa to ten. It is hoped that these countries will contribute to tourists arrivals in Malaysia as tourist numbers from these markets is expected to grow in the next 10 years in line with the growth of middle income households in those countries.

Heritage sites

Malaysia boasts five important sites that are currently inscribed under UNESCO's World Heritage List. These include the famous Melaka City and George Town, Penang along the Straits of Malacca which has seen over 500 years of trade and cultural exchanges between the East and the West; the Lenggong Valley Archaeological Site which contains the remains of the Perak Man, Southeast Asia's oldest most complete human skeleton and records of human settlement in the span of over two millennia; whereas both Mulu National Park and Kinabalu Park on the island of Borneo are important biodiversity hotspots. All these sites play an important role in attracting tourists to visit Malaysia.

Visitor statistics of arrivals to the World Heritage sites in 2017 came up to 19 million visitors, against the target of 16.5 million. The number of visitors at heritage sites in Malaysia surged dramatically by year-end as tourist arrivals increased in the months of November and December.

Promoting the spa and wellness industry

MOTAC has continued its efforts in promoting the spa industry to enrich Malaysia's tourism offerings. In October 2017, the Malaysian Signature Massage initiative was successfully launched to elevate massage techniques and introduce related products such as aromatherapy and oils into a country-specific signature massage product. This further serves as an effective enabler for the marketing of the Malaysian spa industry globally.

The launch also marked the start of a nationwide marketing and upskilling roadshow programme which had begun to roll out in various states at the end of 2017 into 2018. Further promotion and demonstration of the Malaysian Signature Massage in major regional and global tourism travel marts and forums were carried out at the end of 2017 and planned for 2018, including at the Asia Tourism Forum (ATF) Chiang Mai, International Tourism Fair (ITB) Berlin, Dubai Travel Mart and the World Travel Mart, London.

Malaysia Mega Biodiversity Hub

The Malaysia Mega Biodiversity Hub (MMBH) sites recorded a total of 906,661 visitors in 2017, against the year's target of 750,000 visitors. Generally, among the factors which have influenced the increase in volume of tourists to MMBH live sites are the natural resources attraction, recreational activities available and location accessibility.

Hiking is one of the most popular activities taken up by tourists at MMBH live sites, and a significant number of tourists have taken the hike up Gunung Tahan and Gunung Kinabalu. Meanwhile, for those more interested in flora and fauna conservation, activities at the Kuala Gandah Elephant Conservation Centre are geared towards the conservation of local wildlife affected by loss of habitat. Its short distance from Kuala Lumpur and accessibility via highways also increases its appeal among tourists. Gunung Mulu National Park, on the other hand, is known for its pristine tropical forest, unique limestone pinnacles and extensive cave formation, making it a popular adventurous and recreational attraction.

Although MMBH live sites are able to attract international and domestic tourists alike, the main challenges faced by most sites are maintenance, safety and accessibility among them. Moving forward, the sustainability of the environment and surrounding landscapes must be carefully balanced when establishing new sites, along with the impact of increased tourists on the culture of local people.

Developing ecotourism clusters

Tourism initiatives have also been focused on developing ecotourism clusters. In 2017, the Taiping-Kuala Sepetang-Batu Kurau-Bukit Merah area was identified as a site which will be developed as an ecotourism cluster. Among the proposed initiatives to develop the cluster include improving signage for ecotourism sites, upskilling and hand-holding local community businesses and establishing a research programme for product development and conservation. These initiatives are projected to benefit the local communities through the increased economic activities brought by the ecotourism industry.

Several other sites have also been identified for potential ecotourism clusters. These include Lanchang-Jerantut-Taman Negara (Pahang), Setiu-Merang-Penarik (Terengganu), Bako-Santubong-Semenggoh-Bau-Padawan (Sarawak) and Sandakan-Kinabatangan (Sabah). In developing these clusters, engagements were held with the State Economic Planning Units on the implementation structure and project concession opportunities. There have also been engagements on the development of potential products within the cluster in addition to the roles of various agencies involved.

To oversee the development process, a Cluster Destination Coordination Group (CDCG) has been set up for the Taiping-Kuala Sepetang-Batu Kurau-Bukit Merah cluster. More CDCGs are in the pipeline to manage the progress of ecotourism clusters in Pahang, Terengganu, Sabah and Sarawak.

In keeping up with the global trends of ecotourism and ensuring sustainability, MOTAC has developed the National Ecotourism Plan (NEP) 2016-2025. The plan embodies the collaborations between the Government, private sector and local communities, with specific focus on areas such as investments, tourism concessions, synergy between ecotourism and conservation, marketing and promotion, and development of ecotourism clusters. The NEP will serve as a platform for sustainable development and conservation of ecotourism sites as well as poverty-reduction and community empowerment in Malaysia.

The growth of international cruise tourism in Malaysia has been a steady driver in the tourism industry.

Cruise tourism

The growth of international cruise tourism in Malaysia has been a steady driver in the tourism industry, with 471 international cruise calls at Malaysian ports bringing in 924,885 passengers at primary ports in the country. This brings the total calls made to Malaysian ports, including local cruise ships, to 599. In attracting a higher rate of arrivals, the cruise sector has been primed for growth with several new developments that will enhance Malaysia as a cruise destination.

One of the industry's key players, the TUI group, is designating Langkawi as a homeport in 2018. The "TUI Discovery" will be home-porting in Langkawi starting December 2018 to cater for the winter season market. The route will cover Langkawi, Port Klang, Melaka, Singapore, Koh Samui (Thailand), Laem Chabang (Thailand), Sihanoukville (Cambodia) and Phu My (Vietnam). Based on the cruise schedule, there will be eight sailings with 1,800 passengers on board for each sailing.

Another key player in the cruise industry, Star Cruises, has also expanded its offering with multiple homeports and fly-cruise options to cater for demand from Southeast Asian tourists as well as those outside the region. This provides greater flexibility to tailor cruise routes and itineraries to suit the needs of various consumers. Additionally, now that Port Klang has been established as a Star Cruise homeport, tourists have greater ease to fly in and out of Kuala Lumpur.

Royal Caribbean Cruises has also submitted a proposal to the Penang Port Council with the objective of extending the berths at the Swettenham Port Cruise Terminal to accommodate larger cruise ships. The proposed extension covers the lengthening of the pier from the present 400 metres to 688 metres. The extension will enable the docking of two mega cruise liners simultaneously – with each carrying 4,900 passengers, an increase over the pier's present capacity of simultaneous dockings of cruise ships carrying a maximum of 3,000 passengers each. The expansion includes space for tour buses to wait and pick up ship passengers taking packaged tours, along with better accessibility for senior citizens and the physically challenged.

EXTRACTING VALUE FROM MAJOR EVENTS AND BUSINESS EVENTS

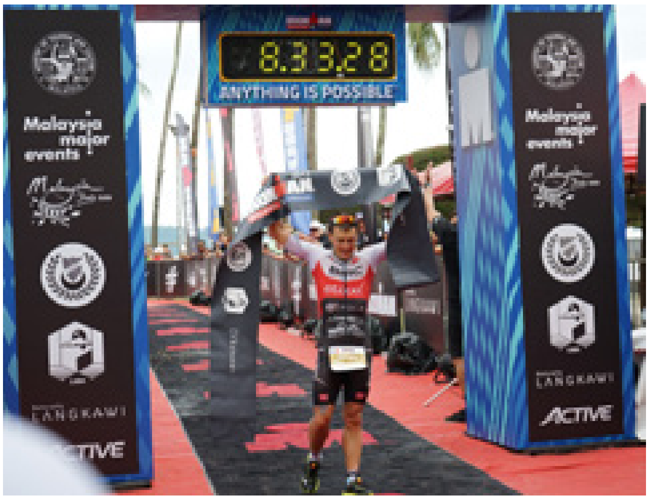
The value of the major events industry extends far beyond the expenditure on venue rental and includes supporting industries such as hospitality, entertainment and food and beverages (F&B), transportation and retail. It also has an intangible but strategic value in providing the country exposure to event visitors from across the globe, who may potentially become leisure tourists or even investors in Malaysia.

Major events

During the period between 2012 to 2017, major events contributed RM3.17 billion to the nation's economy. This comprises RM792.7 million in F&B and entertainment spending, RM951 million in hotel accommodation spending, RM951 million in retail spending and RM475.6 million from other revenues. Among the top events destinations in Malaysia include Kuala Lumpur, Georgetown, Langkawi and Johor Bahru.

In 2017, the total number of international tourists at major events supported by the Malaysia Convention & Exhibition Bureau (MyCEB) amounted to 58,492 attendees. The events, which helped raised Malaysia's prominence on the world map, include G-Dragon 2017 World Tour "Act III, M.O.T.T.E" in Kuala Lumpur in September 2017 that drew 8,813 total attendees with total tourist expenditure worth RM8.8 million and Ed Sheeran Live in Malaysia in November 2017 with 12,956 total attendees and RM12.8 million worth of total tourist expenditure. Moreover, a sporting event called the Ironman® Malaysia and Ironman® 70.3 Langkawi was held in November 2017, and attracted 7,200 total participants and spectators with total tourist expenditure of RM22.3 million. Another international sporting event, the Viper Challenge Series 2017 was held and attracted 52,519 total participants and spectators with total tourist expenditure of RM50.1 million.

Furthermore, several international music events were hosted during the year. Amongst them, the Good Vibes Festival 2017 held on 12 to 13 August attracted



Malaysia hosted Ironman® Malaysia and Ironman® 70.3 Langkawi in November 2017.

10,294 attendees with total tourist expenditure of RM14.7 million, while the K-Wave Music Festival held on 5 August 2017 attracted 14,672 attendees with total tourist expenditure of RM14.97 million.

One of the main challenges facing the events industry is the decreasing amount of available subvention funds, a form of budget allocation from the Government for international events. This is despite international events segment generating positive economic returns from indirect economic benefits such as withholding taxes, levies, GST and international tourist expenditure from events hosted in Malaysia. In order to mitigate the effects of budget rationalisation, the international events segment has to adapt and recalibrate its focus to support more events that require lower investments from the Government. In addition, the targeted events should also possess the ability to attract regional attendees. Currently, Malaysia's key strategy is to fill the calendar with as many events as possible with the aim of offering variety and choice to potential regional attendees.

To strike the criteria of mass participation and high returns in events, MyCEB will identify events which can draw a high number of attendees per event to generate higher yield. For example, only concerts or sporting events which are able to attract more than 10,000 total attendees with the ratio of 3:1 (local: international) will be considered, given the availability of venues in the Kuala Lumpur Sports City such as the Bukit Jalil National Stadium and the Axiata Arena.

Business events

In the business event segment, MyCEB together with its partners has secured a total of 151 international conferences, incentive groups and trade exhibition events as at December 2017, which amounted to 381,342 number of delegate days, with a total estimated economic impact value of RM954 million.

Among the key conferences hosted in 2017 were the World Congress of the International Federation of Freight Forwarders Associations (FIATA) 2017 which drew 1,611 delegates and the Asia Pacific Life Insurance Congress (APLIC) 2017 that attracted 4,563 delegates. The incentive groups segment also drew large number of delegates, such as the Amway Advance Sales & Marketing Training to Malaysia that saw 1,390 delegates and Babycare Leadership Summit 2017 that drew 1,575 delegates. In addition, these events also contributed to benefits beyond tourism such as enhancing Malaysia's global reputation as a preferred business events destination, advocating knowledge transfer between international professionals and local talent, increasing trade and investment prospects, as well as creating legacy stories for Malaysia.

The industry is also further supported by the growth of Malaysia's association community with the establishment of the Malaysian Society of Association Executives in response to the need for a single body to regulate the profession of association executives in Malaysia. Its mission is to advance the stature and professionalism of associations in Malaysia through advocacy, education and advisory services.

Educational programmes such as the Malaysia Business Events Week and Bid Workshop were also held throughout the year to increase and strengthen the capabilities and capacity of local industry partners. These capability and capacity-building initiatives will enable the business events industry to deliver transformative outcomes in terms of increased spend per tourist, as well as generate a broader economic impact for Malaysia.

While the year 2017 was positive for business events and the segment has presented significant potential to generate revenue for the country, more effort and emphasis need to be placed on creating greater synergies between associations and relevant

Ministries in realising the potential socio-economic benefits from business events. MyCEB will continue with an inter-ministerial collaboration in order to identify events which contribute towards achieving the NTP goals. This will ensure that potential networking and business development opportunities are aligned with strategic ministerial goals.

As such, MyCEB has developed the Business Events Roadmap to power Malaysia's knowledge and creative economy. The roadmap has underlined five key goals that institutionalise platforms for collaboration and support the development of strong local hosts:

- Significantly increase Malaysia's market share in conventions and exhibitions taking place in Southeast Asia;
- Business events will play a major role in achieving 2020 goals of every government ministry
- Create Asia's most professional, successful and sustainable business events industry;
- Significantly increase the contribution of business events to the country's GDP, job creation and tax revenue; and
- Help Malaysians expand their global investment, trade and professional networks.

MyCEB will also empower and energise the Malaysian Association of Convention and Exhibition Organisers and Suppliers (MACEOS) and the newly formed Business Events Industry Council of Malaysia to become strong advocates of the needs of business events players.

MyCEB has developed the Business Events Roadmap to power Malaysia's knowledge and creative economy.

ENHANCING TOURIST CONNECTIVITY

Efforts to enhance Malaysia's connectivity have enabled more links between the country and potential tourist markets, with 158,682 weekly seats secured by all Malaysian carriers from identified priority countries including China, India, Australia, Japan, Republic of Korea and Taiwan.

> ***"The Government will hold continuous bilateral discussions with potential target countries to leverage the ASEAN Air Transport Working Group (ASEAN ATWG) as a platform to discuss a more liberal air service arrangements."***

One of the notable highlights in 2017 was the new Air Service Agreement (ASA) signed with the Government of India during the YAB Prime Minister's visit to India from 30 March to 4 April 2017. An additional 1,861 seats have been added, giving a total of 22,531 seats per week to six major cities in India namely Delhi, Kolkata, Mumbai, Chennai, Bangalore and Hyderabad. Designated airlines from Malaysia will also be allowed to enter into domestic codeshare arrangements with selected Indian airlines.

There will also be continuous engagement with India to acquire additional traffic rights. This includes a proposal to add eight additional secondary cities to the existing 18 cities. The additional cities are Coimbatore, Pune, Madurai, Vijayawada, Mangalore, Surat, Chandigarh and Srinagar.

During the year, the Government also applied for additional traffic rights to Australia, especially to four main cities. The additional traffic rights to Australia will serve to increase travel and traffic between both countries by boosting weekly seat capacity.

To continue expanding Malaysia's global linkages, the Government will hold continuous bilateral discussions with potential target countries,

Making Malaysia an International Conference Destination

International conferences hosted by Malaysia have an impact that go beyond tourism as they serve as a catalyst for transformation, helping to spur national development on a variety of fronts through knowledge transfer, networking, global exposure and championing of key issues and best practices. To this end, the Malaysia Convention and Exhibition Bureau (MyCEB) has been working with various Ministries to bring in conferences that help them achieve their Ministry goals.

MyCEB currently works with Ministries and key associations to identify and bid for conferences which are aligned with the nation's development goals and requirements. "Our strategy is to bring in events that relate to Malaysia's areas of focus," says Datuk Zulkefli Hj Sharif, CEO of MyCEB.

Malaysia saw much success in bringing in major international conferences to its shores in 2017, thanks to aggressive efforts by the Government to bid for high profile events. Major conferences held in Malaysia during the year included the International Federation of Freight Forwarders Associations' (FIATA) World Congress, the International Forum on Quality and Safety in Healthcare Asia 2017 and the Asia-Pacific Retailers Convention and Exhibition (APRCE) 2017.

Building on this momentum, 2018 looks to be a banner year for Malaysia with a hefty number of world conferences lined up, mainly as a result of the NKEA Tourism's initiatives, as well as substantial Government backing. The United Nations' World Urban Forum

The International Federation of Freight Forwarders Associations' (FIATA) World Congress was held in Malaysia in October 2017.

2018 looks to be a banner year for Malaysia with a hefty number of world conferences lined up.

will kick off the year, representing the premier global conference for sustainable urban development. To bring the conference to Kuala Lumpur, MyCEB worked with the Ministry of Urban Wellbeing, Housing and Local Government.

Other events on the calendar include the World Cancer Congress which will raise Malaysia's prominence as an international host and the World Chef Congress, for which Kuala Lumpur represented the Asian region at the global level to win the right to host the event, beating out high profile competing cities like Vancouver, Canada. The country will also host the World Library and Information Congress 2018 and the International Solid Waste Association World Congress.

Given the increasing importance of conferences to national development, MyCEB is now also tracking other outcomes beyond traditional statistics such as tourist arrivals and spending. These outcomes include charters and MoUs signed, legacies left behind and business deals concluded.

But much more needs to be done, including the public and private sector pulling together to successfully bid for key conferences. If leveraged correctly, there could be huge national benefits from the hosting of international conferences and exhibitions.

Conferences and exhibitions are considered so strategic in some countries, that in Thailand for example, MyCEB's equivalent – the Thailand Convention and Exhibition Bureau (TCEB) – comes under the Prime Minister's Department, notes Datuk Zulkefli. The benefits of hosting such events are numerous. Firstly, the host country gets to be profiled and showcase its strengths. Then there is the knowledge transfer that happens when professionals, experts and even Nobel Prize winners come together to interact with the local population. There is also the legacy left behind to the destination.

MyCEB, which was established in line with one of the NTP's targets to make Malaysia a leading destination for events and conferences, has also been working on initiatives to bolster the country's competitiveness in the sector. These include initiatives to raise the professionalism of associations to the next level through the Malaysia Society of Association Executives as well as the Kesatria programme which identifies prominent experts and authorities to be 'ambassadors' for the country to help boost Malaysia' hosting credentials. MyCEB has also developed a Malaysia Business Events Roadmap to help position Malaysia as Asia's business events hub.

The value of hosting global conferences is also being recognised by more countries now, which means more competition for Malaysia. With that, conference organisers are also looking at many other factors besides the normal pre-requisites.

"It's not all about how beautiful the country is or whether it has a good airport," says Datuk Zulfkefli. "Safety and security are also important."

The MyCEB chief adds that Malaysia also needs to build and allow access to more iconic and unique spaces and venues in order to make itself more competitive.

He notes that conference delegates want to experience something special offered by the host country. Examples of this are conferences in Beijing where delegates are taken to dinner at the Great Wall of China or conferences in Sydney where dining is provided outside the Sydney Opera House.

"It has become so competitive that conference organisers now want experiences that money cannot buy," he says. "All countries are now competing to offer special arrangements to win events. To win, you need a nationwide collaboration. From immigration, to local authorities, to hotels, everything has to work together. Collaboration needs to be a lot better, from inter-department to inter-agency. We cannot work in silos."

Malaysia needs to build and allow access to more iconic and unique venues in order to make itself more competitive.

Taking Melaka Tourism to The Next Level

Datuk Wira Boo Kuang Loon's vision to take Melaka's status as a tourist destination to new heights is drawing closer to reality with the impending completion of the Encore Melaka show in the second quarter of 2018.

The Encore Melaka is a world-class, live theatre production that has been staged exclusively in China for over 10 years as part of the Impressions Series of shows. Back when the production was heading out of China, Melaka successfully beat some 150 cities from around the world for the distinction to host the first international Impression production.

Once complete, the Encore Melaka show is expected to attract more than one million audiences a year, enriching the historic city's cultural scene and boosting the local creative industry through the hiring and training of local performers as well as through technology and knowledge transfer. The theatre is expected to be the first 360-degree rotating auditorium in Southeast Asia with advanced audio and lighting effects.

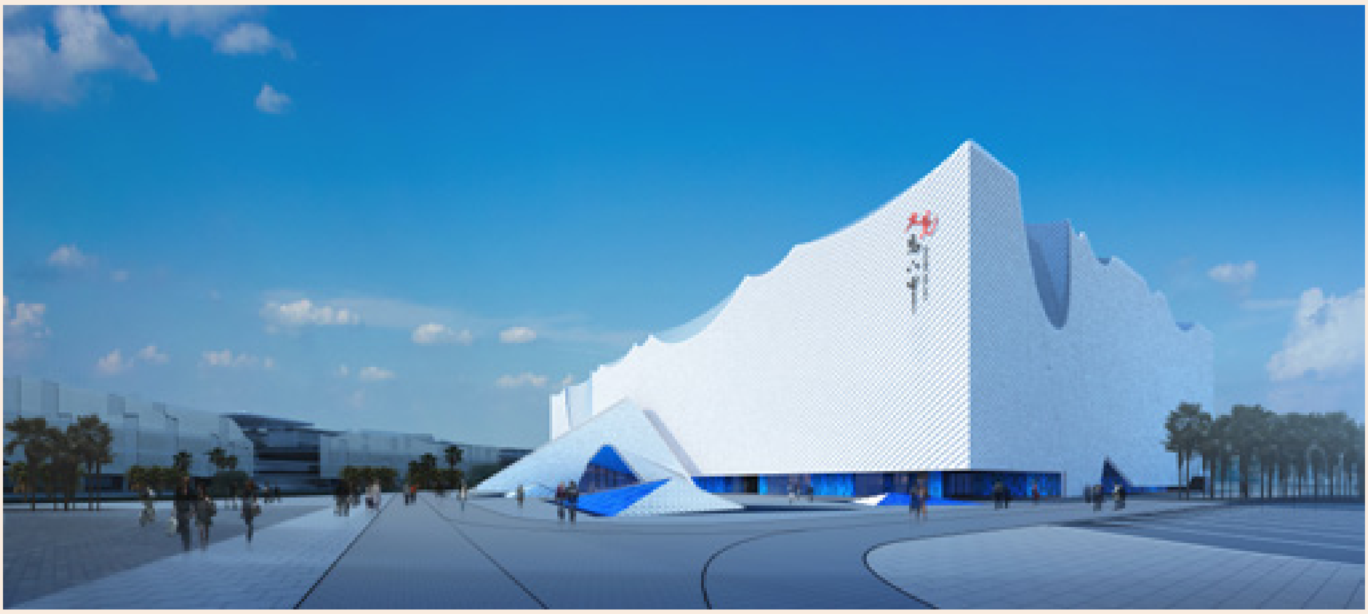
Datuk Wira Boo, who is the CEO of Yong Tai, the developer of the Impression Series-Encore Melaka, says the project will raise tourism standards in Melaka, not only in terms of venues but also service.

ENCORE MELAKA
IMPRESSION SERIES

"Impression Series-Encore Melaka is a purpose-built theatre that has no rival in the region," he says. "What we offer is not just the advanced quality of the hardware such as the sound and lighting equipment but the software – the uniqueness of the cultural performance."

He adds that the Impression Series-Encore Melaka and the larger development it is part of, Impression City, have been planned carefully to ensure the quality of its service is on par with global standards.

"We aim to set the benchmark for excellent customer service. Visitors would visually experience the beauty of local culture, while having a deeper understanding of Melaka and the formation of modern Malaysia," he says.



Encore Melaka show is expected to attract more than one million audiences a year.

Encore Melaka is situated not far from the city and provides a great scenic view of the Straits of Malacca.

He adds that although the Impression Series originates from China, the show will reflect the "true voice" of the Melaka community.

"It will be a cultural performance reflecting a society that embraces diversity and upholds harmony," he says. "Diverse and inclusive, Melaka offers a peaceful atmosphere welcoming multi-ethnic integration."

The journey to host the world-famous show was a challenging one that took years of work and planning. It started with an official letter to the team behind Impressions in China. It was then followed up with many rounds of detailed assessments and numerous visits to China before successfully convincing Impression China to produce its first international show in Melaka.

The Malaysian Government also played an important role in the development of the Impression Series-Encore Melaka by providing Investment Tax Allowances and training grants from the Malaysian Investment Development Authority (MIDA). The training grants were allocated to train local performers and included course fees, audio visual equipment expenditure, venue rentals as well as funds to cover other expenses.

The Impression City tourist complex, meanwhile, provides a vibrant mix of entertainment, shopping, dining, art, culture and lifestyle attractions that caters to both locals and tourists.

"The Impression City master-plan takes its inspiration from elements found in nature and life. The Impression Series-Encore Melaka is the centre of Impression City – representing the sun, the centre of the solar system in our development philosophy," says Datuk Wira Boo.

Challenges faced during development included identifying a suitable location for the theatre that was not too far from the city while providing a great scenic view of the Straits of Malacca. Datuk Wira Boo also says that since the theatre is one-of-a-kind, from the interior to the exterior, extra attention was required to resolve construction issues.

He adds that for Malaysia to continue to improve its capabilities to develop world-class tourist attractions, there must be an emphasis on enhancing the visitor experience.

"Key considerations to be addressed include quality of service infrastructure, hygiene conditions and safety and security," he says. "We should work with local and international advisers to review and develop industry standards."

Efforts to enhance Malaysia's connectivity have enabled more links between the country and potential tourist markets.

namely to leverage the ASEAN Air Transport Working Group (ASEAN ATWG) as a platform to discuss more liberal air service arrangements with related countries. However, negotiations are not straightforward as each country has its own policies and restrictions on air service arrangements.

Operational issues faced by Malaysian airlines operating in China and Japan, such as inadequate slot allocations, airport capacity constraints and traffic rights restriction, may hamper the ability of Malaysian carriers to expand their reach to these markets and attract more tourists from these countries to Malaysia. As such, the Government will continue to facilitate designated Malaysian airlines into the regions to develop the market.

Malaysia, as part of ASEAN, organised exploratory talks on air services agreements between the Republic of Korea and ASEAN on 11 October 2017 in Singapore. This served as a preliminary discussion before the convening of official air talks between both sides. The Government also convened with related countries during the 10th ICAO Air Services Negotiation Event (ICAN2017) held in Colombo, Sri Lanka from 4 to 8 December 2017. This marked a continuous effort to further liberalise air service arrangements and acquire additional traffic rights to countries such as Australia and India, with a further 3,500 weekly seats being added to four Australian cities. Another planned negotiation, the ASEAN-Japan RASA (Regional Air Service Agreement) Meeting is scheduled to be held in early 2018.

To further grow international inbound tourist arrivals, there should be an increase in tourism promotion, especially to China and India, since most Malaysian airlines are now focusing on these two major markets. As such, Tourism Malaysia has been aggressively collaborating with industry players to develop special packages to Malaysia, participating in several joint promotions with foreign airlines such as Singapore Airlines, Etihad Airways, Emirates, and Air Asia X to attract tourist arrivals into the country. Apart from that, airlines and tour operators are continuously encouraged to carry out charter flight services from second- or third-tier cities particularly in China, Taiwan, Japan and Republic of Korea to new destinations such as the east coast of Peninsular Malaysia, Johor Bahru and Kuching. Tourism Malaysia has also executed targeted promotions to attract high net-worth tourists focusing on major events and business events, ecotourism and shopping.

MOVING FORWARD

With the goal of recording a total of 36 million in arrivals and a GNI contribution of RM104 billion by 2020, the sector must remain abreast on delivering game changers and last-mile initiatives.

A number of initiatives from the Tourism Lab 2.0 were identified in 2016 with the potential to push for the achievement of 2020 targets. In addition to those currently being implemented, such as the focus on business and major events, MOTAC will continue to strategise the best ways to roll out those niche sectors identified within the lab including diving and culture an crafts, as well as nationwide rollout of Malaysian Signature Massage.

As part of MOTAC's ongoing efforts at driving progress in the tourism sector, a new policy study is being developed. The National Tourism Policy Study 2020-2050 is currently in the process of being formulated by comprehensively reviewing all existing plans and policies related to tourism in Malaysia. It applies a two-pronged approach: firstly, providing a well-defined strategic direction that sets targets for consolidating and strengthening the position of Malaysia as a leading tourism destination; secondly, transforming the governance of the industry into a more business-friendly environment to foster more public-private partnerships (PPP) involvement in the development of the sector.

The final report is targeted to be ready by June 2018. Once completed, the study will provide a blueprint for the development of tourism in Malaysia from 2020 to 2050, and will also identify new sets of targets in terms of tourist arrivals receipts, and manpower requirements in the sector for 2030.

In terms of marketing and promotions, Tourism Malaysia will continue to maximise integrated global advertising campaigns by integrating promotional messages from other Ministries such as the Ministry of Health, Ministry of Higher Education, MIDA and MATRADE in promoting Malaysia to the world. Furthermore, efforts in promoting Malaysia as a location for films, documentaries and reality game shows to international production houses and television stations will be intensified. In line with current trends, digital and social media platforms will continue to be used as the main medium for promotions, publicity and advertising campaigns.

INNOVATING HIGH-VALUE MANUFACTURING

YB DATO' SRI MUSTAPA MOHAMED
Minister of International Trade and Industry

The electrical and electronics (E&E) sector remains key to Malaysia's continued industrial growth, providing for new businesses and new jobs. The GNI contribution from the E&E sector has increased from RM38.7 billion in 2009 to RM63.4 billion in 2017. In fact, Malaysia is the world's 7th largest exporter of E&E products valued at RM343.0 billion, accounting for 36.7% of total exports for the year. Moreover, the industry has shown an upward trend in exports for the past four years. It is also the only industry with a trade surplus for four consecutive years from 2014 to 2017. Presently, Singapore, China and the United States are Malaysia's major export destinations for E&E products.

In preparation for the global digital revolution, a High-Level Task Force (HLTF) chaired by the Ministry of International Trade and Industry (MITI) has been formed to spearhead the development of the National Industry 4.0 Blueprint, with strong consideration on feedbacks from both public and private sectors. As such, this blueprint has recognised E&E as a priority area.

In the first 10 months of 2017, the Malaysian Investment Development Authority (MIDA) approved a total of 91 E&E projects with investments of up to RM9 billion. Of these, 17 projects are new with investments totalling RM1.2 billion, while 74 were expansion and diversification projects with investments amounting to RM7.8 billion. Foreign investments contributed 86%, or RM7.8 billion while domestic investments accounted for 13% or RM1.2 billion.

Most of the E&E investments involved expansion and diversification activities in the manufacturing of light-emitting diode (LED) products, household appliances, solar wafers, cells and modules, thus realising Malaysia's vision of moving towards more value-added upstream activities. The industry is expected to generate new job opportunities for 9,238 people.

Of note, the Collaborative Research Engineering for Science and Technology (CREST) has provided a conducive platform for the industries, academia and government to work together to nurture innovation and research activities. In 2017, 11 new projects were approved with a commitment from CREST, industries and universities amounting to RM16.1 million. These projects are expected to further produce high quality inventions for commercialisation. On top of that, 11 projects were successfully completed with one intellectual property (IP) filed and one open-source licence created. Since its inception in 2012, CREST has successfully produced 57 postgraduates with projected cumulative income of RM16.2 million from 2017 until 2022.

MITI is currently working closely with MIDA to establish a Manufacturing Innovation Centre (MIC) for the E&E sector to tackle issues related to talent, foreign workers, technology adoption, low R&D spending and the lack of a cohesive ecosystem. These efforts reflect MITI's commitment to push the industry towards Industry 4.0 to ensure Malaysia remains competitive in the global arena.

YB DATUK SERI PANGLIMA WILFRED MADIUS TANGAU
Minister of Science, Technology and Innovation

The NTP continues to place emphasis on the role of the electrical and electronics (E&E) sector for its contribution to the socio-economic development of the nation. In this respect, the Ministry of Science, Technology and Innovation (MOSTI) together with its agencies; MIMOS Berhad, SIRIM Berhad and NanoMalaysia Berhad continue to play an active role in re-energising this sector to catalyse investment and provide high-skilled employment opportunities.

As at 2017, MIMOS has successfully established an E&E shared services platform for advanced analytical services in the semiconductor industry. The platform is currently utilised by over 300 companies. The facilities provided have proven invaluable in supporting business and industry needs, as evidenced by the increase in E&E exports from RM249.8 billion in 2010 to RM343.0 billion in 2017. Additionally, the facilities foster the birth of a knowledge-based economy by enabling local researchers and scientists to produce higher-quality inventions; thereby enabling them to compete in the global arena. Malaysia will move forward with increased collaborations with international partners and accreditation of the facilities which fulfil the required standards for global market acceptance.

NanoMalaysia Berhad, in spearheading the uptake of nanotechnology by E&E sector players, facilitated the development of two innovative products in 2017, namely; backup-storage graphene-based quantum cells (BSGQC) and light-emitting diodes (LEDs) using copper-based carbon nanotube (Cu-CNT) substrates.

The successful commercialisation of these products within the targeted NKEA timeframe will further strengthen our national capabilities in energy storage for a future solar-powered economy. To improve BSGQC uptake, close collaborations with solar-power companies and telco operators for full-fledged field trials of BSGQC will be explored. This technology will revolutionise the energy sector within the E&E ecosystem by creating supportive technology platforms to meet future energy needs while controlling the sector's impact to climate change.

In providing industry players, particularly small and medium enterprises (SMEs), with a facilitative environment to empower them to move up the manufacturing design value chain, SIRIM's Eco-Industrial Design Centre (EIDC) continues to offer much-needed assistance. Indeed, EIDC supports local firms in the production of environmentally friendly products through eco-innovation, whilst enhancing their capabilities for global competitiveness.

In addressing industry players' emerging challenges, especially in terms of labour, automation will be a key technology to be embraced. SIRIM will adopt Industry 4.0 by strengthening local industry players' uptake of additive manufacturing technology to increase the sectors' production capacity through proposing the establishment of an Additive Manufacturing Demonstration Centre (AMDC).

SURGING AHEAD WITH SEMICONDUCTORS

Malaysia has an extensive history in semiconductor industry, although activities were traditionally focused on the lower value-add spectrum such as testing and assembly. Under the NTP, the sector has shifted towards mature technology semiconductor fabrication and expanded into advanced packaging and integrated circuit (IC) design, among other higher value-add activities.

Semiconductor Value Chain	IC R&D and Design	Manufacturing and Fabrication	Advanced Packaging, Assembly and Testing	Sales and Distribution
Company	• Integrated device manufacturer (IDM)			• Original equipment manufacturer (OEM) • Original design manufacturer (ODM)
	• Fabless company • IC design house	• Foundry	• Advanced packaging company • Outsourced assembly and test (OSAT) company	
Supporting Industry	• Electronic design automation (EDA) company • Intellectual property (IP) company	• Specialised equipment and tools supplier • Raw wafer and chemicals material supplier	• Automated test equipment (ATE) manufacturer • Lead frames and packaging material supplier	• Electronic manufacturing service (EMS) provider • Equipment and tool supplier

Semiconductor and integrated circuit (IC) industry value chain.

Invigourating semiconductor wafer fabrication

To fortify the electrical and electronics (E&E) ecosystem in Malaysia, specifically in the semiconductor industry, the Semiconductor Fabrication Association of Malaysia (SFAM) was established in 2012 to be an industry association for companies producing semiconductor wafers in Malaysia. It will act as the reference body for existing and future wafer fabrication partners in Malaysia, presenting a common voice to address local and global stakeholders. Officially inaugurated on 25 April 2017 at SEMICON Southeast Asia, SFAM is helmed by its President, Dato' Peter Halm, with members from X-FAB, Silterra, ON Semiconductor, OSRAM Opto Semiconductor, MIMOS Semiconductor, Infineon Technologies and Fuji Electric. Its associate members are the Advanced Technology Training Centre (ADTEC) Kulim and the Advanced Multidisciplinary MEMS-Based Integrated Electronic NCER Centre of Excellence (AMBIENCE), Universiti Malaysia Perlis (UniMAP).

SFAM holds consultations with the public sector regarding infrastructure, water supply quality and electricity supply security, and promotes benchmarking based on global standards for industrial emission and discharge limits. It also facilitates the semiconductor industry development by expanding the local supplier base to support wafer fabs. Currently, it participates in the E&E Productivity Nexus to promote automation and Industry 4.0.

On the human capital development front, SFAM engages with academia such as UniMAP, Universiti Sains Malaysia (USM) and Universiti Kuala Lumpur (UniKL) among others to enhance the curriculum in engineering, science and technology. It also provides internship programmes for undergraduates and research opportunities for postgraduates and lecturers. For example, Silterra, a member of SFAM, has hosted 180 interns over 2016 and 2017. SFAM and MIMOS also co-developed a semiconductor training curriculum for the wafer fabrication industry.

To support critical high-technology expertise needs of wafer fabs, it works with relevant agencies such as Malaysian Investment Development Authority (MIDA) and Talent Corporation Malaysia Berhad (TalentCorp) to expedite immigration procedures. For experienced technicians, it collaborates with polytechnics and training centres to provide channels for employment through upskilling. Among these institutions are the Polytechnic Tuanku Sultanah Bahiyah (PTSB) Kulim, Polytechnic Sultan Abdul Halim Mu'adzam Shah (POLIMAS) Jitra, ADTEC Kulim, ADTEC Taiping, and the Kedah Industrial Skills and Management Development Centre (KISMEC).

Supporting wafer fabrication via advanced analytical services lab

The MIMOS Advanced Analytical Services Lab supports the wafer fabrication industry by meeting the analytical services needs. More than 300 companies are presently utilising the lab's value-added analytical shared services, while over 600 services were provided to the industry in failure and material analysis in 2017. The presence of a comprehensive infrastructure of advanced analytical capabilities in Malaysia elevates the country's global competitiveness, reduces local dependency on foreign lab services, and lowers cost and turnaround time.

However, technological advancements have created the need for continuous enhancements to enable the lab to keep pace with Industry 4.0 practices. Competition from regional and global services is keen, requiring the lab to continuously innovate its systems, processes and offerings to better meet demands.

To alleviate these challenges, the lab is working to create mutually beneficial partnerships with global research institutes and companies such as Interuniversity Microelectronics Centre (IMEC) Belgium, Industrial Technology Research Institute (ITRI) Taiwan and Electronics and Telecommunications Research Institute (ETRI) Korea, while seeking and maintaining accreditation of its facilities with ISO/IEC 17025, ISO 9001 and other standards to secure global market acceptance. Also, given that most E&E companies are located in the Northern Corridor Economic Region (NCER), including Kedah's Kulim Hi-Tech Park (KHTP) and Penang's Bayan Lepas Free Industrial Zone (FIZ), there is a need to locate some of the lab's services and research capabilities in the northern region to enable shorter turnaround times.

Developing integrated circuit design

In the field of permanent magnet synchronous motors (PMSM), MIMOS, in collaboration with local firms, My Technology and Emerald Systems released the Green Motion Controller (GMC), a new IC solution that efficiently controls and manages the performance of PMSM. The GMC will be used in selected applications and is expected to reduce energy consumption by 40% vis-à-vis existing solutions. GMC could potentially replace existing PMSM controllers, thereby simplifying system design and reducing product costs by up to 50%.

The GMC has proven effective in industrial elevator applications and MIMOS has successfully facilitated the development of an energy-saving prototype for large electrical home appliances, achieving energy savings of more than 40%. MIMOS is presently collaborating with a solution provider to develop a GMC-based platform for use in air conditioning compressor applications.

> *"The Green Motion Controller is expected to reduce energy consumption by 40%."*

Additionally, the GMC system has been demonstrated to original equipment manufacturers (OEMs) in China for potential adoption in their electrical home appliances solutions.

Growing the advanced packaging sector

Advanced packaging, a component in semiconductor manufacturing, has become extremely competitive in Malaysia with strong back-end manufacturing dominated by multinational companies (MNCs). The rapid changes in technology and demand for advanced packages are forcing manufacturers to introduce new differentiated packages to preserve their edge on their circuits' small sizes, low costs and high performance.

In 2017, RM1.2 billion was invested in this sector to undertake an expansion and diversification project to produce wafer-level chip scale packaging and wafer bumping, which are techniques of advanced packaging. The investment demonstrates Malaysia's position as a preferred investment destination for both new and existing companies against the backdrop of an uncertain economic climate, reaffirming domestic and foreign investors' confidence in Malaysia's economic fundamentals.

PROMOTING SUSTAINABLE ENERGY

Malaysia has introduced various incentives and strategies to encourage the growth of the renewable energy sector. Given Malaysia's location in the equatorial region where sunshine is in abundance all year round, solar energy is naturally positioned to play a crucial role in the country's future energy generation.

Demand for solar energy is expected to rise as consumers and businesses become increasingly aware of its benefits not just to the environment but also to the economy. Malaysia, a key exporter of solar photovoltaic (PV) cells and modules, is well-positioned to benefit from the spillover effects of growing solar power usage worldwide, which is expected to see growth of between 12%-20% over the next five years.

Ranked as the world's third largest producer of solar PV cells and modules with production capacity of 4.1 GW and 7.2 GW respectively, Malaysia has 250 companies involved in upstream activities such as polysilicon, wafer, cell and module production, and downstream activities such as inverters and system integrators. In 2017, a RM300 million expansion project producing solar ingots, wafers, cells and modules was approved by MIDA. The project involves integrated manufacturing of solar PV products, from ingots to modules.

LED AND SSL CONTINUE TO ILLUMINATE

Malaysia is gaining prominence as a production hub for light-emitting diode (LED) manufacturers. The development and production of LED clusters in the country cover semiconductor devices for LED, wafer fabrication, as well as lighting products and solutions.

Creating local solid-state lighting champions

SME Corporation Malaysia's (SME Corp) capacity building programme to produce local solid-state lighting (SSL) champions aims to develop Malaysia's SSL value chain towards chip and application R&D. This programme assists local SSL companies in expanding abroad via trade delegations that focus on key SSL-related areas, establishes strong intellectual property (IP) recognition by the Government to thwart the entry of imitation LED products into Malaysia, and establishes pro-environment regulations and public awareness.

In one week, OSRAM's new LED chip factory in Kulim, Kedah can produce enough LEDs to replace all the street lights in New York, Rio de Janeiro, Hong Kong and Berlin.

The scope of SME Corp's assistance encompasses matching grants for international certification costs and the acquisition of automated machineries and inspection tools. To date, it has provided RM7.6 million worth of matching grants to 11 companies: Avialite, Primelux Energy, ecoNoon, P-Plus, Extra-Built, LED Vision, PCO Lite, Oversea Lighting & Electric, HANS LEDLite, Novabrite and EcoTech LED. The companies recorded combined annual sales of RM137.6 million in 2017 against RM70.1 million in 2013 and combined annual exports worth RM8.4 million against RM6.3 million in 2014.

However, soft global economic conditions have caused some order cancellations and extension of project timelines. Some companies have also struggled to regain their cost competitiveness, while fluctuations in the foreign exchange rates have made certifications, imports of raw materials and packaging costlier, which compounded the competitive threat from China's low-cost offerings.

To boost their export competitiveness, LED companies have joined the Go-Ex Programme, one of the High-Impact Programmes under the SME Masterplan 2012-2020, developed as part of the Government's initiatives to guide and grow the exports of Malaysian small and medium enterprises (SMEs) by strengthening their resilience and competitiveness. Implemented by Malaysia External Trade Development Corporation (MATRADE), the programme is aimed at addressing challenges faced by SMEs on new market entry due to the high upfront costs and the lack of detailed knowledge about new markets and competitors.

Expanding LED front-end operations

Meanwhile, OSRAM's investment in Kulim, which will establish Malaysia's first fully integrated LED epitaxy, wafer fabrication and product manufacturing facility, continues to progress well. The first stage of the facility, which employs 1,500 people, is now operational, whereas future expansion of two additional stages will bring in a total investment to RM4.9 billion.

Epitaxy

Epitaxy is a technique that involves growing a thin crystalline film of one material on top of another crystalline material, such that the crystal lattices match. In other words, epitaxy is when additional layers of semiconductor crystals are grown on the surface of the wafer.

The Northern Corridor Implementation Authority (NCIA) has facilitated OSRAM's purchase of a metal organic chemical vapour deposition

The OSRAM factory in Kulim will produce blue LED chips which, by means of a converter layer, can generate white light.

(MOCVD) system and implementation of the Northern Corridor Competency Enhancement Programme (NCEP), as well as supported the Technical and Vocational Education and Training at Kulim Hi-Tech Park (TVET@KHTP) Programme, which is implemented by the KISMEC to produce skilled labour to support OSRAM's operations in Kulim.

ESTABLISHING MALAYSIA'S PROMINENCE IN TEST, MEASUREMENT AND AUTOMATION

Test and measurement form the basic block of automation by creating signals and capturing responses for control systems to perform decision making without human intervention. The impact of automation is tremendous – it increases productivity, quality and consistency of products and processes in mining, agriculture, manufacturing and services. In view of its cross-cutting linkages to various economic sectors, automation will serve as a catalyst to facilitate Malaysia's transition to a high-technology nation.

Building a test and measurement hub

A shared test and measurement hub was set up in Penang in 2014, led by Keysight Technologies and facilitated by NCIA, to develop local test and measurement companies as they seek to grow their research, development and commercialisation capabilities. The hub has raised the value of the local E&E ecosystem by developing their know-how in high-precision engineering. This has enabled Keysight to replace its foreign procurement of high-precision components with locally produced components, with some of its manufacturing plants in other parts of the world are now procuring from Malaysian vendors.

To date, seven local players have benefitted directly from this test and measurement hub. For example, CEEDTec and Myreka are currently Keysight's first-level vendors that have co-developed 26 local products with Keysight for the global market and created 36 IPs. Benefits from this initiative are significant, as the work packages of the first-level vendors is further taken up by five more local players, namely STRiDE Electronics, Inari Amertron Berhad, Prodelcon, Tekun Asas and Bi Technologies.

To sustain competitiveness in the industry, there is a need for vendors to upscale their ability to design according to new product specifications. This will also require attracting, acquiring and retaining talent. In an effort to address this, the vendors are increasing their engagement with universities like USM through career talks and technical collaborations to ensure varsity studies reflect industry needs. The hub also provides the vendors' R&D teams with quick access to Keysight experts for consultation and verification.

Strengthening testing and certifications for solar and LED products

As for solar and LED products, testing centres have been created by QAV Technologies Sdn Bhd (QAV) to provide quality assurance and testing services. QAV is the only TUV NORD-certified failure analysis, reliability testing and electromagnetic compatibility centre in Malaysia. It is also the first American National Standards Institute (ANSI) certified lab outside of the United States (US). QAV has expanded its LED testing operations in Penang and set up a new operations branch in Selangor. QAV's operations in Malaysia benefit local manufacturers by generating income growth, as QAV's certifications enable direct shipments to the US. QAV's testing centres also assist local companies' development of testing and certification methods that are not available in the country yet.

In 2017, 52 products were tested by QAV, and currently aims to establish a platform for the certification of Malaysian product standards, thereby making Malaysia the Asia-Pacific regional hub for ANSI and the US Department of Energy (DOE) certification. This can benefit the country by attracting more LED MNCs to Malaysia. In addition, QAV maintains multiple industrial training and research collaborations with institutions of higher learning, such as Monash University, Universiti Tenaga Nasional (UNITEN), Multimedia University (MMU) and Universiti Tunku Abdul Rahman (UTAR).

However, QAV faces escalating testing costs and must contend with the unpredictable nature of standards and requirements. This encumbers QAV's efforts to train and retain its personnel, while complicating its relationships with manufacturers, many of which do not actively keep abreast of changes in the landscape of standards and requirements. As such, QAV undertakes regular engagements with industry players to mitigate this.

Creating an innovation nucleus in test and measurement

The National Instruments Academy and Innovation Nucleus (NI-AIN) continues to empower innovation for local SMEs through its shared service lab facility. Launched on 13 September 2012 by National Instruments (NI), Technology Park Malaysia (TPM) and SME Corp, the centre currently houses approximately RM20 million worth of hardware and software assets. The automation solutions centre also serves as an SME incubator centre specialising in design, system integration, system customisation and engineering services, allowing SMEs to innovate without the need for huge capital outlays, while accelerating the lab-to-commercialisation phase. It also facilitates research institutions' R&D with minimal grants.

In 2017, the centre was involved in 10 projects by local companies, agencies and institutes encompassing test and measurement, system design, prototyping, proof-of-concept and system customisation, making a total of 74 projects since 2014. Notable projects undertaken this year include oil palm fruit grader by Universiti Putra Malaysia (UPM), lock rotor temperature monitor by Daikin Research & Development Malaysia Sdn Bhd, and payout tension meter system services and troubleshoot sensor by Asian Geos Sdn Bhd.

“The NI-AIN allows SMEs to innovate without the need for huge capital outlays.”

Going forward, there remains a need to increase the centre's utilisation. This can partly be resolved by convincing SMEs to embrace automation as part of the broader Industry 4.0 landscape through concerted efforts by Ministry of International Trade and Industry (MITI), MIDA and SME Corp. There is also the demand for more up-to-date equipment. As such, the centre will work with SME Corp to attract more SMEs, encourage higher-learning institutions to utilise its equipment and provide training for industrial Internet of Things (IoT) applications.

Enabling automation equipment manufacturing

The machinery and equipment (M&E) industry in Malaysia, which began with the need to repair

Collaboration between Keysight Technologies, Myreka and CEEDTec in the area of test and measurement resulted in the establishment of a Machinery and Equipment Shared Services Facility in Bayan Lepas, Penang.

and service imported machineries in the resource-based and agro-based industries, has undergone steep developmental phases. Rapid advancements in technology and innovation have propelled the industry to move up the value chain to manufacture state-of-the art M&E for high-tech industries, such as the front-end semiconductor processing, medical devices, aerospace, and oil and gas.

In line with this, Malaysian companies have transformed from being mere contract manufacturers (CM) to undertake R&D, design and development (D&D), and system integration to become OEMs for the export market. In 2017, MIDA approved a diversification project with investment of RM181 million to produce chamber and module for semiconductor process equipment.

INDUSTRIAL E&E BOLSTERS GROWTH MOMENTUM

Industrial E&E projects under this NKEA focus on developing embedded systems and IoT products, electric vehicle component manufacturing, and nanotechnology and commercial graphene applications to compete in the world market and penetrate certain niche sectors. Leveraging on Malaysia's existing expertise and capabilities in the E&E sector, these new and high-growth segments will create more business opportunities.

Developing embedded systems and Internet of Things industry

Modern devices need to be increasingly intelligent to fulfil more sophisticated customer demands. The intelligence of these devices resides in embedded systems, which are intelligent solutions with tightly integrated hardware and software designed to perform a dedicated function. These intelligent embedded systems have evolved to become what is popularly called the IoT, a network of components that contain embedded technology to communicate via the internet. The data from IoT will provide insights to enable new revenue streams, better understand customer behaviour and improve control over operations, amongst others.

The Grow the Embedded Systems Industry project, helmed by Malaysia Digital Economy Corporation Sdn Bhd (MDEC), centred on growing the local industrial domain via industry collaborations with technology leaders such as Intel, NI, Altera, Cisco, Microsoft, Windriver and PTC-ThingWorx, and other parties including MIDA, MATRADE, NCIA, MIMOS, SIRIM, SME Corp, TalentCorp, Penang Skills Development Centre (PSDC) to develop local capabilities.

Two embedded systems and IoT projects were successfully completed in 2017: Silkron's retrofitted smart vending machine and Sophic Automation's IoT data extractor and universal bus translators for smart manufacturing. Overall, 23 projects have been approved and completed from 2012 till 2017. Moving forward, MDEC will continue to monitor and assist the growth of the embedded systems companies, accelerate digital adoption and unlock global market access. In addition, these companies are encouraged to focus on talent upskilling with data analytics capabilities to move up the development value chain and exploit new business models. Against this backdrop, opportunities for local embedded systems and IoT enterprises to tap into include niche-area technology development, application development, and technology collaborations and partnerships with technology MNCs.

In 2017, MIDA also approved a new project by an existing foreign company with a RM2.0 billion investment in R&D for the development of leading-edge semiconductor technologies for 10-nanometer complementary metal-oxide-semiconductor (CMOS) manufacturing processes, product innovation and IoT solutions. Through this investment, 100 patents are expected to be filed by local R&D talents, and 100 staff engineers will be hired over the next five years.

Strong policies is imperative to create high-impact projects and support adoption of embedded systems and IoT in vertical sectors and the development of the digital economy. Such policies should foster competition and cooperation between embedded systems and IoT industry players to provide the best solutions to end-users. Talent availability will also likely remain a hindrance, and thus policies should hence encourage talent development in science, technology, engineering and mathematics (STEM).

Enabling electric vehicle component manufacturing

Electric vehicles powered by lithium-ion batteries (LIBs) are fast gaining traction among car buyers due to their fuel savings. Electric vehicle component manufacturing in Malaysia commenced with the LIB manufacturing project, led by the Malaysia Automotive Institute (MAI), under the Economic and Technical Collaboration (ECOTECH) of the Malaysia-Australia Free Trade Agreement (MAFTA) in 2013. The first goal of this project was to acquire Malaysian IP in LIB manufacturing as a commercial platform for a Malaysian manufacturer. The target by 2020 is to have at least one local manufacturer producing LIBs for domestic and export markets. At present, battery material is produced on a pilot scale to support limited manufacturing of 18650-type LIBs. Performance and cycle tests have also been conducted on these LIBs.

> *"Spin-off benefits from the demand for electric buses will uplift the domestic manufacturing industry, especially in the E&E sector."*

Market development in Europe, Japan and China have presented unique opportunities for Malaysia. These countries have announced their intention to shift from conventional mobility options to green energy alternatives, including electric mobility. These announcements have been supported by several automakers which have pledged to go fully electric in the near future. Malaysia stands to gain from these developments due to its developing expertise in battery technology as well as its strategic location.

MAI also initiated the electric bus manufacturing project under ECOTECH in 2013. The first goal of this project was to acquire Malaysian IP in prototype-ready electric buses as a platform for a Malaysian commercial bus assembler. The target by 2020 is to have at least one local complete knocked-down (CKD) manufacturer producing electric buses for domestic and export markets with supporting infrastructure in place. A prototype electric bus has been delivered as a platform for commercial manufacturing development. Knowledge-transfer activities were undertaken that involved local engineers, while prospective investors were engaged and a business plan evaluation is in progress.

Demand for electric buses will likely pick up with the completion and implementation of more national development projects to improve public transport and mobility in urban areas. There is also international demand for proven technology for hot and humid climates like Malaysia's. Spin-off benefits to local vendors will uplift domestic manufacturing industry, especially in the E&E sector. At present, the nature of the investment, which is capital-intensive, continues to be the biggest obstacle to the advancement of this initiative. As such, more pilot projects should be in place to augment public awareness and market demand for this platform.

Transforming the E&E sector through nanotechnology

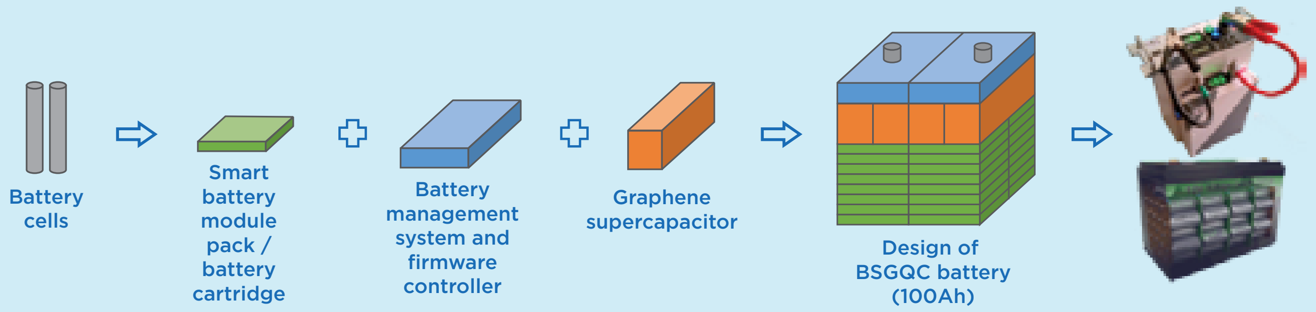
Nanotechnology plays an important role in Malaysia's Industry 4.0 journey as the global market for nano-materials and nanotech-based products is expected to reach US$3 trillion by 2020. Hence, Malaysia is positioning local entrepreneurs and companies to capture a significant market share.

This initiative is supported by NanoMalaysia Berhad's nanotechnology commercialisation programmes, namely the National Graphene Action Plan 2020 (NGAP2020) and iNanovation. Both NGAP2020 and iNanovation help introduce companies to the adoption of commercial graphene and nanotechnology products for their E&E applications. NanoMalaysia also leads Advanced Materials Industrialisation, an open innovation platform under MITI designed to enhance E&E manufacturing in Malaysia.

Targets under this initiative for 2017 comprise of two product commercialisations utilising commercial graphene and nanotechnology for E&E applications. The first of these projects, the backup-storage graphene-based quantum cells (BSGQC) project, was conceived to support MNA Research, a specialist local start-up that received catalytic funding from NanoMalaysia's NGAP2020 to scale up its graphene-infused energy-storage management system from product development stage and penetrate the market. MNA Research has successfully completed pilot production and testing of the system and has acquired sales orders from various local companies specialising in renewable energy.

Backup-Storage Graphene-Based Quantum Cells (BSGQC)

BSGQC are potential replacement for valve-regulated lead-acid (VRLA) batteries due to their efficient energy-storage management system that can serve well in sustainable renewable energy generation, particularly for solar and telecommunication tower applications. BSGQC have the added advantage of withstanding extreme temperatures besides having environmentally friendly properties.

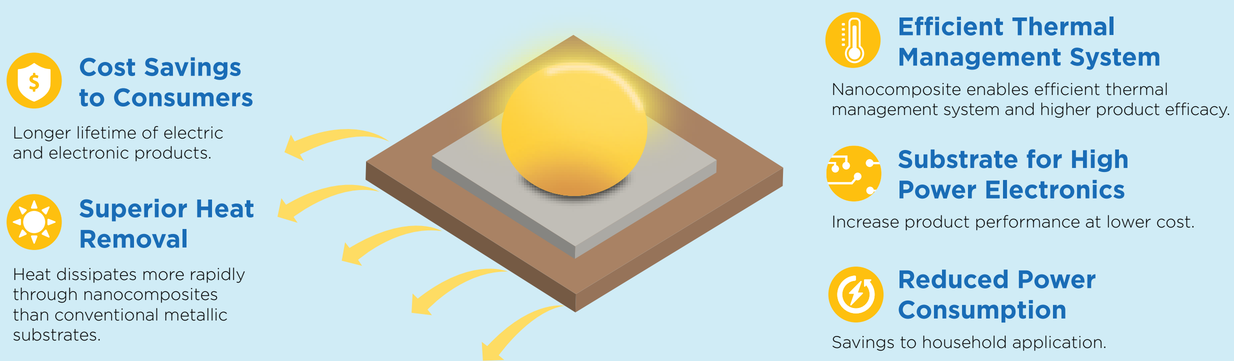


Structure of backup-storage graphene-based quantum cells (BSGQC).

The second project aims to complete the product development of LED heat sinks using copper-carbon nanotube (Cu-CNT) substrates and license the technology from Universiti Teknologi PETRONAS (UTP) to HANS LEDLite using catalytic funding provided under iNanovation, thus bringing the product to market. Pilot production has been completed and the technology licensing of the Cu-CNT substrates was signed in 2017 between UTP, NanoMalaysia and HANS LEDLite, enabling the first batch of substrates to be brought into the market.

Copper-Carbon Nanotube (Cu-CNT) Substrates

Cu-CNT-based LEDs possess higher thermal conductivity than aluminium-based LEDs, which are the current dominant variant in the market. This technology will help HANS LEDLite to differentiate themselves in the global LED market through higher performance, better reliability and longer lifespan products.



Benefits of copper-carbon nanotube (Cu-CNT) substrates.

The successful commercialisation of these two products pushes Malaysia's capabilities in energy storage for long-lasting high-performance LEDs in the market. However, both projects are hampered by limited capacity, administrative difficulties in securing projects and marketing. The companies must also further optimise performance and costs to ensure their products meet expectations while providing a reasonable and sustainable profit margin.

To mitigate these issues, NanoMalaysia provides a market validation platform to run proof-of-value assessments for these products in a real market situation. It also provides NANOVerify nanotech-based product certification programme to boost customer confidence. As these products are newly introduced to the market, continued partnership with NanoMalaysia will provide these companies access to future funding for new product development or the scaling up thereof, technical and business consultation services, IP rights consultation and services, and opportunities for wider market access.

DEVELOPING THE E&E TALENT POOL

Forging advanced competency in wafer fabrication

The MIMOS-NCIA Advanced Competency Development Centre (MIMOS-NCIA ACDC) is a human capital development centre serving the field of wafer fabrication and equipment. Jointly established by MIMOS and NCIA, it leverages on MIMOS' facilities and semiconductor training curriculum co-developed with SFAM to offer end-to-end, high-tech, industry-driven training to foster the hands-on experience needed to produce highly skilled workers for the E&E sector.

Since its launch in July 2017, 430 engineers and students have undergone skill enhancement at the centre. MIMOS has also trained more than 2,400 skilled workers in the E&E sector in the last decade with its provision of high-impact training to members of the SFAM, MNCs, SMEs, research institutions, lecturers and university students.

Unlike traditional training centres that focus on theory and provide limited hands-on exposure, the MIMOS-NCIA ACDC offers enhanced facilities for experiential learning in high-technology equipment maintenance and processes. In fact, 80% of the facility's training in industrial-grade wafer fabrication comprises of practical learning and the remaining 20% focuses on the theoretical frameworks, enabling accelerated development of skill sets that supports movement up the E&E value chain, and complements technical and vocational education and training (TVET) and Malaysia Board of Technologists (MBOT) programmes.

> ***"430 engineers and students have undergone skill enhancement at the MIMOS-NCIA ACDC."***

However, continual upgrade of the centre is required to keep pace with global technological advancements, including alignment with Industry 4.0 practices. As such, more strategic engagements could be done with the Ministry of Higher Education (MOHE) to make this centre an integral part of microelectronics and semiconductor education, thereby accelerating students' interest and development in the required fields to support industry needs.

Building capacity in test, measurement and automation

The NI-AIN Capacity Building Programme serves as a training hub for engineers and university students to obtain and upgrade their proficiency in the LabVIEW system design platform. The programme also offers guidance for engineers to complete their automation projects, training for participants in advanced data transfer method with data loss prevention technology, and training for trainers to advance their knowledge in the field of test and measurement as well as automation. As a result, engineers can produce better solutions and apply new industry technology such as IoT, automation and system integration. In 2017, the programme has upskilled 130 local talents.

TRANSFORMATIVE ENABLERS

Supporting collaborative research and development

Collaborative Research in Engineering, Science & Technology (CREST) is an industry-led catalyst for the growth of Malaysia's E&E sector by promoting industry, academia and government collaboration in R&D, talent development and commercialisation, targeting six focus clusters as defined by industry stakeholders, namely:

1. Optoelectronics, LED and SSL;
2. Embedded systems and IoT;
3. IC design, test and validation;
4. Advanced materials and packaging;
5. World-class electronic manufacturing;
6. Drones, driverless and autonomous vehicles.

Since CREST commenced operations in June 2012, a total of 46 local companies, 17 MNCs and 20 public and private universities have undertaken 118 collaborative R&D projects, amounting to a total project value of RM125.0 million, with industry contributing 61% to this total. Of the 118 projects approved, 41 have been completed since its inception the end of 2014, of which 10 have been translated into new products and processes that generate new revenues and savings from productivity in design and manufacturing processes.

The revenue and savings to be gained in five years from these new products and productivity tools are estimated at RM60.2 million – a remarkable return, given CREST's funding of just RM9.1 million for these projects. These R&D collaborations also enabled 57 students to complete their postgraduate studies, and 13 IP disclosures with seven patents to be filed.

Two new business spillover opportunities were also created from the projects. USM School of Physics' Thermal Materials Research Lab, led by Dr. Mutharasu Devarajan, partners with local SMEs in developing thermal interface engineering design solutions for LED and semiconductor component manufacturers. Also, USM School of Mechanical Engineering's 'TheVibrationLab', led by Professor Mohd Zaidi Ripin, provides acoustic and vibrational

The official launch of MIMOS-NCIA Advanced Competency Development Centre on 18 July 2017 was graced by Ahmad Rizan Ibrahim, Datuk Wira Dr. Abu Bakar Mohamad Diah and Datuk Redza Rafiq Abdul Razak.

The Development of the E&E Industry in Malaysia

The electrical and electronics (E&E) industry has become a major part of Malaysia's manufacturing sector and is a significant supporter of the country's export and employment levels. Due to its multiplier effects and extensive linkages with other sub-sectors, the industry has been identified as a catalytic subsector under the 11th Malaysia Plan to re-energise the nation's domestic manufacturing sector.

In this regard, the Malaysian Investment Development Authority (MIDA) is working to promote the growth of the semiconductor, solar, light-emitting diode (LED), test and measurement, as well as the automation industries. This effort is also being undertaken extensively on a more regional scale in the Northern Corridor Economic Region (NCER), led by the Northern Corridor Implementation Authority (NCIA).

Collaborations are key

Dato' Azman Mahmud, Chief Executive Officer of MIDA, states that collaborations between the public sector, industry and academia are crucial to address the industry's talent demands whilst increasing the competitiveness of existing workers. "MIDA has undertaken partnerships with various stakeholders such as the American Malaysian Chamber of Commerce (AMCHAM), USAINS – the corporate arm of Universiti Sains Malaysia (USM), Talent Corporation Malaysia Berhad (TalentCorp), the Ministry of Higher Education (MOHE), and the Semiconductor Fabrication Association of Malaysia (SFAM)," Azman elaborated.

Notably, the Industry-Academia Collaboration (IAC), which was launched in 2015, has seen strategic collaborations formed between higher-learning institutions such as USM, Universiti Malaya (UM) and Universiti Teknologi Malaysia (UTM) with companies such as Intel, First Solar, National Instruments, Motorola and OSRAM. MIDA is also engaging with the Ministry of Finance (MOF), Ministry of Science, Technology and Innovation (MOSTI), MIMOS Berhad and related companies for the establishment of the Manufacturing Innovation Centre (MIC). MIDA is also cooperating with the Malaysia Digital Economy Corporation (MDEC) and Electrical and Electronics Strategic Council (EESC) to develop the Digital Internet of Things (IoT) Marketplace, an initiative led by Silterra. Meanwhile, the agency has also aligned efforts in the export chapter through the National Exports Council (NEC) and productivity chapter through the E&E Productivity Nexus (EEPN).

Datuk Redza Rafiq Abdul Razak, Chief Executive Officer of NCIA concurred with MIDA's stance on collaborations, saying that NCIA upholds

Datuk Redza Rafiq Abdul Razak, Chief Executive Officer of Northern Corridor Implementation Authority.

Dato' Azman Mahmud, Chief Executive Officer of Malaysian Investment Development Authority.

the "quadruple-helix model" that involves the government, private sector players, academia and the community in all of its development initiatives. "We leverage on private sector participation in line with the Government's stand to position them as the driver of economic growth, with the government playing the role of enabler and facilitator," said Redza, adding that engagements with members of the community and academia are crucial to secure their support and insights in order to refine the delivery of NCIA's development initiatives.

Results from collaborations positive so far

"Our collaborations with the NEC and EEPN have resulted in incentives for Industry 4.0 and smart manufacturing, as announced in Budget 2018, including an Accelerated Capital Allowance of 200% on the first RM10 million qualifying capital expenditure incurred in the years of assessment 2018 to 2020 for manufacturing and manufacturing-related services sectors," Azman said.

"The Capital Allowance, meanwhile, is for the purchase of ICT equipment and software with effect from year of assessment 2017, and expenditure incurred on the development of customised software with effect from year of assessment 2018. There is also the extension of the Automation Accelerated Capital Allowance, which was introduced in 2015 to year of assessment 2020 for labour-intensive industries such as rubber, plastic, wood and textiles," he continued.

NCIA's accomplishments are similarly illustrious. It has, amongst others:

1. supported a wafer chip producer's capacity expansion initiative, which also benefited SMEs providing ancillary services such as parts cleaning, supply and installation of equipment;
2. set up a semiconductor equipment training centre with MIMOS;
3. established a waste treatment processing facility to support industries in Kulim Hi-Tech Park (KHTP);
4. developed assembly and test systems using advanced packaging technology;
5. supported the growth of substrate manufacturers and related industries;
6. facilitated the creation of a RM30.5 million LED test and certification centre by QAV;
7. collaborated with Keysight Technologies to build a test and measurement hub; and
8. collaborated with TF-AMD Microelectronics to grow automation equipment manufacturing with 12 local vendors.

These have culminated in OSRAM recently decided to set up a RM4.9 billion facility in KHTP.

However, the abovementioned achievements did not come easy. "Financial constraints prevented us from giving out more incentives to companies to implement Industry 4.0 and smart manufacturing initiatives," explained Azman. This made it difficult to raise the low rate of innovation in the country and sustain the right talent pool to support the E&E industry.

Collaboration is, once again, key in addressing these challenges. To overcome funding constraints, MIDA is also doubling its efforts to connect local companies to multinational companies (MNCs) to achieve integration into their supply chains through adopting and producing new technologies, processes and products. To expand the talent pipeline, MIDA is engaging with policymakers, academia, and other stakeholders through initiatives such as career fairs and the Industry Working Group, which serves to strengthen and develop syllabi specific to emerging industry requirements.

Up north, Redza pointed to the establishment of the Kedah Science and Technology Park (KSTP) to help disseminate knowledge and information on technological advancements and get more SMEs on board with Industry 4.0. KSTP would drive the region's economy through applied R&D by providing a platform to develop ground-breaking technologies via its Global Research Centre and Modern Industrial Park.

Certainly, the outlook for the industry looks bright, especially with MIDA and NCIA continuing to work closely with the relevant stakeholders to promote productivity and innovation whilst familiarising local companies with emerging technological trends.

Advancing Technology Through Building a Test and Measurement Hub

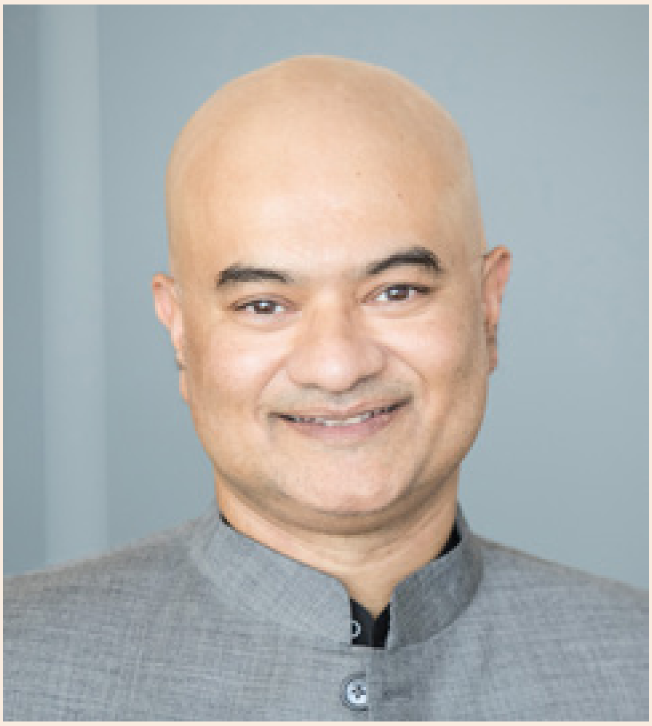
Test and measurement is essential to the electrical and electronics (E&E) industry as its technologies in smart sensors, precision engineering, intelligent instruments, data acquisition and signal processing are the foundation for automation; which is the crucial enabler to achieve technological advancement in Industry 4.0 and smart manufacturing.

Hence, under the NKEA E&E, building a test and measurement hub was pinnacle to the sectors' progress. Two companies participated in realising this requirement, namely; Keysight Technologies (Keysight), which is a leading electronic test and measurement company and National Instruments (NI), a provider of platform-based systems which enables engineers and scientists to solve complex engineering problems.

In collaboration with the Northern Corridor Implementation Authority (NCIA), Keysight launched a programme with two Malaysian design partners, CEEDTec and Myreka. The programme was designed to expand their research & development (R&D) and original design manufacturers (ODM) capabilities to be able to design and build their own products. Two shared services facilities labs were established within Keysight to incubate CEEDTec and Myreka's design and development expertise in the areas of precision power source solutions and audio signal analysis solutions respectively.

On the other hand, NI had partnered up with Technology Park Malaysia (TPM) and SME Corporation Malaysia (SME Corp) to launch one of NI's largest public-private partnership initiatives in 2013, called the National Instruments Academy and Innovation Nucleus (NI-AIN). NI-AIN is a shared services lab facility, which comprises foundation labs for training, as well as vertical application labs for creating test, measurement and control systems for various industry applications. It is designed to be an small and medium enterprises (SME) incubator centre for high-value design and engineering services.

"Working alongside Keysight, CEEDTec and Myreka now have full scale design-to-manufacturing capabilities, benefitting from the technology



Chandran Nair, Vice President, Sales and Marketing for Asia-Pacific, National Instruments.

Chan Keng Cheong, Keysight's Vice President of Global Procurement and Materials.

collaborations, proximity to Keysight's global standards and access to market information. This has subsequently allowed them to compete on an international scale and move up the value chain," said Tay Eng Su, Keysight's Director of Customer Experience, Quality and Compliance.

Hing Wai Toong, NI Area Sales Manager, states that the NI-AIN provides a shared technology infrastructure that SMEs have access to for system development and integrations. "Our human capital development centre also provides training, certification and skills development programmes in science, technology and innovation. These complement our SME incubator center which hosts local and overseas experts who provide technical consultation in engineering projects, especially in test, measurement and control," explained Hing.

"Through participation in this programme with Keysight, CEEDTec has developed advanced capabilities on sophisticated measurement grade equipment design and manufacturing to enable them to become a full original equipment maufacturer company in the coming years with a brand and channel of their own. Meanwhile, Myreka has accumulated 15 intellectual properties and grown its technological capabilities to extend its design solutions to other multinational corporations," said Chan Keng Cheong, Keysight's Vice President of Global Procurement and Materials.

The rapid expansion of CEEDTec and Myreka has also spawned a second tier of local ecosystem partners who are providing advanced technology support in the areas of printed circuit board assembly, precision metal works and tooling and high-density transformers. All in all, this initiative has successfully grown seven local SMEs and created over 200 jobs.

Additionally, NI's Hing identified the low awareness of NI-AIN's benefits as a challenge to be overcome. "NI has always been committed to supporting the SME ecosystem. As such, encouraging SMEs to access the facility will be an ongoing commitment," says Hing. To do this, NI has been working closely with government agencies to roll out promotional and engagement programmes targeted at SMEs.

Keysight's initiative, in collaboration with NCIA, has been a catalyst for CEEDTec and Myreka to develop new and differentiated technologies through R&D, as well as showcase world-class innovations from Malaysia. Moving forward, Keysight's strategy with both CEEDTec and Myreka will continue to provide guidance in new technologies and markets to address future challenges and meet the complex demands of the ever-increasingly competitive business environment.

Chandran Nair, Vice President for Asia-Pacific of NI, says that the Malaysian Government is instrumental in encouraging local companies to invest in technology to streamline their work processes. "This encourages the use of automated test and measurement systems to meet productivity goals and test requirements for complex high-technology devices," Nair said. "By collaborating with NI, the Government has fulfilled the industry's needs in R&D and collaboration, and also continues to help upskill the current E&E workforce and facilitate the creation of new talent through skills-based learning for university students and fresh graduates."

The test and measurement segment will see tremendous growth going forward. Technological advancements, such as Industrial Internet of Things (IIoT), autonomous vehicles and 5G wireless systems, will result in overwhelming demand for next-generation test and measurement systems. Companies in this field will continue to be at the forefront, facilitating technological advancements and helping bring cutting-edge products to market quicker and at lower cost.

Creating Local Solid-state Lighting Champions

Solid-state lighting (SSL) products like light-emitting diodes (LEDs) have been receiving considerable attention due to the advantages they offer over conventional lighting technologies, such as their extended lifespans and reduced energy consumption.

To push Malaysia to the forefront of the production of these advanced lighting solutions, SME Corporation Malaysia (SME Corp) has been tasked to oversee 10 companies in the Malaysian LED Consortium (MLC) through its capacity-building programme, which will assist them in the areas of certification and regulation support, developing a technology roadmap, supply chain management, marketing strategy implementation, branding, and partner search. The programme moved into its second phase in 2014, supporting the MLC in achieving sales of RM84.2 million for the year.

Datuk Dr. Hafsah Hashim, Chief Executive Officer of SME Corp describes the programme as one of "total immersion", where the corporation is wholly involved with the participating small and medium enterprises (SMEs) from end-to-end of the value creation chain. "SME Corp offers two forms of assistance: the first comes in the form of funding for the development or improvement of commercially viable SSL products, whilst the second takes the form of matching grants for the purchase or improvement of manufacturing equipment, testing, processes or monitoring techniques, to obtain international certifications," she elaborated.

Two such companies are beneficiaries of this programme, i.e. Avialite Sdn Bhd and Primelux Energy Sdn Bhd. Avialite supplies aviation obstruction warning lights to warn aircraft of tall obstacle hazards in low-visibility conditions, while Primelux Energy supplies outdoor lighting and lux, as well as 3D photometric design.

Programme taking industry to greater heights

Since the programme's inception, Hafsah observed that the consortium members' research and

Primelux Energy Sdn Bhd.

development efforts have gained traction. "With our funding assistance, these companies are better able to research and develop innovative products to meet global market demands," she said. "A number of them have made a name for themselves in countries like India, Australia, Vietnam, Indonesia and Thailand, with their products used in stadiums, public transportation systems and exhibition halls."

Indeed, Hee Wee Leng, Co-Founder and Chief Executive Officer of Avialite reported that the company has been receiving orders from telecommunications companies in Indonesia, the Philippines and Myanmar for maintenance and new tower project requirements. "This supplements our domestic order book, which comprises such projects as the supply and installation of lamps nationwide for edotco Group Sdn Bhd worth RM8 million for five years, and a three-year nationwide contract from Telekom Malaysia Berhad worth RM16 million," Hee said. Avialite's quality offerings also garnered it awards such as the SME Corp Best Innovation Award in Manufacturing (2014), the Best Innovation Award from The Electrical & Electronics Association of Malaysia (2016), and the Enterprise 50 Award from SME Corp and Deloitte (2017).

Similarly, Aimi Syairah Md Zin, Deputy General Manager of Primelux Energy remarked that the company's enhanced capacity enables it to work with international institutions like LUX-TSI, from which it receives world-class consultancy, testing and certification services as it undertakes design and manufacturing work for LED street lanterns. "We also engage with Oxford University Innovation to procure research and training assistance for our business strategy development," Aimi shared, adding that the company is primed to receive the prestigious CE marking that indicates conformity with health, safety, and environmental protection standards for products sold within the European Economic Area.

With the push for innovation also comes improved remuneration: skilled workers are able to draw over RM3,000 per month, whilst management-level employees can command in excess of RM5,000, Hafsah explained. Worker productivity levels and job opportunities have increased too, alongside sales in domestic and overseas markets.

These positive outcomes notwithstanding, Hafsah believes that several areas for improvement exist. "As our SMEs increasingly establish their footprint overseas, I would like to see more MNCs collaborating with them to give them greater impetus to be progressive in their outlook and world-class in their systems and processes."

In addition, SMEs need to align themselves to Industry 4.0 and scale up their adoption of the latest technological advances to better compete in the global marketplace. She also believes that while our local SMEs are creative and keen to undertake new LED designs, they should protect their intellectual property (IP) via IP registrations and obtain international certifications for their products to attain a premium advantage.

Outlook is bright

Hafsah sees plenty of potential in SSL solutions overseas, as Europe has banned all fluorescent lighting, with Australia following suit. Hee added that LED lighting is gaining acceptance in Malaysia, making this a sunrise industry. "LED is the future of lighting. Its performance in terms of light output per unit of energy and lifespan will only get better," Hee opined.

Avialite Sdn Bhd.

engineering design services to electronic product manufacturers and test validation equipment developers.

These projects yield many benefits to the local E&E field, including supporting SMEs in developing new technologies, nurturing start-ups in bringing innovative products to market, improving design and manufacturing cycle times to increase productivity, developing relevant postgraduate talents and technopreneurs, as well as enhancing the ability of local universities to support the industry in research, engineering and design activities.

> *"24 eco-design applications were undertaken at EIDC's shared facilities in 2017."*

However, more local companies, both SMEs and large local enterprises (LLEs), need to collaborate in commercialising research outputs to market. There is also a lack of self-funding and venture funding in developing technologies and solutions that are new to market. Thus, pre-seed and seed co-funding schemes should be created to support the validation of new technologies to market. Government funding agencies should also reallocate funds to the commercialisation of new technologies until the minimum viable product (MVP) stage to lower technological risk.

Promoting eco-industrial engineering design

Complementing the work of CREST is the SIRIM Eco-Industrial Design Centre (EIDC), which was set up to assist SMEs to move up the value chain by providing affordable services in product conceptualisation and visualisation, 3D design and modelling, environmental and engineering analysis, as well as rapid prototyping. EIDC creates the required excellence in the field of industrial design that combines eco-innovation elements to minimise environmental impact while ensuring aesthetics, ergonomics and usability of products. The facilities at EIDC has also been strengthened to comply with the Restriction of Hazardous Substances (RoHS) Directive.

In 2017, the number of eco-design applications undertaken by companies utilising EIDC's shared facilities stood at 24, bringing the total number to 68 since 2015. Other benefits brought about by the centre include greater localisation of components, market expansion for businesses, reduction of processing time, waste and cost, as well as environmental sustainability.

However, EIDC is faced with aging facilities, high annual hardware and software maintenance expenditure, and low uptake of the facilities and eco-industrial design services. SMEs also possess limited knowledge and tools for product design, development and testing. Thus, they instead focus on low-level product development and R&D. The centre is also highly dependent on imported materials for 3D printing, while the low readiness of SMEs to adopt Industry 4.0 presents an overall hindrance to continuous growth.

In mitigating the challenges above, SIRIM is establishing the Additive Manufacturing Demonstration Centre (AMDC) at EIDC to sensitise SMEs in developing and producing more value-added products. EIDC will continue to focus on its targeted sectors, especially E&E, M&E, medical devices and aerospace, in the area of additive manufacturing technology advancement. In addition, the centre aims to create a conducive manufacturing system that will facilitate the uptake of additive manufacturing technology among SMEs in supporting the Industry 4.0 implementation in Malaysia.

Ir. Dr. Mohamad Jamil Sulaiman, Datuk Seri Panglima Wilfred Madius Tangau and Professor Ir. Dr. Ahmad Fadzil Mohamad Hani visited SIRIM Industrial Design Centre, Bukit Jalil, Kuala Lumpur.

MOVING FORWARD

The Government will continue driving the development of the E&E sector by allocating targeted incentives and funding to promote the adoption of Industry 4.0, in line with its commitment to reduce Malaysia's dependency on low-skilled foreign workers in the manufacturing sector. The adoption of Industry 4.0 in this context will increase efficiency and productivity, in tandem with global trends.

Autonomous Robots	Autonomous, flexible and cooperative robots interact with one another and work safely side by side with humans and learn from them
Simulation	Mirror physical world in a virtual model, which can simulate machines, products and humans, and allow for testing and optimisation of machine settings before the physical changeover
System Integration	Universal data integration of companies, departments and functions to establish cohesive capabilities and enable truly automated value chains
Industrial Internet of Things	Devices enriched with embedded computing and connected using standard technologies allow field services to communicate and interact with one another and centralised controllers
Cyber Security	The need to protect critical industrial systems and manufacturing lines, which have increased connectivity and use of standard communications protocols, from cyber security threats
Cloud Computing	Data sharing across sites and company boundaries to increase machine data and functionality and enable more data-driven services for production systems
Additive Manufacturing	High performance and decentralised systems to produce of small batches of customised products that offer manufacturing advantages, such as complex and lightweight designs
Augmented and Virtual Reality	Provide real-time information to improve decision making and work procedures, train plant personnel to handle emergencies, interact with machines and maintenance instructions
Big Data Analytics	Collection and comprehensive evaluation of data from different sources to support real-time decision making

Nine advances in technologies which form the foundation of Industry 4.0.

Industry 4.0's impact is manyfold – it will transform the design process, manufacturing process, operation, service of products and production system, whilst the increased connectivity and interaction among parts, machines and humans will speed up production system by as much as 30% and improve efficiency level by 25%, elevating mass customisation to new levels. This enables faster, more flexible and efficient processes to produce higher-quality goods at reduced costs.

The Government has formulated the National Industry 4.0 Blueprint, which is led by MITI in close collaboration with MOSTI, MOHE, Ministry of Human Resource (MOHR), Ministry of Finance (MOF), Ministry of Communications and Multimedia (KKMM) and the Economic Planning Unit (EPU), to spearhead the development of Industry 4.0 strategies focusing on manufacturing and manufacturing-related services, with input from stakeholders within and outside of the industry. The National Industry 4.0 Blueprint will be tabled to the Cabinet in the first quarter of 2018. MIDA is also expected to complete a study titled "Future of Manufacturing: Industry 3+2" in the first quarter of 2018, covering five catalytic and high-potential growth industries sub-sectors; namely E&E, M&E, chemicals, aerospace and medical device.

In the immediate term, the Government aims to promote investments from high-technology companies to undertake advanced R&D activities in Malaysia. Plans are also afoot to develop upskilling programmes to train Malaysian engineers to undertake R&D and IC design activities to fulfil the industry's demand for R&D personnel. MNCs will be encouraged to groom start-ups through R&D collaborations, local outsourcing and commercialisation support, whilst collaborations are fostered between MNCs and local universities to conduct R&D activities, increase commercialisation rate and align academic syllabi with industry needs.

ESTABLISHING MALAYSIA'S NICHE IN THE GLOBAL BUSINESS SERVICES INDUSTRY

YB DATO' SRI MUSTAPA MOHAMED
Minister of International Trade and Industry

Malaysia continues to retain its position as a competitive location for business services globally. This year, the Business Services sector secured RM41.1 billion in investments and recorded a GNI of RM64 billion, which puts the NKEA on track to achieve the overall 2020 GNI target of RM78.7 billion. The overall investments comprised of contributions from shared services and outsourcing (SSO), green technology and aerospace projects. The local global business services sector is expected to see a compounded annual growth rate (CAGR) of 10%-15% for the next three years.

The aerospace sector has emerged as a key engine of growth in the business services sector. It has created over 21,000 job opportunities since the inception of the NKEA and achieved significant expansion in 2017 with more than 200 small and medium enterprises (SMEs) now involved in the aerospace industry. Malaysia has also positioned itself as a critical supplier of aircraft structural components. For instance, UMW Aerospace is the first Malaysian company to be a tier-1 supplier to Rolls-Royce, with value of contract worth RM830 million as of 2017.

GBS Iskandar is also poised to strengthen Malaysia's competitive ability to capture a larger share of the growing global business services market. To date, GBS Iskandar has created over 2,800 professional jobs while successfully attracting over RM1.4 billion (US$315 million) in committed investments.

Additionally, Malaysia has retained its third ranking in AT Kearney's Global Services Location Index for the past 14 consecutive years since 2004. On top of that, Malaysia remains among the top 25 countries in the world in terms of ease of doing business which reflects continuous effort by the Government to make Malaysia as an attractive business destination.

AEROSPACE INDUSTRY CONTINUES TO SOAR

The aerospace industry continued to surge forward in 2017, recording an annual revenue of RM6.96 billion* and attracting RM600 million* in investment. The total aerospace industry revenue comprises revenue from three aerospace focus areas under this NKEA, namely SME manufacturing (RM17.2 million), Maintenance, Repair and Overhaul (MRO) services (RM6.23 billion*), and pure-play engineering services (RM125 million*). Overall, current investments into the aerospace industry stand at RM2.55 billion* against the 2020 target of RM1.9 billion.

A noteworthy development within the aerospace industry in 2017 was the appointment of Composites Technology Research Malaysia (CTRM) Sdn Bhd as a single-source supplier for the manufacture and supply of Airbus A350 fan cowls. CTRM has thus far invested RM93.4 million towards the construction of facilities which will boost its capacity to meet future increase in demand of Airbus A320 and A350 aircraft parts. Moreover, Malaysia has positioned itself as a producer of aero engine parts, following the operationalisation of UMW Aerospace's fan case manufacturing facility in Serendah, Selangor. Once all phases of the project are complete, the facility will be able to produce up to 250 units of fan cases worth RM770 million annually. The fan cases will be used as part of Rolls Royce's Trent 1000 engine for the B-787 Dreamliner passenger aircraft, as well as the Trent 700 engines for the Airbus A330 Neo. Malaysian aerospace players have also developed to become suppliers of composite and metallic aero structure components for Airbus and Boeing. This is a testament to the technical know-how and high-value manufacturing prowess of local players.

> *"Overall, current investments into the aerospace industry stand at RM2.55 billion* against the 2020 target of RM1.9 billion."*

Significant strides were also made in the MRO sector of the industry in the past year. One of the sector's key players, Sepang Aircraft Engineering (SAE), officially opened its second hangar in 2017. The hangar covers 12,000 m^2 and will boost SAE's capacity to handle the Airbus A320 family and accommodate two aircrafts for major maintenance

Launch of the new Sepang Aircraft Engineering hangar.

*Figures projected by the National Aerospace Industry Coordinating Office (NAICO) as of Jan 2018.

checks at one time, thus complementing the 37,000 m^2 first hangar which can accommodate six single-aisle aircraft or two widebody aircrafts. It also features Malaysia's first eco-friendly closed-door dedicated paint bay, as well as state-of-the-art workshops for the repair and overhaul of a wide range of components used on Airbus aircraft, including hydraulic and pneumatic systems.

The Government has made it a priority to encourage the development of a large and thriving aerospace domain. It will also look to boost the capacity and capabilities of local aerospace companies to ensure they will be globally competitive. To this end, SME Corporation Malaysia (SME Corp) has conducted programmes to nurture and raise the capacity of suitably qualified small and medium enterprises (SMEs), helping to prepare them for success in the aerospace market. Some 20 SMEs have been selected over the past two years to be part of this grooming programme. The majority of these companies have been successfully AS9100 certified and have generated RM17.2million in revenue to date.

The National Aerospace Industry Coordinating Office (NAICO) has also continued to spearhead the Government's efforts to facilitate industry coordination and enhance partnerships. As part of these efforts, NAICO has strategically expanded its global network and pursued closer collaborations with aerospace industry bodies in two other emerging aerospace countries, Mexico and Morocco. It has also conducted intelligence gathering activities across Asia and Europe. These efforts are expected to result in more opportunities for local companies to enter new markets while at the same time help draw more foreign direct investment.

NAICO has also led various talent-based initiatives to ensure a steady supply of qualified talent for the industry. The initiatives include the development of a Critical Occupation List for aerospace in collaboration with TalentCorp Malaysia. An Industry-Based Education Training (IBET) centre located at MARA Advanced Skills College (KKTM) Masjid Tanah was also established as a result of a collaboration between CTRM, Aerospace Malaysia Innovation Centre (AMIC) and Council of Trust for the Bumiputera (MARA). The centre will offer industry-based training programmes.

MOVING UP THE OUTSOURCING VALUE CHAIN

The shared services and outsourcing (SSO) sector, also known as Global Business Services (GBS), continues to grow from strength to strength, with annual export revenue of RM3 billion* with investments of RM731 million*. However, to ensure Malaysia's continued competitiveness in GBS, the country must achieve its goal of transitioning from being primarily a Business Process Outsourcing (BPO) player to a Knowledge Process Outsourcing (KPO) hub.

> *"To ensure Malaysia's continued competitiveness in GBS, the country must achieve its goal of transitioning from being primarily a Business Process Outsourcing (BPO) player to a Knowledge Process Outsourcing (KPO) hub."*

In view of the goal to move further up the SSO value chain and transform Malaysia into a KPO hub, the Government has placed significant emphasis on the development of qualified talent to support the SSO ecosystem, especially in terms of advanced and high-value activities. As such, the Malaysia Digital Economy Corporation (MDEC) and Talent Corporation Malaysia (TalentCorp) have together launched the Industry-Academia Collaboration for Global Business Services (IAC-GBS). Through the IAC-GBS, universities, Government entities and industries will collaborate to design and develop curricula for short courses and industrial training that are relevant for the KPO transition. IAC-GBS is an innovative model that covers the full spectrum of training and placement activities from end-to-end. It involves creating awareness, providing internship and certification opportunities, implementing curriculum embedment, organising

*Figures projected by the Malaysia Digital Economy Corporation (MDEC) as of Jan 2018.

Official launching ceremony of Aegis in Iskandar Puteri.

industry-focused competitions and boot camps as well as upskilling graduates. As of 2017, 21 employers and six higher learning institutions have participated in programmes organised by IAC-GBS. More than 300 participants have enrolled in IAC-GBS programmes since 2015, of which roughly 70% have been successfully placed in GBS companies.

Down south, the Iskandar Puteri city in Johor continues to develop as a GBS hub. It has seen over RM1.6 billion in GBS-related investments and over 3,000 jobs created in the sector to date. In 2017, it welcomed several new entrants such as Aegis, Courts, KPMG and Technopals, bringing in a total investment of RM447.7 million and creating 1,397 new jobs.

The MSC Malaysia Status was also awarded to two office complexes located in Iskandar Puteri, namely Medini 7 and Medini 9. This is a reflection of the availability of world-class services, infrastructure and amenities in Iskandar, which aligns with the goal for the entire Medini development to attain 'smart city' status.

In line with this, a new steering committee was set up in 2016 to focus on administering the development of the city as well as to ensure that Iskandar Puteri stays on track to achieve the investment target of RM6.5 billion by 2020. To achieve this, the committee will focus on accelerating the flow of business services investments in Iskandar Puteri as well as put in place plans to buffer against the challenging global economic climate. Several collaborations with industry stakeholders were also carried out to develop a sustainable talent pool for Iskandar Puteri, including the GBS Iskandar Campus Connect initiative and the GBS Iskandar Readiness Enhancement Dedicated Skilling (REDS) programme, aimed at upskilling Malaysians with skills required by GBS and assisting in job placements.

A Client Engagement Programme has also been formulated to increase client retention rates and enhance the appeal and attractiveness of Iskandar Puteri. The programme will feature community-centric activities such as sports tournaments and knowledge-sharing activities.

DEVELOPING DATA CENTRES IN MALAYSIA

The Data Centre (DC) sector saw revenue of RM1.0 billion* in 2017. The DC sector has received a boost with the Government's adoption of the "Cloud First" Strategy into the national agenda, with implementation beginning with the public sector. The adoption of cloud technology will bring innovative public services to the rakyat without incurring high capital expenditure by investing in information technology infrastructure such as data centres, servers and storage.

Malaysia has also successfully attracted foreign investments such as Alibaba Cloud and the acquisition of CSF CX Sdn Bhd by Bridge Data Centres. Alibaba Cloud, the cloud computing arm of Alibaba Group, will support local SMEs and offer training programs such as the Alibaba Cloud Certified Professional (ACP) certification.

As part of Malaysia's aspirations to be a pioneer in technology investment policies, a Trusted Data Zone (TDZ) draft Bill is stated to be tabled in Parliament in 2018. The TDZ is aimed at developing progressive technology governance policies, specifically for data centres. It is expected that the TDZ will also strengthen Malaysia's stature as a DC hub.

*Figures projected by the Malaysia Digital Economy Corporation (MDEC) as of Jan 2018.

NAVIGATING THE SHIPBUILDING AND SHIP REPAIR INDUSTRY TOWARDS GROWTH

The shipbuilding and ship repair (SBSR) industry in Malaysia is developing at a steady rate, with total exports of RM700 million in 2016, representing an increase of 2.5% from 2015. In order to facilitate further growth of the industry, a SBSR Advisory Panel was established in 2017. The panel, led by the Malaysian Investment Development Authority (MIDA) and assisted by the Malaysian Industry-Government Group for High Technology (MIGHT), is mandated to initiate and drive key projects to develop the SBSR industry.

The Government launched the modernisation of fishing vessels initiative in 2017, which is aimed at upgrading the vessels in the fishing industry from wooden hulls to steel/fibreglass hulls to ensure robust standards regarding safety, hygiene and overall seaworthiness. Echoing this, the Department of Fisheries has devised the standards and design for the steel/fibreglass vessels, whereas financing schemes to support this initiative are offered by MIDA and Agrobank to enable fishing industry players to upgrade their vessels, in line with the goal to modernise the local fishing industry.

LEVERAGING GREEN TECHNOLOGY FOR A SUSTAINABLE FUTURE

The green technology sector continues to advance, generating RM6.1 billion in revenue and attracting RM2.9 billion in investments in 2017. As the custodian of green initiatives in the country, the Ministry of Energy, Green Technology and Water (KeTTHA) annually organises the International Greentech & Eco Products Exhibition & Conference Malaysia (IGEM). The event serves as a platform for Malaysian solution providers and green energy businesses to tap into the fast expanding ASEAN market by showcasing the latest innovations to policy makers, Government organisations, investors and members of the mass market under the IGEM brand.

The eighth IGEM was held on 11 to 13 October 2017, attracting 34,868 global attendees and 320 participating companies from over 30 countries. A total of RM1.6 billion in investments were secured during the event.

"It is anticipated that by 2030, green businesses will contribute approximately 1.5% to the nation's GDP, or equivalent to RM60 billion."

Among key highlights at the exhibition was the unveiling of the Green Technology Master Plan (GTMP). The Master Plan outlines Malaysia's green technology strategy to create a resource-efficient and low-carbon footprint economy. It aims to boost the growth and development of Malaysia's green technology sector, with a target revenue of RM180 billion and creation of more than 200,000 green jobs by 2030. It is anticipated that by 2030, green businesses will contribute approximately 1.5% to the nation's Gross Domestic Products (GDP), or equivalent to RM60 billion, as compared to RM7.9 billion in 2013. The Master Plan also aims to achieve RM86.3 billion in total investment in the green technology sector.

Additionally, the GTMP outlines the Government's commitment to shift the country from mere green technology adoption to green technology production. The ultimate objective of the shift is to cement Malaysia's position as a forerunner in the global green movement as part of the National Transformation 2050 (TN50) aspirations.

Launch of the Green Technology Master Plan at IGEM2017.

Malaysia's Aerospace Poised to Soar

The Malaysian aerospace industry has made impressive strides in becoming a regional aerospace hub. Especially when taking into consideration the fact that Malaysia is now the single source supplier for Airbus A530 fan cowls; as well as manufacturing of fan cases for the Trent 1000 and Trent 7000 Rolls Royce engines.

The growth and development of aerospace manufacturing stems in large part to efforts by the Government to develop the sector through the National Transformation Programme and ministry initiatives such as the National Aerospace Industry Coordinating Office (NAICO). The latter was established in August 2015 to develop and enhance the aerospace industry, implement the Malaysian Aerospace Industry Blueprint 2030, coordinate and monitor aerospace industry development programs, and be the referral point for foreign and domestic investors.

Shamsul Kamar Abu Samah, Head of NAICO, said that the outlook for the Malaysian aerospace sector continues to be promising thanks to the expansion of its two major airlines – AirAsia and Malaysia Airlines.

"More aircrafts mean more engineering activities," said Shamsul. He added that Malaysia has to act fast to establish itself as a regional hub and tap into the anticipated boom in aircraft delivery with some 16,000 aircrafts expected to be delivered by 2036 to the Asia Pacific region. Not only that, one quarter of the 16,000 aircraft are expected to make their way to South East Asian customers.

"We need to grab this opportunity," he said. "We need to be fast as other countries in the region are also looking to do this. This means that engagement with global players is very crucial."

To this end, NAICO has pushed hard on national developmental activities. To sharpen the nation's

Shamsul Kamar Abu Samah, Head of National Aerospace Industry Coordinating Office.

competitive edge and position the industry for the future, NAICO along with its industry partners such as Aerospace Malaysia Innovation Centre (AMIC) developed the National Research and Technology Roadmap to identify strategic research areas. The roadmap is expected to be launched in 2018. The roadmap will chart the technological competency focus areas of the Malaysian ecosystem as well as direct university research, government assistance and technology acquisition.

As aerospace is also a highly-skilled and knowledge-intensive industry, NAICO also worked with the Council of Trust for the Bumiputera (MARA) and the Ministry of Higher Education (MOHE) to develop the required aerospace related human resources the country needs. It was also appointed by the Ministry of Human Resources (MOHR) to lead the aerospace skills development framework.

It also worked with SME Corporation Malaysia (SME Corp) to develop Malaysia's aerospace SMEs, including SMEs that are not currently involved in the aerospace sector but would like to venture into it. NAICO is also involved in the development of infrastructure to support the growth of the aerospace industry. It worked closely with Malaysia Airports Holdings Berhad (MAHB) to promote the development of the KLIA Aeropolis, and UMW to develop the Aerospace Hard Metal Manufacturing Park in Serendah, Selangor.

Shamsul noted that the National Transformation Programme and its aerospace specific initiatives also helped to boost Malaysia's profile as a regional Maintenance, Repair and Overhaul (MRO) destination as well as develop a pool of competitive SMEs. "The National Transformation Programme through it various projects have really assisted in our efforts to develop the local aerospace ecosystem," said Shamsul.

Additionally, Shamsul noted that the main challenge facing the local industry is convincing Malaysia companies to embark on Industry 4.0 to ensure the industry remains sustainable.

"We need to move into different ways of producing parts and components," he said. "Smart robots, online automation and 3D printing needs to be introduced to our shop floors. We need to do it because in developed countries, they are looking into it. If we are not competitive enough, they will pull out the activities that they previously outsourced. It is critical for us to understand this." To address this challenge and assist the industry to move into Industry 4.0, NAICO along with Ministry of International Trade and Industry (MITI) are developing the National Industry 4.0 Blueprint. The blueprint is expected to be launched in the first quarter of 2018.

Shamsul added that all elements of the Malaysian aerospace ecosystem should work more closely together and represent the country as one. He noted that Japan develops clusters of industries in selected geographical regions and the companies within the clusters are able to pool their resources and strengths and submit a unified bid for projects and tenders, increasing their chances of winning.

"We need to strengthen the local ecosystem, cluster our capabilities and offer better solutions to original equipment manufacturers (OEMs) and Tier 1 companies," he said. "This way they can see that a strong ecosystem is being built in Malaysia and this is the place that they need to be."

Johor SME Takes to the Skies

Aerospace Partners Engineering (APE) is a Johor-based small and medium enterprise (SME) that makes parts for aircraft interior fit-out companies based in Singapore. Started in 2010 by a former Malaysia Airlines employee, Jeffrey Lee, APE has managed to win significant contracts including a deal in 2012 to fabricate parts eventually fitted on Singapore Airlines' Business Class seats. It is currently capable of making some 2,000 different precision machined parts that are used in aircrafts all over the world including SilkAir, Xiamen Airlines and Aeromexico.

APE is also one of the graduates of the NKEA Business Services which benefited from initiatives to enhance the development of SMEs in the global aerospace manufacturing industry. Led by SME Corporation Malaysia (SME Corp) as part of EPP8 - Developing SMEs in the Global Aerospace Manufacturing Industry, SMEs are placed in a year-long development program to bring them up to speed with what is required to be a supplier to global aerospace original equipment manufacturers (OEMs) and Tier-1 companies. Although APE was invited to apply for admission to the program, admission was not automatic but competitive, and APE had to make a presentation to SME Corp in order to be selected.

During the program, APE was brought to the United Kingdom for a learning experience through immersion in the aerospace industry. There, program participants visited the Farnborough Airshow as well as attended special industry sessions at Cranfield University. At Cranfield, APE and the other Malaysian SMEs were given a course on what it takes to be successful in the aerospace business as well as how to drive the business.

Back in Malaysia, the SMEs were introduced to potential aerospace OEM customers operating in the country such as Spirit AeroSystems and UMW. They were also given briefings by aerospace certification experts and met with Airbus representatives who outlined what was needed in order to become a supplier to the global aviation manufacturer.

Lee says that the NKEA also helped APE to connect to potential Tier-1 and Tier-2 customers and partners in Malaysia. It also served as a networking platform for SMEs to share experiences, skills and resources, which could help in submitting more competitive bids for contracts.

Computer numerical control (CNC) tooling machine.

As part of the program, APE also received a RM500,000 productivity enhancement grant from SME Corp which assisted in increasing APE's production capabilities.

"SME Corp held our hand and looked to see where they could help in terms of information and financial assistance," said Lee.

The aerospace entrepreneur also noted that National Transformation Programme initiatives such as Asia Aerospace City and the Malaysian Aerospace Industry Blueprint 2030 would help draw in bigger aerospace OEMs which in turn would help boost the local industry and enhance Malaysia's competitiveness as an aerospace hub.

"Overall, the aerospace landscape has improved under the National Transformation Programme. We now know what it takes to build a complete aerospace ecosystem in Malaysia," says Lee.

For the future, APE has plans to expand its current manufacturing capacity from 4,000 machining hours per month to 10,000 machining hours per month. It is also looking to expand its workforce from 30 employees to 100 employees in the next 5 years.

Lee also said that he wants the company to move up the value chain and upgrade itself from its current Tier-2/Tier-3 status and become a Tier-1 manufacturer. This would mean APE would eventually own its own designs, do assembly and kitting work and well as perform research and development.

"We want to move up the value chain and do work that is at the higher end," said Lee.

In terms of improving the operating environment for aerospace SMEs, the APE founder says that the Government could help lower the capital expenditure requirements to move into Industry 4.0, speed up processing, as well as help connect SMEs with Tier-1 companies. He also notes that the fluctuations in foreign exchange rates and rising costs may impact the Malaysian aerospace sector's regional competitiveness.

Additive manufacturing machine.

"Additionally, while the Government has encouraged more companies to adopt Industry 4.0 technologies and innovations to position themselves for the future and become more competitive, the exercise is a costly one that could run into the millions," says Lee. He suggests that the Government consider schemes that could help lower the financial barrier for SMEs to adopt Industry 4.0 technologies such as 3D printing.

Lee also suggests that due to the speed at which the country's competitors are moving, bureaucracy could be minimised to further enhance Malaysia's competitiveness. He adds that the Government could also look into providing incentives for Tier-1 and Tier-2 companies operating in Malaysia to work with SMEs to grow the overall industry, either by helping with technology transfer or by taking up more Malaysian made content.

"We should partner more SMEs with Tier-1 and Tier-2 companies," he says.

Ensuring a Greener Future for Malaysia

Malaysians can look forward to a future that is cleaner, greener and more sustainable thanks to initiatives to reduce carbon emissions, a better waste management policies and a strong commitment by the Government to develop the green technology sector under the NTP.

From the phasing out of conventional gas-guzzling automobiles in favour of electric vehicles to the recycling of wastewater for industrial use, the country has already mapped out where it wants to go in the Green Technology Master Plan Malaysia (GTMP). The GTMP, which was developed by the Ministry of Energy, Green Technology and Water (Kementerian Tenaga, Teknologi Hijau dan Air, KeTTHA), is a framework that facilitates the mainstreaming of green technology in the country, strengthening the role of green technology as well as using it as a catalyst to drive sustainable growth.

Among targets set out under the GTMP, include for new vehicles to be 100% electric and energy efficient, 15% of waste water to be treated and for the number of green certified buildings in the country to reach 1,750, all by the year 2030.

The hefty 200-page GTMP which was launched in October 2017, is a significant achievement for the country and will further accelerate the expansion of the green technology sector which is already a growing presence in the country, says Dato' Seri Ir. Dr. Zaini Ujang, Secretary General of KeTTHA. He points out that green technology and policies cut across many Ministries and portfolios – from housing to transport to the environment to energy - making it difficult for many countries to come up with a consensus on how to move forward and to commit to targets.

"When I was in Europe, people asked me: 'How do you get everyone to agree on a single masterplan?'" says Dato' Seri Ir. Dr. Zaini. "In some countries, they just agree on general carbon emission principles but not on the details, whereas in Malaysia, we go into six sectors and itemise the parameters and detail the ways to move forward."

He credits the strong commitment from the top leadership in Government for the success in getting all Ministries to work together on a common roadmap. "The YAB Prime Minister is the driving force behind it," he says, adding that the YAB Prime Minister chairs the Malaysian Green Technology and Climate Change Council twice a year.

With the GTMP in place, Dato' Seri Ir. Dr. Zaini expects the local green economy, which according to him contributes approximately RM50 billion to the Malaysian economy currently, to grow about 5% every year in terms of realised investments. The sector's growth thus far has been reflected by developments in the area of green energy, for which Malaysia is one of the largest producers of solar panels in the world and is also home to among the highest numbers of green certified buildings in the world.

The Secretary General explains that starting from 2018, budget allocations for the construction of new sewage treatment plants will be removed and channelled towards wastewater recycling plants. This will enable a higher rate of recycling wastewater, which, in turn, will remove the need for any new dams in the country.

Some RM5 billion in funds have also been approved for the Green Technology Financing Scheme 2.0 (GTFS 2.0), which is run by the Malaysian Green Technology Corporation (GreenTech Malaysia). The allocated funds will last up to the year 2022. GTFS aims to boost the growth of green technology companies by assisting with financing through soft loans.

Dato' Seri Ir. Dr. Zaini says that all that remains is for Malaysians to adopt a greener lifestyle and culture which will stimulate demand for more green technology, products and services.

Dr. Mohd Azman Zainul Abidin, Group CEO of GreenTech Malaysia, concurs, saying that the world is downsizing carbon footprints and Malaysians need to embrace this. Countries such as Sweden, for example, are establishing and integrating their waste and water into the electricity supply grid, while India's MRT system in Bangalore and Hyderabad was built with its train stations utilising renewable energy.

In line with this movement, RM7.05 billion has been approved as green investments from 319 projects to date to help Malaysia reduce its carbon footprint. "The green economy is the way forward," says Dr. Mohd Azman, adding that GreenTech Malaysia will heavily focus on smart sustainable cities and low carbon mobility, besides continuing the promotion of renewable energy and energy efficiency, sustainable waste, water and manufacturing processes.

In terms of ways to enhance the development of the green economy, Dr. Mohd Azman believes that green initiatives should be supported by more legislation which would empower greater levels of funding and authority. This would enable the agency to carry out green technology initiatives more effectively.

MOVING FORWARD

NKEA Business Services has seen its fair share of ups and downs over the years. Technological advancements and global economic realities have impacted initiatives that were initially charted out at the beginning of the journey, necessitating changes to the NKEA initiatives along the way.

For example, the increasingly challenging global financial environment has led to large MRO companies downsizing their MRO activities within Malaysia. In the data centre industry, the advancement of cloud technology has forced industry players to adjust their data centre design principles accordingly, as companies consolidated their hardware and floorspace requirements. Meanwhile, in the SBSR space, the downward trend of the oil and gas market has had an adverse impact on shipbuilders as the demand for Offshore Support Vessels (OSV) has declined.

Nevertheless, the initiatives under NKEA Business Services were continuously agile and innovative to meet these challenges head on. The coordinated efforts of several agencies have led to increased SME participation in the aerospace industry supply chain. Continuous efforts are also ongoing to attract global data centre players and enhance the sector from a financial, regulatory and environmental perspective to ensure that Malaysia is an attractive data centre location. Lastly, the SBSR industry has started diversifying from the oil and gas sector, instead exploring other opportunities that show plenty of room to encourage localisation of design and production such as the fisheries and tourism segment.

Moving forward, to continue the momentum of the industry's development, the Government will take proactive measures and work in tandem with the private sector to advance the development of the business services industry. The capacity and capabilities of local industry players will need to be cultivated in line with achieving the NTP goals and moving towards Industry 4.0.

REALISING A BETTER FUTURE THROUGH CONTENT AND CONNECTIVITY

YB DATUK SERI PANGLIMA DR. MOHD SALLEH TUN SAID KERUAK
Minister of Communications and Multimedia

2017 was a banner year for the communications content and infrastructure (CCI) sector, with the NKEA contributing RM58.7 billion to GNI. Strong progress was recorded in both the financial and social initiatives undertaken by the Government, especially those under the Broadband for All programme. The Government is committed and remains on track to double broadband speeds while maintaining the same price levels to improve the rakyat's socio-economic wellbeing, especially the bottom 40% of income earners (B40). Affordable high-quality broadband will enable the rakyat to leverage the digital platforms to create additional income on a sustainable basis.

Communication and internet coverage in Malaysia has improved with the completion of more than 800 upgraded and new telecommunication towers. These initiatives, supplemented by the expansion and improvement of 3G and Long-Term Evolution (LTE) wireless broadband coverage, have greatly bridged the digital divide between urban and rural areas. I am also happy to report that the LTE wireless broadband coverage has increased to 77% in populated areas nationwide.

Another milestone this year has been the completion of the 3,800-km national submarine cable project, known as the Sistem Kabel Rakyat 1Malaysia (SKR1M), which started operations on 16 September 2017. The completion of this project has enhanced connectivity links between Peninsular Malaysia with Sabah and Sarawak, and lowered Internet traffic congestion between the three regions.

Parallel to this, Malaysia's creative sectors have continued to flourish. The export value of creative content such as films, animation, games for both finished products and related services reached RM737.84 million by Q3 2017.

Malaysia is also becoming an increasingly popular destination for international movie producers who have responded well to the various initiatives introduced through the Film in Malaysia Incentive (FIMI). Throughout the year, a slew of international productions have either selected Malaysia as a location to shoot their movies or utilise our state-of-the-art studios, such as the Pinewood Iskandar Malaysia Studios. The FIMI will, from time to time, be enhanced to ensure Malaysia continues to attract high-quality investments from the entertainment world and create jobs and opportunities for our local practitioners across the creative industry value chain.

As we seek to accelerate the adoption of high speed broadband, the Nationwide Fiberisation Plan (NFP) is being developed to expand the country's fixed broadband infrastructure, covering about six million premises, of which two million premises are located in rural areas. This is to further improve coverage that began with the High Speed Broadband (HSBB) project in 2008.

The move to expand high-speed broadband nationwide is crucial to ensure the country remains competitive and Malaysians, including those living in rural areas, participate and benefit fully from the digital economy. With these strategic measures in place, Malaysia is well on its way to achieve its communications, creative content and infrastructure aspirations.

IMPROVING INTERNET CONNECTIVITY TO ENABLE INCLUSIVE GROWTH

To ensure fast and robust nationwide connectivity, the High Speed Broadband (HSBB) project continued to gain momentum throughout 2017 amid its second and final phase. During the year, 480,084 ports with speeds of up to 100Mbps were rolled out in capital cities and major towns, achieving 183% of the 2017 target, thus completing the entire HSBB project as per the contract signed between the Government and Telekom Malaysia via the public-private partnership (PPP) model.

Nonetheless, completing the HSBB project is not without challenges. Some of the issues encountered in the implementation of this project include the insufficiency of appropriate infrastructure required for installation and for the service to work optimally, namely fibre optic wiring in buildings. Telecommunication companies also faced inconsistent application processes at the local authority level to build telecommunication towers and conduct civil works. Telecommunication Infrastructure Meetings were held at state level, where appropriate resolutions were passed on a case by case basis to overcome this challenge, and hit the roll-out target.

Meanwhile, under the Sub-Urban Broadband (SUBB) project, 146,904 ports were added in 2017, making the total number of ports reach 366,294 since the inception of the project, surpassing the cumulative target of 317,000 ports by 2017. The initiative is at 150% completion and is targeted to be completed in 2019. Some of the new towns and cities that received SUBB coverage include Kota Belud in Sabah, Lundu in Sarawak, Jengka in Pahang, Batu Kikir in Negeri Sembilan, Bedong in Kedah and Kuala Perlis in Perlis.

As people increasingly access the Internet via mobile technologies, significant strides were made to improve access to high speed mobile broadband nationwide, with Long-Term Evolution (LTE) and 4G coverage continuing to expand in 2017. The initiatives are driven by private sector participation and coordinated by the Malaysian Communications and Multimedia Commission (MCMC). As a result, LTE and 4G coverage reached 77% in populated areas, providing connectivity to additional locations such as Penampang in Sabah, Bintulu in Sarawak, Kulaijaya in Johor, Seberang Perai Utara in Pulau Pinang and Seremban in Negeri Sembilan.

> ***“LTE and 4G coverage reached 77% in populated areas.”***

As part of further efforts to bring connectivity to the rakyat, the Pusat Internet 1Malaysia (PI1M) initiative continues to play a key role in connecting rural areas by providing computers, Internet facilities, IT-related workshops and community programmes. 52 new centres were established under the NKEA CCI by the end of 2017.

In addition, the public can now enjoy free WiFi within a one kilometre radius of a PI1M, further enhancing high speed Internet accessibility. This has also enabled entrepreneurs in rural areas to increase their income and living standards by using online channels to expand their customer reach.

In tandem with initiatives to enhance broadband connectivity, a 3,800-kilometre submarine fibre optic cable connecting Peninsular Malaysia with Sabah and Sarawak has been completed under the Sistem Kabel Rakyat 1Malaysia (SKR1M) programme. Using the latest 100 Gbps wavelength technology with initial capacity of four terabits per second (Tbps), SKR1M is one of the Government’s game-changing efforts to accelerate connectivity between Peninsular Malaysia and Sabah and Sarawak by providing diversity in the country’s networks, as well as to cater for future bandwidth requirements between states. This project started in 2015 with a cost of RM619 million via a PPP where the Government and Telekom Malaysia allocated RM412 million and RM207 million, respectively.

Bringing the Digital Economy to Rural Entrepreneurs

The Pusat Internet 1Malaysia (PI1M) programme has not only successfully fulfilled the objective of bridging the digital divide between rural and urban populations, but it has also been a boon to rural entrepreneurs by extending their geographical marketing reach, offering new social media channels to market their products as well as making it easier to apply for grants and certifications.

Thanks to the push provided by the National Transformation Program, there are now some 840 PI1Ms operating nationwide with over 550,000 registered members. The PI1M centres serve as broadband access centres as well as places for rural communities to receive free ICT training, including online entrepreneurship training. The facilities and courses have encouraged more rural businesses to promote their products and services – whether food, handicraft or homestays – on the internet, bringing them in line with the rise and growing acceptance of e-commerce globally.

One such beneficiary is Masinah binti Paris of Kampung Medong Dalat in Dalat, Sarawak. Masinah has been marketing sago products under the Sago Medang brand since 1999. Prior to her introduction to the world of online marketing via PI1M, Masinah had marketed her sago products via conventional advertisements in the Dalat district villages. But she realised that the internet aids greatly in expanding her marketing reach.

"The conventional way is no longer as relevant in the current marketplace," she said. To bring her business online, Masinah attended ICT training and online marketing workshops conducted at the PI1M in Kampung Medong Hilir.

Masinah's online marketing efforts met with encouraging response from her customers in Sarawak and she even received orders from customers in Peninsular Malaysia. Her products were also marketed by PI1M Kampung Medong Hilir which helped attract more people to seek out her products.

Thanks to the training and guidance provided by PI1M Kampung Medong Hilir, Masinah said her income has now exceeded RM10,000 a month.

Additionally, a Hulu Terengganu based cake and cookie vendor, Mazni binti Muhamad has also made use of PI1M to further grow her business. Before using internet facilities at PI1M, Mazni said that she relied on regular customers, enquiries through the WhatsApp application and help from friends to promote her products via word of mouth.

But since engaging with PI1M, Mazni said that she could promote her business more easily and the PI1M centre even helped to promote her products through programs and events, whether they were conducted within PI1M or outside PI1M.

> *"I hope that PI1M continues to be a platform to help small entrepreneurs."*

"I hope that PI1M continues to be a platform to help small entrepreneurs like me," she said. "Although the support is more on training and knowledge sharing and not financial support, I still feel very proud and thankful," she added.

Another entrepreneur who gained from the offerings of PI1M is Mohd Jaid bin Aspar of Bagan Datoh in Perak. Jaid, who markets dodol and soy milk, used the facilities of PI1M at Simpang 4 Rungkup to take advantage of the time saving features of e-government and applied for grants and certifications online.

"In Bagan Datoh, even to get a good cell phone connection is difficult, so the PI1M is really helpful since it provides good internet connection," he said.

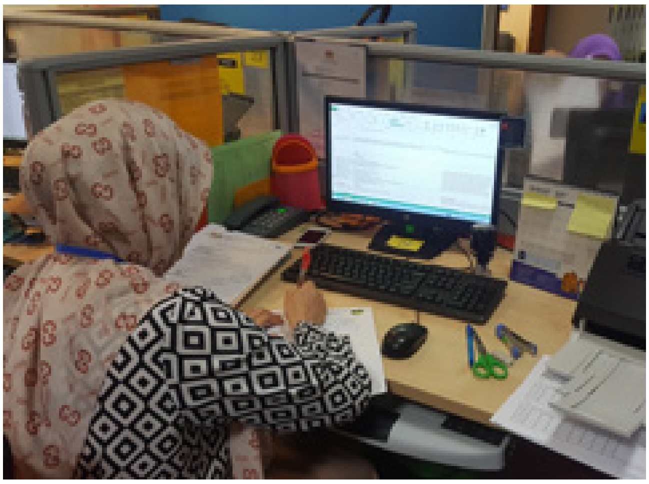
Among the courses that Jaid took at the PI1M were e-government, social media and training on how to fill out online applications such as for the MeSTI and Halal certifications as well as for grants from Ministry of International Trade and Industry (MITI) and SME Corp.

As a token of appreciation, Jaid is currently a loyal supporter of PI1M centres and he has collaborated with Public Private Research Network (PPRN) to promote internet facilities and training which are available at PI1M to entrepreneurs in the area.

ENHANCING PUBLIC SERVICE DELIVERY THROUGH TECHNOLOGY

The Digital Document Management System 2.0 (DDMS 2.0) forms part of the Government's efforts to improve file management efficiency, promote eco-friendliness and improve services to the rakyat. As at December 2017, 32 new Government agencies have adopted the DDMS system against the target of 30 new agencies for the entire year. A total of 65 agencies have adopted the DDMS since 2011, with 21,000 users and 1.2 million records digitised. Among the new agencies and Ministries which have come on board are the National Sports Council of Malaysia (Majlis Sukan Negara – MSN), Shah Alam Hospital, Human Rights Commission of Malaysia (Suruhanjaya Hak Asasi Malaysia – SUHAKAM), Department of Islamic Development Malaysia (Jabatan Kemajuan Islam Malaysia – JAKIM) and Universiti Putra Malaysia.

The roll out of DDMS has its challenges. The practice of printing out digitised documents remains deeply embedded within the general work culture. Altering long-standing practices in order to transition users to a greener way of working requires a fundamental change in user mind-sets. For example, to diminish the culture of printing, the Government is constantly engaging with DDMS users to raise awareness on the benefits of the system in increasing efficiency and reducing wastage.



Inputing into DDMS 2.0 system by Ministry of Education.

REALISING THE GLOBAL POTENTIAL OF MALAYSIAN CREATIVE CONTENT

Malaysian creative content continued to perform well in 2017, recording forecasted export value of RM737.84 million against the target of RM650 million. Since 2012 to 2017, creative content exports have grown at a rapid CAGR of 6.15%. Being the agency tasked with developing Malaysia's digital economy, the Malaysia Digital Economy Corporation (MDEC) continues to facilitate export activities through promotion, capabilities development programmes and collaborations to support creative content development and export.

This has enabled home-grown intellectual property (IP) to strengthen its global competitiveness in work-for-hire agreements. Key examples of locally made IPs which have reached the global stage are Chuck Chicken, Seafood, Saladin, Upin & Ipin, Boboiboy, Ejen Ali, Kuku Harajuku, Boing, Origanimals, Didi & Friends and Hogie the Globehopper.

> ***"From 2012 to 2017, creative content exports have grown at a rapid CAGR of 6.15%."***

Video game development, another component of creative content, has also gained positive momentum in Malaysia with more than 30 AAA games created by Malaysian talents. AAA is an informal rating recognised across the gaming industry used for video games with the highest development budgets and levels of promotion. Some notable examples of games created using Malaysian talents include Final Fantasy XV, Unchartered, Tekken 7, Gears of War 4, Fable Legends, Street Fighter V, Dark Souls 3 and Bloodborne.

In order to take locally made content to the next level, the Kre8tif! Conference 2017 was organised under MDEC's #animationMY platform. The programme was initiated to spark innovation and exploration of major trends across the creative sector. It drew over

550 participants from seven countries and featured 35 speakers from North America, Europe, Australia and Southeast Asia. Meanwhile, to develop Malaysia into a Game Hub by 2025, MDEC has organised the annual Level UP KL event to catalyse business opportunities and share technical insights and future-shaping trends from thought leaders from all over the world.

In terms of film and video production, the National Film Development Corporation Malaysia (FINAS) continues to lead efforts in attracting foreign investments via the Film in Malaysia Incentives (FIMI) programme. The programme offers a 30% cash rebate on all Qualifying Malaysian Production Expenditure (QMPE) and has succeeded in attracting the filming of foreign productions in Malaysia as well as increase local productions, both for studio-based and location-based productions. Among the beneficiaries of this programme include ASTRO Shaw (Ola Bola), Animonsta Studios (BoboiBoy Season 3), KRU Studios (Cicakman 3D) and foreign productions such as the Hi-5 TV Series, Prey and Asia's Got Talent. FINAS has also strategically partnered with Khazanah Nasional Berhad to promote Pinewood Iskandar Malaysia Studios, attracting international film-makers into the country and thus generating a good source of revenue for the industry.

Example of locally made IP which has reached the global stage.

Connecting 1Malaysia

The Connecting 1Malaysia focus area works to create an ecosystem which accelerates the adoption of new communications technologies.

Following the completion of Connecting 1Malaysia initiatives such as the Get Malaysian Business Online (GMBO) and Telepresence, a new initiative known as the Digital Mailbox was introduced in 2017. The service was developed by Pos Malaysia in line with the declining trend in the use of physical letters as well as the increasing demand for mailing security.

As most e-mail servers are hosted in foreign countries and has no restriction on the sending or receiving end, organisations and individuals are hesitant and mostly unwilling to share confidential details via conventional e-mail pathways. Therefore, the Digital Mailbox creates a secure environment for the exchange of information through an online platform hosted on a Malaysian-based server. The features are:

- Only registered users in the platform can communicate with one another – e-mails cannot be received from, or sent to other e-mail servers (outside of Digital Mailbox);
- The security of this platform is guaranteed further as all senders and recipients are required to go through a one-off verification process which involves them identifying themselves at the post office, along with providing proof of identification.

The Digital Mailbox will be launched to the public in 2018 and has underwent a soft launch in 2017 for Pos Malaysia staff, with 19,000 new subscribers signed up during this period. Pos Malaysia will continue to conduct rigorous testing and will seek feedback from various Ministries and agencies regarding the service before its launch. It is also working to gain consumer buy-in to ensure the success of the service.

Preparing Our Infrastructure for the Digital Economy

As the world evolves to integrate more technology, advanced and reliable communication infrastructure increases in importance. Thus, dedicated efforts by the Government to expand Malaysia's communications infrastructure in urban and rural areas have intensified of late. The nation's coverage of high speed broadband of both fibre and wireless varieties continue to expand in line with the Communication Content and Infrastructure NKEA's aim to improve promote the uptake of world-class digital services and content.

Towards this end, connectivity via High Speed Broadband (HSBB), Sub-Urban Broadband (SUBB), the Sistem Kabel Rakyat 1Malaysia (SKR1M), increased mobile coverage, 4G/LTE coverage and 3G coverage has been ensured by the Malaysian Government.

To uplift the whole nation in line with this technological movement, there was a need to ensure that rural areas were advancing at the same pace as urban areas. Hence, to bring connectivity in rural areas on par with urban cities, rural sites have been covered by the Government's Universal Service Provision (USP) scheme which allocates funds to build communication towers in remote rural areas as well as establishes Pusat Internet 1Malaysia (community internet centres).

Dato' Mohd Ali Hanafiah Mohd Yunus, Chief Officer, Communications and Digital Ecosystem Sector, said that the government's USP initiative was vital to encourage telecommunication companies to provide services to the less profitable rural areas of the country. "We know the industry will come in when there is profit, but they are not keen on going into rural areas," he said. "This is where the USP comes in. With the funding, they can build the towers and expand their coverage in rural areas and this is a benefit to the industry."

Dato' Mohd Ali Hanafiah Mohd Yunus, Chief Officer, Communications and Digital Ecosystem Sector, MCMC.

Dato' Mohd Ali outlines that PI1M goes beyond merely providing internet facilities, and also carries out sessions for basic ICT training which includes online entrepreneurship lessons.

"We teach PI1M users how to market their food products, handicrafts and homestays online," he said. "Because of this, they have expanded their reach to the whole country and some, overseas."

A challenge in moving forward is the sustainability of PI1M. The centres are not self-sustaining, hence some countries in the region are turning similar centres in their home countries to co-operative type centres which are able to generate revenue through methods such as collecting a membership fee.

In terms of infrastructure roll-out; charges are imposed by Malaysian states for site acquisition to build communication towers and fibre optic cables.

"For fibre rollouts, a few agencies now charge RM30-40 per 100 meters," he said. "Before this, there were no charges. This introduces new costs. You can imagine the cost if you roll out many kilometres of fibre. Everyone is talking about the digital economy and we need to have fibre everywhere."

To overcome these issues MCMC is conducting ongoing engagements with state governments. The major telecommunication companies are also involved in the discussions and all parties are encouraged to give their views and try to find a solution. Dato' Mohd Ali said that the issue is one which is critical to ensure cost effective roll out of communication infrastructure.

By weeding out and identifying these issues; the Government continues towards working alongside its states and agencies to streamline the infrastructure processes.

MOVING FORWARD

The development of the CCI sector is crucial in transitioning Malaysia from a middle-income to high-income economy. The sector has come a long way since the beginning of the NTP in 2011, with many major milestones achieved throughout the years – notably the expanded high-speed Internet coverage nationwide which has impacted many Malaysians, and the growth of the creative industry. Despite the challenges along the way, the sector continues to showcase great development in communication services, government services and the creative content segment.

In line with the sector's aim to provide new and compelling content and services to stimulate demand and driving high growth in communications, the Government will remain committed to work towards achieving its targets. The sector also plays a role in achieving inclusive transformation as the Government continues to bridge the digital divide between urban and rural areas through the expansion of high speed broadband in rural areas, providing rural communities access to the digital economy.

Following global trends and in the effort to boost connectivity, MDEC is spearheading the Digital Free Trade Zone (DFTZ) initiative which is now supported with high speed broadband connectivity at KLIA Aeropolis and in the near future, Bandar Malaysia.

HEALTHCARE

ADVANCING HEALTHCARE SERVICES

YB DATUK SERI DR S. SUBRAMANIAM
Minister of Health

Since taking over the helm at the Ministry of Health (MOH), I am delighted to note that the year 2017 has shown remarkable growth in the Healthcare Industry. MOH's initiatives that have contributed profoundly to the NKEA are clearly exemplified by the positive results in the Industry Sponsored Research (ISR) conducted by Clinical Research Malaysia (CRM), to the increased revenues generated through healthcare travellers and tourists monitored by the Malaysian Healthcare Travel Council (MHTC). Alongside the initiatives conducted by the Medical Device Authority (MDA) that have led to the increased number of approvals of establishment licence applications, improved lab compliance to Organisation for Economic Co-operation and Development (OECD) Good Laboratory Practice (GLP) requirements for pre-clinical testing as well as increased Medical Devices registration are also to be trumpeted about and be proud of. To top off all these efforts, the upsurge in generic pharmaceutical products registered under the National Pharmaceutical Regulatory Authority (NPRA) has significantly contributed to the development of the Healthcare sector in Malaysia.

With these achievements and on-going commitments, our Healthcare Industry generated RM26 billion in GNI* in 2017 as compared to RM15 billion at the beginning of the NTP in 2010.

To further benefit the rakyat, Healthcare in Malaysia has embarked on two transformative processes. The first is the Enhanced Primary Healthcare, which builds on the existing primary healthcare framework within the public and private sectors to target non-communicable diseases and emphasises early detection, intervention and treatment. The second is the development of the non-profit Voluntary Health Insurance Scheme (VHI), which will ensure the sustainability of our current public healthcare systems while bridging the gap between public and private healthcare.

Another highlight of the year was the tabling of the Private Aged Healthcare Facilities and Services Act to regulate all private aged care centres, thus ensuring adequate standards are maintained to care for our elderly. This Act is critical to meet mounting demands for aged care services, as Malaysia shall become an aged nation by 2030 with an estimated 15% of the population to be over the age of 60 years.

Additionally, the inception of e-Health such as MY Health Information Exchange (MyHIX) and MY Health Data Warehouse (MyHDW) will place Malaysia at the forefront of the Healthcare Industry. The total healthcare integration system as well as digitalisation efforts are aligned with our Industry 4.0 efforts, and focuses on modernising the health sector as Malaysia closes in on the completion of the NTP and moves towards the TN50 horizon.

*Includes public healthcare.

SHOWCASING THE QUALITY OF MALAYSIAN HEALTHCARE

Malaysia has established itself as one of the most preferred destinations for healthcare travel globally. This is evidenced by the recognition earned from the US-based International Living magazine which has ranked Malaysia as one of the world's top countries for healthcare in terms of service quality, accessibility, standard of post-procedure recuperation options and cost-competitiveness for three years since 2015. The International Medical Travel Journal (IMTJ) has also acknowledged Malaysia as "Health and Medical Tourism: Destination of the Year" for three consecutive years from 2015 to 2017.

Healthcare travel (Medical Tourism) is one of the fastest-growing sectors in the country, registering an average growth rate of 16% to 17% every year.

Ms. Sherene Azli together with H.E Mr. Mohd Hassan Bal, Malaysian Ambassador to Zagreb and Keith Pollard, Chief Editor of the International Medical Travel Journal at the IMTJ Awards 2017.

YB Datuk Seri Dr. S.Subramaniam, Minister of Health Malaysia, chaired a roundtable discussion with captains of the private healthcare industry on medical tourism and the way forward.

In 2017, the healthcare travel industry recorded a preliminary performance of RM1.3 billion*. The industry is expected to record a year-on-year growth of 16%*. Healthcare travel spending also creates sizeable multiplier effects. Malaysia has outpaced the regional industry growth with more than one million healthcare travellers, spending around RM5 billion* for medical treatment as well as non-medical expenditure such as hospitality services and tourism activities. The aim is to achieve 30% growth year-on-year by 2020.

Efforts in this area are led by the Malaysian Healthcare Travel Council (MHTC), which has introduced long-term sustainability initiatives to maintain the successful growth trajectory, in line with the three key tenets of industry facilitation, optimisation of digital marketing and sustainable growth. MHTC has set out the following strategies to drive the growth of this industry:

- Strengthening end-to-end experience from the arrival of the healthcare travellers through to their departure after treatment;
- Securing partnerships with industry players and to enhance network and relationships;
- Amplifying branding and recognition.

To effectively amplify promotion, MHTC has identified four focus countries as key target markets: Indonesia, China, Myanmar and Vietnam while continuing efforts to penetrate other important markets such as Singapore, Brunei, Bangladesh, the Middle East, India, Australia and New Zealand.

*Projected data from MHTC as at 29 January 2018, for data ending 31 December 2017.

Elite Hospitals

The Malaysian Government has further supported the healthcare travel sector by facilitating investments in medical infrastructure for hospitals, putting Malaysia on par with well-developed countries through producing well-trained medical staff and providing excellent hospital facilities.

MHTC Elite Hospitals represent the best of these health services and are internationally accredited, providing international support services for foreign patients. The international accreditation of Elite Hospitals from reputable international agencies guarantees the highest standards of quality and safety to all patients. Its services are benchmarked against the best practices in the world and provide state-of-the-art facilities and served by highly qualified medical personnel.

In 2017, Malaysian Elite Hospitals geared towards serving the demand for high-value, niche quality healthcare. Many hospitals developed specialist treatment and diagnostic faculties, comprising high-end care centres as well.

Several of these hospitals have received global and regional awards as well as certifications along the year, namely Sunway Medical Centre for orthopaedics, Prince Court Medical Centre for paediatrics and healthcare travel, TMC Fertility Centre for fertility services, and KPJ Berhad as Malaysia's hospital of the year.

Strengthening end-to-end experience

MHTC strives to create a holistic ecosystem for healthcare travellers to enjoy a seamless healthcare experience through the following initiatives:

- The establishment of representative offices in focus markets to gain faster access to the markets and facilitate potential visitors with enquiries and any healthcare travel assistance needed;
- The introduction of a Meet-and-Greet service at the aerobridge by Malaysia Healthcare Concierge and Lounge;
- Fast-tracking passport and customs clearance at the Kuala Lumpur International Airport (KLIA).

2017 was focused on smoothing the airport greeting process. As the project goes on, more initiatives will be implemented to improve the services along the value chain. Moving forward, MHTC is looking to strengthen its partnerships with member hospitals and travel agents to ensure that patients' post-treatment experience is enhanced through their Affiliate programme.

Securing partnerships with industry players to enhance networks and relationships

Recognising the overall journey as an important facet of healthcare travel, the end-to-end experience will provide a seamless journey from the moment they begin searching for information from their home countries through to their successful treatments and return home. Accordingly, MHTC has worked to create more value-for-money and attractive packages for healthcare travellers by bundling hospital services with existing deals from tour agents and airline companies. Additionally, to increase awareness on its efforts, MHTC is selecting effective distribution channels through partnerships with local travel agents while maintaining its strategic integration between airlines, in-bound travel agencies and complementary services centred around the healthcare value chain.

Amplifying branding and recognition

Invigorating the Malaysia healthcare brand and gaining mindshare is important for expanding Malaysia's healthcare travel market size. As such, the "Malaysia Loves You" campaign was launched in 2016 to effectively advocate the essential attributes of Malaysian healthcare, namely quality, accessibility, affordability and ease of communication. In 2017, this marketing pursuit was continued with the "Share My Love" campaign which took on a more contemporary and artistic approach to convey what good health means to Malaysians. The "Share My Love" campaign has featured the works of 7 local artists to inspire others in spreading the value of care and healthy living.

Capitalising on the power of social media to increase publicity, the public was given an opportunity to win prizes through a social media contest by sending in their own version of fun heart doodles this year. MHTC had since received more than 1,400 submissions for the Instagram contest.

BOOSTING MALAYSIA'S PRODUCTION AND EXPORTS OF HEALTHCARE PRODUCTS

Malaysia's healthcare exports are focused on medical devices and pharmaceuticals, since the Government has identified and listed the medical devices sector as a high-growth sector under the 11th Malaysian Plan 2016-2020. Medical devices exports have increased consistently year-on-year at the average of 14.2%. In 2017, total exports of medical devices and products hit approximately RM11.3 billion and grew by 16.8% from 2016's export value of RM9.7 billion. The total market size of medical devices in Malaysia is now US$1.4 billion, against global medical devices market worth an estimated US$324 billion.

"Pharmaceutical exports grew at an average annual rate of 8%, from RM577.8 million in 2011 to RM938.5 million in 2017."

Meanwhile, pharmaceutical exports grew at an average annual rate of 8%, from RM577.8 million in 2011 to RM737.3 million in 2016. Exports of pharmaceutical products for the year 2017 grew by 27.3% as compared to 2016 against the Ministry's target of 8%. Total export revenue hit RM938.5 million against the target of RM796.3 million.

The overall impact of focusing on Malaysia's production and exports of healthcare products is the gradual substitution of imported products, which will develop the capacity of local manufacturers, leading to an increase in export volume and value. The move is also cost-saving for the Ministry of Health (MOH).

Medical Devices

Malaysia's major export categories for medical devices are surgical and examination gloves, electromedical equipment, catheters, syringes, needles and sutures, ophthalmic lenses, medical and surgical X-ray apparatus, orthopaedic appliances and medical furniture. These devices are exported mainly to the US (23%), Belgium (13%), Germany (12%) and Singapore (9%).

The sector recorded numerous achievements during the year, including a significant increase in medical devices registration. The increase in registration is reflective of the increasing number of medical devices which are of superior quality and are safe for patient use, as regulated by the Medical Devices Act 2012 (Act 737). As of December 2017, more than 195,000 medical devices have been registered and over 2,000 establishment licences, which are company licences given to facilities, have been issued by the Medical Device Authority (MDA).

To spur the sector, MDA has been working to increase the knowledge of industry players on the regulatory requirements governing the manufacturing of medical devices in Malaysia through training sessions, awareness programmes, consultation sessions and the International Medical Device Conference held on 8-10 August 2017.

Further supporting the medical device ecosystem, the Government provided grants for the establishment of two Good Laboratory Practice (GLP) labs in Malaysia in 2016, which are MyBioScience Lab Sdn Bhd, Melaka and Makmal Bioserasi, Universiti Kebangsaan Malaysia (UKM). The GLP labs will allow local medical devices manufacturers to incur lower costs and encourage foreign manufacturers to invest in Malaysia by

Mutation study lab with automated colony counter and biosafety cabinet in Makmal Bioserasi, UKM.

providing testing facilities for their products. The two labs have commenced the OECD GLP compliance process and expected to receive their OECD GLP status in 2018.

The conference aims to obtain updates on global regulatory requirements for medical devices as well as spearheading growth of the medical device sector.

Vigilenz Medical Devices Sdn Bhd

As one of the NTP's project champions, Vigilenz Medical Devices (Vigilenz) commenced the operations of its new plant in the Penang Science Park in 2017.

The new plant will manufacture surgical sutures such as Class II sutures, hernia meshes, antibacterial wound management solutions and antibiofilm orthopaedic implants which will then be exported worldwide.

A key highlight recorded by the medical devices sector in 2017 was the conclusion of MOH's first off-take agreement (OTA) for medical devices with Vigilenz for Antibacterial Electro Activated Super Oxidized Water (Hydrocyn Aqua). The Hydrocyn product has received FDA 1510K approval.

Moving forward, Vigilenz has started the development of nano fibre wound dressing and clinical trials of antibiofilm orthopaedic implants (Orthosyn). In ensuring that its products are up to standards, the company has provided training for its staff as per the new Medical Device Regulations and Risk Management requirements. In tandem, the company has kicked off its collaboration on development research with UKM, UTM, and USM. As for its progress in exports, 2017 has seen to the export market registration in the UK and additional product registration in Australia.

Vigilenz's ISO Class cleanroom manufacturing area compliant to ISO 13485:2016, equipped with in-house microbiology laboratory.

Fresenius Medical Care Sdn Bhd (FME) regional manufacturing facility in Bandar Enstek.

Fresenius Medical Care Sdn Bhd

Fresenius Medical Care Sdn Bhd (FME) created a new milestone in the Malaysian medical devices industry when it became the first Continuous Ambulatory Peritoneal Dialysis (CAPD) manufacturer in Malaysia in 2017.

The FME regional manufacturing facility in Bandar Enstek, Fresenius Medical Care Production Sdn Bhd (FMCP) was launched in September 2017. FMCP produces haemodialysis concentrates A & B, Citrosteril (a disinfectant for haemodialysis machines), as well as CAPD Stay.Safe Link for dialysis treatment.

FME products manufactured in Malaysia meet the FME's global quality standards, providing the local market with access to stable supply of the products and ensuring continuity of treatment for patients. FME has invested close to RM80 million in its facility to date, with additional investment for expansion in the next 5 years.

(From left to right) Mr. Carsten Fischer, Chargés d'Affaires of the German Embassy, Mr. Harry De Wit, President and CEO, Fresenius Medical Care Asia Pacific, Mr. Gerhard Breith, Senior Vice President, GMQ Asia Pacific, Mr. Mahesh Nair, Senior Vice President, Fresenius Medical Care South Asia Pacific, YBhg. Dato' Seri Dr. Chen Chaw Min, Secretary General, Ministry of Health Malaysia, and Mr. Michael Wong, Managing Director, Fresenius Medical Care Malaysia at the official opening of Fresenius Medical Care regional manufacturing plant at Bandar Enstek, Malaysia.

A training on Malaysia's Pharmaceutical Regulatory System was held for 12 regulators from Tanzania, Uzbekistan, Nigeria, Thailand, Jordan, Sudan, Indonesia, Iran, Kazakhstan and Morocco which aim to promote Malaysia's Regulatory System and to build confidence towards pharmaceutical products manufactured locally.

Pharmaceuticals

Malaysia is ranked Asia's 14th largest pharmaceutical exporter, exporting to more than 50 countries including countries in Africa and South America. Its major export destinations are Singapore, Brunei, Hong Kong, Vietnam and Indonesia, with the main types of pharmaceuticals exported comprising medicaments in measured dosage forms containing antibiotics and health supplement such as vitamins and antibiotics. Despite the relatively small size of the industry and its concentration on generic medicines.

The investment climate for pharmaceuticals is promoted by the National Pharmaceuticals Regulatory Agency's (NPRA's) launch of QUEST 3+ in January 2017, an enhanced online registration system that will improve and raise efficiency of the pharmaceuticals registration process. On top of the automation of processes under QUEST 3+, NPRA has also implemented fast track registration of generic products, effectively reducing registration time to three months (90 working days) from the date of application as compared to seven months (210 working days) for other prescription drugs.

To build trust and receptiveness towards pharmaceutical products manufactured in Malaysia, training on the Pharmaceutical Regulatory System was conducted by NPRA in September 2017, showcasing the alignment of Malaysia's pharmaceutical regulatory system to international requirements. This is expected to facilitate Malaysia's pharmaceutical exports further.

> ***"Malaysia is Asia's 14th largest pharmaceutical exporter, exporting to more than 50 countries worldwide."***

The sector has also reached an important milestone with Thailand confirming its readiness to sign the ASEAN Mutual Recognition Agreement (MRA) for Bioequivalence (BE) Study Reports of Generic Medicinal Products. This leaves only one member state, Philippines, to confirm intention to sign the MRA.

The MRA eliminates the need to conduct another BE study as it would have been conducted in a listed BE Centre. Harmonising BE study requirements and eliminating technical barriers for registration of generic products within ASEAN will allow generic pharmaceuticals to gain earlier access in the region,

Strengthening the Country's Biotechnology Sector: Bringing It Home

Increasing local generic manufacturing for exports is a focus under the Healthcare NKEA of the National Transformation Programme (NTP). This ultimately spurred Malaysia's creation of a highly supportive legal, financial and institutional climate for the growth of biotechnology as well as its implementation of proactive policy measures.

"This enabling environment led to Biocon, India's largest and fully-integrated, innovation-led biopharmaceutical company to join hands with the Malaysian Government in 2010 to strengthen the country's biotechnology sector," says Srinivasan Raman, Vice President and Head of Biocon Malaysia's operations.

The company was chosen as an Entry Point Project (EPP) champion under the Healthcare NKEA after it proposed the largest investment in the Malaysian biotechnology sector to set up a high-end biopharmaceutical manufacturing and R&D facility at the BioXcell Biotech Park in Johor. Biocon Sdn Bhd was incorporated as a wholly owned subsidiary of Biocon in Malaysia to set up this greenfield facility. To date, Biocon has invested nearly US$275 million in the facility, which houses Asia's largest state-of-the-art integrated insulins manufacturing plant that is designed to manufacture insulin and insulin analogues to cater to the needs of people with diabetes in Malaysia and other global markets.

In November 2016, Biocon Sdn Bhd was awarded a contract to supply rh-Insulin cartridges and re-usable insulin pens over a period of three years under the Malaysian Government's Off-Take Agreement (OTA) initiative.

Biocon's rh-Insulin, Insugen®, manufactured at the Johor facility, is Malaysia's first locally made biosimilar product to be approved by the National Pharmaceutical Regulatory Authority (NPRA) for commercial sales in the country. Insugen® is enabling access to a safe, affordable and quality treatment option for over 3.3 million people with diabetes in Malaysia.

Biocon's rh-Insulin, Insugen® is Malaysia's first locally made biosimilar product to be approved by NPRA for commercial sales in the country.

Biocon facility in Malaysia.

The benefits of purchasing insulin from a local vendor are manifold. There are currently 3.3 million individuals currently diagnosed with diabetes, and the Malaysian Government spends nearly US$566 per year on every diabetic. These numbers are expected to multiply to a whopping 4.5 million diabetics by 2020, which will significantly impact the Government's healthcare expenditure. Locally manufactured affordable rh-Insulin has the potential to reduce the diabetes treatment cost burden and increase access to insulin therapy for diabetes patients in Malaysia.

This OTA provides assurance of public sector purchases of locally manufactured pharmaceutical products and incentivises exports. "When the Malaysian Government purchases and uses these products, it provides confidence to the export market about the safety and efficacy of these drugs. Winning the OTA thus endorses our credibility as a manufacturer of affordable yet high-quality insulin products."

To upskill the local community, Biocon employs a team of over 550, including 450 Malaysians at its insulin manufacturing plant in Johor. In addition to creating local employment opportunities, the company has trained over 240 of its Malaysian employees at its headquarters in India. "We continue to provide training to our staff in Malaysia in various areas of biopharmaceutical manufacturing, quality control, supply chain and research and development. The company also utilises local vendors to source its input materials and services as well as in the construction and set-up of its manufacturing plant," says Srinivasan.

Biocon is also making a significant contribution to build the biotechnology industry ecosystem in Malaysia. Three senior leaders from Biocon Malaysia have joined the industry-academia panel of Universiti Teknologi Malaysia and Universiti Kebangsaan Malaysia. These industry-academia collaborations enable universities to tailor their curriculum to emerging industry trends and talent requirements.

Wrapping up the conversation, Srivinasan said "the Malaysian Government's support for the healthcare sector via the NTP has shown the world how progressive policies can make a transformational impact".

aside from reducing cost of registration in other ASEAN countries.

Further strengthening Malaysia's generic pharma production, these EPP champions have invested in high technology manufacturing. A significant contribution in this sector is that the total 11 projects have garnered RM852.95 million in committed investments, led by pharmaceutical project champions such as Kotra Pharma Sdn Bhd and Pharmaniaga LifeScience Sdn Bhd.

Kotra Pharma Sdn Bhd

Kotra Pharma is undertaking three projects under the Healthcare NKEA, namely:

- The Accessible Sterile IV Export Project / Prefilled Syringe Line (PFS) with 12 products to be manufactured;
- The Metered Dosage Inhaler (MDI) Project with eight products to be manufactured under this line;
- The contract manufacturing partnership with Servier to manufacture its patented products.

Kota Pharma's Vaxcel Omeprazole 40mg Injection for treatment of duodenal and gastric ulcer, reflux esophagitis and Zollinger-Ellison syndrome.

The three projects involve an estimated investment of RM25 million for construction and development of manufacturing lines, staff training, product research and development.

Freeze dried product formulations are more stable than small volume liquid injectables and generally have longer shelf life.

The MDI and PFS lines are currently at the final stages of preparation and readiness for line inspection and audit by NPRA. Following NPRA's approval, the first product under PFS line is targeted to be commercialised in the second quarter of 2018 while the MDI products are expected for commercialisation in the fourth quarter of 2018. However, through Malaysia's contract manufacturing partnership with Servier, Kotra Pharma has already commenced exports of its products to Brunei.

A total of five OTAs have been awarded to Kotra Pharma. The drugs supplied under OTAs are for treating stomach and oesophagus problems, cardiovascular disorders, upper and lower respiratory tract infections and other intra-abdominal infections, and control of blood glucose for diabetes patients.

Pharmaniaga LifeScience Sdn Bhd

Pharmaniaga LifeScience (Pharmaniaga) is the first and only pharmaceutical Small Volume Injectable (SVI) manufacturer in Malaysia to install and utilise Lyophilisation (freeze-dry) technology following a RM21 million investment to expand its existing manufacturing facility.

The company currently has 15 products in its Lyophilisation product pipeline and manufactured pilot batches for its first four products in June 2016. Stability studies have been completed and the dossiers are undergoing final review by Pharmaniaga, after which the product will then be off for registration submission to the NPRA.

Commercialisation of the products are expected in 2018. This is expected to be followed by export to the ASEAN market in 2022, and Europe in 2024. The company expects to create an additional 21 highly skilled jobs from the expansion, with hiring expected to start in 2019.

The Government is expected to realise substantial savings by purchasing generic lyophilised products as the originator products are generally priced higher.

ADVANCING UP THE HEALTHCARE VALUE CHAIN THROUGH CLINICAL RESEARCH

Clinical research in Malaysia is led by Clinical Research Malaysia (CRM) as the centralised body managing the entire clinical research field, which also includes university hospitals. This centralisation of resources is vital in this niche space as it allows Malaysia to optimise and mobilise resources quickly and efficiently. The sector's positive trajectory has been acknowledged by international sponsors and research communities alike. This is again demonstrated by an investment value of over RM220 million since 2012 from companies conducting clinical trials in this country.

> *"Results of the study are expected to lower the cost of hepatitis C treatment from RM320,000 per patient to just RM1,200 per patient in Malaysia."*

Malaysia is successfully making its mark on the global map as a result of cutting-edge research conducted on hepatitis C in collaboration with the Drugs for Neglected Diseases Initiative (DNDi). The project is a one-of-a-kind model and will pave the way for more smart partnerships between the Government and NGOs. Results of the study are expected to lower the cost of hepatitis C treatment from RM320,000 per patient to just RM1,200 per patient in Malaysia, allowing more than 500,000 Malaysian patients suffering from hepatitis C to access affordable treatment.

On another note, the sector has also witnessed a reduction in Clinical Trial Agreement (CTA) reviews and approval timelines from three months to just five working days with the launch of the e-submission system.

Memorandum of Understanding (MoU) between C&R Research Inc and Clinical Research Malaysia signed to promote clinical trial activities in Malaysia and South Korea.

There are, however, challenges in terms of attracting more clinical research, including:

- Insufficient oncologists to take up oncology trials;
- Malaysia's involvement in mainly late-phase trials makes it less attractive to pharmaceutical and medical device companies;
- Lack of awareness and interest in the importance of clinical trials among medical professionals and the public.

The untapped field of clinical research brings numerous benefits in terms of improving patients' choices as well as raking in economic benefits to the country. Improvements in the field will provide patients with the opportunity to receive medication or treatment that is yet to be available in the market, especially expensive oncology drugs.

Besides difficulty in attracting more clinical research, the next challenge lies in ensuring Malaysia can move its activities upstream in the clinical research ecosystem. These will be mitigated by the Phase I Realisation Project (P1RP) which includes Project ACCELERATE. Both projects are spearheaded by CRM to enable Malaysia to conduct early-phase trials and eventually move into drug development and discovery.

Early-phase studies play a crucial role in the development of medicines as it investigates the effect, efficacy and safety of pharmaceutical drugs in humans. Indeed, this phase overlaps between scientific research and clinical medicine. The conduct of early-phase studies may also contribute to the transfer of knowledge and recent technologies unto Malaysians, creating new jobs in clinical research, advancing local innovations and reducing the outflow of investments – hence moving the country higher in the clinical research value chain. In fact, Phase I of the Clinical Trial Guideline was completed in November 2017. This guideline gives sponsors, investigators and trial sites an overview of the conduct of Phase I in Malaysia.

Project ACCELERATE involves collaborations across agencies, clinical research industries and universities on pre-clinical projects. CRM will also collaborate with local universities and MOH in 'bench to bedside' projects. Additionally, a trained crisis management team has been prepared to tackle any issues in relation to early phase clinical trials.

Phase I trials have attracted interest from various companies in Malaysia, out of which one company has confirmed to conduct the Phase I trial at the beginning of 2018 while another three companies are already at the site evaluation stage to consider Malaysia as the Phase I centre of their drug development program. There are at least another five currently at the feasibility stage. Furthermore, CRM is assisting Aurigene in their pre-clinical work on novel anti-cancer compounds and associated biomarkers. This pre-clinical Phase I project is expected to sensitise the local industry towards discovery and eventually lead to the manufacturing of innovator drugs in Malaysia.

In view of the need to promote the importance of clinical trials, CRM has initiated the 'I AM AWARE' campaign and Clinical Trials Day, as well as other media-led awareness activities. To date, these campaigns have enabled CRM to register more than 2,000 patients and healthy volunteers who have shown interest in clinical trials.

CRM has been actively pursuing international collaborations, for instance:

- MoU with C&R Research Inc, Korea's largest contract research organisation (CRO). This collaboration will allow Malaysia to attract more Korean biopharmaceutical companies to conduct clinical trials in this country. With this cooperation, C&R and CRM have agreed to promote clinical trial activities in Malaysia and South Korea, while providing support and resources to complement the needs of each country in terms of business development, clinical trial operations and trainings. This has resulted in CRM receiving enquiries from Korean companies to conduct clinical trials in Malaysia. Moreover, C&R Research is also looking at establishing their office here in Malaysia;
- CRM has been assisting FIND, a global health non-profit organisation based in Geneva, Switzerland with identifying clinical trials sites for a hepatitis C diagnostic kit. The collaboration will greatly widen access to hepatitis C diagnosis in Malaysia and speed up the test result for patients.

ENSURING THE HEALTH OF SENIOR CITIZENS

Apart from providing affordable and quality health services for everyone in Malaysia, the healthcare industry has to pay specific attention to the needs of senior citizens. This is consistent with the shift in the country's demographics, whereby 15% of the population is projected to be aged 65 and above by 2030, from the current 9.3%. This shift is expected to exert considerable strain on the nation's healthcare system, especially with the rising rates of non-communicable diseases worldwide.

> *"A ground-breaking Act under MOH was tabled in Parliament in October 2017 to regulate private nursing homes."*

Private Aged Healthcare Facility and Services Act

Private Healthcare Facilities and Services Act 1998 (Act 586), a legislation that regulates all professional medical centres. This is clearly insufficient to cater for the rising demand in aged care, and it has prompted the Government to propose a more specific regulation for private facilities and services for aged care. Thus, a ground-breaking Act under MOH was tabled in Parliament in October 2017 to regulate private nursing homes. The Private Aged Healthcare Facility and Services Act will set a minimum level of quality for care and services delivered at private aged care institutions, and encourages the licensing and regulation of unregistered care institutions as well as supports the elderly who choose to age in their own homes, reducing dependency among the elderly community as per World Health Organization (WHO) standards.

Sunway Shines As Malaysia's Medical Tourism Takes Off

Far sighted government policies to tap into the booming health tourism market are paying off as tourists flock to the country's shores to take advantage of the affordable yet world class medical care available in Malaysia. This is reflected in the medical tourist traffic streaming into the country with some 921,000 visitors traveling to Malaysia for medical purposes in 2016, up sharply from 643,000 in 2011.

One of the key players in the industry is Sunway Medical Centre, one of the most established and largest private hospitals in Malaysia as well as the ASEAN region. Sunway credited key NTP initiatives such as the Malaysia Healthcare Travel Council (MHTC) as having helped boost its profile in the regional healthcare tourism arena.

Dr. Michelle Mah, the Director of Business Development and Corporate Communications at Sunway Medical Centre said that the MHTC contributed greatly in promoting Malaysia as a medical travel destination of choice, and helped raise the profile of not just Malaysia but also Malaysian hospitals. This in turn helped draw in increasing numbers of foreign medical patients.

"The launch of the NTP helped bring industry players together to more effectively brand the country as a medical travel destination," she said. "It also increased focus and urgency to implement necessary measures to facilitate the development of the sector and ease travel arrangements of foreign patients. It has certainly paved the way in putting Malaysia on the world map in terms of medical tourism."

Dr. Mah added that other non-healthcare related initiatives under the NTP such as improving public transportation also helped to enhance Sunway's appeal to medical tourists. This is because improved transportation infrastructure made the Sunway City's cluster of hospitals, malls, theme parks and hotels more attractive.

"The indirect knock-on effect from the NKEA with a special focus on the development of an integrated public transportation system has resulted in creating an excellent commuting hub for medical tourists especially in Sunway City where the BRT (Bus Rapid Transit) connects the hotels, shopping malls, theme park and residences to our hospital," noted Dr. Mah.

Sunway has also worked with Harvard University and the University of Cambridge to improve its standard of healthcare and education.

Sunway Medical Centre is an elite member of the MHTC.

Sunway is also an Elite member of the MHTC which also added to its appeal. Dr. Mah said that as elite member hospital, more pathways and opportunities opened up for it to tap into foreign markets. "The affiliation with MHTC has boosted our credibility in international markets and facilitated our outreach initiatives," she said.

Dr. Mah also commended the commitment and dedication of MHTC representatives, noting that the MHTC CEO, Sherene Azli, was very supportive and helpful in supplying information and analysis on the market trends and competitors as well as promoting Sunway Medical Centre abroad.

Sunway Medical has also managed to attract medical talents residing abroad to return to Malaysia under the Returning Expert Programme (REP). This enabled it to increase its pool of specialists and deliver even more comprehensive medical services to patients. "Their return to Malaysia helped to augment the pool of medical talents for the country," she said.

Looking ahead, Dr. Mah said that Malaysian hospitals are increasingly competing in terms of standard and comprehensiveness of care. "For example, Sunway Medical now has one of the most comprehensive cancer centres, not just in Malaysia but also the region," she said. "We are also working with top institutions like Cambridge University and the Royal Papworth Hospital, Europe's top heart and lung hospital, to raise the bar in terms of the standard of care we deliver."

Sunway also recently collaborated with some of the top global universities such as Harvard University and the University of Cambridge to enhance the standard of healthcare and education in Malaysia. As part of the collaboration, Sunway Medical Centre established the Sunway Clinical Research Centre which will be the Regional Site Partner of the University of Cambridge's School of Medicine.

In terms of suggestions on how to improve the healthcare tourism landscape in the country, Dr. Mah said that the government could look into assistance in the form of grants and sponsorships for the private sector in the area of training and research to intensify research efforts and position Malaysia to be a regional leader in various medical fields.

"Shift the focus of Malaysian healthcare to quality and not just as a more value for money destination compared to our competitors," said Dr. Mah. "This will require not just investing in talent and technology, but also more active clinical research and active benchmarking on the clinical outcomes. We believe MHTC is already working on some of these initiatives."

Delivering healthcare to your doorstep

In an era when digitalisation and mechanisation of services are at the forefront, one of the NKEA's project champions, Love on Wheels is providing mobile nursing and physiotherapy services straight to the patients' doorstep or easy-to-understand medical advices remotely through a mobile app.

The company has recently developed a structured programme that is approved by the Department of Skills Malaysia to train caregivers on the knowledge, skills and attitude needed for delivering quality care to the elderly. The programme emphasises practical training and is supplemented by centre-based (theory) learning to ensure that caregivers are sensitive towards the needs of the elderly and able to detect critical health conditions. The capacity building initiative is expected to reduce dependency on foreign workers as well as lowering the cost of elderly care over the long-term.

Another initiative undertaken by Love on Wheels is the mSIHAT mobile app. Through the application, caregivers will be aware of when their services are required by the patient in real time, wherever they are in Malaysia. This application provides a platform for patients and healthcare practitioners to connect for mobile physiotherapy, nursing and caregiving. mSIHAT also assures that the practitioner is qualified and certified and that the patient has continuity in care even if attended to by multiple practitioners while maintaining the privacy and security of users' information. This service is currently available in the Klang Valley and will roll out nationwide over time. Looking ahead, given that Malaysia is expected to be an aged nation by 2030, mSIHAT can help address some of the challenges such as limited beds, overcrowded hospitals and high cost of care.

The future of aged care

The Eden-on-the-Park project, an integrated retirement and care residence resort in Kuching was completed in 2015. It comprises a 71-suite (142-bedded) state-of-the-art care complex, a 104-apartment condominium block and 14 single-storey villas.

Since its inception, the Care Centre has opened the eyes of Malaysians to what dignified senior living and aged care can be, changing the negative perception of care centres to one which is positive and supportive of a healthy lifestyle.

Eden-on-the-Park Sdn Bhd, the promoter and creator of the Malaysian Integrated Seniors Lifestyle and Care residence, is planning to replicate the concept in its first off-site venture in Kota Kinabalu, which will commence construction once development plans are approved.

Eden's Active Senior Lifestyle Apartment with its 50 metre salt water pool.

MOVING FORWARD

Healthcare travel in Malaysia is booming rapidly as the country had witnessed a positive growth trend in healthcare travel revenue over the past six years to stay on track to achieve the 2020 goal of RM2.8 billion. MHTC is raising the profile of Malaysia as the leading global healthcare destination and the industry will be strengthened as one of the country's sources of income. Plans are in place for the establishment of flagship hospitals, the positioning of Malaysia as Asia's leading hub for fertility and cardiology, and the introduction of high-end medical packages for healthcare travellers.

In terms of healthcare exports, the Government should consistently engage with the industry to understand its challenges and needs. This will also help the balance between supply from local manufacturers and demand from MOH. Alliance between the two will ensure that production is aligned with the relevant national goals and health policy. Moreover, greater synergy between the Industry Pharmaceutical Master Plan, National Medicine Policy and National Healthcare Plan is required to achieve a strong multiplier effect for the pharmaceutical industry.

The private sector should also focus on market expansion for large players and developing niche strategies for small players. Local manufacturers must be able to differentiate their products and services in some unique way and create a stronger and competitive ecosystem by systematically enforcing their brand presence.

CRM will continue working on increasing public-private partnership (PPP) in oncology to optimise the uptake of oncology clinical trials in Malaysia. This will enable oncologists from private hospitals to conduct trials in MOH hospitals. CRM will also continue working with the Institute of Medical Research (IMR) and other companies in pre-clinical collaborations to drive a turnover to early phase clinical trials. Additionally, the organisation will promote Malaysia as a clinical trial hub in Asia through participation in international congresses, meetings and social media.

To bolster the elderly healthcare initiative, the industry should consider an integrated financial system and a stronger financial support, such as long-term care insurance and reverse mortgage, to ensure sustainability for the ageing population in utilising aged care facilities.

The future of the Malaysian healthcare industry will increasingly hinge on the adoption of e-Health, in line with the Industrial Revolution 4.0 concept to further modernise healthcare services and unlock more growth opportunities. This will also require appropriate regulations to maximise the benefits of using technology in healthcare.

PROVIDING INCLUSIVE AND SUSTAINABLE FINANCIAL SOLUTIONS

YB DATUK SERI JOHARI ABDUL GHANI
Minister of Finance II

Guided by regulators and market-led efforts, the Financial Services NKEA has achieved significant progress in developing Malaysia's financial industry, especially in improving her regional competitiveness in line with the financial system needs of a high-income nation. The Government has also outlined three strategic areas to further strengthen Malaysia's economic resilience while driving inclusive and sustainable economic growth for years to come. These comprise ensuring well-distributed economic growth and development to provide equal opportunities to those in small townships and rural areas; positioning Malaysia as a competitive market for the digital economy; and leveraging financial technology as an enabler to fortify the resilience and sustainability of the financial system.

The NTP has been contributing to these areas, with this NKEA paving the way for universal access to insurance for the rakyat, while regulators and market players have rapidly taken up opportunities presented by financial technology. Other indicators, such as the value of the capital, equity and debt markets, the fund management industry's Assets under Management (AuM) and Malaysia's share of global Islamic assets under management also reflect the continued resilience and global prominence of our financial system. As at the end of the year, the value of the capital, equity and debt markets amounted to RM3.2 trillion, RM1.9 trillion and RM1.3 trillion respectively, while AuM stood at RM776.2 billion. Of the US$71 billion global market value of Shariah assets, Malaysia commands a 30% share and is also the global leader of sukuk issuances. These contributed to the RM73.9 billion in GNI created by the NKEA in 2017, accounting for 6% of total GNI generated.

Furthermore, the Malaysian financial system has become more regionally integrated to support stronger economic and financial linkages, as reflected by the presence and activity of Malaysian commercial banks in ASEAN. Beyond banking integration, other initiatives to strengthen economic and financial integration in ASEAN include the ongoing promotion of local currency settlement arrangements between ASEAN countries with banks serving as key enablers in these mechanisms, the deepening of regional financial markets, increasing interconnectedness and safety of payment systems as well as enhancing financial inclusion.

The banking industry is facing rapid and irreversible forces of change across technology, customer behaviour and regulation. The effect is that the industry's current shape and operating models may no longer be competitive and sustainable in the long-run.

The Ministry fully believes that with proper harnessing, technology will help to broaden retail investor participation and stimulate more innovative, market-based financing options. The digitisation of the financial services value chain will also make it easier for consumers to access financial services. This will help address funding challenges faced by the Malaysian business community, especially for the micro, small and medium-sized enterprise segment and in the long-term, further enriching our financial services industry in tandem with our transformation into a high-income nation by 2020.

ENCOURAGING FINANCIAL PROTECTION IN AN INCLUSIVE MANNER

Insurance and takaful penetration in Malaysia has ranged between 54% and 56% between 2012 and 2017. Bank Negara Malaysia (BNM) targets to increase this to 75% by 2020. To increase the uptake of insurance and takaful among Malaysians, BNM has been undertaking a number of initiatives. This includes working with the insurance and takaful industry to introduce a diverse range of affordable, accessible and simple products intended to meet the needs of the underserved household segment. In addition to increasing insurance and takaful coverage among Malaysians, the initiative is also expected to heighten awareness of insurance and takaful over the longer term.

Another key initiative is to diversify distribution channels for insurance products. The insurance and takaful industry has begun offering life insurance products through direct channels since July 2017, particularly through the digital space. As a result, protection-focused products are now available via cost-efficient distribution channels. This will enable the development of product comparison websites and further catalyse innovation for protection-focused products.

EMBRACING DIGITAL FINANCE AND REINVENTING THE FUTURE

Following the new peer-to-peer (P2P) financing framework which came into effect on 2 May 2016 and the registration of financing platform operators, RM37.15 million of financing has been issued through these platforms. The introduction of P2P financing follows the launch of equity crowdfunding (ECF) in 2015, making it the second market-based financing asset class in Malaysia. Since the operationalisation of the ECF market in mid-2016, 37 issuers have raised a total of RM32.74 million through ECF operators as of December 2017.

In 2017, the Securities Commission (SC) introduced the Digital Investment Management framework, setting out licensing and conduct requirements for the offering of automated discretionary portfolio management services to investors, making investments affordable and accessible to everyone, at all stages of their lives.

This also calls for the evolution of a more comprehensive ecosystem for innovation which includes incubator programmes that are proving to be highly successful in helping entrepreneurs commercialise ideas and scale up companies. Such programmes can significantly reduce the cost of innovation for firms and risks for financiers and risk managers such as insurance providers. Malaysia's well-developed institutions also play a key role in partnership with financial institutions to support innovative financing solutions.

“Since the operationalisation of the ECF market in mid-2016, 37 issuers have raised a total of RM32.74 million through ECF operators as of December 2017.”

In an effort to energise the digital agenda for Malaysia's capital market, SC through its aFINity (alliance of FinTech Community) outreach programme has prioritised engagements with start-ups, technopreneuers, incumbent capital market participants, sectoral players and other stakeholders. It also launched Engagement Labs in 2017 with interested parties to delve into the key aspects of digital business and raise understanding in its deployment in the Malaysian capital market.

On its part, BNM has enhanced its regulatory approach to digital finance with the introduction of the Regulatory Sandbox on 18 October 2016. Under the Sandbox, financial institutions regulated by BNM and fintech companies looking to carry out businesses regulated by BNM may be granted certain regulatory flexibilities to experiment with innovative solutions in a production or live environment accompanied by appropriate safeguards. A Sandbox may be deployed for a period not exceeding 12 months, and thus six fintech companies have been approved to test their solutions in the Sandbox.

To attract more digital natives, Bursa Malaysia has refreshed its BursaMktPlc online platform which is aimed at improving financial literacy, educating and empowering investors to participate in the next generation of growth and creation of economic value. The website contains information about the Malaysian financial markets, including research reports, and serves to equip potential investors with knowledge on capital markets and provide experienced investors with tools to make investment decisions.

BUILDING A SUSTAINABLE SECURITIES CAPITAL MARKET

The equity capital market remained resilient in 2017 with support and collective efforts from the SC, Bursa Malaysia and industry players who work together to build a vibrant, robust and competitive marketplace with a continued focus on sustainability. In addition to expanding the market's range of tradable products, efforts are centred on facilitating greater market efficiency and accessibility, thus widening Malaysia's footprint in the regional marketplace.

The equity market has recorded significant gains since 2009, driven by Malaysia's stable economic growth. The FBMKLCI has risen by 105% during the period, with market capitalisation increasing by 187% and Average Daily Value (ADV) recording robust growth of 105%. The market has also recorded net inflows from foreign institutions of RM16.5 billion during the period from January 2010 to December 2017.

Total capital raising through the capital market amounted to RM146.7 billion in 2017. Primary market issuances amounted to RM132.1 billion, with a total of RM124.9 billion raised in the corporate bond and sukuk market, and RM7.4 billion raised via new equity listings. Notable IPOs for the year include Lotte Chemical Titan Holding Bhd (RM3.8 billion) and Eco World International Bhd (RM2.6 billion). RM14.5 billion was also raised via the secondary market through rights issues and private placements. Since 2010, the total capital raising in the capital market has reached close to RM900 billion.

As part of the amplified efforts to ensure a supportive market for issuers and investors, on 25 May 2017 Bursa Malaysia launched the Mid- and Small-Cap (MidS) Scheme, a platform to provide independent analyst coverage by licensed research houses for an inaugural batch of 100 mid- and small-cap public-listed companies (PLCs).

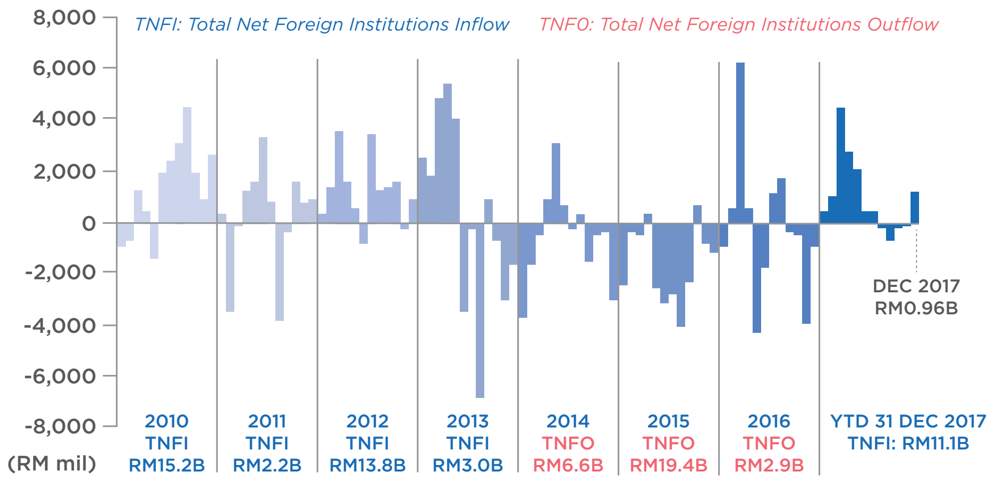
Malaysia Equity Market Growth from January 2009 through December 2017

FBM KLCI	+ 105%
Market Capitalisation	+ 187%
ADV	+ 105%
Market Foreign Shareholdings	+ 2.4 percentage points
Foreign Instituions Net Flow	2017 (inflow) **RM11.1 billion** 2014 - 2016 (Outflow) **RM28.9 billion** 2010 - 2013 (Inflow) **RM34.3 billion**

Source: Bursa Malaysia MIS

Foreign Institutions Net Inflows
January 2010 - December 2017

RM16.5 billion



Source: Bursa Malaysia MIS

ADVANCING MALAYSIA'S GLOBAL LEADERSHIP IN ISLAMIC FINANCE

In collaboration with the financial industry, BNM issued a Strategy Paper on Value-based Intermediation (VBI) in July 2017. VBI outlines a holistic approach for the Islamic finance industry to deliver the intended outcomes of Shariah finance. This includes processes and outcomes that generate positive and sustainable impact on the economy, community and the environment.

> *"Malaysia already offers comprehensive Islamic capital market (ICM) capabilities with its Islamic funds and sukuk markets ranked as the largest in the world and supported by a sizeable Islamic equity market."*

The initial focus of VBI will be its implementation within the Islamic banking industry. Subsequently, it will be expanded to the takaful industry and other areas of the financial sector.

In line with the recommendation under the Financial Sector Blueprint, which seeks to position Malaysia as reference centre for the offering of Islamic financial products and services, BNM has also embarked on a Shariah Standards initiative. This initiative aims to develop a contract-based regulatory framework that is underpinned by standards on Shariah contracts which contain guidance on sound practices and effective governance.

From 2013 to 2016, 11 Shariah standards have been issued covering the policy documents on murabahah (cost and mark-up), mudharabah (profit sharing partnership), musyarakah (profit & loss sharing partnership), istisna' (construction), tawarruq (commodity trading), kafalah (guarantee), wakalah (agency), wadi'ah (safe custody), hibah (gift), qard (loan) and ijarah (lease).

The first half of 2017 saw the release of another policy document on wa'd (promise) and two exposure drafts on rahn (collateral) and bai' al-sarf (currency exchange) to the industry. The finalised policy documents on rahn and bai' al-sarf, which will be issued by the end of 2017, will mark the completion of the Shariah regulatory standards compendium which is widely applied in the Islamic finance industry.

Malaysia also continues to capitalise on the availability of Shariah compliant assets in its capital market. Furthermore, it is regulated on internationally benchmarked securities laws and practices. Malaysia already offers comprehensive Islamic capital market (ICM) capabilities with its Islamic funds and sukuk markets ranked as the largest in the world and supported by a sizeable Islamic equity market. The Islamic capital market nevertheless requires significant new drivers globally to build greater scale and elevate it to the next phase of growth. In this regard, the growing demand and preference for Islamic fund and wealth management services represent a new growth opportunity for ICM.

In view of this, the SC launched a five-year Islamic Fund and Wealth Management Blueprint in January 2017 to drive greater development and growth of Malaysia's Islamic capital market. Key initiatives will be operationalised based on three mutually reinforcing strategic thrusts. These will strengthen Malaysia's positioning as a global hub for Islamic funds, establish Malaysia as a regional centre for Shariah-compliant sustainable and responsible investment, and develop Malaysia as an international provider of Islamic wealth management services.

Leveraging on its strength in the Islamic capital market, the SC also developed a Sustainable and Responsible Investing (SRI) Fund framework, which will be instrumental in developing and branding Malaysia as a regional SRI market, further cementing the country's position as the largest SRI market in Asia. The framework details out the requirements that will have to be complied with by SRI funds, including additional disclosures.

Bursa Malaysia continued to register a healthy breadth of Shariah-compliant securities on the Main and ACE Markets. As of 31 December 2017, 76% of the 902 PLCs on Bursa Malaysia are Shariah-compliant with Shariah market capitalisation accounting for 60.5% of the total market capitalisation. Additionally, since its launch in September 2016, Bursa Malaysia-i has signed up 14 Islamic Participating Organisations (POs), almost half of the 30 POs currently registered with Bursa Malaysia Securities. POs are companies which carry out the business of dealing in securities.

ENABLING CAPITAL MARKET ACCESS TO SMALL PLAYERS

Given the importance of small- and medium-sized enterprises (SMEs) in driving Malaysia's economy, regulators have recognised the need to develop a supportive capital market-based fundraising mechanism for this important business segment. In line with this, Bursa Malaysia launched the Leading Entrepreneur Accelerator Platform (LEAP) on 25 July 2017. The first of its kind in ASEAN, designed solely for SMEs and sophisticated investors, the new market aims to provide SMEs with a fast and efficient fund-raising platform and visibility through the capital market. This initiative will contribute to enhancing SME fundraising activities in Malaysia.

The LEAP market offers several benefits to its various stakeholders. For example, it benefits issuers by providing an alternative and less costly platform for fundraising and provides sophisticated investors with access to a wider pool of potential investments that may yield high returns or provide investment diversification opportunities, while allowing advisers to enhance their profile and access additional revenue streams. Bursa Malaysia's launch of its MidS Scheme also served to catalyse the LEAP market ecosystem.

Moreover, two new indices were introduced as part of an initiative to track the performance and generate more interest in mid- and small-cap PLCs. The inclusion of the FTSE Bursa Malaysia MidS Cap Index and FTSE Bursa Malaysia MidS Cap Shariah Index into the FTSE Bursa Malaysia Index Series is in line with global trends where investors are now allocating their investment portfolio strategically into the mid- and small-cap segment. Mid- and small-cap stocks offer attractive growth prospects and provide greater opportunity for active managers to make informed decisions within the sector. Bursa Malaysia aims to further grow the two new equity segments and continue to drive sustainability in the marketplace by bringing new investable products to the market.

LEAP Market exchange of MoU and agreement on 25 July 2017.

ENABLING CONTINUED GROWTH OF THE CAPITAL MARKET

Given the overall size of the capital market, which now stands at more than RM3.2 trillion, the SC is establishing the Institute of Capital Market Research to further accelerate the market's growth momentum.

The Institute will benefit industry and policy makers by facilitating the introduction of innovative products and services through greater applied research, identifying new growth areas, developing more in-depth and rigorous research on capital market trends and issues, providing more analytical thinking for policy formulation as well as enhancing talent in the capital market via industry collaborations and strategic partnerships.

The Institute will also function as the central repository and reference point for capital market data and disseminate comprehensive statistics to facilitate analysis for the benefit of various industry participants, including undergraduate and post-graduate students undertaking research projects relating to financial markets, business and the economy.

MINISTRY OF FINANCE STEERING FINANCIAL SERVICES SECTOR TO A NEW ERA

Malaysia's financial services sector has emerged as a primary source of financing for the private sector to perform businesses and promote economic growth, says Datuk Siti Zauyah Md Desa, Deputy Secretary-General (Policy) of the Ministry of Finance. The financial services subsector constituted about 14% of the services sector, and the services sector, in turn, made up nearly 53% of Malaysia's GDP between 2010 and 2016.

Datuk Siti Zauyah says that the robust state of the financial industry is the outcome of careful planning and implementation of Government initiatives designed to strengthen the sector. These include the Financial Services NKEA under the NTP, the Financial Sector Masterplan (FSMP) 2000, Financial Sector Blueprint 2011 – 2020 (FSBP), the Capital Market Masterplan 2 (CMP2) and measures taken under the 11th Malaysia Plan (11MP).

Moves taken to develop the financial industry in the country include initiatives to improve levels of governance, competitiveness, regional integration and inclusion. The Government has also taken measures to make financial services more supportive of entrepreneurship and innovation.

Datuk Siti Zauyah adds that in order for Malaysia's financial service sector to be more competitive, it needed to be efficient and inculcate integrity. "The sector has to have a good communication strategy to educate the stakeholders and this could be done effectively through digitalisation and online transactions."

She also says that Malaysia needs to establish strategic partnerships with countries in the region, for example Islamic Finance and Public-Private Partnership for Infrastructure Development, to bridge the gap between the demand and supply of capital.

"At the same time, we need to distribute the relevant risks and return in a manner which is fair for all parties involved and more importantly, incentivise good operational performance," says Datuk Siti Zauyah.

The Deputy Secretary-General also notes that with the progressive liberalisation achieved in the banking, insurance and capital market subsectors, the Malaysian financial landscape will be further enhanced.

"The more meaningful participation of ASEAN financial institutions in the domestic financial system and capital markets, coupled with greater operational flexibilities accorded to these institutions, will further promote a more competitive and dynamic domestic financial system that will support economic growth and development," she says.

One of the challenges facing the industry is the increasing popularity of FinTech (financial technology) companies which is disrupting the way traditional banking is being done.

"This creates a big challenge for traditional banks because they are not able to adjust quickly to the changes – not just in technology, but also in operations, culture, and other facets of the industry," says Datuk Siti Zauyah.

Another concern surrounding the rise of FinTech is the potential tax leakages and the challenge to tax revenue generated from e-commerce and other FinTech transactions which can easily bypass regulatory requirements.

Nonetheless, the Malaysian Government has positioned financial services to take advantage of disruptive technology such as FinTech in line with global trends. This includes the introduction of a conducive regulatory environment that harnesses the potential of FinTech to modernise, deepen and increase the competitiveness of the domestic financial and funding markets.

"FinTech is touted as a game changer, the revolution that is taking the financial services industry into a new era," says Datuk Siti Zauyah.

Datuk Siti Zauyah Md Desa, Deputy Secretary-General (Policy), Ministry of Finance.

MOVING FORWARD

The Malaysian economy has proven its resilience amid the uncertain global economic environment by advancing its strategic focus areas in the financial industry. In embracing the new normal, regulators and regulations have proved their ability to adapt. As there is a need for greater certainty around the regulatory agenda, policy must continue to empower the role of the financial system as a positive contributor to economic growth as well as an enabler for inclusiveness.

Financial institutions will now need to sharpen their strategic focus to remain relevant amid emerging competitors, shifting demographics, rising customer expectations and changing regulations. A conducive and robust business environment will remain pivotal to maintain the growth and sustainability of the industry.

AGRICULTURE

BRINGING MALAYSIAN FARM PRODUCTS TO THE WORLD

YB DATO' SRI AHMAD SHABERY CHEEK
Minister of Agriculture and Agro-based Industry

Agriculture initiatives under the NTP have adopted a bold approach aimed at extracting value from a sector traditionally seen as the poor man's sector. In contrast, the Government sees agriculture as a high-yielding activity which can leverage Malaysia's rich natural resources and catalyse economic growth, contributing to employment, income generation and food security.

With this in mind, the Agriculture NKEA marks a shift from subsistence farming towards agribusinesses, facilitating the production of high-value products for export. This contributed to the RM73.6 billion in GNI generated by the agriculture sector in 2017, an achievement which has already surpassed the roadmap target of RM49 billion by 2020. This has been driven by the growth of the processed food sector, aquaculture segments and herbal products, as well as the development of agriculture SMEs through the anchor company model to take up NKEA projects and provide income-generating opportunities for smallholders.

In the processed food sector, we recorded the development of 154 SMEs and RM511.21 million of sales to support anchor companies along the full value chain in 2017, the highest number recorded since 2015 when we initiated the SME development programme. This exceeds the targets of developing 40 SMEs and generating RM320 million in processed food sales for the year. To date, 323 SMEs have been developed with RM1.1 billion in sales generated.

Meanwhile, the shrimp farming industry has generated more than RM2.7 billion worth of production since the establishment of the Integrated Zone for Aquaculture Models (IZAQs) project. Annual shrimp production stood at 25,399 tonnes in 2017, compared with 10,464 tonnes in 2012. Aligned with agriculture industry norms, the aquaculture sector is affected by the risk of disease and the need to ensure minimum standards. In view of this, the Government is undertaking various efforts to maintain quality and boost aquaculture production, such as to allow companies to import shrimp brood stocks from approved sources in Thailand, Singapore, Brunei and the US, at the same time requesting anchor companies to adopt the Malaysia Good Agricultural Practice (MyGAP).

In the herbal sector, 27 products have undergone pre-clinical and clinical trials since 2011, of which three have been completed and launched for use in the nutraceutical and cosmeceutical industries. The growth of this segment, in turn, continues to spur demand for contract farming of local botanicals under the herbal cluster initiative which commenced in 2012, with total sales from the herbal cluster reaching RM5.25 million in 2017 against just RM1 million at its start.

With new projects still taking off, such as in fresh milk production, as well as continued momentum of existing projects, I am confident that the agriculture sector remains well-positioned to complete its transformation in line with our socio-economic agenda under the NTP.

DEVELOPING AGRICULTURE SMEs

The Ministry of Agriculture aims to consolidate the local processed food industry by developing an integrated food park facility, under a project to strengthen export capability of the processed food industry. The food park will produce ready-to-eat packaged food by SMEs to be marketed and distributed by anchor companies that will also obtain product certification, package, brand, market, manage suppliers and help develop small fragmented players through apprenticeship training.

"As of 2016, the percentage of local fresh milk market share stood at 61.24% against the market share of imported fresh milk."

An anchor company under the food park project, Holstein Milk Sdn Bhd, is presently distributing its dairy products under the "Farm Fresh" brand, mostly through home vendors instead of hypermarkets. To date, the company has signed up 350 home vendors and 25 stockists. Holstein's decision to utilise home vendors provides job opportunities to more than 300 people, besides increasing the national market share of local fresh milk. As of 2016, the percentage of local fresh milk market share stood at 61.24% against the market share of imported fresh milk.

Under this project, 154 SMEs have been developed against the target of 40 SMEs in 2017 alone. Sales from these SMEs have reached RM511.21 million, 50% more than the original target planned.

Another project undertaken in this NKEA is the transformation of seaweed farming in Sabah into a high-yielding, commercial-scale business by clustering farms under the seaweed mini-estate initiative which is spearheaded by the Department of Fisheries (DoF). To date, five mini estate projects and four cluster programmes are actively operating, providing valuable income-generating opportunities to 615 seaweed farmers.

Operators have, however, encountered challenges such as production and demand issues, land disputes, as well as low seaweed price levels. In terms of production, Semporna has been identified as an ideal habitat for the best-quality seaweed and efforts have been made to develop the optimal technique to grow seaweed. However, gains in terms of yield quality and quantity have been offset somewhat by a lack of standardisation in implementing good agricultural practices. While MyGAP standards are in place, not all farmers implement the standards strictly.

Furthermore, the State Government is unable to gazette and allocate areas for seaweed farming

The PAKAR programme recorded 3,441 participants in 2017.

and instead, leases out areas for short periods of less than five years. This scenario limits the DoF's ability to attract seaweed growers to participate in this programme. There is also only one active seaweed processing company for growers to sell their produce to, which weighs down demand, affects pricing and restricts growers' compensation. In mitigation, the Ministry is looking to expand the pool of entrepreneurs to buy and process seaweed to avoid the current monopoly which impacts pricing. Moving forward, the Ministry is planning to produce the National Seaweed Blueprint based on a study that was conducted in 2016 in collaboration with a local university to better address the industry's supply-demand dynamics.

The Pasar Komuniti dan Karavan (PAKAR) initiative was introduced under the Wholesale and Retail NKEA in 2010 to modernise the traditional concept of markets by introducing more up-to-date trading methods and creating cleaner and more comfortable environs for traders and consumers. The initiative was transferred to the Agriculture NKEA in 2013, following which 10 PAKAR sites in Manjung, Jengka, Pekan, Bera, Mersing, Paroi, Kuala Kedah, Kota Belud, Keningau and Kuching were established. In 2013, 1,865 people took part in this initiative, with this number almost doubling to 3,441 in 2017. In 2017 alone, revenue generated from the PAKAR programme reached RM103 million, exceeding the target by 24%.

To boost participation, the Ministry is working to improve the coordination of agricultural marketing activities by private sector and Government entities to enhance marketing and undertake new market development for Malaysia's agricultural produce moving forward.

BOOSTING EXPORT OF AGRICULTURE GOODS

The herbal product project aims to take advantage of Malaysia's rich biodiversity to establish the country as a producer of high-value herbal products in the global market for traditional medicines and supplements. A total of 27 high-value herbal product development initiatives have undergone pre-clinical and clinical studies, whereas a selection of herbal companies exhibiting strong potential in terms of product offerings, command of the market as well as financial strength have been identified and appointed as anchor companies. These companies are offered grant incentives to finance their product development through pre-clinical and clinical studies. As of October 2017, 14 companies have been identified as anchor companies under this project.

> ***"From 2011 to 2017, Malaysia has exported EBN products mainly to Hong Kong (RM507.51 million), followed by China (RM360.57 million) and Taiwan (RM166.71 million)."***

The product development pipeline for 2017 involved 14 herbal products that have entered pre-clinical studies, while 11 products have commenced clinical studies. Additionally, four products have completed pre-clinical and clinical studies, which will expand the market for high-value herbal products both domestically and internationally. A notable company in this field is BioAlpha, a botanical drug producer and owner of a herbal park. Focus Malaysia has listed BioAlpha as one of the fastest-growing companies (for companies with market capitalisation below RM500 million) on Bursa Malaysia in 2017. BioAlpha was publicly listed in 2015 and has expanded into new markets.

The DoF also leads the Integrated Zone for Aquaculture Models (IZAQs) project, which focuses on improving the production of fully certified export-quality shrimp for premium markets. Smallholders and SMEs are continually engaged to participate in this project through contract farming or profit-sharing agreements with anchor companies. As of 2017, anchor companies in the IZAQs project have committed to producing 9,264 jobs in the sector. The Government's capital expenditure of RM300 million in this sector has also catalysed more than RM2.7 billion worth of shrimp production.

Nevertheless, this project faces a unique challenge as most of the ponds are in remote areas. For instance, one of the highest-producing anchor companies, Pegagau, which operates in Kalabakan, 90 km away from Tawau in Sabah and produced 2,651 tonnes of shrimp in 2017, faced issues in

Milking New Opportunities

Dairy farming is something most people would associate with New Zealand, rather than tropical Malaysia. Yet Malaysia's own The Holstein Milk Company has not only managed to surpass foreign established brands in the fresh milk category, it has helped spur a new development of a sustainable dairy industry as well as significantly increase incomes of dairy farmers around the country. The Holstein Milk Company, one of Malaysia's premier diary brands, has also helped to improve the quality of fresh milk in the market as their products are made of pure fresh milk directly from the farm, free from any form of preservatives, unlike most imported brands sold as fresh milk which are either reconstituted from powder or milk solids or treated with preservatives.

Holstein has a 39% market share for fresh milk in Malaysia with its "Farm Fresh" brand, the No. 1 brand in the fresh milk category. Holstein is an anchor company under the Agriculture NKEA, which aims to develop dairy farming clusters in Peninsular Malaysia as well as develop small entrepreneurs as distributors.

Started by Johor-based entrepreneur Loi Tuan Ee about seven years ago, the company received strong support and backing from the Government including investments from national strategic investment firm, Khazanah Nasional, which now holds a 30% stake in the company. Holstein also received a RM10 million soft loan from the Government which has aided in funding for initial equipment investment.

Holstein currently produces about one million bottles of milk a month from approximately 4,000 heads of cattle. It has two farms — one in Kota Tinggi, Johor, and another at the Muadzam Shah Cattle Research and Innovation Centre in Pahang. The latter was started in 2014 with assistance from the East Coast Economic Region (ECER) and MARDI (Malaysian Agricultural Research and Development Institute). New farms and processing plants expansion are underway.

"Malaysia is a very conducive location to set up a business and the Government has been very supportive," says Loi.

Loi at his dairy farm in Kota Tinggi, Johor.

Holstein has also played a role in lifting the incomes of dairy farmers in Malaysia, contributing to the long-term sustainability of the industry. About 30% of its milk is sourced from contract farmers and Holstein currently pays them a fair price of about RM2.80 per litre as compared to RM1.20-RM1.40 per litre previously. By doing so, Holstein has managed to put an additional RM3,000-RM15,000 a month into the pockets of contract dairy farmers around the country.

"Malaysia is a very conducive location to set up a business and the Government has been very supportive."

"In the dairy industry context, we are of the view that the Agriculture NKEA has succeeded beyond expectations," says Loi. "For decades, the price of raw milk has been suppressed by foreign processors at RM1.20 -RM1.40 per litre. Today, it is RM2.80 per litre. This is life changing for the local dairy farmers. Many farmers have gradually increased their herds to produce more milk as they can earn more profits."

Loi says that the potential for dairy in Southeast Asia is vast as it is a multi-billion dollar market. "The Malaysia market is significantly smaller compared to Indonesia and Vietnam," he says.

The dairy entrepreneur has several suggestions to enhance the industry, especially in terms of the governance of the milk industry. He believes there needs to be a central agency that coordinates all national dairy development programmes. Loi also urges that the label "fresh milk" should not be allowed for imported processed liquid milk. "This will allow the Government to establish better pricing for local farmers who produce real fresh milk," he says.

Loi adds that he is optimistic about the long-term future of the dairy industry as consumers are getting more discerning and aware about the benefits and differences between fresh milk and powdered milk.

He adds, "With the correct dairy development policies in Malaysia, more private sector involvement and parties will invest in the sector to improve the quality of farming and increase fresh milk products.

"With concerted efforts amongst Government agencies to educate Malaysian parents to feed their children fresh milk instead of powdered milk, even if three out of 10 kids were to switch, it will translate to a growth of RM500 million for the fresh milk market. This translates to 70 million additional litres of fresh milk which will require 20,000 dairy cattle to produce.

"More Malaysians today are moving towards the consumption of healthier and more nutritious food," he says. "The long-term future of the industry in the country is extremely good."

receiving electricity supply. This delayed the project for almost a year. However, strategic intervention and monitoring from federal agencies resolved the operational issues, enabling the farms to operate according to projected targets.

On the other hand, upstream edible birds' nest (EBN) production and development of high value-added downstream products, driven by the Department of Veterinary Services, has recorded significant achievements since its commencement. From 2011 to 2017, Malaysia has exported EBN products mainly to Hong Kong (RM507.51 million), followed by China (RM360.57 million) and Taiwan (RM166.71 million). As of 2017, 15 companies under the third batch of exporters are currently being audited by the Certification and Accreditation Administration of China (CNCA), while the number of existing companies that have been approved to export products stands at 19. The total export for EBN products reached 385.44 tonnes in 2017, exceeding the target of 270 tonnes.

A challenge faced by this initiative was the export restrictions on EBN products due to an avian influenza outbreak in Kelantan during the year. Although China lifted its export ban on 15 June 2017, the epidemic risked Malaysia's reputation as an EBN exporter and has required stricter monitoring of the implementation of MyGAP standards to ensure EBN producers comply with the highest standards.

Meanwhile, under a project to upgrade the industry's capabilities to produce premium fruit and vegetables, the local fruits and vegetables export sector has seen exports of fruits rise from RM630 million in 2011 to RM1.09 billion in 2016, led by exports of watermelon and durian mainly to Singapore and Hong Kong, while vegetable exports increased from RM750 million in 2011 to RM1.5 billion in 2016, led by tomato and cucumber exports to Singapore and the UAE. In fact, the durian to China reached RM18 million in 2016. The local premium fruits and vegetables export project leverages existing Permanent Food Production Zones to boost the production of shortlisted fruits and vegetables and catalyse the sector holistically.

The main complication faced by this project is limited market access to other countries. Nevertheless, federal agencies led by Department of Agriculture are in constant negotiations with their counterparts in target markets such as China, the US, Australia and Japan. Among results of this effort is the signing of a protocol on phytosanitary requirement in May 2017 to export pineapples to China, allowing Malaysia to export 12,000 tonnes of pineapples worth RM40 million annually to China. Currently, Malaysia exports RM160 million worth of pineapples mainly to Singapore, Iran and the UAE every year.

Working visit by YB Dato' SrI Ahmad Shabery Cheek to a manufacturer of 'daun belalai gajah' extract.

MOVING FORWARD

The Ministry of Agriculture has developed the National Dairy Industry Development Programme (NDIDP) 2017-2020 to raise milk production by an additional 20 million litres by 2020 through the import of 10,000 heads of dairy cattle. In 2017, funding was allocated for this programme on a pilot basis, covering the development of Muadzam Dairy Valley and upgrading of dairy farms in Segamat in Johor and Gemencheh in Negeri Sembilan. Work on this project is expected to begin in January 2018. An additional 4.5 million litres of milk is targeted to be produced by August 2018 (19 million litres for the full year), with 28 million litres to be achieved by December 2019.

Separately, recognising the importance of certification to ensure quality control, the Ministry will make MyGAP certification compulsory throughout the agriculture industry and aims for all companies to be certified by 2020.

TOUCHING LIVES THROUGH PUBLIC SERVICES

YBHG TAN SRI DR. ALI HAMSA
Chief Secretary to the Government

Over the course of the NTP, the Public Service Delivery Transformation (PSDT) SRI focus areas have evolved from improving the Government's services to create a business-conducive environment to ensuring that Malaysia's public services effectively address the rakyat's key concerns. This has been achieved through holistic activities which focus on maximising outcomes and optimising resources. This is in line with our National Blue Ocean Strategy (NBOS) which was introduced in 2009 with the aim to increase collaboration across Ministries, Departments and Agencies (MDAs) to implement high-impact citizen-centric projects rapidly at low cost.

As a testament to these initiatives, Malaysia was ranked second out of nine ASEAN countries and 15th globally for its efficiency in Government spending in the World Economic Forum's Global Competitiveness Report 2017-2018. Globally, Malaysia's ranking is ahead of some European and other Asian countries such as Finland, Norway, China, Iceland, Sweden and Japan.

To date, more than 100 NBOS initiatives have been implemented, addressing a wide range of socio-economic areas and providing game-changing public services to the rakyat. These include the Urban Transformation Centres (UTC) and Rural Transformation Centres (RTC) which serve as one-stop premises which provide a range of integrated Government services for the rakyat's convenience and for efficient utilisation of public resources.

Under the PSDT SRI, the Government is focusing on transforming the delivery of public health services to the rakyat by introducing LEAN Healthcare initiatives. Initiated as a pilot project in Hospital Sultan Ismail, Johor Bharu in 2013, significant improvements in reducing waiting time as well as congestion at the hospital prompted the expansion of LEAN Healthcare to all 133 hospitals nationwide in phases.

There are 52 hospitals under the Ministry of Health (MOH) which have implemented the LEAN Healthcare initiative in their various departments. MOH aims to expand the LEAN methodology to all hospitals nationwide.

Further to this, the Government has also embarked on various transformation led by Public Service Department to enhance and expand digitisation of public services. A total of 1,432 transformation initiatives, including high-impact initiatives such as the 1Malaysia Customer Service of Civil Servants (1SERVE), 1Malaysia Civil Service Retirement Support (1PESARA), Domiciliary Treatment Services and Ez ADU KPDNKK have been undertaken.

The Government is committed to continuously review and improve its services. We will continue to adopt NBOS to deliver the TN50 vision, which will require paradigm shift in terms of planning and implementation. With this innovative thinking and shift of our perspective and strategy in delivering national transformation, we are confident the NTP will be successful and pave a new phase of Malaysia's transformational and inclusive development.

IMPROVING HEALTHCARE SERVICES FOR THE RAKYAT

SRI PSDT projects focus on process improvements and "doing more with existing or less resources". To this end, the LEAN Healthcare initiative by the Ministry of Health (MOH) has demonstrated improvements in the quality of care provided by public hospitals, thereby enhancing the patient experience and adding value to delivery of healthcare to the public.

Up to 2017, 52 hospitals have embarked on the LEAN Healthcare transformation journey mainly in the Emergency Departments (ED) and Medical Wards (MW), which include 16 new hospitals this year. The initiative aims to reduce waiting time and congestion in hospitals by improving the process flow of patients' visit at MOH hospitals.

The 16 hospitals are Hospital Banting, Hospital Segamat, Hospital Kluang, Hospital Port Dickson, Hospital Bukit Mertajam, Hospital Kepala Batas, Hospital Sibu, Hospital Pekan, Hospital Tawau, Hospital Duchess of Kent, Hospital Keningau, Hospital Lahad Datu, Hospital Bintulu, Hospital Kapit, Hospital Sri Aman and Hospital Seri Manjung.

In addition to EDs and MWs, MOH also initiated five LEAN pilot projects this year:

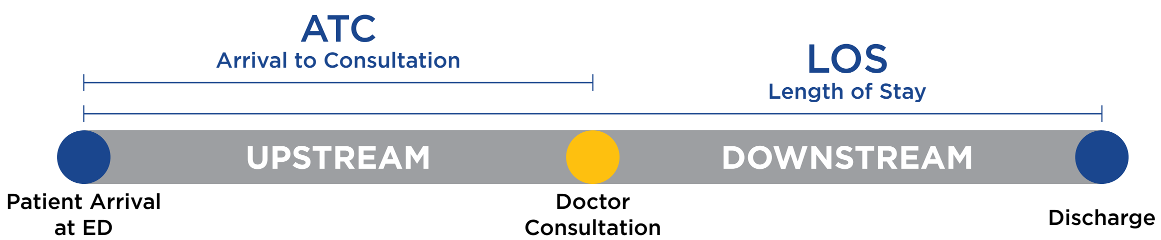
1. Introducing a block appointment system in specialist clinics;
2. Improving Operating Theatre (OT) utilisation;
3. Improving management of medical records;
4. Improving turnaround time on urgent diagnostic tests run by the Pathology department; and
5. Improving delivery of hospital support services.

Strengthening the frontline

Emergency Departments and Medical Wards are at the frontline of hospitals, and to this effect MOH continues to focus on improving services in these areas. To date, MOH has rolled out LEAN to the EDs and MWs of 52 hospitals. This has improved patient flow at the ED's Green Zones, which is measured by the throughput of the following two metric targets:

- Waiting time from arrival to consultation (ATC) of 60 minutes or less; and
- Total length of stay (LOS) in ED of 120 minutes or less.

Throughput indicates the ED's percentage of success in meeting the key targets mentioned above. Before the implementation of LEAN, the EDs were first ranked into categories A, B, C and D based on ATC and LOS throughput. A measure of success is when EDs move up in the direction of Category D to Category A post-LEAN implementation as they become more efficient and achieve higher throughput.

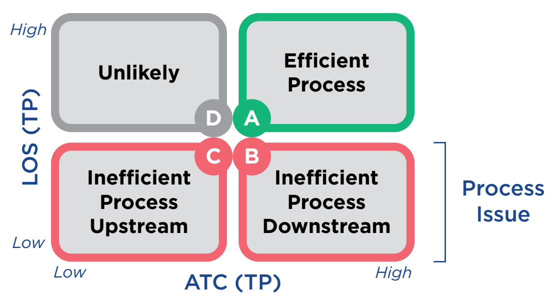


THROUGHPUT* (TP)

ATC (TP)	LOS (TP)	WHAT IT MEANS
low	low	Upstream Issue
low	high	Unlikely
high	low	Downstream Issue
high	high	Efficient Process

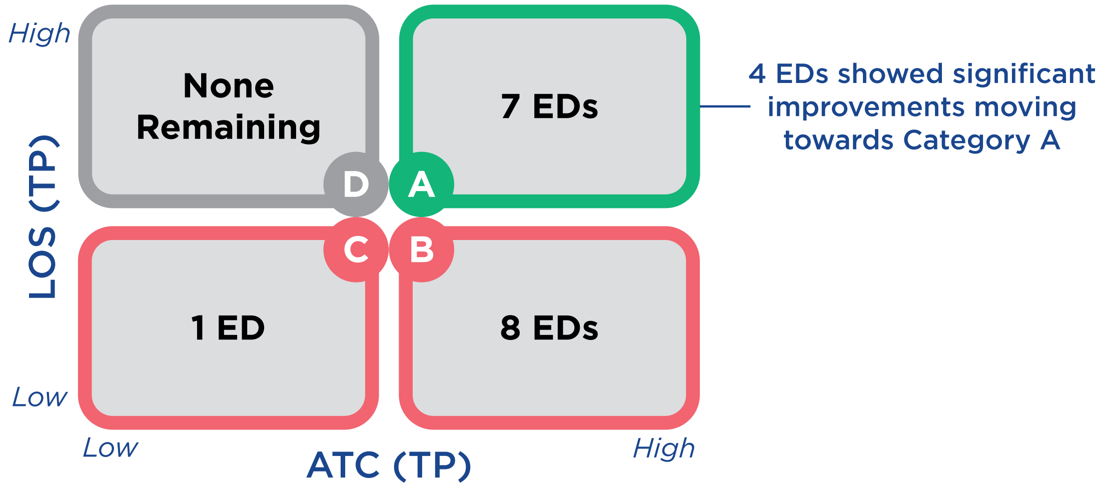
*Higher throughput is better

2x2 MATRIX



The diagrams above demonstrate how the Emergency Departments are categorised on a 2x2 matrix based on throughput of ATC and LOS.

Post LEAN Emergency Department (ED) Efficiency Categories



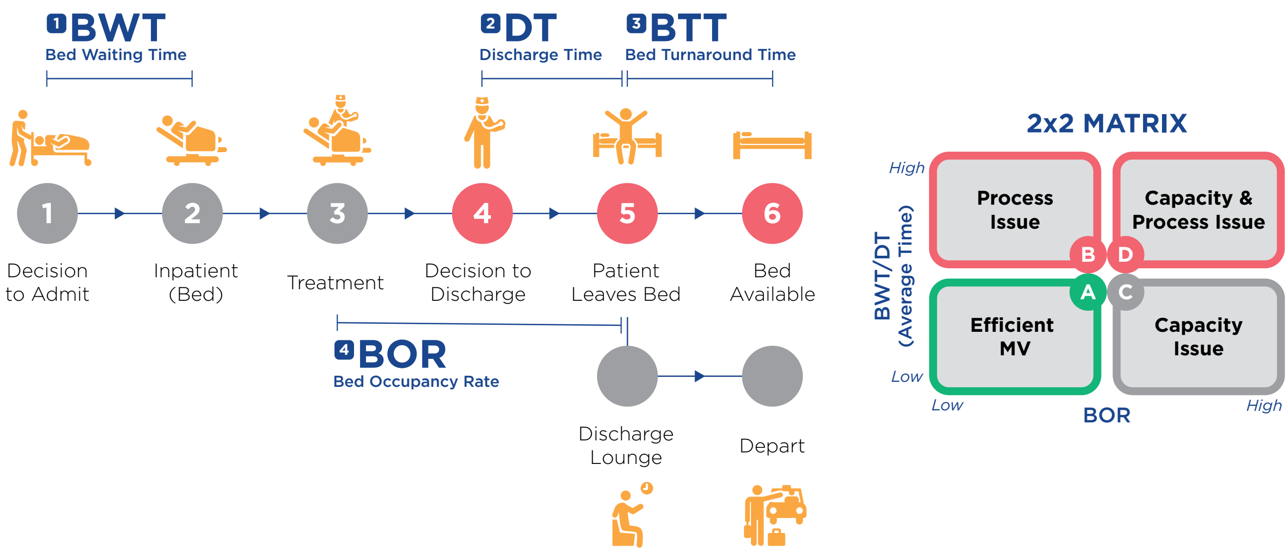
The diagram above shows the Efficiency Categories of the 16 Emergency Departments post LEAN implementation.

Four out of the 16 EDs demonstrated a significantly higher throughput post LEAN implementation, showing movement from Category B to Category A. The remaining EDs showed smaller improvements but remained within Categories A and B.

To achieve the LEAN targets, steps that did not create value were eliminated and value-added changes which result in high-impact improvements were introduced.

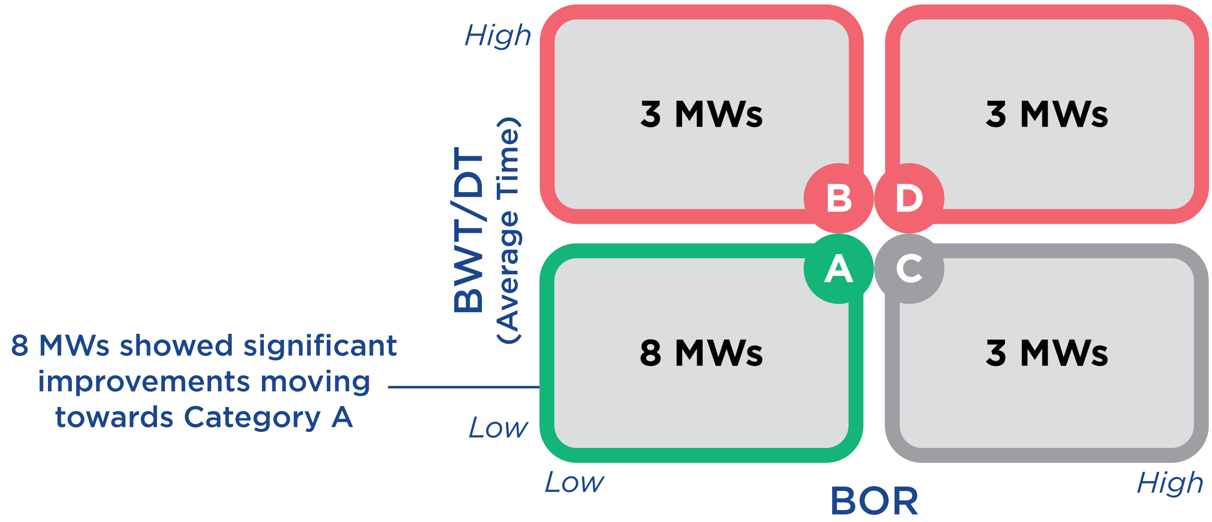
Meanwhile in the MWs, MOH aimed to improve bed management. This involved improving the discharge time (DT), bed turnaround time (BTT), bed occupancy rate (BOR) and bed waiting time (BWT) to streamline the process. The targets for the metrics are four hours or under for DT, 30 minutes or under for BTT, 85% or below for BOR and 120 minutes or below for BWT.

To measure performance, the MWs were also ranked on a 2x2 matrix based on the aforementioned metrics for EDs, as depicted in the following diagram:



The diagrams above demonstrate how the Medical Wards are categorised on a 2x2 matrix based on DT, BWT & BOR performances.

Post LEAN Medical Wards (MW) Efficiency Categories



The diagram above shows the Efficiency Categories of the 16 Medical Wards post LEAN implementation.

Overall improvements were seen in the MWs post LEAN implementation, where on average:

- Discharge time has reduced by 94 minutes (39% improvement);
- Bed waiting time has reduced by 40 minutes (35% improvement); and
- Bed occupancy rate has shown 8% improvement.

In implementing these projects, MOH observed encouraging levels of teamwork in ED and MW teams, while Hospital Quality Managers also facilitated collaboration between both departments and other departments such as pathology, radiology, IT and finance. The challenge is to incorporate LEAN thinking within the staff's day to day work, as they are already occupied with the demands of high workload. Continuity is also a challenge with rapid turnover of staff in many MOH hospitals. From 2018 onwards, the ED and MW KPIs will be incorporated into the Hospital Performance Indicators for Accountability (HPIAs) to support the internalisation of LEAN.

Discharge lounge for patients to wait for their pick up.

REVAMPING MALAYSIA'S HEALTHCARE SERVICE DELIVERY

Establishing Hospital Kuala Lumpur as a premier hospital

In his Budget 2012 speech, the YAB Prime Minister announced that Hospital Kuala Lumpur (HKL) will be upgraded to a premier hospital. To achieve this target, HKL was allocated RM300 million in funding for the construction of new facilities including a new specialist complex, ambulatory care centre, nephrology centre and a seven-storey car park.

To enable HKL's transition into a premier hospital, a two-part workshop involving MOH, HKL and the Universiti Kuala Lumpur's Malaysian Institute of Industrial Technology was held in June 2016. The workshop identified three areas for HKL to address: The Turnaround Time (TAT) for urgent diagnostic tests, the management and retrieval of patients' medical records and the quality of support services. Addressing these issues formed Phase 1 of the HKL Transformation journey.

A LEAN pilot project was thus kicked off to speed up diagnostic results produced by the pathology laboratory (Core Lab), which receives an average of 2,300 blood samples a day on weekdays and 500 blood samples a day on weekends, with 6:00 a.m. to 7:00 p.m. being peak operational hours.

HKL Core Lab - The time stamping step at the urgent workstation was removed to expedite the processing of samples.

The TAT target for routine tests is four hours; however urgent tests have a turnaround time of 45 minutes (20% of routine TAT). The challenge for lab staff is in the workflow of urgent tests, where 60% of all tests are urgent requests. MOH mandates that at least 90% of urgent biochemistry and haematology requests must be reported within 45 minutes.

Following the pilot, improvements were seen. The percentage of Biochemistry tests that met the KPI improved from 9% to 24% (167% increase), and Haematology tests improved from 56% to 66% (18% increase).

The second HKL LEAN project was initiated to improve the management of patient medical records, which is critical to the delivery of efficient and effective healthcare services at hospitals. A good patient medical record system can, among other things, ensure patient safety, reduce patients' waiting time, support better clinical decision-making and reduce unnecessary test requests. The LEAN project focused on seven departments which experience high patient attendance that increases annually: Emergency Department, General Medicine, Ophthalmology, Orthopaedics, Paediatrics, Neurology and Nephrology, covering both outpatient and inpatient workflows.

Key results on Medical Records 2017 pilot LEAN implementation were:

- Reduction in records retrieval period from 14 days to five days
- The number of records not found on any clinic day has reduced from 35% to 5%; and
- The number of temporary records created has reduced from 80 cards a day to less than 10 cards a day.

The third LEAN pilot project was initiated to optimise the delivery of hospital support services. This is the first initiative which involves a third party, Radicare Sdn Bhd, which is HKL's concessionaire for hospital support services. The project focuses on two key areas within the outsourcing management framework: communications management and performance management. Communications management ensures that HKL staff and Radicare representatives are coordinated on the needs of the hospital, whilst a robust performance management system ensures that support is provided in a timely manner and meets patients' healthcare needs. HKL and Radicare have identified a list of issues, of which two thirds are deemed to be quick wins, and have begun implementing potential solutions.

Public Service Department: The Bedrock of National Transformation

To further establish the momentum of the national transformation, which has roots in the 1Malaysia philosophy of "People First, Performance Now", the Public Service Transformation effort was introduced in 2013 to support Malaysia's mission of becoming a developed, high-income nation. This effort is led by the Public Service Department (PSD) with support from the Malaysian public service to ensure the achievement of desired outcomes.

It is imperative for the Malaysian public service to adapt to present-day realities to ensure it offers the best services to the rakyat. The execution of this transformation effort, therefore, is based on the Public Service Transformation Framework, which has five Strategic Bases that encompass transforming the public service through strategic collaborations, cooperation and co-dependence between Government agencies to bring about a delivery mechanism that is characterised by high performance, integrity, dynamism, and strong people orientation.

This transformation effort takes a holistic and integrated approach, with elements of creativity and innovation featuring prominently in the execution of annual lab sessions. This helps to secure the commitment and cooperation of each public agency to deliver services of discernibly enhanced quality.

The close cooperation within the Malaysian Public Service in the past five years has yielded 1,432 transformation initiatives, including 216 high-impact initiatives to deliver maximum value to the target groups, raise productivity, form new models for service delivery, diversify service delivery channels, and introduce new products or services. Taken together, these initiatives open the doors for the rakyat to have easier and more comfortable access to services like healthcare and consultations on elevating income and productivity levels. Channels for service delivery have also been broadened with the participation of non-governmental organisations (NGOs) and the community.

The close collaborations between public agencies also serve to optimise resources. Various initiatives were birthed from this endeavour, one of which is the Inmate Upskilling programme by the Malaysia Prisons Department under the jurisdiction of the Ministry of Home Affairs. This programme aims to improve the delivery of skills training and certification for inmates to raise their employment prospects upon their release from prison, and to reduce their falling back into crime and recidivism.

The 1Malaysia Map initiative is another example, led by the Natural Resources and Environment Ministry (NRE) and aims to make the most of the available application platforms through sharing of geospatial data from various agencies. This data encompasses the five sectors of Point of Interest, Emergencies and Natural Disasters, Education, Natural Environment, and Health. The NRE also drove another strategic collaboration, the Flood Warning and Prediction Management system by working closely with and sharing data between agencies like the Malaysian Meteorological Department, Remote Sensing Agency and the Drainage and Irrigation Department to raise the accuracy of flood predictions and reduce loss of life and possessions.

Success has also been seen in the people-oriented 1SERVE initiative, which offers various services through one-stop PSD counters with the help of other departments like the Road Transport Department, National Registration Department, Malaysian Immigration Department and local authorities. Another high impact initiative is the Ministry of Health's Domiciliary Treatment Service, which is performed in patients' homes after their discharge from hospital.

Efforts to entrench this culture of transformation are being prioritised by the civil service to ensure its provision of services remains relevant and fulfils the rakyat's needs. A new direction set through Public Service Transformation 2.0 underlines several points of focus, namely execution through core business, taking the Do-it-Yourself approach, optimising cost and producing cost-effective outcomes, intensifying strategic collaborations, increasing alternative service delivery channels, prioritising touch-point services, and delivering high-impact quick wins. Emphasis is also being given to promotional activities and extending the transformation effort to agency, state and local authority levels.

The importance of a successful Public Service Transformation must continually be impressed upon all civil servants to ultimately create a public service that is wholly people-centric and trustworthy. Indeed, this transformative effort's success is contingent on the hard work, sacrifice and perseverance of the civil service in realising a service delivery mechanism that is holistic, inclusive and capable of uplifting the rakyat's quality of life in line with the aspirations of Transformasi Nasional 2050.

National Blue Ocean Strategy (NBOS): Simultaneously Pursuing High Income and Greater Public Well-being

While Malaysia is moving fast towards becoming a developed nation by 2020, the Government must ensure that the rakyat can truly enjoy high income along with a greater level of public well-being. As such, the National Blue Ocean Strategy (NBOS) was launched by the YAB Prime Minister in 2009 to deliver initiatives that are high-impact, low-cost, rapidly executed and sustainable.

The NBOS employs the concept of blue ocean strategy, which takes a systematic approach to form creative solutions without directly competing with existing socio-economic boundaries. The adaptation of blue ocean strategy into NBOS is thus critical in improving efficiency in the public delivery system and accelerate the national transformation process.

To date, 115 NBOS initiatives have been implemented in more than 80 Ministries and agencies in the country. These initiatives include the Urban Transformation Centre (UTC), Rural Transformation Centre (RTC), Mobile Community Transformation Centre (Mobile CTC), Community Rehabilitation Programme and among others.

Urban Transformation Centres

The Urban Transformation Centre (UTC) serves as a one-stop centre offering miscellaneous public services for urban dwellers, with services extended to after-office hours (except for public holidays) to cater to urbanites' busy schedules.

The Government's main objective for establishing the UTCs is to raise the service delivery standards of the public and private sectors as well as NGOs by centrally locating these services at a venue that is easily accessible by the people. The UTC also functions as a conduit for affordable community activities by judiciously utilising Government buildings, as well as rehabilitating public spaces and intensifying economic activity in its vicinity.

The decision to kickstart the UTC initiative was made at the National Blue Ocean Strategy Meeting on 24 April 2012, chaired by the YAB Prime Minister. The

The Chief Secretary, YBhg Tan Sri Dr. Ali Hamsa, greeted a service user at the UTC in Kuala Terengganu.

initiative was subsequently launched after the Federal Government successfully got various ministries, agencies and State Governments on board.

The Government has plans to establish a UTC in every state capital throughout the country as well as other densely populated areas as the need arises. Each State Government, upon the Finance Ministry's request, must submit their plans for suitable UTC sites in their states. The UTCs must be located in an under-utilised Government building, situated in the state capital or a highly populated area, and be strategically positioned with easy access to public transport. Currently, there are 20 UTCs nationwide.

UTCs house various Federal and State Government agencies, statutory bodies, NGOs and private sector agencies under one roof to facilitate the rakyat's procurement of services rendered by these parties, thereby raising delivery standards by optimising the usage of all available resources.

State UTC services are categorised into 10 clusters:

1. Common Government Services
2. Health Services
3. Safety Services
4. Training, Education and Career Services
5. Entrepreneurship and Business Opportunity Development

6. Youth Activity Centre
7. Welfare Services
8. Utility Services
9. Banking Services
10. NGO Services

Services offered by city-based UTCs include:

1. Common Government Services
2. Health Services
3. Safety Services
4. Entrepreneurship and Business Opportunity Development
5. Utility Services
6. Banking Services

The use of under-utilised Government buildings to house UTCs, instead of building new premises, also optimises public funds and is in line with the basic concept of the National Blue Ocean Strategy: high-impact, low-cost, rapidly executed. The UTCs have also gained recognition as an innovative idea by international delegations from the World Bank, Indonesia, Singapore, India, Sri Lanka and Tanzania, among others. Additionally, it received the Prime Minister Innovation Award in 2014.

Mobile Community Transformation Centre

The Mobile Community Transformation Centre (Mobile CTC) was launched by the YAB Prime Minister on 1 March 2013 as one of the initiatives under the National Blue Ocean Strategy (NBOS) and as an extension of the Urban Transformation Centre (UTC). Through the Mobile CTC, Government and private services that are normally available at UTC premises are brought to communities in the rural and remote areas of Malaysia. Since the start of its implementation up until 2017, Mobile CTC programmes have been rolled out at 152 locations and impacted over 2.59 million Malaysians in rural areas.

Among the services provided by Mobile CTCs include identity card registration, licence renewal, health screening, distribution of Government aids such as the Bantuan Rakyat 1Malaysia (BR1M) and business consultancy.

Besides that, a number of new initiatives have also been introduced to further benefit the rakyat. These initiatives include free eye examinations at selected locations, post-flood programmes for those affected by flooding, free tuition classes for school students, and the participation of additional agencies such as JobsMalaysia through the Program Kembara Kerjaya Jelajah FELDA, the National Heart Institute through Program Pemeriksaan Jantung dan Kesihatan Rakyat, as well as the Tribunal for Consumer Claims Malaysia and the Tribunal of Housing and Strata Management.

The Mobile CTC is rolled out in a carnival format where vans and buses of Government units and private agencies gather at a location in the rural area. Meanwhile, mobile CTCs boat services are also available for areas that are not connected via roads.

Operationalisation of the Mobile CTC programme emphasises on NBOS elements such as cost effectiveness, which is achieved through the sharing of resources between the Federal Government, State Governments and participating agencies to maximise service output for the rakyat. Since implementation, the Mobile CTC programme has successfully transformed the way services can be accessed by communities who are otherwise marginalised.

Community Rehabilitation Programme (CRP)

The Community Rehabilitation Programme (CRP), introduced in 2011, complements the Fighting Crime NKRA initiatives to reduce recidivism rate of petty criminals and overcrowding in prisons by ensuring readiness of inmates or 'People Under Supervision' to reintegrate and readjust with society before they are released. The rehabilitation is done through

The Mobile CTC serving a group of customers in Besut, Terengganu.

training and productive work on military premises such as farming, fishery, animal husbandry and manufacturing, amongst other technical skills.

The CRP is part of the Government's transformation agenda under NBOS that optimises available public resources to generate a higher impact. The use of military camps as Community Rehabilitation Centres is the brainchild of the YAB Prime Minister, involving an innovative collaboration between two Government agencies – The Malaysian Armed Forces and the Malaysia Prisons Department. The military camps in the programme are:

1. Mahkota Camp in Kluang, Johor;
2. Sultan Abdul Halim Muazam Shah Camp in Jitra, Kedah;
3. Syed Sirajuddin Camp in Gemas, Negeri Sembilan;
4. Desa Pahlawan Camp in Kota Bharu, Kelantan;
5. Batu 10 Camp in Kuantan Pahang; and
6. Paradise Camp in Kota Belud, Sabah.

As a result, inmates are given the opportunity to learn and dive deeper into the working field while increasing their income prior to release day. In fact, inmates who are undergoing CRP are paid RM200 more per month than non-participating inmates.

To date, implementation of CRP has successfully raised employability of ex-prisoners to 88.48%, with increase in the number of particpants from 3,665 to 4,142 with a job, whether employed by employers or self-employed. Additionally, the Government has saved as much as RM2.9 million every year for grass trimming works and drain cleaning activities at the military camps maintained by inmates, while RM232.2 million was saved from not having to construct new prisons, which is a huge figure as compared to the cost of building five CRP centres at just RM22.8 million to hold over 1,450 inmates.

Inmates working out at one of the CRP camps.

The LEAN Project: Elevating the Healthcare Consumer Experience

Dr. Marzilawati Abd Rahman has taken on the position of being Hospital Kuala Lumpur's (HKL) LEAN champion for the hospitals' LEAN journey which kicked off in 2015. The Acute Internal Medicine Physician embarked on this journey by learning the basics of the LEAN concept and tools from the Ministry of Health (MOH), namely those of the Medical Development Division, the Institute for Health System Research, and the Universiti Kuala Lumpur. "We commenced our LEAN Healthcare improvements with our two busiest departments, which are the Department of Medicine and Emergency Department where we improved processes to add value to our patient care," says Dr. Marzilawati.

As the LEAN Healthcare executor in HKL, the physician also gives talks to promote LEAN Healthcare awareness among HKL's staff alongside other MOH hospitals in Peninsular Malaysia. Towards this end, Dr. Marzilawati adds "I am very honoured to work with Datin Dr. Nor Akma bt Yusuf, who not only led the development and implementation of LEAN Healthcare but also initiated the Kaizen Office in HKL, whose personnel empower departments to provide the best customer service possible by eliminating inefficiencies and creating smooth process flows that standardise the ways of performing their tasks." Today, more than seven HKL departments (orthopaedic, ophthalmology, nephrology, neurology, pathology, paediatric, record office and support services departments) are involved in this initiative.

Further, Dr. Marzilawati, as Chairman of HKL's Corporate Culture since 2016, worked with her corporate culture team to create a training module on soft skills called the 'Premiere Work Culture Module' to enable staff to deliver more personal patient care, in line with LEAN Healthcare's objectives. About 1,350 HKL healthcare workers had undergone the course since its commencement in 2016, yielding positive feedback from their direct reports.

Dr. Marzilawati opines that the LEAN programme adds value to Malaysia's healthcare services in general. The clinician explains, "The programme allows hospitals to improve the quality of care for patients by reducing errors and waiting times,

Dr. Marzilawati Abd Rahman, LEAN Healthcare executor in HKL.

which can lead to lower cost. LEAN Healthcare approaches support healthcare workers and physicians by eliminating roadblocks and allowing them to focus on providing good care. It helps break down barriers between disconnected departmental 'silos,' allowing them to work together for the benefit of patients."

This programme achieved several achievements in HKL alone, the biggest of which was the streamlining of an early pulmonary Tuberculosis (PTB) diagnosis in the hospital's medical wards by expediting the sputum microscopy process and having a mobile unit for the bedside registration and counselling of patients with the disease. Indeed, the results were remarkable - patients with PTB were more quickly diagnosed and treated, reducing man-hours in medical wards by about 40%.

Dr. Marzilawati added, "At present, our improvements are growing from many areas, and the improvements we made were presented at the International Conference 2017 (British Medical Journal Quality and Safety in Healthcare) as well as at the National QA Convention 2017 in Malaysia."

While she is satisfied with the results thus far, she also believes that her team has some way to go before LEAN Healthcare becomes embedded in HKL's working culture. Part of this reason is because transforming a culture is not an easy task, especially for an organisation as huge as HKL. "Starting something new is always tough. My biggest challenges were in breaking the 'silos' between departments and to change the entrenched mindsets and perceptions in utilising LEAN tools for improvements. However, the LEAN concepts themselves teach me and my team to respect and support the staff. All of it is a team effort, not the work of any individual," she said.

Dr. Marzilawati thinks that LEAN Healthcare or its underlying concepts should be expanded to other Ministries in the Government to further elevate the capacity and quality of public services in Malaysia.

HKL Core Lab - Blood samples are placed in a basket after barcoding instead of being repacked again into specimen bags to shorten process time.

"Working together with the relevant ministries will ensure patient safety, improve workflow, as well as achieve a balanced and synchronous production of healthcare services in Malaysia. Sharing innovations, expertise and services between ministries will be a conducive platform for public healthcare to grow, and increase the number of success stories in LEAN's journey," she asserted. Assimilation and incorporation with Malaysia's National Blue Ocean Strategy (NBOS) platform will further enhance cost-saving measures and create various benefits through quality improvements for the wider Malaysian society.

Going forward, Dr. Marzilawati foresees public healthcare to continue leading the marketplace for healthcare services in Malaysia. As price pressures and cost challenges loom large, so too will the number of customers for public healthcare services grow. In this respect, the clinician believes that LEAN methods will be instrumental in enabling healthcare providers to effectively reduce the actual cost of providing safe and reliable care.

Optimising utilisation of operating theatres

The LEAN Operating Theatre (OT) project was piloted in 2017 at Hospital Sultan Ismail in Johor. It aims to achieve 80% utilisation of operating theatres and a turnaround time of 20 minutes. Turnaround time refers to the time taken from when a patient exits the OT to the next patient entering the room. Three types of surgeries take place in these OTs: emergency, elective and non-surgical procedures. Scheduling for the use of OTs are extremely complex due to OTs being used by medical personnel from multiple disciplines, the lack of visibility towards actual demand and a high proportion of emergency surgeries displacing scheduled surgeries. The project is currently ongoing, and is in the stage of collecting base data.

Improving efficiency at specialist clinics

Hospital Sungai Buloh has piloted the introduction of block appointment times to reduce congestion in specialist clinics. In 2014, outpatient attendance at Hospital Sungai Buloh was over five times more than admissions, with the majority of outpatients seeking treatment at the specialist clinics. There are presently 14 departments in Hospital Sungai Buloh with specialist clinics: Ophthalmology; Orthopaedics; O&G; Ear, Nose and Throat (ENT); Paediatrics; Infectious Disease; Surgical; Dermatology; Psychiatric and Mental Health; Plastic Surgery; Oral and Maxillofacial Surgery (OMFS); Neurosurgery; Paediatric Dentistry; and Anaesthesiology.

Currently, most patients with scheduled appointments arrive at the specialist clinics at around 8:00 a.m., causing congestion at the clinics with patients facing difficulties in parking their cars. To overcome these problems, a staggered patient appointment system is introduced across all 14 specialist clinics. This system will use pre-determined time blocks for scheduling appointments and ensure that patient demand and staffing levels are matched, thus possibly reducing waiting time and creating a more positive patient experience. Implementation is due to begin in all 14 clinics at various start points throughout 2018.

Congestion at the central registration counter at Hospital Sungai Buloh.

MOVING FORWARD ▶▶

The LEAN Healthcare initiative will be expanded in the hospitals that have previously implemented LEAN project in EDs and MWs with projects for the Orthopaedics Clinic, Ophthalmology Clinic, Operating Theatre, Medical Record Service and Hospital Support Service. These pioneering projects are presently in the calibration phase. All data gleaned from these projects will then be used to develop a master template for nationwide rollout.

Vital to the sustainability of LEAN is the development of an organisation which supports staff involvement and LEAN education to inculcate LEAN thinking and implementation in their day-to-day work. A new LEAN Healthcare governance structure will also be introduced to ensure the sustainability of LEAN Healthcare initiatives. This will involve the establishment of a dedicated sub-unit parked under the Quality Unit at the State and hospital levels to facilitate implementation and monitoring as well as provide feedback on the progress of its implementation.

Following the successful implementation of NBOS programmes as well as the transformation initiatives led by Public Service Department, the Government remains committed to continuing these efforts to touch the lives of over 30 million rakyat, in line with the TN50 vision of a prosperous, inclusive and sustainable nation.

DEVELOPING A HIGH-SKILLED WORKFORCE

YB DATO' SRI RICHARD RIOT ANAK JAEM
Minister of Human Resources

In developing our human capital, the Government is working towards building a high-skilled workforce while supporting the country's talent needs as we are now transitioning into a high-income country. This is in line with the strategic thrusts of the 11th Malaysia Plan which aims at accelerating human capital development for an advanced nation. To achieve these outcomes, the SRI looks at six focus areas: modernising labour law; creating a labour safety net; strengthening human resource management; conducting labour market analysis; upskilling and reskilling; and leveraging women talent.

This has resulted in positive outcomes in the country's human capital landscape and has contributed to continued growth in wages, with the mean monthly household income of Malaysians rising to RM6,958 in 2016 from RM4,025 in 2009 and median monthly household income reaching RM5,228 in 2016 from just RM2,841 in 2009. Additionally, Malaysia was ranked second in Southeast Asia and 33rd out of 130 countries in the Global Human Capital Report 2017 issued by the World Economic Forum (WEF) as compared to ranking 42nd in 2016, with strong scores across the capacity, development and know-how components.

Under the Ministry of Human Resources (MOHR), the labour market also saw significant development during the year with the passing of three major laws, namely the Self-Employment Social Security Act 2017, the Private Employment Agencies (Amendment) Bill and the Employment Insurance System Bill (EIS) 2017.

As we continuously develop our labour force, we must remain proactive in responding to global trends such as digitalisation and automation, in tandem with Industry 4.0, as well as crowdsourcing, which is changing the labour landscape. In view of this, the Government has taken the initiative to enhance the branding of TVET Malaysia with the aim to produce skilled manpower that meets the industry needs and becomes the choice of our youth career development. Our human resource agencies and education institutions must continue to focus on supporting and providing the development of relevant skills.

With good economic growth and positive outlook on the demand side, more quality jobs are expected to be created to absorb the increase in labour force. This development augurs well for achieving one of the targets of the 11th Malaysia Plan target, which is to increase the share of compensation of employees to GDP up to 40%, as compared to 33.6% in 2013.

YB DATO' SRI ROHANI ABDUL KARIM
Minister of Women, Family and Community Development

The women talent thrust forms an important component of the Strategic Reform Initiative (SRI) in achieving the NTP's goals on inclusiveness. Its initiatives are helmed by the Ministry of Women, Family and Community Development (KPWKM) that focuses on the "3R" principles, which are Retaining, Returning and Rising women talent towards a gender-balanced and sustainable pool of talent for the country.

Throughout the year, the Ministry has facilitated several initiatives such as the provision of affordable and accessible childcare centres and the promotion of flexible working arrangements to accommodate the needs of working mothers with young children. In 2017, 329 new childcare centres were established, bringing the total number of registered childcare centres to 4,143 compared to 2,045 in 2012. Meanwhile, 92 companies have adopted the flexible working arrangement since the start of the initiative in 2012. These efforts by the Ministry have seen significant achievements in the women labour force participation rate, which recorded an increase to 54.6% in Q3 2017 from 54.3% the year before.

Additionally, this year the Ministry played a key role in reinvigorating the women registry for board candidacy and harnessing their skill set via mentorship and training programmes. To date, 1,326 candidates are listed in the registry, of which 1,051 have undergone the Women Directors Training Programme that prepares them for Board positions. This has contributed to more women rising to the decision-making level and appointed as Board directors. As a result, in 2017, women made up 19.2% of the Boards in the top 100 public-listed companies by market capitalisation in Malaysia, as compared to 16.6 % in 2016.

These achievements, among others, have put Malaysia on the global arena in championing the initiatives to promote participation of women in the corporate sector. As a validation to these achievements, the 2017 Corporate Women Directors International Report on Women Board Directors of Asia-Pacific Companies has ranked Malaysia third out of 20 Asia-Pacific countries for the achievement in women directorships. The study was based on a total of 1,597 large public-listed companies across the 20 economies.

Ensuring that women are well-represented in the labour force and key decision-making positions is a cross-sectorial effort that requires undivided commitment from the private sector. Though heartening progress is being made in the creation of environments conducive for women to be in the workforce, awareness on the importance of having gender diversity in the workforce is still low. The Ministry will continue to leverage on the Human Capital Development - Women Talent Steering Committee platform to resolve cross-cutting issues related to this SRI portfolio.

ENSURING EMPLOYMENT SECURITY

Malaysia's labour laws are being modernised to transform the local talent pool towards a 35% skilled workforce by 2020 in line with the country's efforts to achieve high-income nation status. As part of these efforts, labour safety net programmes have been introduced to protect the Malaysian workforce in difficult times and ensure that all prosperity gained from the transition to a high-income economy is shared with the rakyat. To this end, three major laws were passed in 2017.

The first law, the Self-Employment Social Security Act 2017 or Act 789 under the Social Security Organisation (SOCSO), was approved by Parliament in April 2017 and officially implemented on 13 June 2017 to extend social security coverage to the informal sector. The preliminary phase of this initiative involved providing coverage for taxi drivers and other services of a similar nature. To date, 2,800 taxi drivers have been registered and insured, of which eight have received benefits due to injury at work or while commuting. This scheme aligns the need for comprehensive social security coverage with the universal principles of social justice as stipulated in Article 23 of the Human Rights Declaration, International Labour Organisation (ILO) Convention 102 and Recommendation 202 of ILO.

The second law, the Private Employment Agencies (Amendment) Bill, was passed on 14 August 2017 and aims at providing protection to local workers who obtain employment abroad through private employment agencies. This law is expected to be implemented in 2018.

The third law, the Employment Insurance System (EIS) Bill 2017, was passed on 25 October and marked a major milestone in strengthening employee protection in Malaysia. The EIS, which will be administered by the SOCSO by 2018, allows for the establishment of an insurance scheme for laid-off workers to claim a portion of their insured salary for a period of between three to six months. Workers who lost employment will also be entitled to receive allowances based on reduced income and training attended. They will also be given priority to early re-employment opportunities. The scheme provides coverage to employees involved in voluntary or mutual separation schemes or those retrenched due to business restructuring or closure.

The Minimum Wages Order was introduced in 2012 and it has been reviewed once every two years since, with the last revision being in 2016. Statutory inspections conducted by the Labour Department of Peninsular Malaysia, Labour Department of Sabah and Labour Department of Sarawak from January 2013 to December 2017 had found that 98% from 154,501 employers inspected had complied with the Minimum Wages Order. Moreover, the National Employment Returns (NER) 2016 study conducted by the Institute of Labour Market Information and Analysis (ILMIA) revealed that 76.3% of establishments surveyed had not recorded increases in their labour costs following the introduction of minimum wages.

> ***"SOCSO's Return to Work Programme (RTW) provides return-to-work, retraining and employment support as well as job placement services to insured persons."***

Several other key laws are also currently under review, including the Occupational Safety and Health Act 1994, Private Employment Agencies Act 1981, Factories and Machinery Act 1967, the Employment Act 1955, the Industrial Relations Act 1967, as well as the Trade Unions Act 1959.

In further supporting employee well-being, SOCSO's Return to Work Programme (RTW) provides return-to-work, retraining and employment support as well as job placement services to insured persons, marking another effort to enable injured workers to return to work quickly. The programme also ensures minimal disruption to national productivity. Since the launch of the programme in December 2016, a total of 18,137 insured workers have successfully been rehabilitated and have returned to work.

In relation to the RTW, the Tun Razak SOCSO Rehabilitation Centre in Ayer Keroh, Melaka was established in 2014 and launched by the YAB Prime Minister on 21 April 2017. The centre provides treatment and rehabilitation services to employees injured at work or while going to or returning from the workplace. To date, 2,187 patients have benefited from the centre's services.

In addition, the 1Malaysia Outplacement Centre (1MOC) by the Human Resource Development Fund (HRDF) is a separate but related initiative which aims to enhance the employability of retrenched Malaysian workers by serving as a one-stop centre providing advisory on career counselling and planning as well as job applications and matching. To date, it has helped 3,162 retrenched workers regain employment.

1Malaysia Outplacement Centre providing counselling, planning and preparation for next career move or placement.

STRENGHTENING COMPANY FUNDAMENTALS BY FOCUSING ON HUMAN RESOURCES

Effective management of human resources is a key success factor for all businesses. In 2017, the Ministry of Human Resources (MOHR) focused on ensuring that Malaysian companies were properly equipped and prepared to adapt to the changes in labour laws and the creation of labour safety net systems. The Ministry recognised that the changes introduced will only be effective if industry players can understand the reason behind these changes and comply with the requirements.

To support this, during the year, the coverage of HRDF was extended from Manufacturing, Services and Mining & Quarrying to other sectors as well. Engagements with private sector players were held to cover employers with one employee or more across all sectors (with the exception of the public sector, statutory bodies, NGOs, financial and construction sectors), ensuring all workers in Malaysia have access to the training fund.

Additionally, the National Human Resource Centre (NHRC) Portal by HRDF, a platform for users to obtain HR resources in the form of high-quality research papers and whitepapers which aid in human capital growth planning, has been utilised by 1,315 individual users and 20,444 companies as of December 2017. The portal is slated to undergo some improvements in 2018 to provide better service and a more seamless experience to a greater number of users.

> ***"HRDF has developed a small- and medium-sized enterprises (SME) Diagnostic Tool called the MyFuture to enable a structured approach to training."***

HRDF has also developed a small- and medium-sized enterprises (SME) Diagnostic Tool called MyFuture to enable a structured approach to training. MyFuture helps to identify gaps in the human capital capabilities of SMEs, enabling HRDF to suggest more structured capacity-building programmes for them. To date, 1,296 companies have gone through assessments and received recommendations for the structured training programmes.

To improve human resource management of foreign workers, the Government has also introduced online systems to facilitate hiring applications from the employers. The introduction of the online systems is also aimed at avoiding the involvement of middlemen, minimising recruitment costs, shortening the recruitment period and deterring cases of abuse and trafficking of migrant workers. With effect from 1 January 2017, employers are held accountable towards the management of foreign workers in accordance with Malaysian laws via the signing of the Employers Undertaking (Surat Aku Janji Majikan).

FORMULATING EFFECTIVE LABOUR POLICIES

Since its establishment in 2012, the Institute of Labour Market Information and Analysis, or ILMIA has strived to become the focal point for comprehensive labour market data to aid the Government in formulating effective labour policies, hence contributing to the country's achievement of high-income status. The Labour Market Information Data Warehouse (LMIDW) was launched on 18 July 2017, with the Data Flow Management System (DFMS) developed as a vital part of LMIDW to manage all labour market data-sharing initiatives and disseminate labour market data.

Standard Operating Procedures (SOP) to operationalise the Data Sharing Mechanism were also developed to guide all labour market data providers. The LMIDW presently involves participation from 14 agencies and departments within MOHR and four other Ministries and agencies, namely the Ministry of Education, Ministry of Higher Education, Ministry of Youth and Sports and Council of Trust for the Bumiputera (Majlis Amanah Rakyat - MARA). To date, a total of 142 labour market indicators can be generated from the 43 types of LMIDW data for use by stakeholders such as policymakers, industry players, academia, legislators, media houses and jobseekers.

In 2017, ILMIA continued its collaboration with TalentCorp to produce the Critical Occupations List (COL), an initiative under the 11th Malaysia Plan, to address skill mismatches in the labour market. The updated COL is scheduled for publication in February 2018 to be used to coordinate policy interventions related to higher education and TVET, upskilling, scholarship, and management of highly skilled foreign workers and Malaysian talent abroad. In addition, the National Employment Returns (NER) Study 2017 is underway and is expected to be completed by March 2018. Starting in 2017, the NER will be conducted on a yearly basis to enhance information timeliness that will lead to better understanding of labour-market dynamics, including the breakdown of local versus foreign employees, types of employment, salaries and gender diversity.

ILMIA has also developed a National Wage Index (NWI) to support policy measures that address human resource planning, labour utilisation, wage fixing, social security and labour costs. The NWI will be constructed through quarterly surveys of stratified samples of enterprises that are representative of the Malaysian economy, employees and occupations. To date, five quarterly surveys have been conducted since September 2016, the findings of which will be published by March 2018.

> *"The National Wage Index (NWI) supports policy measures that address human resource planning, labour utilisation, wage fixing, social security and labour costs."*

However, the lack of recognition for ILMIA's role as the central authority for all data on the labour market is limiting its effectiveness. This requires a greater investment of time and resources in nationwide awareness campaigns. ILMIA also needs better access to subject matter experts such as labour economists, data scientists and data management personnel. In view of this, ILMIA will work with MOHR to address its challenges.

1Malaysia Outplacement Centre: one-stop centre for retrenched Malaysian workers to regain employment.

NURTURING A HIGH-INCOME WORKFORCE

This focus area supports the nation's talent needs by upgrading the skills and competitiveness of the Malaysian workforce to equip the country with a sufficiently skilled workforce to achieve its high-income goal by 2020.

The Recognition of Prior Experiential Learning (RPEL) Programme was launched in 2016 to recognise the experience, skills and competencies of Malaysian workers with the relevant paper qualifications. As of December 2017, 3,182 candidates completed their portfolio development and received their Diploma in Skills Malaysia Level 4 certification of Malaysian Skills Certification (Sijil Kemahiran Malaysia, SKM).

To further develop the local talent pool, the Train and Replace programme by HRDF aims to replace skilled foreign workers and expatriates with Malaysians. This programme was announced by the YAB Prime Minister during the presentation of the Budget 2016 and has seen a total of 899 replacements of foreign workers as of December 2017.

On the other hand, the 1Malaysia Skills Training and Enhancement for the Rakyat (1MASTER) programme by the Department of Skills Development (Jabatan Pembangunan Kemahiran, JPK) is an initiative under the National Blue Ocean Strategy (NBOS) to upskill workers across different industries, while the Centres of Excellence in Technology (CoETs) initiative by HRDF has helped with the enhancement of 26 institutions to meet current industry needs and technology changes in the computerisation of manufacturing. Finally, the OKU (Persons with Disabilities) Talent Enhancement Programme (OTEP) by HRDF, launched on 1 May 2017, has provided competency-based training to 129 disabled persons as of December 2017.

The abovementioned efforts have thus benefitted a total of 4,210 people and contributed towards an increase of 0.7% in the skilled workforce, resulting in 28% of skilled workers in Q3 2017 compared to 27.3% in 2016.

Nonetheless, MOHR also acknowledged that there is some difficulty in securing the buy-in and involvement of employers to send their employees for upskilling programmes. Furthermore, there are overlapping issues on accreditation by the Malaysian Qualifications Agency (MQA) under the purview of Ministry of Higher Education, and JPK under MOHR. Indeed, multiple agencies and Ministries are presently involved in upskilling programmes, creating a possible duplication of efforts. To address these issues, MOHR is taking the lead in producing the Malaysia TVET Masterplan in collaboration with six other Ministries, namely the Ministry of Education, Ministry of Higher Education, Ministry of Youth and Sports, Ministry of Rural and Regional Development, Ministry of Agriculture, and Ministry of Works.

ENABLING FEMALE PARTICIPATION IN THE LABOUR MARKET

Initiatives to raise female participation in the labour market are based on "3R" principles, which are Retaining female workers in the workforce, Returning them to work after a period of absence, and Rising them to the top-decision-making level in the corporate sectors.

Under the Retaining and Returning principles, several initiatives led by TalentCorp have been implemented to attract and retain the nation's latent talent pool. The Career Comeback Programme (CCP) is a programme that aims to connect women on career breaks to job opportunities and encourages employers to adopt policies that support gender diversity in the workplace. In 2017, 650 women participated in the CCP of which 195 women have since returned to work. These women are in the financial services, business services and education sector, holding administrative, human resources, accounting and finance and customer service roles.

Additionally, Career Comeback Grants is another initiative to incentivise employers to recruit and retain women who have been on career breaks. Under this scheme, the Retention Grant offers employers that successfully retain women returnees for at least six months a grant that is equivalent to

TalentCorp Career Comeback Programme targeting women who are on career break.

the returnee's one-month salary (with a limit of up to RM100,000 per employer).

Augmenting the CCP's efforts, TalentCorp held its 4th Career Comeback Networking & Job Fair on 25 August 2017. The event saw a 20% year-on-year increase in the number of employers offering a variety of full-time and flexible job opportunities to more than 300 women who had left the workforce for various reasons. These employers included UEM Group, Maybank, BASF, Astro and Experian, representing many of the country's priority key sectors.

"In 2017, 650 women participated in the CCP of which 195 women have since returned to work."

Recognising also that women talents are attracted to companies that offer flexible working arrangements (FWAs) and family-friendly policies, TalentCorp offers the Resourcing Grant, which is given to companies that implement or enhance a programme or campaign to recruit women returnees. Under this grant, TalentCorp co-funds 75% of the cost incurred to run the programme, up to a maximum of RM100,000.

To date, 72 companies have applied for the Retention Grant and one company has applied for the Resourcing Grant. As of November 2017, more than 60 companies in Malaysia have implemented FWAs since TalentCorp launched its efforts in promoting FWAs.

Another key enabler to facilitate women's return to work is the provision of quality childcare services at the workplace. Previously, childcare centres built higher than the second floor of high-rise buildings required approvals on a case-by-case basis. Private sector players also regularly cited high costs as the reason for not building childcare centres on lower floors, while building such centres on higher levels involved a cumbersome process to obtain approvals.

In this respect, PLANMalaysia (Jabatan Perancangan Bandar dan Desa, JPBD) under the Ministry of Urban Wellbeing, Housing and Local Government proposed amendments to the guidelines for the establishment of childcare centres, including kindergartens and nurseries, to allow for childcare centres to be established on Levels 1 to 5 of buildings. These amendments were approved by the Cabinet on 21 June 2017 and subsequently tabled to the National Council for Local Government on 10 July 2017.

Moving forward, JPBD will consolidate the new amended guidelines into a single document and present it to local authorities for approval and implementation.

Maybank: Championing Women in The Workplace

Thanks to Malayan Banking Berhad's (Maybank) commitment to its innovative People Transformation initiative, which it first undertook in 2009, it has become recognised nationally and globally as an employer that promotes gender diversity, work-life integration, and a parent-friendly work environment.

Nora Abdul Manaf, Group Chief Human Capital Officer at Maybank, has been with Maybank since 2008. She notes that Maybank's women employees have registered a favourable engagement score of 85% in its recent 2017 engagement survey of its workforce, compared to 82% in 2014. "These engagement levels are at global high-performing levels, and signify that we have transformed our people practices to truly create an inclusive, fair, and enabling environment for our diverse talents to flourish. Women's empowerment is an ethical, responsible, critical, and fair business practice. Sustained change requires consistent and deliberate actions – we are committed to continue pursuing this goal," she adds.

Since 2009, Maybank has taken several initiatives to improve gender equality in the workplace. Maybank's meritocracy-based Diversity and Inclusion Policy, which governs its employment practices and activities, explicitly prohibits discrimination or harassment. In addition, Maybank enacts multiple communication and engagement platforms, such as the Conversation Series dialogues, regular town halls and roadshows featuring top management, the Ask Senior Management channel, the yearly International Women's Day recognition and celebration, and others.

Senior deserving women are provided further professional educational courses at institutions such as Harvard, Cambridge, and INSEAD, to hone cutting-edge leadership skills and keep abreast with current developments. In its Transitioning Leaders to CEO signature leadership programme, 45% of the participants were women. Maybank also formed the cross-functional Maybank Women Mentor Women Council in 2014 in support of the development of Maybank's women talent. The Council has paired over 100 women to support their development as effective leaders through its mentoring programme.

"The many interventions that have been placed systematically have provided opportunities for our women to accelerate their growth by stretching ambitions, potentials and capacities, both professionally and personally. Women form 55% of our workforce, and female representation in management has grown from 38% in 2009 to 45% in 2017. Women in top management positions have also increased from 15.68% in 2009 to 30% in 2017," Nora enthuses.

Nora Abdul Manaf, Group Chief Human Capital Officer at Maybank.

Maybank celebrates the International Women's Day annually.

Nora acknowledges that the banking industry globally is an industry that is still under-represented by women. "Within Maybank, we work intensively to create a work climate that is without – or at least have fewer – barriers, and to more systematically build the next generation of our women leaders via many targeted initiatives. This is closely and constantly watched, monitored at all levels to address blockages and hurdles responsibly."

In the long-term, however, she hopes that employers in the country will take on more initiatives that not only create an enabling and inclusive workplace for women to thrive, but also empower their participation in leadership roles in the workforce. "This will create a ripple effect that promotes inclusion and provide women talent the right opportunity to thrive in their career while being able to balance work and life."

Meanwhile, in an effort to increase the number of the qualified childminders, Kursus Asuhan Permata (KAP) which was designed to provide childcare minders with the relevant knowledge and skills, has been extended to the National Service Training Programme (Program Latihan Khidmat Negara, PLKN) candidates. In 2017, 201 candidates have been trained and another 180 candidates have expressed their interest to undergo the training.

As part of the effort to increase the accessibility of the KAP, the online version of KAP conducted via Massive Open Online Course (MOCC) was launched on 8 August 2017. This online programme requires 23 weeks of online revision and an additional week of practical coursework at Sultan Idris Education University (Universiti Pendidikan Sultan Idris, UPSI).

The abovementioned initiatives have resulted in a commendable 54.6% women labour force participation rate in Q3 2017 compared to 54.3% in 2016.

PLACING MERITED WOMEN IN KEY DECISION-MAKING POSITIONS IN PRIVATE SECTOR

The YAB Prime Minister had first announced in 2011 the country's aspiration of having at least 30% Women on Boards to ensure inclusive participation of women across the workforce by 2020. This is the main initiative under the Rising principle. In 2017, he announced the intention to name and shame public-listed companies with no women on their boards starting in 2018. In the 2018 Budget speech, the YAB Prime Minister also announced that Government-linked companies (GLCs), Government-linked investment companies (GLICs) as well as statutory bodies will be required to have at least 30% participation of women as board of directors by end 2018.

In April 2017, the Securities Commission has also launched the Malaysian Code of Corporate Governance (MCCG) that includes requirements for public-listed companies with a market capitalisation of RM2 billion or more to adopt the best practice of having 30% women on their boards. Failing which, they are required to provide clarifications and rectification timeline in their Annual Report. Bursa Malaysia is now taking a step further to reflect the improvement in the MCCG in its public company listing requirements.

> ***"The percentage of women directors in all public-listed companies stands at 13.3%, while the percentage of women directors in the top 100 public-listed companies registered at 19.2%."***

To date, the percentage of women directors in all public-listed companies stands at 13.3%, while the percentage of women directors in the top 100 public-listed companies registered at 19.2%. These numbers are encouraging, as the percentage of women directors in all public-listed companies was a mere 7.5% in 2008, whilst the percentage in the top 100 public-listed companies was 13.2% in 2014. This achievement was facilitated through the 30% Club, an organisation that promotes awareness regarding boardroom gender diversity, and the NAM Institute for the Empowerment of Women Malaysia (NIEW), which manages training and provides a registry of potential female board candidates under KWKPM.

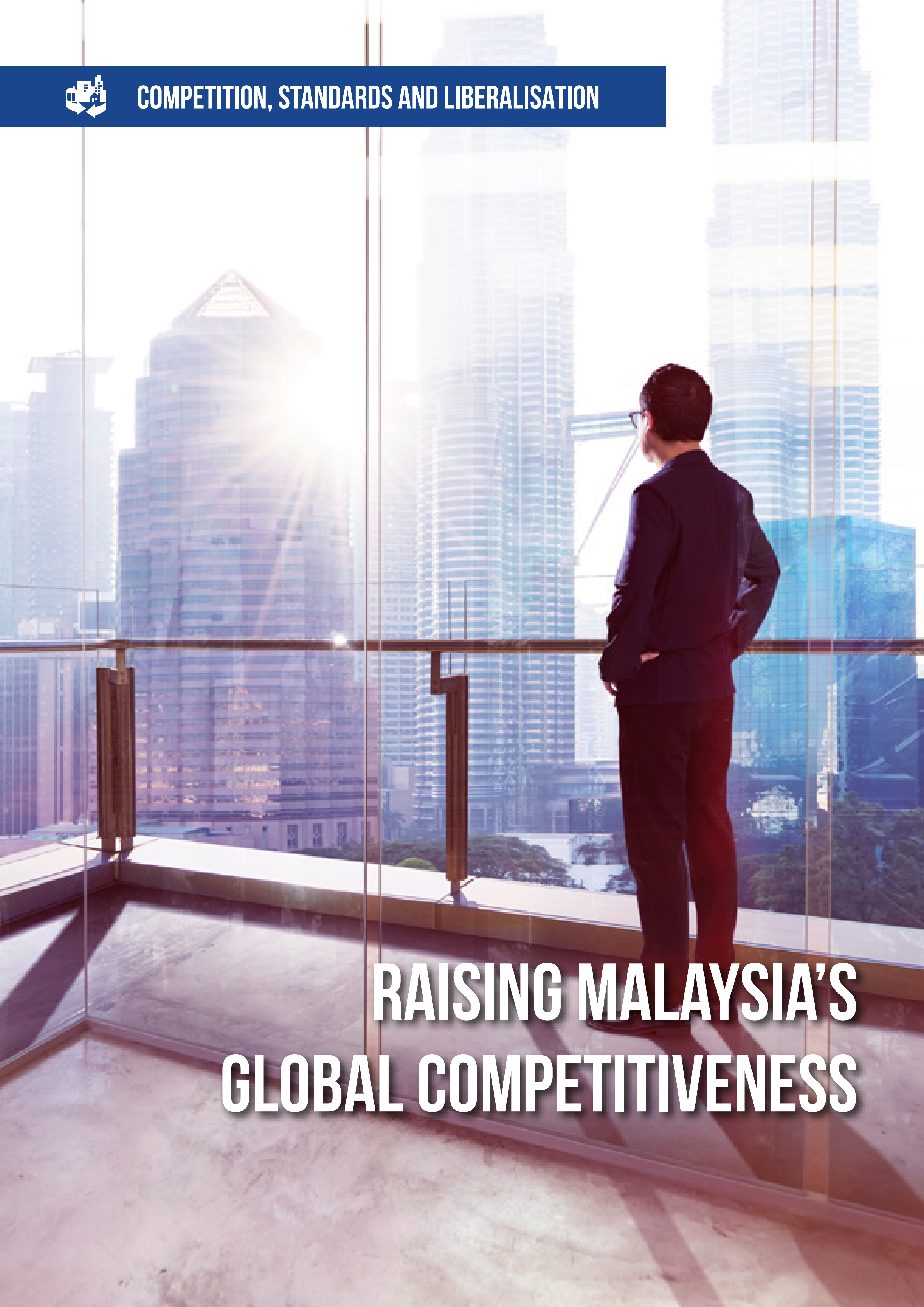
In 2017, the 30% Club conducted four sessions of its 30% Club Business Leaders Roundtable as part of its Board Mentoring Scheme with Chairmen and Board Directors of approximately 50% of Bursa Top 100 companies, such as Petronas Holdings, Boustead, Top Glove, the Employees Provident Fund, RHB Insurance Bhd, PLUS Bhd and Telekom Malaysia. As a result, 29 public-listed companies have sought assistance from the Club under the PWC Mentorship programme for their female Board candidates.

Under the efforts of NIEW, a total of 1,051 women director candidates attended the Women Directors Training Programme (WDP) between 2012 and December 2017. As of December 2017, 74 women from WDP alumni were placed on the board of directors of public-listed companies.

MOVING FORWARD

In pursuing the high-income nation status by 2020, the Human Capital Development (HCD) SRI is one of the key enablers towards having a 35% skilled workforce to meet the workforce skillset requirements in all the key economic sectors. The efforts will require full cooperation from public and private sectors. MOHR will thus continue engaging the relevant stakeholders across the focus areas to realise SRI-HCD portfolio's aspiration by 2020.

It is also acknowledged that women participation in the workforce and decision-making positions are essential towards making up the 35% skilled workforce, mitigating the brain drain issues and enhancing business practices. Hence, KPWKM will continue to work collaboratively with its stakeholders to enable more women to be in the workforce with equal access to key decision-making roles.



RAISING MALAYSIA'S GLOBAL COMPETITIVENESS

YB DATO' SERI HAMZAH ZAINUDIN
Minister of Domestic Trade, Co-Operatives and Consumerism

It is the mission of the Ministry of Domestic Trade, Co-operatives and Consumerism (MDTCC) to accelerate main domestic sectors that are viable, competitive and sustainable thereby ensuring a developed domestic economy grounded by fair competition and innovation, thus developing a trade ecosystem based on ethics and protection of consumer interest.

The competition law and policy in this country plays a major role towards this end by ensuring a conducive and healthy competition environment in the country.

With a healthy competition process, consumers will be able to enjoy more choices, competitive prices and better quality goods and services. The country's economy as a whole will benefit positively as a result of increased productivity and more efficient resource distribution. According to the World Economic Forum's Global Competitiveness Report 2017-2018, Malaysia is ranked as the 23rd amongst 137 countries in terms of global competitiveness. The report also stated that Malaysia is the region's top emerging economy, ahead of China which is ranked 27th.

I am confident that the Malaysia Competition Commission (MyCC) will continue to strive to deliver an effective competition regime to support a business-friendly environment to increase Malaysia's competitiveness globally. MyCC had changed the business environment by changing the rules of the game for the better.

YB DATUK SERI PANGLIMA WILFRED MADIUS TANGAU
Minister of Science, Technology and Innovation

Standards play an important role in assisting businesses of all sizes and sectors to improve productivity, increase efficiency and access new markets. Many businesses question the need for compliance to standards and its associated costs. The perception by companies is that standards compliance is a cost rather than an investment, making it a low priority for companies. Companies should realise that by complying to standards, it builds customer confidence that their products are safe, reliable and of quality. It also helps to reduce cost of operation, increase yield and competitiveness.

Standards has been identified as an important enabler to ensure the competitiveness of Malaysian companies at the global stage. For instance, the number of certifications for Quality Management Systems (QMS) and Environmental Management Systems (EMS) are being used as indicators for the Global Innovation Index (GII). In the GII 2017 report, Malaysia is ranked 26th out of 127 countries for Quality Management Systems certification and at number 35 for Environmental Management Systems certification. Based on this year's achievement where the number of certification has increased by 19%, Malaysia's GII ranking is expected to further improve in 2018. This shows that more industries are adopting and incorporating standards into their core business practices.

Consumers too need to create an intense demand for quality products and services which meet standards in order to alter the attitude of producers towards standards compliance. Standards must be seen as a tool to protect the safety and health of the rakyat and the environment. Now, more standards are being put in place across the spectrum of products from tyres to building design, tinted glass and playground equipment among others. High-impact standards such as the Design of Structures for Earthquake Resistance, Anti-Bribery Management Systems, good agricultural practice and specification for trigona honey, and DNA detection method for Halal certification have been developed in 2017. As of the end of 2017, 5,331 Malaysian Standards have been made available for businesses and consumers, and 510 of those standards are being made mandatory by regulators.

We experience unprecedented challenges, including rapid urbanisation, modernisation mandates, and economic austerity pressures thus it is the goal of this Strategic Reform Initiative (SRI) for standards to support the development of the country as outlined in the 11th Malaysia Plan. Standards will underlie the entire ecosystem, starting from production, development, utilisation, market access and even the removal of technical barriers to trade. We aim to brand Malaysian standards as a symbol of quality for Malaysian products and services.

YB DATO' SRI MUSTAPA MOHAMED
Minister of International Trade & Industry

Our mission to become a developed nation by the year 2020 is supported by several key measures outlined under this SRI. This SRI is part of the key policy measures recommended under the New Economic Model (NEM) for Malaysia Part 1: Strategic Policy Direction published by National Economic Advisory Council (NEAC). This policy measure stresses on the need to continue developing our services sector through greater involvement of foreign investment, which will spur the competitiveness of our domestic services sector. The excessive protection must be phased out gradually and sectoral liberalisation must be continued progressively.

The Services Sector Blueprint (SSB) was launched in 2015 meant to further support the domestic market and provide valuable policy direction for the development of Malaysia's services sector. The SSB was also designed to support and align with existing Government programmes, including the 11th Malaysia Plan. Henceforth, the services sector has continued to dominate and shall continue to serve as the biggest contributor to our national income until and beyond the year 2020.

Against the backdrop of rapidly evolving economic challenges, we must continue to formulate strategic moves and policy directions to harness the full potential of our diverse economy. Complications such as the shortage of skilled talent as well as regulatory constraints that still exist in our governance structure have to be tackled pragmatically and comprehensively, in line with the National Transformation Programme (NTP).

In our pursuit to become among the most competitive economies in the region, efforts must be strengthened to accelerate the growth of our export in goods and services sectors. Higher productivity and value-add for all targeted segments of our industry will also have to be intensified and continued actively. The services sector offers vast opportunities with huge growth potential in the years to come and our services industry players need to be able to capture these opportunities presented. The Government's commitment in facilitating and attracting more investments is unwavering – we will continue to provide conducive business climate in line with our vision of strengthening Malaysia's position as a premier investment destination.

FOSTERING A CULTURE OF COMPETITION

As an enforcement body, the MyCC is serious in nurturing a strong culture of competition in Malaysia. Throughout the year, MyCC has achieved various milestones through its enforcement, advocacy, market review, capacity-building and knowledge sharing in ensuring the development of Malaysia into a more globally competitive nation.

Actions taken by MyCC include a Proposed Decision against the General Insurance Association of Malaysia (PIAM) and its 22 members on 22 February 2017 for infringing Section 4(2)(a) of the Competition Act 2010 (CA 2010) through involvement in an anti-competitive agreement to fix trade discounts and labour hourly rate for PIAM Approved Repairers Scheme ("PARS") workshops. MyCC proposed to impose various remedies including financial penalties against the 22 general insurers.

"MyCC continued to engage with both the public and private sectors to increase awareness of competition law in the country through advocacy activities and market surveys to identify breaches in competition law."

On 27 February 2017, the Competition Appeal Tribunal (CAT) dismissed the appeal of Prompt Dynamics Sdn Bhd, which had infringed Section 4(2)(a) of the CA 2010 and was subsequently fined RM152,042 for engaging in price cartel activities. Aside from Prompt Dynamics Sdn Bhd, MyCC also investigated and penalised four other companies for price cartel activities. All five companies were fined a total of RM645,000.

Following MyCC's Final Decision against My E.G. Services Berhad (MyEG) for infringement of Section 10 (2)(d)(iii) of the CA 2010 by abusing its dominant position, MyEG filed an appeal to the CAT on July 2016. On 28 December 2017, the tribunal has dismissed the appeal of MyEG and My E.G. Commerce Sdn Bhd (MyEG Commerce) against the decision of MyCC with a penalty amounting to RM6,412,200.

MyCC has also extended the block exemption for liner shipping agreements in respect of Vessel Sharing Agreements (VSA) and Voluntary Discussion Agreements (VDA) commencing 7 July 2017 for a period of two years. The block exemption renewal application was submitted by the Malaysia Shipowners Association (MASA) and the Shipping Association of Malaysia (SAM) on 6 March 2017. Previously, MyCC had granted a three-year block exemption for liner shipping agreements, which expired on 6 July 2017.

In leading competition law in Malaysia, MyCC continues to spearhead the Special Committee on Competition which was formed in 2011, comprising several sector regulators to discuss mutual issues on competition laws and policy besides to ensure consistency in the application of the CA 2010 and other related laws. The Committee convened in July and December 2017 to discuss several issues cutting across various sectors. MyCC also continued to engage with both the public and private sectors to increase awareness on competition law in the country through advocacy activities and market surveys to identify breaches in competition law in certain industries. Since its establishment, MyCC has organised over 200 advocacy programmes for both the private and public sectors all over Malaysia.

In its efforts to raise awareness on competition amongst SMEs in Malaysia, MyCC has marked another notable development during the year with the launch of the e-Learning System on Competition Compliance Programme for SMEs in March 2017. An introductory course was designed to introduce CA 2010 to those owning and/or working in SMEs to help them comply with the requirements of the Act. The main objectives of the e-Learning System are to serve as a learning tool for SMEs and serve as a one-stop portal to access information on CA 2010, especially on competition compliance.

Following the success of the inaugural Moot Court Competition on Competition Law in 2016, MyCC organised the 2nd Moot Court Competition on Competition Law at the Ahmad Ibrahim Kulliyah of Laws (AIKOL), International Islamic University Malaysia (IIUM), Kuala Lumpur on 28 to 29 October

2nd Moot Court Competition on Competition Law 2017 held at Ahmad Ibrahim Kulliyyah Of Laws (AIKOL), International Islamic University Malaysia (IIUM).

2017. The second event attracted seven teams from universities all over Malaysia, and was won by the team from the University of Malaya. This competition aims to promote CA 2010 among university students, in line with the aim of creating a pool of future competition experts in Malaysia.

The Commission also organised and hosted two international conferences, namely the Malaysia Competition Conference 2017 held on 6 to 7 March 2017, serving as a platform for deeper exposure on competition policies, and the 7th ASEAN Competition Conference on 8 to 9 March 2017, focusing on the development of competition policy and law in ASEAN countries over the past decade, the priorities of younger competition agencies in a competitive ASEAN, understanding the challenges faced from new technological developments, and how regional cooperation can be strengthened to promote a stronger and more competitive ASEAN.

MyCC has completed two market reviews on the pharmaceutical sector and building materials in the Malaysian construction industry under the CA 2010. The review is done to understand the construction industry market and identify any anti-competitive conduct in the production of selected key building materials, as well as assess the prevailing industry practices and regulations that restrict competition and cause unnecessary regulatory burden. The Commission is also in the process of finalising new guidelines for the use of intellectual property rights under the CA 2010.

Malaysia continues to face a long road ahead in competition-related legislations. Enforcement of competition law remains a complicated issue even in the most well-established jurisdictions, due to the complex and technical nature of the subject. Detecting and investigating cases require considerable economic and legal expertise and these are areas that MyCC will need to invest in. Despite facing multiple challenges, MyCC remains determined in executing its mandate efficiently and effectively.

ENSURING WORLD-CLASS STANDARDS OF MALAYSIAN GOODS AND SERVICES

Producing more quality products

The Standards initiative under this SRI has contributed to greater cognizance among businesses on certification requirements for their products. This is as certification has become a pre-requisite for export which facilitates the trade of Malaysian products and allows local players to enjoy better market access. Heightened recognition and implementation of standards has catalysed efficiency in production, especially in the electrical and electronics (E&E), food and beverages (F&B), and agriculture sectors, while significantly increasing GDP contribution from those sectors (E&E – 0.02%, F&B – 0.26% and agriculture – 0.06%).

> ***"Heightened recognition and implementation of standards has catalysed efficiency in production."***

The launch of a new certification programme, the Malaysian Sustainable Palm Oil (MSPO) (compliance to MS2530:2013), has also contributed significantly to the production of more quality products. To date, 210 oil palm plantations have been awarded the MSPO certification. The Government, through the Ministry of Plantation Industries and Commodities (MPIC) and the Malaysian Palm Oil Board (MPOB), will make the MSPO certification mandatory for all oil palm plantations by the end of 2019 in the effort towards branding local palm oil as sustainably produced and safe. In order to uphold the credibility of the MSPO certification, the Malaysian Palm Oil Certification Council (MPOCC) in collaboration with Standards Malaysia has developed an accreditation programme which emphasises on three pillars of sustainability: economic viability, social acceptability and environmental soundness.

Expansion of standards in the services sectors

Standards Malaysia has worked closely with the services industry to promote the implementation of standards in various service sub-sectors. For instance, it has collaborated with the Malaysia Association of Cleaning Contractors to promote the cleaning services standard MS ISO 2550:2014 – Cleaning Performance for Commercial & Public Buildings for adoption by the cleaning services industry. This new standard incorporates best practices in management as well as hygiene and cleanliness. Cleaning contractors under the Association such as Industrial & Commercial Cleaning Sdn Bhd, Q-Services Sdn Bhd and Juwara Trading & Resources Sdn Bhd have volunteered to pilot projects using this standard with Universiti Teknologi MARA Raub and Universiti Teknologi MARA Shah Alam, Boustead Curve Sdn Bhd and Express Rail Link (ERL) Sdn Bhd agreeing to allow their facilities to be used in this pilot.

Meanwhile, the National Recreational Scuba Diving Council under the Ministry of Tourism and Culture (MOTAC) has invited Standards Malaysia to provide professional advice from a conformance perspective to increase awareness among diving operators and other scuba diving-related businesses on the importance of adhering to standards. Among the standards set for the diving industry include the MS ISO 11121:2011 – Recreational Diving Service which specifies the minimum requirements for organisations that offer introductory scuba experience training programmes to non-divers in an open-water environment.

Standards Malaysia has also initiated a programme with MOTAC to uplift the service levels of adventure tourism operators in the Pahang National Park. To this end, Standards Malaysia has signed a MoU with the Malaysian Tropical Environment Adventure & Fellowship Society (MyLEAF) to accelerate the development of a certification scheme for adventure tourism, ensuring that a minimum quality standard is observed by the operators. Beyond the safety aspect, this includes the preservation, conservation and sustainability of natural habitats.

Ensuring quality and security of food

The Ministry of Health (MOH) has undertaken the Makanan Selamat Tanggungjawab Industri (MeSTI), or the "Food Safety is the Responsibility of the Industry" certification with the objective to put in place a system for the maintenance of food hygiene and process control which includes food safety assurance and food traceability. It is targeted for at least 50%, or 3,874, of the 7,749 food manufacturing premises to be registered with MOH, and be MeSTI-certified, including MeSTI renewals. Since its introduction in 2012, 3,895 premises have been certified and by 2021, all food manufacturing premises shall be required to be certified according to MOH's requirements.

The Smart Partnership Programme that saw MOH collaborating with Universiti Putra Malaysia (UPM) to provide internship students with training on MeSTI modules has been expanded to include 127 students from Universiti Kuala Lumpur Malaysian Institute of Chemical & Bioengineering Technology (UniKL MICET) in Malacca, and 94 students from Politeknik Sultan Haji Ahmad Shah (POLISAS) in Pahang. Lecturers from UPM, UniKL and POLISAS have also received training in relation to the MeSTI certification.

Under the Beyond the Sustainable Supplier Development Programme (SSDP), MOH has collaborated with five major hypermarkets in Malaysia to improve food safety along the supply chain. Additionally, MOH has partnered with Tesco to make it mandatory for Tesco's fresh produce suppliers to be MeSTI-certified, and this will be expanded to other Tesco product suppliers. MOH has also worked with the Malaysian Islamic Development Department (Jabatan Kemajuan Islam Malaysia – JAKIM) to make food safety assurance programmes such as the MeSTI certification mandatory for corporate applicants of the halal certification.

The MeSTI certification will be expanded to include other hypermarkets and supermarkets such as AEON, Mydin, Giant and 99 Speedmart. MOH is also currently collaborating with food manufacturers such as durian processors, birds' nest packers, honey producers and others to expand and instil the benefits of MeSTI certification.

In order to promote MeSTI and create public awareness about the certification, many large-scale promotional activities and campaigns were carried out throughout the year through social media as well as electronic and print media, besides several other local engagement platforms.

Meanwhile, the Malaysian version of the Good Agricultural Practice standard, myGAP, has shown a CAGR of 37% of certification for fruit and vegetable farms and 130% for aquaculture farms and 14% for the number of livestock farms/premises since its inception in 2011. The cumulative number of farms certified with myGAP increase by 451% from 1,378 farms in 2011 to 6,226 farms in 2017. This can be attributed to increased awareness, market access and funding incentives for farmers to upgrade their facilities and fulfil the requirement of the myGAP certification.

MesTI certified food manufacturing premise belonging to Serantau Desa Industries, Kuala Lumpur.

However, demand for certified produce remains low in the domestic market, requiring collaboration with hypermarkets and grocers to demand certified produce, besides increased enforcement from implementing agencies, as well as more understanding among consumers on the need for certification.

Currently, the myGAP certification is voluntary, with the auditing and certification of farms left to the discretion of farmers. Fruit and vegetable farms that are certified by the Department of Agriculture (DOA) comprise small farms which account for only 2%, or 22,877 hectares, of the total farm land in Malaysia. Hence, there continues to be a need for larger farms to apply for the myGAP certification.

To further enhance the standards of agricultural produce, MOA has also allocated funds to assist farmers in upgrading their storage, sewage, collection and other facilities. In addition to funding, the Departments of Agriculture, Fisheries and Veterinary Services support MOA's efforts through engagement programmes, including capacity-building programmes towards myGAP compliance.

The myGAP certification has started to be recognised by neighbouring countries and has been set as a pre-requirement for the export of fruits and vegetables to Indonesia and Brunei Darussalam. Indonesia started implementing this requirement in February 2016 while Brunei started in 2017. Full implementation of this requirement will be rolled out in Brunei starting January 2018.

MOA views increasing the domestic demand for myGAP as an important component in encouraging farmers to obtain certification. Currently, there is no price differentiation for myGAP-certified and non-certified products. Thus, educating the domestic market to seek certified products where it touches quality, safety and sustainability will become a high priority, as well as create another layer of product offerings. Similar to MOH in its efforts to promote the MeSTI certification, MOA will also be collaborating with hypermarkets, speciality stores and supermarkets to create a demand for certified produce.

"The myGAP certification has started to be recognise by neighbouring countries and has been set as a pre-requirement for the export of fruits and vegetables to Indonesia and Brunei Darussalam."

Improving environmental standards

The MyHIJAU Programme is an initiative under the Ministry of Energy, Green Technology and Water (KeTTHA) which aims to boost the capacity and capabilities of the industry in the production of more green products and services that are competitive locally and globally, and at the same time encourage the consumption of goods and services that fulfil

myGAP certified farm belonging to Ngee Teck Huat Farming Sdn Bhd in Johor.

environmental standards. The MyHIJAU Programme includes the MyHIJAU Mark and MyHIJAU Directory initiatives, both of which aim to coordinate and monitor all existing green labelling activities, as well as enhance promotional and information gathering activities related to green labelling which is currently done by multiple agencies. This coordination serves to provide clarity and avoid confusion to arise from the multitude of uncertified 'green' labels. As of December 2017, 2,319 new local products have been certified under MyHIJAU, including air conditioners, televisions, refrigerators and consumer products such as biodegradable detergents.

Another branch under the MyHIJAU Programme is the MyHIJAU SME & Entrepreneur Development Programme, which aims to promote and increase awareness of the MyHIJAU certification and provide consultation to local entrepreneurs to encourage them to move towards obtaining the certification. As of December 2017, 423 companies have participated in this entrepreneur development programme.

In 2017, the implementation of the Government Green Procurement (GGP) initiative has expanded to all 25 Ministries and Government agencies. Under the 11th Malaysia Plan development budget for the period of 2016-2017, RM4.88 million was allocated for the implementation of green technology development and green procurement programmes. This programme involves capacity building among procurement officers to enhance their capabilities to implement the GGP, besides providing consultation for SMEs to encourage them to adapt green technology and practices in their operations. This programme promotes and facilitates the registration of the MyHIJAU Mark for businesses producing green products and services.

To date, the GGP implementation has seen the selection of 20 product groups as preferred green products with GGP compliance serving as an evaluation criteria in the Star Rating mechanism introduced by the Malaysian Administrative Modernisation and Management Planning Unit (MAMPU) to evaluate and rate the performance of public-sector agencies. GGP guidelines involving those 20 product groups have been developed based on MOF's procurement procedures and relevant national standards and eco-labels. In 2016, the GGP value by the 12 selected ministries was RM130 million.

Work in improving environmental standards in Malaysia has to take into consideration several issues and challenges. Eco-friendly products and goods are more expensive, as there is a high initial cost in manufacturing such green products. As a result, supplier readiness remains a concern, as does the wide availability of existing non-green/traditional products and services as alternatives to their green counterparts. There is also ignorance with regards to the existence of green products and services, which is one of the factors why the market for such goods is less driven by local demand.

To overcome these hindrances, the Government needs to set up a strategy to overcome those challenges. First is to create awareness that the green agenda is an investment, besides providing incentives and assistance to the industry to encourage them to adopt green standards and technologies. The strategy should also include enhancing the existing green standards, labelling and certification system. At the same time, the Government needs to focus on compliance of procurement regulations in the public and private sectors.

> ***"As of December 2017, 2,319 new local products have been certified under MyHIJAU, including air conditioners, televisions, refrigerators and consumer products such as biodegradable detergents."***

The rolling out of the Green Income Tax Allowance (GITA) and Green Income Tax Exemption (GITE) should continue to encourage greater demand for green products. KeTTHA will be involved in continual engagement with various identified agencies that provide Environmental Certification Schemes under the MyHIJAU Programme. Moreover, under the 'Green SME' initiative, environmental compliance and criteria will be incorporated in all SME development programmes organised by Ministries and Government agencies. Additionally, steering the SMEs' plans of action towards eco-friendly approaches will be done by the respective Ministries and agencies to reduce greenhouse gas emissions contributed by the manufacturing and services sectors.

LIBERALISATION AND REFORMS SPUR INVESTMENTS

Since 2009, Malaysia has undertaken a policy of progressive liberalisation and business reforms of its services sector to attract greater foreign investment and improve the competitiveness of the country. The Government has also undertaken sectoral governance reforms which improve the business climate. The exercises in liberalisation and reform continued into the implementation of the NTP.

In March 2015, the Government launched the Services Sector Blueprint (SSB) to further boost investment and activity in the services sector. The blueprint focuses on priority sectors, the Construction Industry Transformation Plan (CITP) and the Logistics and Trade Facilitation Master Plan, paving the way for a change in the composition of the services sector to enhance and leverage on linkages between sectors as well as to improve competitiveness and generate high-income jobs.

> ***"Incentives such as the Services Export Fund, Large Corporation-SME Partnership Programme and GoEx were introduced to facilitate export growth."***

SSB also focuses on three strategic shifts which include focusing on knowledge-intensive services, implementing an integrated sectoral governance reform and stepping up internationalisation efforts of local service providers. The blueprint has identified challenges facing this sector and proposed four policy levers namely internationalisation strategy, investment incentives, human capital development and sectoral governance reform to be implemented.

Strategies and action plans have been formulated for local companies to increase their export and expand their presence into the international market. A number of incentives were introduced to support and facilitate the development of export such as the Services Export Fund, Large Corporation-SME Partnership Programme, Mid-Tier Companies Development Programme and GoEx. These programmes are designed to address specific needs of export-ready services firms not only through funding opportunities but other support measures such as consultation, market research and export promotion. Programmes such as the Large Corp-SME Partnership Programme also encourage partnerships between large corporations and SMEs to venture into projects abroad.

The effectiveness of investment incentives can be further improved with central coordination and management of the various incentive schemes, a focus on quality, transparency and more robust evaluation of current and future incentive schemes. Investing in talent is also essential in ensuring the success of the services sector.

Other than the three strategic shifts, SSB recommended the establishment of the Incentive Coordination and Collaboration Office (ICCO), which was set up in MIDA on 15 April 2015. ICCO identifies the gaps and the enhancement opportunities across all schemes offered and ensures that underserved segments are included. MIDA administers all incentives under the Promotion of Investment Act, 1986 (PIA) and selected incentives under the Income Tax Act, 1967. In alignment with MIDA Act 1965, the organisation is also mandated to be the centre for collection, reference and dissemination of information relating to investments across all sectors of the economy.

ICCO fundamentally serves three main groups of stakeholders which are the foreign and local companies who are interested to establish and currently operating their businesses in Malaysia, agencies that manage incentives such as MOSTI, MIDF, MDEC and MATRADE, as well as incentive monitoring authorities such as MOF and EPU.

For the first phase of ICCO's implementation, MIDA has developed an interactive web portal which currently stores information on 120 incentives by 31 Federal Ministries and agencies. For the second phase, ICCO will collaborate with the relevant Ministries and agencies to compile a database of companies granted incentives under a centralised approval database management system to improve the central coordination and management of incentive provision.

Climbing up the ranks of Doing Business

The success of these efforts can be measured by Malaysia's 24th ranking on the World Bank's Doing Business 2018 report, putting the country fifth in Asia after Singapore, Republic of Korea, Hong Kong SAR and Taiwan. Among the highlights of positive reforms include the areas of getting credit, cross-border trade and protection of minority interests. The country is also ranked 8th in the world in terms of getting electricity due to the shorter number of days needed to connect to the grid (31 days versus 78 days across OECD high-income economies), the reliability of supply, transparency of tariffs and the affordable cost of connection.

> *"Malaysia is ranked 24th in the World Bank's Doing Business 2018 report."*

Furthermore, in the past 15 years, Malaysia has implemented 23 governance reforms aimed at improving business regulations. According to the World Bank, this is much higher than the per country average of 15 reforms in the East Asia and Pacific region. Notably, the country was ranked 11th in the 'dealing with construction permits' indicator, with the average time to obtain a construction permit in Malaysia amounting to 78 days against the global average of 158 days.

The report additionally highlighted the Government's establishment of a one-stop service centre as well as streamlining of the registration process through the introduction of e-lodgment to ease new business registrations. This has helped to halve the time needed to register a new business from 37 days 15 years ago to 18 days now, while the cost has been reduced from 33% of income per capita to 5% today.

The Doing Business 2018 report also suggested areas of improvement, including carrying out governance reforms in a more streamlined and regular manner across all Ministries and agencies. Despite completing six regulatory reform exercises in the Starting a Business area in the last 15 years, further improvements are suggested in the interest of enhancing the benefits and effectiveness of the regulatory reforms to the business community.

Reducing unnecessary regulatory burdens

Efforts to ensure conducive environment for business are also undertaken by the Malaysia Productivity Corporation (MPC), which has undertaken a series of specific regulatory reviews and developed the National Policy on the Development and Implementation of Regulations (NPDIR) to establish good practices for the reform processes. Implementation of the NPDIR includes undertaking in-depth public consultations and regulatory impact assessments to ensure that the new regulatory changes are sound and effective to the public and the relevant industries in Malaysia.

Following this, among regulations which have been eased include landing permits for chartered flights. Prior to the exercise, on average it took seven days for cargo flights and 14 days for passenger flights to obtain landing permits against the best practice, of around two to three days. This exercise has shortened the issuance of Landing Permits of Charter Flights to three days for cargo and passenger flights and reduced 70% of documents for applications for Domestic Airlines and 30% for Foreign Airlines. This improvement will bring tremendous impact in terms of stimulating trade, facilitating business efficiency and spurring economic growth. It has also contributed to the larger objective of transforming Malaysia into the preferred logistics gateway to Asia.

Although governance and regulatory reform exercises are carried out consistently, a number of improvements are required to support the objective of further improving the ease of doing business in Malaysia. These include the need to enhance knowledge on Good Regulatory Practices (GRP) among Government agencies to strengthen the public consultation mechanism and governance to ensure that stakeholders are not adversely affected when the Government introduces and amends policies or regulations. Ministries and agencies are encouraged to undertake the Regulatory Impact Analysis (RIA) in order to manage intended and unintended consequences that may arise from regulatory review processes.

Strengthening Malaysia's Brand by Raising the Bar

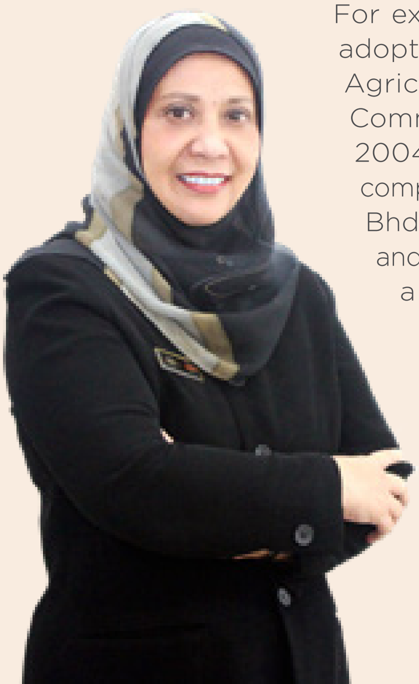
Building up trust in Malaysia's products and services is pivotal to the nation gaining competitiveness. Therefore, Malaysian products and services need to meet high standards, and be seen to be meeting high standards.

Standards Malaysia, a Government department in charge of creating standards for the country's products and services, is one of the key drivers of the CSL SRI. This SRI aims to develop an efficient and competitive business environment and culture via the enhancement and adoption of standards and best practices.

Datuk Fadilah Baharin, Director General of Standards Malaysia states that upholding Malaysian products and services to the highest standards is one of the keys to transforming the nation into a high-income economy. "Standards are important as they open doors, help speed market growth and increase domestic and international trust in Malaysian products and services."

Standards Malaysia has developed over 6,000 standards across 25 sectors, and among those is the Halal certification which is awarded and enforced by Jabatan Kemajuan Islam Malaysia (JAKIM). Through aiding various Government ministries to enforce certification programmes to help companies and businesses improve quality and gain market trust; higher levels of trust, higher sales and better quality for customers are achievable by Malaysian companies.

For example, following the adoption of MS 1784 Good Agriculture Practice Crop Commodities (MyGAP) in 2004, Terengganu based company, GM Peladang Sdn Bhd which grows melons and tomatoes experienced a rise in profit from RM3,870 in 2005 to RM124,567. The rise was attributed to the fact that the MyGAP certification allows GM Peladang's products to more easily gain acceptance and entry into hypermarkets, farmer's markets and hotel kitchens.



Datuk Fadilah Baharin, Director General of Standards Malaysia.

The adoption of Standards Malaysia's standards aided a Kuala Lumpur-based digital security firm, Securemetric Technology Sdn Bhd, double its export revenues to RM4.95 million in 2014 as compared to RM2.4 million in 2010. Securemetric adopted two standards: ISO 15408 – Common Criteria Evaluation Assurance and ISO 9001 – Quality Management Systems. ISO 15408, which also helped Securemetric obtain new deals in the government and private sector that it had previously been unable to secure.

The department is also focused on increasing awareness of the importance of standards to the future generation. To this end, Standards Malaysia is working with universities to incorporate standards education into their syllabi. It also works with the Ministry of Education to disseminate knowledge about standards to primary and secondary school students. This is done via games and competitions such as The National Standards Olympiad; where students must demonstrate creativity, problem-solving skills and cooperation through team-based competitive standardisation activities such as developing prototypes.

Winners of The National Standards Olympiad go on to the represent the country at the International Standards Olympiad. Two Malaysian schools, Sekolah Menengah Kebangsaan Taman Mutiara Rini 2, Johor and Sekolah Menengah Kebangsaan Rantau Petronas, Terengganu won silver and bronze medals respectively in the global games held in Yongin, Korea in 2017.

Standards Malaysia is now working on introducing a national quality mark to help enhance Malaysia's brand globally. "With this national quality mark, Malaysia will fly high," said Fadilah. "There will be higher trust in Malaysia's products and our products will become the preferred brand around the globe."

MOVING FORWARD

The Competitions, Standards and Liberalisation SRI has brought many advancements to the nation in the past seven years including increased awareness of competition law, heightened standards of local products and services, and the progressive transition of the services sector to become more knowledge-intensive and innovation led.

To deliver effective competition regime in Malaysia, MyCC will continue its role to implement and enforce the CA 2010 to ensure a conducive competition culture to make markets work well for consumers, businesses and the Malaysian economy. MyCC will remain focused on elevating awareness as well as educating stakeholders and the public on the importance of complying with competition laws. Besides that, MyCC will continuously build and disseminate expertise in competition law through networking efforts.

Meanwhile, the focus of standards has always been to encourage business entities to obtain certification to improve their competitiveness, particularly those who wish to penetrate the export market. However, the drive to obtain certification is still dependent on export market requirements while certified products do not command a price advantage over non-certified products or produce. Consequently, local businesses would not see the value of obtaining certification. Moving forward, the Government needs to step up its efforts to increase the demand of certified products among domestic consumers and enhance the country's standards to meet international benchmarks.

In liberalisation of the services sector, the Ministry of International Trade and Industry (MITI) will coordinate and oversee implementation of the SSB which outlines 29 action plans that transcends across four main policies: internationalisation of services firms; effective management of investment incentives; enhancing human capital development; and enhancing sectoral governance integration. In addition, there should be continuous efforts by MPC to evaluate the Business Environment Framework, especially in Reducing Unnecessary Regulatory Burdens for the sectors such as the ICT sector, logistics and Distributive Trade to raise Malaysia's ease of doing business.

SAFEGUARDING EQUALITY IN PROSPERITY

YB DATUK SERI PANGLIMA ABDUL RAHMAN DAHLAN
Minister in the Prime Minister's Department,
Economic Planning Unit

In enhancing inclusiveness towards an equitable society, the Government has continued to focus on addressing the needs of identified target groups, including the Bumiputera. Since the launch of the New Economic Policy (NEP) in 1971, various initiatives were implemented in support of the Bumiputera agenda to uplift living standards and reduce socio-economic imbalances. The incidence of poverty among Bumiputeras has since declined from 64.8% in 1970 to 0.5% in 2016 and the mean monthly gross household income of Bumiputeras has increased from RM172 in 1970 to RM6,267 in 2016.

Despite this progress, the participation of Bumiputeras in the economy is still low, therefore, continuous efforts are required to ensure more equitable access for Bumiputeras to economic opportunities. In this regard, the Government through TERAJU has mobilised and spearheaded the implementation of the Narrowing Disparity SRI, adopting "growth with equity distribution" as a key principle to ensure inclusive planning and balanced economic growth.

This SRI has paved the way for the development of the Bumiputera community and the implementation of the Bumiputera Economic Transformation Roadmap (BETR) 1.0 in 2011 has been able to address the fundamental issues faced by the Bumiputera community in a holistic manner with the goal of catalysing Bumiputera wealth. Thus far the results have been encouraging, enabling the creation of business, employment and education opportunities for the Bumiputera community. As of 2017, through the initiatives carried out under BETR 1.0, a total of RM122.2 billion business opportunities have been created for the Bumiputera.

On 19 April 2017, the YAB Prime Minister launched the Transformasi Kesejahteraan Bumiputera (TKB) as an expansion of BETR 1.0. While BETR 1.0 was more focused on wealth creation, the TKB is aimed at uplifting the well-being of Bumiputera across all aspects of their lives. The Bumiputera Economic Council (Majlis Ekonomi Bumiputera, MEB) provides the necessary guidance on policies and initiatives to implement the TKB. Its initiatives are steered towards placing more emphasis on women, youth and Bumiputera in Sabah and Sarawak.

The Government is also committed towards enabling Bumiputera companies to penetrate international markets. In this regard, RM100 million has been allocated for TERAJU to implement various export programmes for Bumiputera SMEs. TERAJU International, an arm to facilitate Bumiputera exporters and connect them to the global arena, was launched in 2017 and will serve to strengthen the competitiveness of Bumiputera companies through integral capacity-building in the international market.

As we move forward, emphasis must be placed on transforming the mindset of the Bumiputera community to reduce their dependency on financial assistance and enhance their competitiveness through capability and capacity-building as well as innovation. It is only in this way that we will be able to achieve sustainable improvements in the well-being of Bumiputera.

EMPOWERING HUMAN CAPITAL

Education development and skills improvement are essential elements to continuously uplift the Bumiputera community's share of wealth and participation in the economy. In this area, Yayasan Peneraju Pendidikan Bumiputera (Yayasan Peneraju) is the body mandated to increase the quality, quantity and relevance of Bumiputera talent. This is in accordance with the Government's effort to catalyse the creation of skilled jobs in line with Malaysia's transformation into a high-income nation. RM419 million was allocated, through both Government and private funding, for three core programmes under Yayasan Peneraju, namely Peneraju Skil, Peneraju Profesional and Peneraju Tunas. After more than five years in operations, Yayasan Peneraju has enrolled 17,700 scholars via more than 205 intervention programmes. From this total, 3,900 scholars were enrolled under Peneraju Tunas, 10,300 scholars under Peneraju Skil and another 3,500 scholars enrolled under Peneraju Profesional.

"After more than five years in operations, Yayasan Peneraju has enrolled 17,700 scholars via more than 150 intervention programmes."

In addition to providing education opportunities for the Bumiputera community, Yayasan Peneraju also focuses on instilling greater discipline, ethics, self and social awareness, besides strengthening work-relevant soft skills and providing on-the-job training to further prepare their scholars for the working world. This includes closer engagement with the industry to ensure graduates are equipped with relevant skills. In the future, Yayasan Peneraju aims to develop and implement programmes for new target areas which require intervention such as the religious education stream, workforce for emerging industries and technologies as well as providing programmes specifically for selected groups such as the Orang Asli, asnaf (Zakat recipients) and prison inmates.

Entrepreneurship development program conducted by INSKEN.

Currently, a large number of Bumiputera companies are involved in low-value projects due to their lack of capacity and capabilities. In an effort to boost the size and capabilities of Bumiputera companies, INSKEN, a unit under TERAJU, has played an important role in developing the capacity of Bumiputera companies and ensuring that the companies are on par with the competitors in the market. As of 2017, 325 businesses have registered a minimum revenue increase of 10%, exceeding the target of 300 businesses through the INSKEN500 programme. In total, 28,330 entrepreneurs have benefitted from 1,109 programmes implemented nationwide in collaboration with various federal and state entities.

On the corporate front, in 2017, INSKEN collaborated with Talent Corporation Malaysia Berhad (TalentCorp) and Unit Perancang Ekonomi Negeri Sabah (UPEN Sabah) to conduct the Sabah GLC Talent Development Programme which aims to develop human capital among those holding senior management positions in Sabah. These individuals are placed within selected national GLCs where they are trained for six months to gain a better understanding of best practices in GLCs. The programme also enables knowledge and technology transfer among GLCs in organisational development and project implementation and delivery.

As the Secretariat to the GLC Talent Development Programme, TalentCorp is responsible for implementing and monitoring this programme, including strategising the best way to develop top talent, setting the selection criteria and matching the candidates with suitable GLCs through profile assessment. In September 2017, two Sabah GLC Talent Development Programme candidates started their six-month training in two GLCs, Khazanah Nasional Berhad and TERAJU.

BOOSTING THE BUMIPUTERA ECONOMY

In 2017, RM80.47 billion worth of business opportunities were created for Bumiputera companies through two feeder programmes – the Facilitation Fund and the Carve-out & Compete programme. Through the Facilitation Fund, RM14.44 billion in private investments have been generated from RM1.7 billion in financing approvals for 455 companies and 538 projects. Under the Carve-out & Compete programme, two projects identified in 2017 – the LRT3 expansion project and the Pan Borneo Sabah Highway project – carved out RM7.12 billion and RM3.9 billion worth of works, respectively, to be awarded to Bumiputera companies. Since 2012, a total of RM66.03 billion in contract value has been carved out for Bumiputera companies via the Carve-out & Compete programme.

To increase Bumiputera involvement in mega infrastructure projects, RM500 million has been made available for local contractors under the "Program Pembiayaan Kontraktor Pan Borneo Highway" (PPKPBH). The funds are made available in collaboration with SME Bank, RHB Islamic and Credit Guarantee Corporation.

Meanwhile, to ensure efficient use of Government funding, TERAJU had introduced the use of Government funding as collateral to be leveraged by financial institutions to provide financing to qualified companies. This financing is provided through programmes such as the TeraS Fund, the Business Expansion Fund, Bumiputera SME Equity Fund and the Bumiputera Technology Fund. As a result, from an initial Government funding of RM444 million, Bumiputera companies have received RM1.62 billion in financing, equivalent to a financing multiplier of 3.65 times against a target of three times.

YAB Tan Sri Datuk Seri Panglima Musa Aman looking at the floor plan of Anjung Usahawan Tanjung Lipat redevelopment project.

Nonetheless, there has been found to be a low take-up rate of the funds as there appears to be lack of awareness among companies of the availability of the programmes. In an effort to address this, TERAJU regularly engages with its financing partners to undertake awareness programmes.

Efforts under BETR 1.0 have also included increasing Bumiputera corporate equity through the Skim Jejak Jaya Bumiputera (SJJB). In 2017, two Bumiputera companies – GFM Services Bhd and Serba Dinamik Holding Bhd – were listed on Bursa Malaysia in January and February respectively. Both companies have seen their market capitalisation increase by more than 50% since then. Serba Dinamik, which raised RM2 billion from its initial public offering (IPO), has seen its market capitalisation grow to RM4.3 billion in 2017, while GFM Services raised RM162.6 million during IPO and recorded a market capitalisation of RM214.1 million in the same year.

Efforts to uplift Bumiputera should be recognised as a national agenda. In order to expand its reach nationwide, TERAJU has worked with multiple agencies to disburse the Dana Pembangunan Usahawan Bumiputera (DPUB). The agencies involved include the Northern Corridor Investment Authority (NCIA), East Coast Economic Region Development Council (ECERDC), Iskandar Regional Development Authority (IRDA), Sabah Economic Development and Investment Authority (SEDIA), Ministry of Industrial and Entrepreneurial Development Sarawak (MIED), Sedcovest Holdings Sdn Bhd, a State Government agency in Sabah, and Yayasan Sabah. Funds amounting RM15 million are allocated to each corridor for, among others, entrepreneur funding, training and the establishment of community innovation centres, infrastructure development and incubation centres. A total of RM110 million has been disbursed since 2015. To date, 11,488 entrepreneurs from these various corridors have benefitted from the various programmes under DPUB implemented across all corridors.

The Government remains inclusive in its initiatives to uplift Bumiputera and has formulated strategies to upscale Bumiputera micro-entrepreneurs. As such, various initiatives were developed to aid those in this segment, especially micro-entrepreneurs at the corridors with emphasis given to Sabah and Sarawak. One of the initiatives is the redevelopment of the Anjung Usahawan Tanjung Lipat with an allocation of RM13.5 million through a collaboration with Sedcovest. The 51,130 square feet building was rebuilt and given a facelift with the aim to create a centre for business that is comfortable and well-organised for Bumiputera entrepreneurs in the food & beverage, retail and services sectors. It is also hoped that the development of the surrounding areas and tourism industry in Kota Kinabalu will be further supported with the development of this business environment. Construction commenced in September 2017 and is targeted for completion in December 2018. The redevelopment project will provide business opportunities to 64 entrepreneurs within the business area and is projected to create 200 additional jobs for the locals.

Young, innovative and creative Bumiputera entrepreneurs and start-up companies are also given a chance to realise their ideas through the Skim Usahawan Permulaan Bumiputera (SUPERB). As at December 2017, 201 winners have been identified for grant allocation of RM79.8 million in collaboration with 10 agencies, namely Malaysia Digital Economy Corporation (MDEC), Perbadanan Usahawan Nasional Bhd (PUNB), Technology Park Malaysia, Malaysia Development Ventures, Malaysia Venture Capital Management Bhd (MAVCAP), Malaysian Technology Development Corporation (MTDC), Cradle Fund, Bioeconomy Corporation, MyCreative Ventures and Kumpulan Modal Perdana.

The Government is also committed to enabling Bumiputera companies to penetrate international markets. In view of this, RM100 million was allocated to implement various export programmes for Bumiputera SMEs. Following this, TERAJU launched TERAJU International in 2017 to serve as a platform to facilitate Bumiputera exporters through various programmes and connecting them to the global arena with the aim of strengthening their competitiveness in the international market.

The Bumiputera Initiative for Globalisation (BIG) programme and Bumiputera Frontier Financing (BFF) are the two flagship programmes under TERAJU International, for which RM50 million has been allocated for each programme. BIG is a collaboration between TERAJU and Malaysia External Trade Development Corporation (MATRADE) to assist export-ready companies and other high-potential companies with competitive products to penetrate international markets. The programme is targeted to develop five global champions and 10 regional champions from different sectors.

> *"TERAJU launched TERAJU International in 2017 to serve as a platform to facilitate Bumiputera exporters through various programmes and connecting them to the global arena."*

Meanwhile, BFF is a partnership between TERAJU and EXIM Bank which provides financing facilities to exporters for indirect exports, overseas contracts, projects or investment abroad for working capital and capital expenditure. Using the funds as security/collateral, EXIM Bank will provide a financing facility of RM150 million for exporters to enjoy cheaper financing from subsidised financing rates, reduction in collateral obligations for financing and access to cross-border financing products to capitalise on new business opportunities.

To push forward the Bumiputera agenda, Unit Pemerkasaan Ekonomi Bumiputera (UPEB) has been set up within Ministries to drive and lead the implement of Bumiputera agenda at the Ministerial level. These Ministries will need to carry out initiatives that promote the Bumiputera agenda with KPIs reported to MEB on a bi-annual basis to ensure all targets are achieved.

BUMIPUTERA ECONOMIC TRANSFORMATION ROADMAP 2.0

In April 2017, the BETR 2.0 Syndication Lab was held, attended by over 600 representatives from ministries, agencies, entrepreneurs, GLCs, GLICs and NGOs. A total of 46 initiatives were derived from the syndication lab, which paved the way for the YAB Prime Minister to introduce Transformasi Kesejahteraan Bumiputera (TKB). TKB aims to introduce policy principles that will strengthen the Bumiputera agenda over the next 10 years, while focusing on programmes and initiatives to be delivered over the next five years – from 2017 to 2021.

TKB's programmes and initiatives will be guided by the following policy principles:

1. Income as the true north – achieve a mean monthly income of RM5,000 for Bumiputera over the next five years, encompassing both wage and non-wage income.
2. Creating success stories into replicable models – combination of fine-tuning existing programmes to make them more replicable, as well as complementing them with new initiatives.
3. Combining public and private financial resources to deliver greater impact – increase funding for B40.
4. Rationalisation of the delivery system – ensure that benefits are distributed amongst Bumiputera on a needs-based and equitable manner in terms of socio-economic background and gender; Bumiputera companies that are in the priority sectors are given adequate coverage.
5. Small firm-friendly policies – TERAJU will work with key Government organisations and GLCs to pilot small-firm friendly policies in specific procurement and project contexts.
6. Strengthening emphasis on women.
7. Malaysian Youth and the readiness for disruptive technology – programmes like SUPERB for the younger generation need to continue and be enhanced for the nation to be ready for the next 'game-changing' innovation.
8. The Bumiputera agenda has to be embedded in the mainstream activities of Ministries and agencies.

The approach taken by TKB for the Bumiputera transformation champions the people with the aim of elevating the status of Bumiputera. It is anchored on five areas: upscaling Bumiputera companies, empowering human capital, enhancing the competitiveness of Bumiputera, enabling social mobility and ensuring that Bumiputera transformation is comprehensive and holistic.

The BETR 2.0 syndication lab session held in April 2017.

ADOPTING THE BUMIPUTERA AGENDA ON A NATIONAL SCALE

Programmes under TERAJU have seen multiple successes and many Bumiputera companies and individuals have seen an improvement in income and quality of life due to the positive outcomes of the programmes. Thus, in the effort to ensure the sustainability of these improvements, TERAJU is continuously encouraging large and successful Bumiputera companies to adopt policies or programmes such as Carve-out & Compete or develop their own mini Vendor Development Programme.

Echoing the Government's directive which came into effect on 1 August 2017 that any company which receives procurement/contracts from the Government are required to provide training for Skim Latihan 1Malaysia (SL1M) trainees by allocating a budget of 1% of the procurement/contract value for the SL1M programme, many companies that have received funding from the Government will play their part in tackling the issue of unemployment and human capital development by taking in SL1M trainees. This will help address the issue of unemployment and create opportunities for skills development among youth.

Paving the Horology Field in Malaysia

Horology, the study and measurement of time and the art of making time-keeping instruments, is synonymous with Swiss passion and specialty. Although Malaysia has never been known to lead this department, one man and his team are planning to change that.

"MASA Horlogerie is a Malaysia-born fine watchmaking company," says Dr. Ahmad Syahid Mohd. Fadzil. "Established on 31 August 2015, we are the first and only Malaysian Bumiputera watchmaking company that is involved in the business of high quality, ultra-exclusive Swiss-made luxury timepiece. MASA Horlogerie is inspired by the highly acclaimed Swiss watchmaking heritage and artistry, and the aesthetically rich cultural heritage of Malaysia."

The medical doctor by profession and self-confessed 'horologer, designer, watchmaker and entrepreneur by passion' is one of the winners of the prestigious Bumiputera Entrepreneurs Startup Scheme (Skim Permulaan Usahawan Bumiputera, SUPERB) programme, held under the patronship of TERAJU and the Prime Minister's Office. The programme provides grants and funds to support Bumiputera-led startup companies with innovative and creative business ideas.

Dr. Ahmad Syahid Mohd. Fadzil, founder of MASA Horlogerie.

Accelerated through SUPERB

"To be honest I joined the (SUPERB) programme for the opportunity to gain professional entrepreneurial knowledge, not to win," says Dr. Ahmad Syahid, a University Malaya graduate. "The experience I gained from the programme was truly priceless! I had the opportunity to learn about the start-up ecosystem in Malaysia, meet captains of the industry and gain knowledge and guidance from vastly experienced coaches, mentors and fellow participants."

Local culture, International products

Dr. Ahmad Syahid is passionate in bridging the business and knowledge gap between Malaysia and Switzerland in the horology field while highlighting Malaysia's unique heritage. MASA Horlogerie's fine watches, which incorporates 'Heritage Horology™' or 'Horologi Warisan™' receive domestic and international demand.

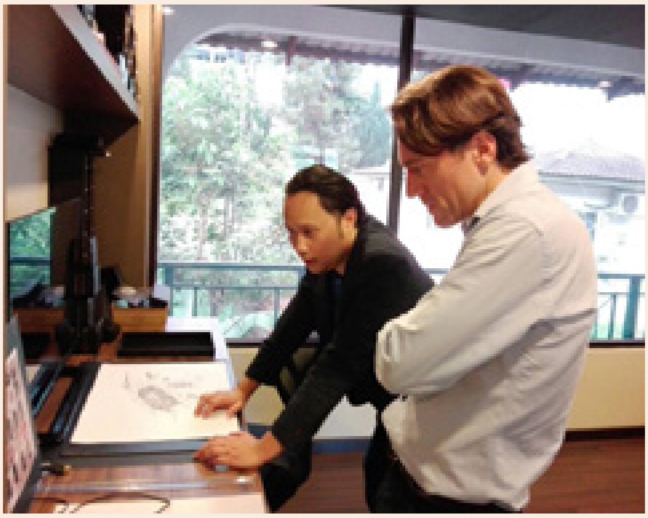
The company is currently in the midst of creating historic-themed pieces such as the Kerabat I series with the world's first "Keris Lok 9" watch hand and "Songket Bunga Pecah 8" dial. It has also successfully established an exclusive sartorial/fashion label, the MONT/OPHIR™ which features the classical name of Gunung Ledang and its legendary gold story.

"SUPERB has provided not only a significant financial contribution, but more importantly the platform for MASA Horlogerie to be established, (plus) social networking, entrepreneurial empowering sessions, and personalised and focused mentoring. It gave us the opportunity to give back to the society, pay our best tribute towards the country, our culture and patriotic spirit through horology," the founder says. "The SUPERB programme had opened the path for me to explore my entrepreneurial acumen and self-potential."

Plans for the future

Dr. Ahmad Syahid is a keen believer in giving back to society. His team is now developing a syllabus and learning materials to encourage Malaysians to be a part of the local horology movement. The company is training staff members and interns on international business administration, the business of horology as well as basic technical aspects of Swiss watchmaking. In addition, the company also plans to establish a national horological institute and a horology-tourism-based "mini Switzerland" in Malaysia, the first in Asia. The institute will feature a watchmaking school, a resource lab and a training centre.

Exemplifying his entrepreneurial spirit, Dr. Ahmad Syahid has big plans for MASA Horlogerie. "We hope to have our own certified watchmaking facility in Malaysia before 2020, so we can educate and train our own talents in this field. In 2018, we will expand our customer experience and support with a bigger gallery, an adjacent watchmaking facility under the name "Montres MASA."



The watch designing process with a Swiss expert.

To aspiring entrepreneurs, Dr. Ahmad Syahid shared the following advice: "Knowledge, perseverance and undying passion are the rules to become successful in any field or career, as these values are the most significant motivation. When you are passionate about something that you whole-heartedly believe, you will find a solution for every problem you might encounter. Your knowledge must be apt and you should never, ever stop learning."

Watches produced by MASA Horlogerie.

DPUB Eases the Way Forward for Bumiputera Entrepreneurs in the ECER

Designed to address the limited access to funding and lack of capital that many Bumiputera face, the Bumiputera Entrepreneur Development Fund (Dana Pembangunan Usahawan Bumiputera, DPUB) has been overwhelmingly well-received; being the most highly sought-after programme by Bumiputera entrepreneurs in the East Coast Economic Region (ECER).

Mohd Suhaimi Ab Aziz, Project Manager of the entrepreneurship development programme in the East Coast Economic Region Development Council (ECERDC), has been involved with the DPUB from the start. "I was involved in policy planning and drafting, activity selection, budget planning, SOP development, promotion and awareness. I now manage the overall implementation of the programme," he explains.

As part of a strategic collaboration with Unit Peneraju Agenda Bumiputera (TERAJU) since August 2015, DPUB aimed to assist Bumiputera SMEs in the ECER to grow their business through four initiatives; soft loans for micro-enterprises, business equipment aid, reimbursement grants for Bumiputera investors in industrial parks and development fund for contract farmers.

> ***"On average, entrepreneurs that received DPUB assistance increased their sales by 30% after only six months."***

"Our strategy has been to identify Bumiputera entrepreneurs with potential to nurture their organic growth and increase their competitiveness. We also cover less-recognised industries, such as post-natal care services and home dealers of agriculture produce, which otherwise might not be considered for loans through commercial financial institutions," Suhaimi points out.

As of December 2017, DPUB had benefited 1,630 ECER entrepreneurs, 95% of which have annual turnovers below RM300,000, with 70 percent of the entrepreneurs involved in the food and beverages (F&B) industry. "On average, entrepreneurs that received DPUB assistance increased their sales by 30% after only six months; some of them, especially in the F&B line, increased sales by more than 50%," Suhaimi enthuses.

He also notes that the business transformation did not only improve their quality of life, but was also able to create a spill over effect in creating more jobs to the local community. "Our survey data shows that on average, each entrepreneur has created three new job opportunities, all of which are filled by locals."

Suhaimi believes that DPUB, along with all the other human capital development and entrepreneurship programmes implemented since 2009, has successfully narrowed the economic disparity in the country, especially in the ECER. "The initiatives carried out by the Government have benefited about 11% of total households in the ECER, which is significant given that 97% of them are in the B40 group, and more than 85% are Bumiputera."

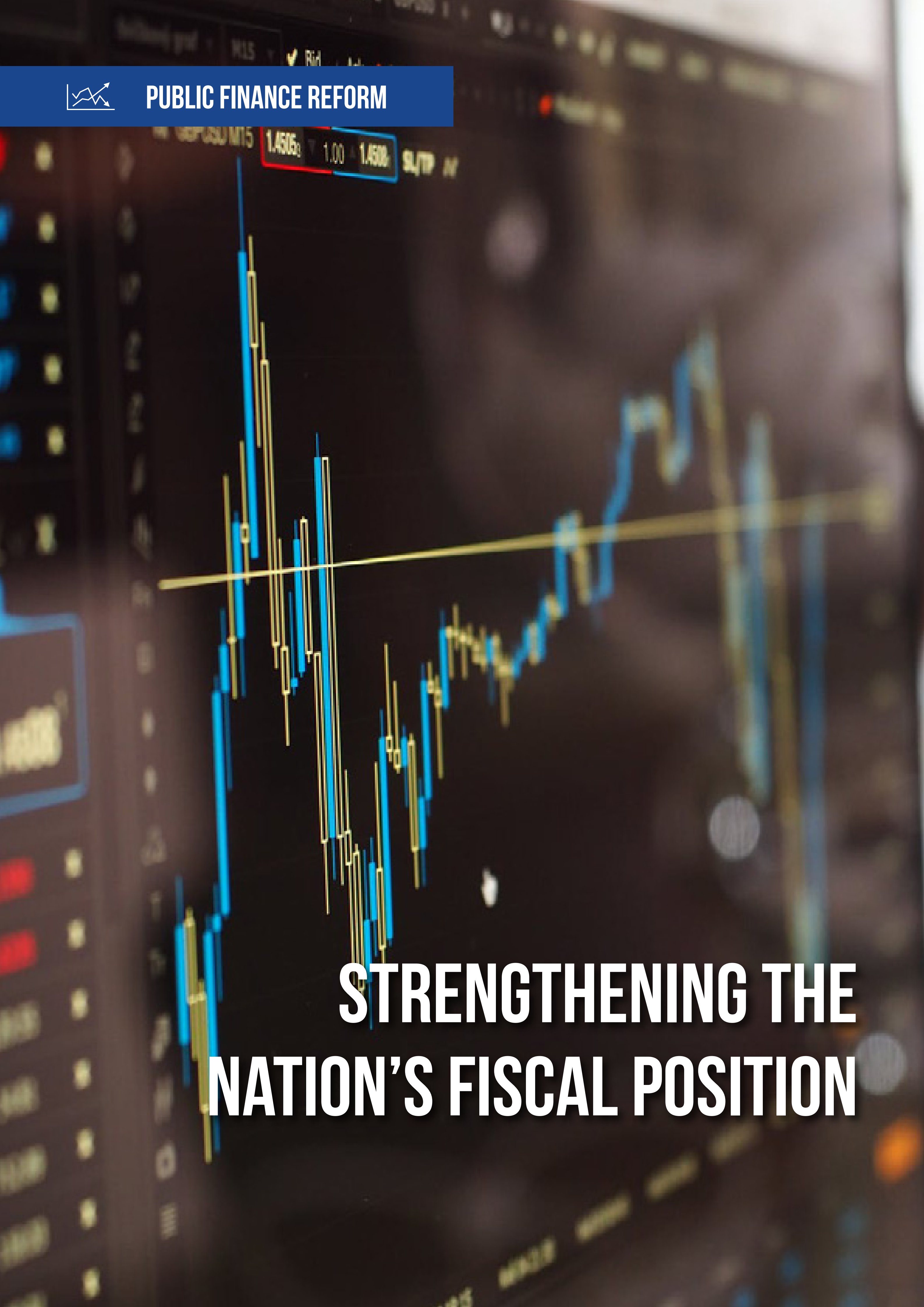
However, he also thinks that the Government needs to encourage technology uptake by Bumiputera entrepreneurs. "The Fourth Industrial Revolution is not merely a concept; it is going to drive industry growth. We need to change entrepreneurs' mindsets and perceptions, so that they see that technology and automation actually reduces costs through digitisation of business operations and improved efficiency. Thus, the Government should impose specific criteria regarding the use of industrial automation or ICT for Bumiputera entrepreneurs to be eligible for all assistance programmes."

MOVING FORWARD

In the future, TERAJU aspires to be the Centre of Excellence for Bumiputera entrepreneurs – serving to incubate, pilot and deploy replicable programmes across both the public and private sectors to further scale-up Bumiputera entrepreneurs. Programmes under TERAJU will also be geared to be more holistic and inclusive, parallel to the TKB to develop the well-being of the Bumiputera community. Emphasis will also be placed on the development of women and youth.

As the programmes for Bumiputera expand, there will be a need to streamline and transform programmes at the Ministry level where best practices and programmes from TERAJU can be adopted and Ministry programmes can be streamlined to reduce redundancy and improve efficiency in the use of resources.

TERAJU targets to launch the TKB index (Bumiputera Well-Being Index) in May 2018 which will be used to measure the achievement and effectiveness of Bumiputera policy implementation. This is crucial in ensuring the quality of the programmes carried out and identifying areas for improvement in order to continuously generate positive outcomes.



PUBLIC FINANCE REFORM

STRENGTHENING THE NATION'S FISCAL POSITION

YB DATUK SERI JOHARI ABDUL GHANI
Minister of Finance II

The Public Finance Reform SRI is focused on exercising prudence in Government spending while increasing revenue to ensure a sustainable fiscal position. At times, this has required the introduction of difficult but necessary measures as we seek to institutionalise structural reform of the Government's finances in a disciplined manner.

Two major outcomes of this approach have been the gradual removal of subsidies to optimise public spending and the introduction of the Goods and Services Tax (GST) to enhance the efficiency and transparency of tax system. Although the rakyat were sceptical on these activities at first, these initiatives have enabled the Government to redirect allocations of non-targeted blanket subsidies towards direct targeted financial aid. This has allowed the Government to be more effective in assisting the rakyat in managing living costs, especially the bottom 40% of Malaysia's household income earners (B40) who need this support the most.

Furthermore, the GST has diversified the Government's sources of income from its previous reliance on oil and gas revenue, strengthening our resilience against external shocks. This ensures that the Government revenue and the Malaysian economy are shielded from commodity price volatility, as we have seen in recent years. In 2017, the Government's oil-related revenue, as a percentage of total revenue, declined to 15.1% from 41.3% in 2009.

As a result of these reform initiatives, Malaysia's fiscal deficit has continued to narrow from 6.7% in 2009 to 3% in 2017. Our improved fiscal position has supported the adherence to our self-imposed debt ceiling of 55% of GDP, while we also continue to implement Outcome Based Budgeting (OBB) which replaces the Modified Budgeting System to achieve efficient and effective management of public sector programmes.

With all these measures in place, we remain confident of achieving our target of a near-balanced budget in 2020, ensuring the sustainability of public finances and resilience of Malaysia's economy for generations to come.

TARGETING A NEAR-BALANCED FISCAL POSITION FOR A SUSTAINABLE FUTURE

The Malaysian Government has come a long way in reforming its fiscal policy since 2009. The implementation of the NTP introduced a two-pronged approach to public finance reform: enhancing Government revenue and exercising expenditure optimisation to achieve a near-balanced budget in 2020.

Enhancing Government revenue

Measures to enhance Government revenue have focused on improving tax administration and compliance of direct and indirect taxes, as well as implementing the GST to allow for broader tax-based collection. These are implemented by the Ministry of Finance's (MoF) tax agencies, namely the Inland Revenue Board of Malaysia (IRBM) which collects direct taxes and the Royal Malaysian Customs Department (RMCD) which collects indirect taxes.

The challenge for these initiatives remains non-compliance to tax laws, including tax evasion and tax avoidance. Additionally, more enforcement is required to enable taxation of those involved in informal sectors, especially e-commerce, to reduce tax leakages. Furthermore, there remain companies which have not registered for GST, hindering optimal tax collection. As at the end of December 2017, a total of 462,784 business entities have registered under the GST.

In view of this, the Government has established the Collection Intelligence Arrangement (CIA) as part of continuous efforts to reduce tax evasion, avoidance and leakage. Members of CIA are the IRBM, RMCD and the Companies Commission of Malaysia. CIA provides an integrated information-sharing platform between agencies in enhancing enforcement and increasing compliance as well as addressing informal sectors of the economy.

The Government is also reviewing tax incentives to ensure the tax breaks provided achieve its intended outcome of facilitating private investment to channel money back into the economy.

Exercising expenditure optimisation

Since 2010, the Government has gradually rationalised subsidies to shift away from blanket subsidies towards providing targeted assistance. This has allowed the Government to channel aid to those most in need through activities such as Bantuan Rakyat 1Malaysia (BR1M). As at the end of 2017, more than RM26 billion in direct cash assistance under BR1M has been provided to over seven million individuals and families in the B40 bracket. These efforts are also focused on increasing inclusiveness within the Malaysian economy.

To further instil discipline in managing its finances, the Government has also put in place an administrative fiscal rule of financing operating expenditure through its revenue while borrowing is strictly to finance development expenditure. As a result, the ratio of Government debt to GDP in 2017 has improved to 50.8% from 52.7% in 2016.

The Government has continued the implementation of OBB which is in line with the Government's efforts to rationalise fiscal policy initiatives through better expenditure management and enhanced accountability to managers at all levels. The OBB provides Ministries an integrated performance framework designed to focus on outcomes and established the necessary vertical alignments of Ministries' programmes to national planning and horizontal linkages of ministries' programmes to ensure more efficient and effective management of public sector programmes. The Ministry's results framework based on the OBB Program-Activity structure was made public through the Budget 2018 announced on 27 October 2017.

MOVING FORWARD

The continued narrowing of the fiscal deficit since 2009 bears testimony to the success of the Government's fiscal reforms. As the Government maintains its discipline and prudence in managing its finances towards achieving its targeted near-balanced budget in 2020, it will continue to prioritise rakyat-centric and high-impact programmes and projects.

This will focus on maximising outcomes, reducing leakages and enhancing value-for-money expenditure, with emphasis placed on the provision of essential services to the rakyat, particularly in the areas of healthcare, education and targeted assistance. The Government will also increasingly focus on the future generation, enhancing the rakyat's well-being and ensuring inclusiveness.

Collectively, these will further strengthen the country's economic fundamentals and resilience in line with its transformation into a high-income nation and towards the goals of Transformasi Nasional 2050 (TN50) for Malaysia to become a top-20 country in terms of economic development, social advancement and innovation.

EXPENDITURE 2017

In the interests of transparency and accountability, the following is the summary of expenditure for NKRA and SRI. Meanwhile, the expenditure is not reported for the Economic Transformation Programme (ETP) as the ETP is private sector driven and contains market sensitive data.

NKRA AND SRI 2017 OPERATIONAL EXPENDITURE (OE) SPENDING

NATIONAL TRANSFORMATION PROGRAMME (NTP)

NKRA	Achievement %	Total 2017 OE Allocation (RM)	Total Spent (RM)	% Spent
Reducing Crime	161	34,000,000	33,168,000	98
Raising Living Standards of Low-Income Households	112	21,000,000	21,000,000	100
Total		**55,000,000**	**54,168,000**	

SRI	Achievement %	Total 2017 OE Allocation (RM)	Total Spent (RM)	% Spent
Competition, Standards and Liberalisation	113	896,266	438,280	49
Public Service Delivery Transformation	114	250,000	207,500	83
Total		**1,146,266**	**645,780**	

Note: No 2017 OE allocaton for NKRA Addressing the NKRA Cost of Living, NKRA Fighting Corruption, NKRA Improving Rural Development, NKRA Assuring Quality Education and NKRA Improving Urban Public Transportation.

NKRA AND SRI 2017 DEVELOPMENTAL EXPENDITURE (DE) SPENDING

NATIONAL TRANSFORMATION PROGRAMME (NTP)

NKRA	Achievement %	Total 2017 OE Allocation (RM)	Total Spent (RM)	% Spent
Improving Rural Development	100	2,393,701,678	2,201,228,820	92
Reducing Crime	161	25,000,000	21,907,036	88
Raising Living Standards of Low-Income Households	112	10,000,000	10,000,000	100
Improving Urban Public Transport	100	35,591,134	35,036,314	98
Total		**2,464,292,812**	**2,268,172,169**	

SRI	Achievement %	Total 2017 OE Allocation (RM)	Total Spent (RM)	% Spent
Competition, Standards and Liberalisation	113	5,000,000	4,983,618	100
Public Service Delivery Transformation	114	200,000	200,000	100
Total		**5,200,000**	**5,183,618**	

Note: No 2017 DE allocation for NKRA Addressing the Cost of Living, NKRA Fighting Corruption and NKRA Assuring Quality Education.

AGREED UPON PROCEDURES BY PWC

A core tenet of the National Transformation Programme (NTP) has been transparency and accountability. In this Annual Report, the 2017 key performance indicators for each National Key Result Area (NKRA), National Key Economic Area (NKEA) and Strategic Reform Initiative (SRI) are published in full, with achievements versus targets listed*. CSDU endeavored to ensure the scoring system is transparent and stringent. Extensive rigour has been put into confirming the collection of data, tabulations of statistics, and results are accurate. External validation is also key to effectively evaluate the efficacy of the NTP. To this end, CSDU engaged PricewaterhouseCoopers Malaysia (PwC), an independent professional services firm, to conduct a series of Agreed-Upon-Procedures (AUP) – specific tests and procedures to review reported results for the KPIs and projects announced. The AUP is applied to a sample taken from each KPI. It is then checked against guidelines and formulae developed in the initial lab sessions, and prescribed by CSDU. Over the course of this exercise, PwC's findings highlighted a number of exceptions on the samples selected, which were subsequently addressed and reflected in this Annual Report. PwC confirmed that the results reported for the selected samples in the Annual Report have been validated according to the AUP. PwC also identified opportunities to improve processes and the quality of information. CSDU, together with the relevant Ministries and private sector stakeholders will be taking positive prescriptive actions to effect these improvements over the next 12 months.

*Exceptions were made where targets featured market-sensitive data. In such instances, this information was kept confidential at the request of involved parties.

NTP PERFORMANCE 2017

All three methods have been formulated to provide a pragmatic representation of the actual KPI numbers in percentages. The overall NKRA/NKEA/SRI composite scoring is the average of all scores.

METHOD 1 & METHOD 2

ACHIEVEMENT	TRAFFIC LIGHT
90 % and above	Green
51 %- 89 %	Yellow
50 % and less	Red

METHOD 3

ACHIEVEMENT	SCORING	TRAFFIC LIGHT
10 % and above	1	Green
51 %- 99 %	0.5	Yellow
50 % and less	0	Red

SCORING METHOD	DESCRIPTION
Method 1	Scoring is calculate by simple comparison againts set 2017 targets.
Method 2	Scoring is calculate by dividing actual result againts set 2017 targets with an added rule : ▸ If the scoring is less than 100%, score #2 is taken as the actual percentage ▸ If the scoring is equal or more than 100%, score #2 is taken as 100%
Method 3	Scoring is calculate by dividing actual results againts set 2017 targets with an added rule : ▸ If the scoring is equal and less than 50%,score #3 is indicated as 0 ▸ If the scoring is more than 50% and less than 100%, score #3 is indicated as 0.5 ▸ If the scoring is equal or more than 100%, score #3 is indicated as 1

NKRA - FIGHTING CORRUPTION		KPI (Quantitative)				
#	KPI	Target (FY)	Actual (YTD)	Method 1	Method 2	Method 3
1	Transparency International (TI) Corruption Perception Index (CPI) score	55	62	89%	89%	0.5
2	Percentage of disposal of corruption cases within 1 year upon registration	85%	43.1%	51%	51%	0.5
3	Special Corruption Courts Judges seminar conducted	1	1	100%	100%	1
4	Percentage of conviction rate for corruption cases	85%	80.7%	95%	95%	0.5
5	Tabling of AuG report in every Parliament session	2	2	100%	100%	1
6	Percentage of resolution of cases highlighted in AuG report Series 1-2 2015 successfully dealt with within 1 year after being tabled in Parliament	90%	76.5%	85%	85%	0.5
7	Corporate Liability Provision bill tabled in Parliament	100%	60%	60%	60%	0.5
8	Training to Public Listed Companies (PLCs) and Government Link Companies (GLCs) CIP signatories	30%	66%	220%	100%	1
9	Political Financing Act: i. Cabinet approved formation of the Special Committee for drafting the Political Financing bill – 33% ii. Formation of the Special Committee for the drafting – 50% iii. First draft completed – 100%	100%	100%	100%	100%	1
10	Establish Malaysian standard in accordance with ISO 37001	100%	100%	100%	100%	1
				100%	**88%**	**0.5**

NKRA - REDUCING CRIME		KPI (Quantitative)				
#	**KPI**	**Target (FY)**	**Actual (YTD)**	**Method 1**	**Method 2**	**Method 3**
1	Index crime per 100,000 residents (114,042 cases)	352.07	306.15	100%	100%	1
2	Percentage improvement of Perception Crime Indicator	10%	39.8%	398%	100%	1
3	Modern Policing – to pilot Phase 2 of Modern Policing project to the entire IPK Kuala Lumpur – 24 stations	120%	120%	100%	100%	1
4	Implementation of Community Engagement Index (CEI) nationwide by 31 December 2017 (788 activities)	100%	214%	214%	100%	1
5	Implementation of the Community Empowerment Programme to 50 out of the 178 high risk areas (as at 1 January 2017) nationwide by 31 December 2017	50	64	128%	100%	1
6	AADK to fully take over the enforcement role under Section 3(1) Drug Dependants Act (Treatment & Rehabilitation) 1983 [Act 283] in 80 districts nationwide by 31 December 2017	80	105	131%	100%	1
7	Upskilling of inmates - inmates to undergo certified skills training	1,500	2,854	190%	100%	1
8	Percentage collection of summonses issued by PDRM in 2017 under category Pol 257	40%	41.4%	104%	100%	1
9	To pilot the border security lab initiatives – AKSEM	6	8.748	146%	100%	1
10	To roll out e-Reporting (by 31 December 2017) in Kuala Lumpur covering non-crime incidents only	100%	100%	100%	100%	1
				161%	**100%**	**1**

NKRA - ASSURING QUALITY EDUCATION		KPI (Quantitative)				
#	KPI	Target (FY)	Actual (YTD)	Method 1	Method 2	Method 3
1	Percentage of pre-school enrolment nationwide: i. Percentage of 4+ years pre-school enrollment (80%) ii. Percentage of 5+ years pre-school enrollment (98%)	100%	97%	97%	97%	0.5
2	English literacy rate among Year 3 students	100%	95.7%	96%	96%	0.5
3	Percentage of teachers improved to at least minimum competency level after undergoing PSYNNOVA i-BMT	88%	81%	92%	92%	0.5
4	Percentage of school leaders improved to at least minimum competency level after undergoing PSYNNOVA i-BMT	95%	100%	105%	100%	1
5	Percentage of HIP schools achieved English immersion of level 3 and above	50%	58%	116%	100%	1
6	Percentage of DLP students increased in proficiency of English language skills	30%	50.7%	169%	100%	1
7	National childcare enrolment rate for children born 2013-2017 (National Children Data Center system)	8%	6.92%	87%	87%	0.5
8	Numeracy rate for Year 3	100%	98.8%	99%	99%	0.5
9	Bahasa Melayu literacy rate for Year 3	100%	98.3%	98%	98%	0.5
10	Percentage of teachers with minimum proficiency of C1 based on CEFR	53%	34%	64%	64%	0.5
11	Percentage of new English teachers from IPG achieved equivalent of C1 based on CEFR before posting	90%	60%	67%	67%	0.5
12	Percentage completion of initiatives implementation under IPG Transformation Roadmap (2016-2025)	28%	28.3%	101%	100%	1
13	Number of students utilising VLE at least in 1 lesson session per week	660,000	865,738	131%	100%	1
14	Number of new model of public-private partnership launched with list of schools identified	1	1	100%	100%	1
				102%	**93%**	**0.5**

NKRA - RAISING LIVING STANDARDS OF LOW-INCOME HOUSEHOLDS		KPI (Quantitative)				
#	**KPI**	**Target (FY)**	**Actual (YTD)**	**Method 1**	**Method 2**	**Method 3**
1	Number of new participants under 1AZAM who participated in Financial Literacy and Debt Management Programme, and monitored for a minimum of 6 months after implementation	3,975	5,340	134%	100%	1
2	Number of new and existing 1AZAM participants who increased their income by RM300 in any 3 months	5,150	5,708	111%	100%	1
3	Number of 1AZAM NGO, corporate sector, and community / group-based projects	12	8	67%	67%	0.5
4	Number of Beyond 1AZAM participants who obtained a minimum 20% increase in income from existing AZAM project (any 1 time)	1,930	1,982	103%	100%	1
5	Number of projects to develop B40 entrepreneurs from micro segment to small enterprise (SME category)	2	2	100%	100%	1
6	Adoption of Information and Communications Technology via registration among B40 participants via e-Rezeki platform	5,000	5,898	118%	100%	1
7	Number of participants who have generated income through e-Rezeki portal	500	500	100%	100%	1
8	Number of B40 entrepreneurs registered and trained on e-Usahawan platform	8,110	12,300	152%	100%	1
				112%	**96%**	**0.5**

NKRA - IMPROVING URBAN PUBLIC TRANSPORT		KPI (Quantitative)				
#	**KPI**	**Target (FY)**	**Actual (YTD)**	**Method 1**	**Method 2**	**Method 3**
1	Number of new KL taxis on the road	4,000	4,987	125%	100%	1
2	Completion of Integrated Cashless Payment System (ICPS) 100% completion of deliverables for year 2017: i. One common card for MRT and Prasarana (including Rapid Bus and MRT Feeder Bus) by July 2017 ii. Additional 99 Touch 'n Go gates opened to the public for 14 major KTMB stations by Aug 2017	61%	61%	100%	100%	1
3	Number of bus info panel installed in GKL/KV	3,000	3,257	109%	100%	1
4	KTM Komuter on-time performance during AM peak (within 10 minutes)	95%	94.9%	100%	100%	1
5	Urban public transport customer satisfaction level (GKL/KV)	85%	90%	106%	100%	1
6	Daily urban public transport ridership (GKL/KV)	1,300,000	1,206,111	93%	93%	0.5
7	Percentage of construction progress of parkway drop zone: i. Serdang : 80% (baseline = 45%) ii. Batu Tiga : 20% (baseline = 0%)	100%	98.4%	98%	98%	0.5
8	ITT Gombak Project - percentage achievement of 2017 milestones	100%	87.9%	88%	88%	0.5
9	Percentage of construction progress of Park N' Ride Klang	72%	57%	79%	79%	0.5
				100%	**95%**	**0.5**

NKRA - IMPROVING RURAL DEVELOPMENT			KPI (Quantitative)				
#	**Project**	**KPI**	**Target (FY)**	**Actual (YTD)**	**Method 1**	**Method 2**	**Method 3**
1	Rural Development: Rural Basic Infrastructure	Roads delivery (km)	786.25	828.27	105%	100%	1
		Water delivery (number of households)	3,000	4,306	144%	100%	1
		Electricity delivery (number of households)	8,271	8,110	98%	98%	0.5
		Housing for poor households - PPRT / PBR (number of houses)	12,524	8,429	67%	67%	0.5
2	Rural Development: 21st Century Village	Desa Lestari Programme - number of villages that successfully initiate business at least one of the approved economic projects that has been completed	20	15	75%	75%	0.5
		Rural Business Challenge - percentage of 2015 RBC winners with more than 30% increase in income	80%	87%	109%	100%	1
					100%	**90%**	**0.5**

NKRA - ADDRESSING THE RISING COST OF LIVING		KPI (Quantitative)				
#	**KPI**	**Target (FY)**	**Actual (YTD)**	**Method 1**	**Method 2**	**Method 3**
1	Direct handout to the Rakyat through BR1M	100%	100%	100%	100%	1
				100%	**100%**	**1**

NKEA - AGRICULTURE			KPI (Quantitative)				
EPP #	**EPP**	**KPI**	**Target (FY)**	**Actual (YTD)**	**Method 1**	**Method 2**	**Method 3**
1	Unlocking value from Malaysia's biodiversity through herbal products	Total number of herbal products completed clinical trial	4	4	100%	100%	1
		Total sales of herbal product (RM million)	4.5	5.25	117%	100%	1
2	Expanding the production of swiftlet nests	Total export of edible bird nest product (tonnes)	270	385.44	143%	100%	1
3	Commercial Seaweed Mini Estate and Cluster Project	Total production dried seaweed (tonnes)	2,500	1,855.54	74%	74%	0.5
4	Farming through Integrated Cage Aquaculture Systems	Total production of farmed fish by anchor companies (tonnes)	9,000	8,265.34	92%	92%	0.5
5	Cattle in oil palm estates	Total cattle in population	54,800	41,822	76%	76%	0.5
6	Replicating Integrated Aquaculture Model (iZAQs)	Total production by anchor companies (tonnes)	27,000	25,399.36	94%	94%	0.5
7	Upgrading capabilities to produce premium fruits and vegetables	Total production from Taman Kekal Pengeluaran Makanan (TKPM) and anchor companies (tonnes)	72,000	65,353	91%	91%	0.5
8	Strengthening the export capability of the processed food industry	Total sales of Anchor Companies (AC) and Small and Medium Enterprise (SME) (RM million)	320	511.21	160%	100%	1
		Number of new SME	40	154	385%	100%	1
10	Scaling up and strengthening paddy farming in Muda area	Total production from amalgamated land (tonnes)	352,082	361,537	103%	100%	1
		Total land area amalgamated (ha)	3,500	4,145	118%	100%	1
		Total submitted for land acquisition (number of lots)	8,050	8,182	102%	100%	1
11	Scaling up and strengthening of paddy farming in other irrigated areas	Total production from amalgamated land (tonnes)	200,000	204,157.1	102%	100%	1
13	Establishing dairy clusters in Malaysia	Total fresh milk produced (million litres)	14.23	13.92	98%	98%	0.5
14	Seed industry development	Total seeds produced (tonnes)	105	28.36	27%	27%	0
17	Pasar Komuniti (PAKAR)	Total revenue generated from PAKAR (RM million)	83	103	124%	100%	1
					118%	**91%**	**0.5**

NKEA - BUSINESS SERVICES			KPI (Quantitative)				
EPP #	**EPP**	**KPI**	**Target (FY)**	**Actual (YTD)**	**Method 1**	**Method 2**	**Method 3**
1	Growing aviation maintenance, repair and overhaul services	Revenue from MRO services (RM million)	6,100	6,230 (estimated)	102%	100%	1
2	Building globally-competitive outsourcers	Overseas sales revenue (RM million)	3,600	3,000 (projected)	83%	83%	0.5
		Projected investment value (RM million)	760	731 (projected)	96%	96%	0.5
3	Making Malaysia a global data centre hub	Total DC services revenue (RM million)	1,100	1,004 (projected)	91%	91%	0.5
		Percentage completion of site readiness for implementation of Sedenak Iskandar Data Hub (SIDH)	100%	96.7%	97%	97%	0.5
4	Jump-starting a vibrant green technology industry	Revenue generated from green technology in subsectors energy, manufacturing, transportation, building, waste, water and services (RM million)	6,000	6,090	102%	100%	1
		New investment in green technology realised (RM million)	5,000	2,855	57%	57%	0.5
5	Growing large pure-play engineering services	Revenue from pure-play engineering services companies (RM million)	120	125 (estimated)	104%	100%	1
7	Making Malaysia the hub for aerospace OEMs in South East Asia leveraging on 'Asia Aerospace City'	Committed investments from OEM, Tier 1 and Tier 2 companies (RM million)	500	600	120%	100%	1
8	Developing SMEs in the global aerospace manufacturing industry	Revenue from aerospace manufacturing activities (RM million)	24.6	17.2	70%	70%	0.5
					92%	**89%**	**0.5**

NKEA - COMMUNICATIONS CONTENT AND INFRASTRUCTURE			KPI (Quantitative)				
EPP #	EPP	KPI	Target (FY)	Actual (YTD)	Method 1	Method 2	Method 3
1	My Creative Content	Revenue of export from creative content (RM million)	670	737.84 (projected)	110%	100%	1
		Total estimated production spending under the “Film in Malaysia Incentive" (RM million)	100	141.8	142%	100%	1
6	e-Government	The implementation of DDMS 2.0 (number of new agencies)	30	32	107%	100%	1
		Percentage increase from 2016 in number of online transactions at ministries	10%	9.9%	99%	99%	0.5
7	Broadband for all	Number of ports providing high speed broadband with the speed up to 100Mbps in capital cities and major towns	390,000	480,084	183%	100%	1
		Number of ports providing high speed broadband in sub-urban areas (SUBB)	317,000	366,294	150%	100%	1
		Percentage of access (coverage) to LTE wireless broadband (% of connected population on LTE)	77%	77.2%	102%	100%	1
8	Extend reach	Number of sites with new towers and 3G base stations for expanded mobile broadband coverage	300	302	101%	100%	1
		Number of existing base stations to be upgraded to 3G base stations	500	510	102%	100%	1
		Number of sites to be deployed with Pusat Internet 1Malaysia	50	52	104%	100%	1
10	Regional network	Percentage of implementation of submarine cables (linking Sabah, Sarawak, and Peninsular Malaysia) rollout	100%	100%	100%	100%	1
					118%	**100%**	**1**

NKEA - ELECTRICAL AND ELECTRONICS			KPI (Quantitative)				
EPP #	**EPP**	**KPI**	**Target (FY)**	**Actual (YTD)**	**Method 1**	**Method 2**	**Method 3**
1	Executing a Smart Follower strategy for mature technology semiconductor fabrication plants	Number of services provided to industry using MIMOS shared facilities for E&E	800	850	106%	100%	1
		Number of engineers and students trained in E&E using MIMOS advanced competency framework	300	430	143%	100%	1
2	Developing assembly and test using advanced packaging technology	Number of advance packaging companies in operation	1	1	100%	100%	1
3	Developing integrated circuit design firms	Number of talents for industrial upskilling / advanced upskilling program in IC design	15	100	667%	100%	1
		Creating business oppurtunities using GMC product and its technologies for Malaysia based companies	2	2	100%	100%	1
5	Increasing the number of silicon producers	Number of new silicon producer to start commercial production	1	0	0%	0%	0
8	Developing LED front-end operations	Number of quality projects in operation for epitaxy manufacturer	1	1	100%	100%	1
10	Creating local Solid State Lighting (SSL) champions	Total annual sales of local LED companies under SMECorp capacity building program (RM million)	120	137.6	115%	100%	1
11	Building a test and measurement hub	Number of new products to enhance test and measurement local ecosystem	4	4	100%	100%	1
		Number of products tested utilising QAV test centre (both Penang and Selangor)	52	52	100%	100%	1
		Number of projects undertaken by local companies, agencies and institutes in test and measurement, system design, prototyping, proof-of-concept and system customisation at National Instruments Academy and Innovation Nucleus (NI-AIN)	30	10	33%	33%	0
13	Growing automation equipment manufacturing	Number of new quality projects adopting smart manufacturing	1	1	100%	100%	1
		Number of talents for industrial upskilling / advanced upskilling program in Advanced Manufacturing	15	19	127%	100%	1
		Number of local talent certified via National Instruments Academy & Innovation Nucleus (NI-AIN)'s program that lead to develop automation and manufacturing industries	60	130	217%	100%	1

NKEA - ELECTRICAL AND ELECTRONICS *(continued)*			KPI (Quantitative)				
EPP #	EPP	KPI	Target (FY)	Actual (YTD)	Method 1	Method 2	Method 3
16	Development of balance of systems for photovoltaic	Number of balance of systems for solar PV companies in operation	1	0	0%	0%	0
17	Growing embedded systems industry	Number of new embedded systems / IoT projects	1	1	100%	100%	1
		Number of talents for industrial upskilling / advanced upskilling program in Advanced Electronics Systems	70	79	113%	100%	1
		Number of embedded systems funded projects completed in 2017	2	2	100%	100%	1
18	Enabling electric vehicle component manufacturing	Implementation of production of battery material on pilot scale to support limited production of 18650-type Li-ion batteries	100%	100%	100%	100%	1
		Deliver a prototype of integrated of EV Bus and Battery System as further development platform to a commercial bus producer	100%	100%	100%	100%	1
20	Enabling nanotechnology for Electrical & Electronics (E&E) Industry	Number of products commercialised or companies adopting commercial graphene and nanotechnology products for E&E application	2	2	100%	100%	1
1-20	Cross-cutting enablers	Total number of new quality NKEA E&E projects by MIDA	8	8	100%	100%	1
		Percentage realised investment of E&E sector projects since 2011 till 2014 (RM billion)	80%	78%	98%	98%	0.5
		Total approved investment for E&E sector (RM billion)	8	8.9	111%	100%	1
		Number of eco design applications undertaken by companies/ organisations utilising Eco Industrial Design Centre (EIDC) shared facilities	22	23	105%	100%	1
		Develop National E&E Framework for the advancement of E&E industries (Completion of E&E national blueprint)	100%	0%	0%	0%	0
		RM million of R&D projects awarded by CREST	6	8	133%	100%	1
		Number of projects completed	6	11	183%	100%	1
		Number of R&D projects commercialised or implemented	1	1	100%	100%	1
					119%	**87%**	**0.5**

NKEA - EDUCATION			KPI (Quantitative)				
EPP #	**EPP**	**KPI**	**Target (FY)**	**Actual (YTD)**	**Method 1**	**Method 2**	**Method 3**
1	Scaling up early child care and education centers	Private pre-school enrollment: i. 4+ years only (59% - 251,406) ii. 5+ years only (49% - 248,949)	100%	93%	93%	93%	0.5
5	Scaling up private skills training provision	Number of high quality TVET instructor's e-profiling	15,000	15,471	103%	100%	1
		Number of students trained in industry-based approach	8,000	8,380	105%	100%	1
		Skill development fund repayment rate	40%	42	105%	100%	1
7	Building an Islamic finance and business education discipline cluster	Number of students enrolled at HLIs in the Islamic finance and business programme	17,500	18,384	105%	100%	1
		Number of new international academics registered with the Islamic Financial Educators Council (ICIFE)	30	61	203%	100%	1
10	Building a hospitality and tourism discipline cluster	Number of students enrolled in hospitality and tourism programmes at private HLIs who are members of MyCenTHE+3	6,000	8,409	140%	100%	1
		Number of student enrolled in hospitality and tourism programmes at Private HLIs	26,000	24,280	93%	93%	0.5
11	Launching EduCity@ Iskandar	Number of students enrolled in EduCity @ Iskandar	5,000	4,368	87%	87%	0.5
12	Championing Malaysia's international education brand	Number of international students enrolled (136,000 from MoHE and 34,000 from MoE)	170,000	170,068	100%	100%	1
		Number of post graduate international students enrolled in HLIs	37,000	32,285	87%	87%	0.5
14	Building a games development cluster	Number of students enrolled in private HEIs with games cluster contact	500	765	153%	100%	1
17	Building an accounting cluster	Number of students enrolled in Sunway-TES through the public-private partnership and Bumiputera initiative	1,020	1,079	106%	100%	1
					114%	**97%**	**0.5**

NKEA - FINANCIAL SERVICES			KPI (Quantitative)				
EPP #	**EPP**	**KPI**	**Target (FY)**	**Actual (YTD)**	**Method 1**	**Method 2**	**Method 3**
1	Revitalising Malaysia's equity markets	Set-up of Capital Market Research Institute	100%	100%	100%	100%	1
		Increase velocity in the market Average Daily Value (ADV) (RM Billion)	2.1	2.3	110%	100%	1
		Increase in new issuance from both IPO and also secondary market (new issue of shares from rights issue, special issue etc.) (RM billion)	11	36	327%	100%	1
		Increase in number of products and offerings	5	8	160%	100%	1
2	Deepening and broadening bond markets	Launch of framework for digital investment management services	100%	100%	100%	100%	1
5	Insuring most, if not all, of our population	Mandatory offering of basic pure protection term insurance products via walk-in and/or online distribution channels by all life insurers and family takaful operators	100%	90%	90%	90%	0.5
		Introduction of national life insurance and family takaful 'starter pack' to offer affordable protection and to enhance insurance / takaful awareness	100%	100%	100%	100%	1
10	Becoming the indisputable global hub for Islamic finance	Launch of Islamic Fund and Wealth Management Blueprint	80%	80%	100%	100%	1
					136%	**99%**	**0.5**

NKEA - GREATER KUALA LUMPUR / KLANG VALLEY			KPI (Quantitative)				
EPP #	EPP	KPI	Target (FY)	Actual (YTD)	Method 1	Method 2	Method 3
1	Attracting 100 of the world's most dynamic firms within priority sectors	Number of Letter of Intent or equivalent Incentive Offer concluded for MNCs to set up regional headquarters/regional hub activity in GKL	10	12	120%	100%	1
		Number of new regional jobs committed	600	1,685	281%	100%	1
		Amount spent by MNCs in 2017 (RM million)	600	1,049	175%	100%	1
		Regional jobs created in 2017	617	324	53%	53%	0.5
2	Attracting the right mix of internal and external talent	Number of approved application under Returning Expert Programme	400	405	101%	100%	1
		New JPA scholars under STAR Programme	1,200	1,206	101%	100%	1
		Percentage of issuance of employment pass process within 5 working days	80%	97%	121%	100%	1
		Number of approved applications under Residence Pass Talent Programme	900	1,049	117%	100%	1
3	Connecting KL to Singapore via a High Speed Rail system	Establishment of Bilateral Committee - reviewed and finalised by SPAD	100%	100	100%	100%	1
		Appointment of the Joint Development Partner (in Q1 2017)	100%	100	100%	100%	1
		Initiation of the AssetsCo tender (roll-out of AssetsCo tender in Q4 2017)	100%	100%	100%	100%	1
4	Mass Rapid Transit	Line 1: Station Completion - To complete all remaining 12 number of elevated and 7 number of underground stations (total of 19 stations)	100%	100%	100%	100%	1
		Accident frequency rate ratio (less than or equal to 1)	1	1	100%	100%	1
		Line 2: Temporary underground works commenced at all station sites by end of 2017 i.e. 10 stations - Sentul West, Titiwangsa, Hospital KL, Kg Baru, Ampang Park, KLCC East, Conlay, Chan Sow Lin, Bandar Malaysia North and Bandar Malaysia South	100%	100%	100%	100%	1
		Line 2: 9 Elevated station packages to be awarded as per planned by Q4 2017, as per below; i. S201 – S203 @ northern alignment (total 11 stations) ii. S204 – S210 @ southern alignment (total 14 stations)	100%	100%	100%	100%	1

NKEA - GREATER KUALA LUMPUR / KLANG VALLEY *(continued)*			KPI (Quantitative)				
EPP #	EPP	KPI	Target (FY)	Actual (YTD)	Method 1	Method 2	Method 3
		Percentage of construction progress River Beautification and interceptor drainage system works for Package Precinct 7 (P7) - Heritage Quarter by June 2017	100%	100%	100%	100%	1
		Percentage construction progress for River Beautification and interceptor drainage system work for Package 3A and 3B (3A 3B) - Northern River Front by December 2017	20%	24.5%	125%	100%	1
		Percentage of construction progress for River Beautification and interceptor drainage system works for Package 4A and 4B (4A 4B) - Southern Riverfront & Brickfields by Dec 2017	18%	12.6%	70%	70%	0.5
		Percentage of construction progress for River Beautification and interceptor drainage system works for Package 1C and 1D (1C 1D) - City Center by December 2017	18%	10%	56%	56%	0.5
		Percentage of construction progress for River Beautification works for Package 2 (Package 2) - Titiwangsa Park	43.5%	0%	0%	0%	0
5	Revitalising the Klang River into a heritage and commercial centre for Greater KL/KV	Percentage completion of Sewerage Treatment Plant (STP) in Bunus (Baseline: 60%) Q1 - 71% Q2 - 82% Q3 - 100%	100%	99%	98%	98%	0.5
		Percentage completion of Sewerage Treatment Plant (STP) in Jinjang Kepong (Baseline: 11%) Q1 - 17% Q2 - 23% Q3 - 30% Q4 - 38%	40%	37.3%	91%	91%	0.5
		Percentage completion of D44 Bunus Network pipeline project (Baseline: 37%) Q1 - 48% Q2 - 68% Q3 - 85% Q4 - 98%	98%	64%	44%	44%	0
		Percentage completion of D43 Jinjang Kepong Network pipeline project (Baseline: 69%) Q1 - 74% Q2 - 79% Q3 - 83% Q4 - 86%	86%	84.5%	91%	91%	0.5

NKEA - GREATER KUALA LUMPUR / KLANG VALLEY *(continued)*			**KPI (Quantitative)**				
EPP #	**EPP**	**KPI**	**Target (FY)**	**Actual (YTD)**	**Method 1**	**Method 2**	**Method 3**
5	Revitalising the Klang River into a heritage and commercial centre for Greater KL/KV	Percentage compliance to effluent standard A at Bukit Antarabangsa Sewerage Treatment Plant (STP)	100%	100%	100%	100%	1
		Percentage compliance: Water quality of Klang River at station IK25 - Abdullah Hukum to meet WQI target ≥ 61 (Class III)	100%	58%	58%	58%	0.5
		Percentage compliance: Water quality of River Gombak at station IK17to achieve WQI target ≥ 61 (Class III)	100%	101%	101%	100%	1
		Percentage submission of the River Of Life Public Outreach Programme (RoL POP) Interim Reports for: 1. Phase 3A – KL East 2. Phase 3B – Ampang Jaya Municipal Council (MPAJ) 3. Phase 4 – Selayang Municipal Council (MPS) 4. Phase 5 – KL West	100%	100%	100%	100%	1
		Performance for 4 nos Sullage Water Treatment Plant (SWTP) in P7 to achieve Water Quality Index (WQI) target ≥ 76.5 (Class IIB)	100%	100%	100%	100%	1
		Discharge from Waste Water Treatment Plants (WWTP) to meet the Water Quality Index (WQI) target ≥ 76.5 (Class IIB) 1. Pasar Jalan Kelang Lama 2. Pasar Air Panas 3. Pasar Sentul Pasar 4. Pasar Borong Kuala Lumpur	100%	99%	99%	99%	0.5
		Percentage of effluent from 134 Communal Grease Traps (CGT) installed that complies with Malaysian Sewerage Industry Guideline (FOG ≤ 50 mg/l)	100%	100%	100%	100%	1
		Percentage of effluent from 64 Communal Grease Traps (CGT) installed in MPAJ that complies with Malaysian Sewerage Industry Guideline (FOG ≤ 50 mg/l)	100%	100%	100%	100%	1
		Percentage of effluent from 112 Communal Grease Traps (CGT) installed in MPS that complies with comply with Malaysian Sewerage Industry Guideline (FOG ≤ 50 mg/l)	100%	100%	100%	100%	1
6	Greening Greater KL to ensure residents enjoy sufficient green space	GPS Tagging of trees	20,000	37,251	186%	100%	1
		Number of parks adopted/sponsored	4	4	100%	100%	1

NKEA - GREATER KUALA LUMPUR / KLANG VALLEY *(continued)*			KPI (Quantitative)				
EPP #	**EPP**	**KPI**	**Target (FY)**	**Actual (YTD)**	**Method 1**	**Method 2**	**Method 3**
7	Creating iconic places and attractions	Heritage Trail 5 Phase 1 - Percentage of construction progress	50%	50%	100%	100%	1
		Heritage Trail 5 Phase 2 - Progress of project milestones: i. Pre-tender (20%) ii. Procurement (70%) iii. Site possession (10%)	100%	100%	100%	100%	1
		Heritage Trail 6 (Jejak Rimba Bandar) - Percentage of project milestone: i. Design (35%) ii. Procurement (55%) iii. Site possession and Preliminary works (10%)	100%	100%	100%	100%	1
		Heritage Trail 7 & 8 (Jejak Pekan Dagangan Bijih Timah) progress of project milestones	100%	100%	100%	100%	1
8	Creating a comprehensive pedestrian network	Pedestrian Network & Cycle Lanes Masterplan Completion (until 2018) progress of project milestones	100%	100%	100%	100%	1
9	Solid waste management	To increase waste diversion rate by 2% from 2016 achievement of 17.5% (Baseline: 17.5%)	19.5%	21.1%	180%	100%	1
		To increase recycling rate by 2% from 2016 achievement of 17.5% (Baseline: 17.5%)	19.5%	20.9%	170%	100%	1
		Preparation of policy concept paper on producer responsibility in minimising waste generation	100%	100%	100%	100%	1
		Finalise Pay-As-You-Throw (PAYT) model from identified options	100%	90%	90%	90%	0.5
		Food waste management database for Industry, Commercial and Institution (ICI) (another 20% in 2018)	80%	80%	100%	100%	1
		Baseline survey for food waste under Industry, Commercial and Institution (ICI)	100%	100%	100%	100%	1
		Sampling survey on willingness to participate in Extended Producer Responsibility (EPR) for Industry, Commercial and Institution (ICI)	100%	100%	100%	100%	1
		Completion of web-based application system for effective monitoring and recording of nationwide construction and demolition (C&D) waste data	80%	80%	100%	100%	1
		Market study on glass recycling in Malaysia	100%	90%	90%	90%	0.5
		Completion of waste to energy plant tender in Taman Beringin, Kepong, Kuala Lumpur	100%	90%	90%	90%	0.5

NKEA - GREATER KUALA LUMPUR / KLANG VALLEY *(continued)*			KPI (Quantitative)				
EPP #	**EPP**	**KPI**	**Target (FY)**	**Actual (YTD)**	**Method 1**	**Method 2**	**Method 3**
9	Solid waste management	Operational and maintenance services for incinerator plant in Pulau Langkawi, Kedah	100%	40%	40%	40%	0
		Establishment of pilot Catchment Area Needs Statement (CANS) database for Putrajaya	100%	40%	40%	40%	0
		Handover of BEP2.0 concept paper for adoption	100%	100%	100%	100%	1
		Cabinet paper on rationalisation of privatisation cost of solid waste management and public cleansing	100%	100%	100%	100%	1
		Drafting of Solid Waste and Public Cleansing Management (Licensing) (Imported Solid Waste) Regulation 2018	100%	100%	100%	100%	1
		Survey on effectiveness of services by concessionaires for solid waste management and public cleansing	100%	30%	30%	30%	0
3	Sewerage non-river	Percentage completion of Langat centralised sewage treatment plant and network (Baseline: 24%) Q1 - 28% Q2 - 33% Q3 - 38% Q4 - 42%	42%	61.7%	209%	100%	1
		Percentage completion of D49: "Pembinaan Rangkaian Paip Pembetungan Di Kajang 1 Dan Kajang 3 (Reka & Bina)" (Baseline: 44%) Q1 - 45 % Q2 - 52 % Q3 - 60 % Q4 - 65 %	70%	80.9%	142%	100%	1
		Percentage completion of D47: "Pembinaan Rangkian Paip Pembetungan Di Kawasan Petaling Jaya (Utara), Selangor (Reka & Bina)" (Baseline: 94%) Q1 - 100%	100%	99.6%	93%	93%	0.5
		Percentage completion of D55: "Pembinaan Rangkaian Paip Pembetungan Di Lot 130, Klang Selangor Darul Ehsan (Reka & Bina)" (Baseline: 99%) Q1 - 100%	100%	100%	100%	100%	1

NKEA - GREATER KUALA LUMPUR / KLANG VALLEY *(continued)*			KPI (Quantitative)				
EPP #	**EPP**	**KPI**	**Target (FY)**	**Actual (YTD)**	**Method 1**	**Method 2**	**Method 3**
3	Sewerage non-river	Percentage completion of D52: "Pembinaan Rangkaian Paip Pembetungan & Rationalisasi Loji Rawatan Kumbahan Di Puchong, Selangor (Reka & Bina)" (Baseline: 51.83%) Q1 - 80% Q2 - 85% Q3 - 95% Q4 - 100%	79%	73.5%	80%	80%	0.5
		Percentage completion of Upper Kerayong STP: "Pembinaan Loji Rawatan Kumbahan Sub-Serantau Upper Kerayong Di Zon 1 - Taman Maluri C Dan Zon 3 - Taman Lembah Maju, Selangor Darul Ehsan" (Baseline: 34.69%) Q1 - 70% Q2 - 80% Q3 - 90% Q4 - 100%	95.98%	84.5%	81%	81%	0.5
					102%	**91%**	**0.5**

NKEA - OIL, GAS AND ENERGY			KPI (Quantitative)				
EPP #	**EPP**	**KPI**	**Target (FY)**	**Actual (YTD)**	**Method 1**	**Method 2**	**Method 3**
2	Developing marginal field	Total production from marginal field (oil and gas) (kboe/d)	*Information kept confidential at the request of involved parties				
		Production from Marginal Field (oil) (thousand barrel per day, kbd)					
		Production from Marginal Field (gas) - (million standard cubic feet per day, MMscfd)					
3	Intensifying exploration activities	Numbers of explored well					
5	Unlocking premium gas demand in Peninsular Malaysia	Implementation of third party access - Completion of relevant instruments for 2017	100%	75%	75%	75%	0.5
		Implementation of third party access - Publication of average monthly gas price, tariff and existing charges in ST's website	100%	100%	100%	100%	1

NKEA - OIL, GAS AND ENERGY *(continued)*			KPI (Quantitative)				
EPP #	**EPP**	**KPI**	**Target (FY)**	**Actual (YTD)**	**Method 1**	**Method 2**	**Method 3**
5	Unlocking premium gas demand in Peninsular Malaysia	Implementation of third party access - Consultation session with key stakeholders with regards to TPA (number of participants)	1,000	1,297	130%	100%	1
		Gas Pricing & Marketing – RAPID & Pengerang COGEN Power GSA @ market price	100%	95%	95%	95%	0.5
6	Encouraging investment in oil and gas services and equipment (OGSE) industry	Committed investment by oil & gas supplier and services and equipment companies facilitated by MPRC (RM million)	650	724.5	111%	100%	1
7	Taking local oil and gas services and equipment (OGSE) companies to the global stage	Number of bidders for international projects facilitated by MPRC	8	8	100%	100%	1
8	Attracting MNCs to set up operations in Malaysia and partner with local firms	Number of MNCs bringing their global operations to Malaysia or mergers/JVs between local OGSE companies with global MNCs	6	6	100%	100%	1
9	Improving energy efficiency	Estimated electricity saving achieved from the compliance of Efficient Management of Electrical Energy Regulations (EMEER) 2008	5%	2.7%	53%	53%	0.5
		Number of buildings audited in government sector, industrial and commercial sector	30	30	100%	100%	1
		Reduction of Special Industrial Tariff (SIT) by 2% for 2017	100%	100%	100%	100%	1
10	Building up renewable power capacity	Additional renewable energy capacity (MW)	7,200	7,260.5	101%	100%	1
		Additional amount of renewable energy capacity (MW) (Feed-in Tariff)	520	528.1	102%	100%	1
		Net Energy Metering (NEM) capacity/ subscription (kW)	2,500	6,114.5	245%	100%	1
13	Increase in Petrochemical output	JPDC to secure potential downstream investors from non-integrated / support industries to PIPC via LOIs (RM billion)	1.0	2.38	238%	100%	1
		Enhancement of PIPC Master Plan (EPMS)	100%	100%	100%	100%	1
		Programme construction management in relations to the key infrastructure projects in PIPC (site possession and commencement of physical works at site)	100%	78.1%	78%	78%	0.5
		Support development of quality talent	100%	135%	135%	100%	1
					112%	**92%**	**0.5**

NKEA - HEALTHCARE			KPI (Quantitative)				
EPP #	**EPP**	**KPI**	**Target (FY)**	**Actual (YTD)**	**Method 1**	**Method 2**	**Method 3**
2	Creating a supportive ecosystem to grow clinical research	Number of Industry Sponsored Research (ISR) approved by Medical Research Ethic Committee (MREC) MOH and Institutional Review Board (IRB)	170	171	101%	100%	1
		Number of Industry Sponsored Research (ISR) approved by Medical Research Ethic Committee (MREC) conducted at MOH facilities	110	110	100%	100%	1
3	Pursuing pharmaceutical export opportunities	Percentage of generic pharmaceutical products (controlled medicines) registered within 210 working days upon complete submission	90%	89.6%	100%	100%	1
4	Reinvigorating health travel through better customer experience, proactive alliances and niche marketing	Revenue generated from healthcare travellers (RM million)	1,150	1,200.5	104%	100%	1
		Revenue generated from healthcare tourists (RM million)	825	776.1	94%	94%	0.5
7-14	Medical device	Percentage of establishment license applications processed within 21 days upon complete submission	90%	98.5%	109%	100%	1
		Progress of 2 pre-clinical testing lab compliance to OECD GLP requirements for pre-clinical testing of medical devices.	100%	65.6%	66%	66%	0.5
		Number of medical devices registered	80,000	112,588	141%	100%	1
					102%	**95%**	**0.5**

NKEA - PALM OIL AND RUBBER			KPI (Quantitative)				
EPP #	EPP	KPI	Target (FY)	Actual (YTD)	Method 1	Method 2	Method 3
1	Accelerating the replanting and new planting of oil palm and increasing smallholders' income	Planted hectares of oil palm by smallholders on gazetted Native Customary Rights land in Sarawak (ha)	1,960	1,207	62%	62%	0.5
		Area of replanting and new planting implemented by smallholders (ha)	12,000	12,820	107%	100%	1
		Crop integration to be implemented (ha)	660	1,387	210%	100%	1
		Number of individual projects under livestock integration scheme (goat and cattle)	60	90	150%	100%	1
2	Improving FFB yield	Total FFB sold to mills by all cooperatives by year end (tonnes)	50,000	93,200	186%	100%	1
		Number of new cooperatives (KPSM) selling FFB to mills with minimum 500 tonnes/year	5	5	100%	100%	1
		New area of plantations/smallholders complying with MSPO (ha)	150,000	296,007	197%	100%	1
		National average yield (tonnes/ha/yr)	19	17.9	94%	94%	0.5
		National FFB production (million tonnes)	103.5	101.7	98%	98%	0.5
		Number of samples tested using SureSawit kit to assist certification of oil palm nurseries	238,000	243,175	102%	100%	1
4	Increasing the Oil Extraction Rate	Number of palm oil mills certified by MSPO	10	30	300%	100%	1
		Oil Extraction Rate (%)	21.50%	19.72%	92%	92%	0.5
5	Developing biogas facilities at palm oil mills	Percentage progress of new biogas plant construction for 5 mills	100%	120%	120%	100%	1
		Percentage progress of 5 new biogas plants connected to grid	100%	100%	100%	100%	1
6	Developing high-value oleo-derivatives	Percentage of take up of the RM2.15 million pre-commercialisation and technology acquisition funds	100%	124%	124%	100%	1
8	Expediting growth of food and health-based downstream segment	Percentage of take up RM20.5 million funds for food and health-based products	100%	200%	200%	100%	1
9	Ensuring sustainability of the upstream rubber industry	Area of replanting and new planting by rubber smallholders (ha)	8,557	8,557	100%	100%	1
10	Increasing world market export of rubber and rubber products	Number of standards met by rubber and rubber products using the newly commissioned equipment	5	5	100%	100%	1
					136%	**97%**	**0.5**

NKEA - TOURISM			KPI (Quantitative)				
EPP #	**EPP**	**KPI**	**Target (FY)**	**Actual (YTD)**	**Method 1**	**Method 2**	**Method 3**
1	Positioning Malaysia as a vibrant shopping destination	Percentage of tourist spend on shopping from total tourism receipt	30%	32%	107%	100%	1
2	Designating Kuala Lumpur City Centre-Bukit Bintang as a vibrant shopping precinct	Total footfalls at malls at BBKLCC (million)	105	124	118%	100%	1
4	Establishing Malaysia as a mega biodiversity hub (MMBH)	Number of visitors to MMBH sites	750,000	906,661	121%	100%	1
6	Developing cruise tourism	Number of international cruise calls at Malaysian ports	405	471	116%	100%	1
		Number of cruise passengers at primary ports	577,500	924,885	160%	100%	1
7	Positioning Malaysia as a vibrant events and entertainment destination	Number of international tourists at international events supported by MyCEB	80,000	59,908	75%	75%	0.5
9	Establishing Malaysia as a leading business tourism destination	Number of delegate days for events secured / year	320,000	381,342	119%	100%	1
11	Enhance air connectivity to Malaysia from priority markets	Total weekly seats from identified priority countries by all Malaysian carriers	125,500	158,682	126%	100%	1
					118%	**97%**	**0.5**

NKEA - WHOLESALE AND RETAIL			KPI (Quantitative)				
EPP #	**EPP**	**KPI**	**Target (FY)**	**Actual (YTD)**	**Method 1**	**Method 2**	**Method 3**
1	Increasing number of large format stores	Number of new hypermarkets	2	1	50%	50%	0
		Number of new superstores	2	3	150%	100%	1
2	Modernising via the Small Retailer Transformation Programme (TUKAR)	Percentage disbursement of RM3 million allocated TUKAR loan	100%	123%	123%	100%	1
		Increase in revenue of newly transformed TUKAR stores by 25% for the first 3 months post transformation	100%	0%	0%	0%	0
					81%	**63%**	**0.5**

SRI - HUMAN CAPITAL DEVELOPMENT			KPI (Quantitative)				
#	EPP	KPI	Target (FY)	Actual (YTD)	Method 1	Method 2	Method 3
1	Human Capital Development (MoWFCD)	Percentage of women on board in public listed companies	14%	13.3%	95%	95%	0.5
		Percentage of women on board in top 100 public listed companies	18%	19.3%	107%	100%	1
		Number of new childcare centres in the workplace i. Public (10) ii. Private (10)	100%	115%	115%	100%	1
3	Human Capital Development (EPU)	Number of women placements	100	196	196%	100%	1
		Critical skills list report – expanded for more sectors and skills level	100%	100%	100%	100%	1
					123%	**99%**	**0.5**

SRI - COMPETITION, STANDARDS AND LIBERALISATION			KPI (Quantitative)				
#	KPI		Target (FY)	Actual (YTD)	Method 1	Method 2	Method 3
1	Competition, standards and liberalisation (MOA)	Number of fruit and vegetable farms certified under MyGAP	750	951	127%	100%	1
		Number of aquaculture farms certified under MyGAP	165	162	98%	98%	0.5
		Number of livestock farms/premises certified under MyGAP	100	78	78%	78%	0.5
		Number of fruit and vegetable farms certified under myOrganic	40	51	128%	100%	1
2	Competition, standards and liberalisation (KeTTHA)	Number of new products under MyHIJAU Programme	2,000	2,319	116%	100%	1
3	Competition, standards and liberalisation (MOSTI)	Number of new certifications obtained by companies from Accredited Certification Bodies	1,500	1,937	129%	100%	1
4	Competition, standards and liberalisation (MOH)	Percentage of food manufacturing premises registered in the FoSIM Domestic System obtaining MeSTI certification	50%	50.2%	100%	100%	1
					113%	**97%**	**0.5**

SRI - PUBLIC SERVICE DELIVERY TRANSFORMATION		KPI (Quantitative)				
#	KPI	Target (FY)	Actual (YTD)	Method 1	Method 2	Method 3
1	Number of newly implemented Lean Healthcare Projects at MOH hospitals per year	35	40	114%	100%	1
				114%	**100%**	**1**

SRI - NARROWING DISPARITY		KPI (Quantitative)				
#	KPI	Target (FY)	Actual (YTD)	Method 1	Method 2	Method 3
4	Total value of business opportunities created for Bumiputera companies (RM billion)	10	14.1	141%	100%	1
	Achieve financing approval for Bumiputera companies at a minimum of 3.0 times against respective government funds received (times)	3.0	3.7	122%	100%	1
	Increase in value of "Skim Jejak Jaya Bumiputera" (SJJB) PLCs by RM 1 billion (billion)	1.0	2.1	210%	100%	1
	Minimum revenue increase of 10% for INSKEN500 participants (businesses)	300	325	108%	100%	1
				145%	**100%**	**1**

SRI - PUBLIC FINANCE REFORM		KPI (Quantitative)				
#	KPI	Target (FY)	Actual (YTD)	Method 1	Method 2	Method 3
1	Percentage of fiscal deficit to GDP in 2017	3.0%	3.0%	100%	100%	1
				100%	**100%**	**1**

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Civil Service Delivery Unit (CSDU)
Prime Minister's Department

Level 1, East Block
Perdana Putra Building
Federal Government Administrative Centre
62502 Putrajaya
Malaysia

Tel : 03-8872 7249
Fax : 03-8889 4428

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