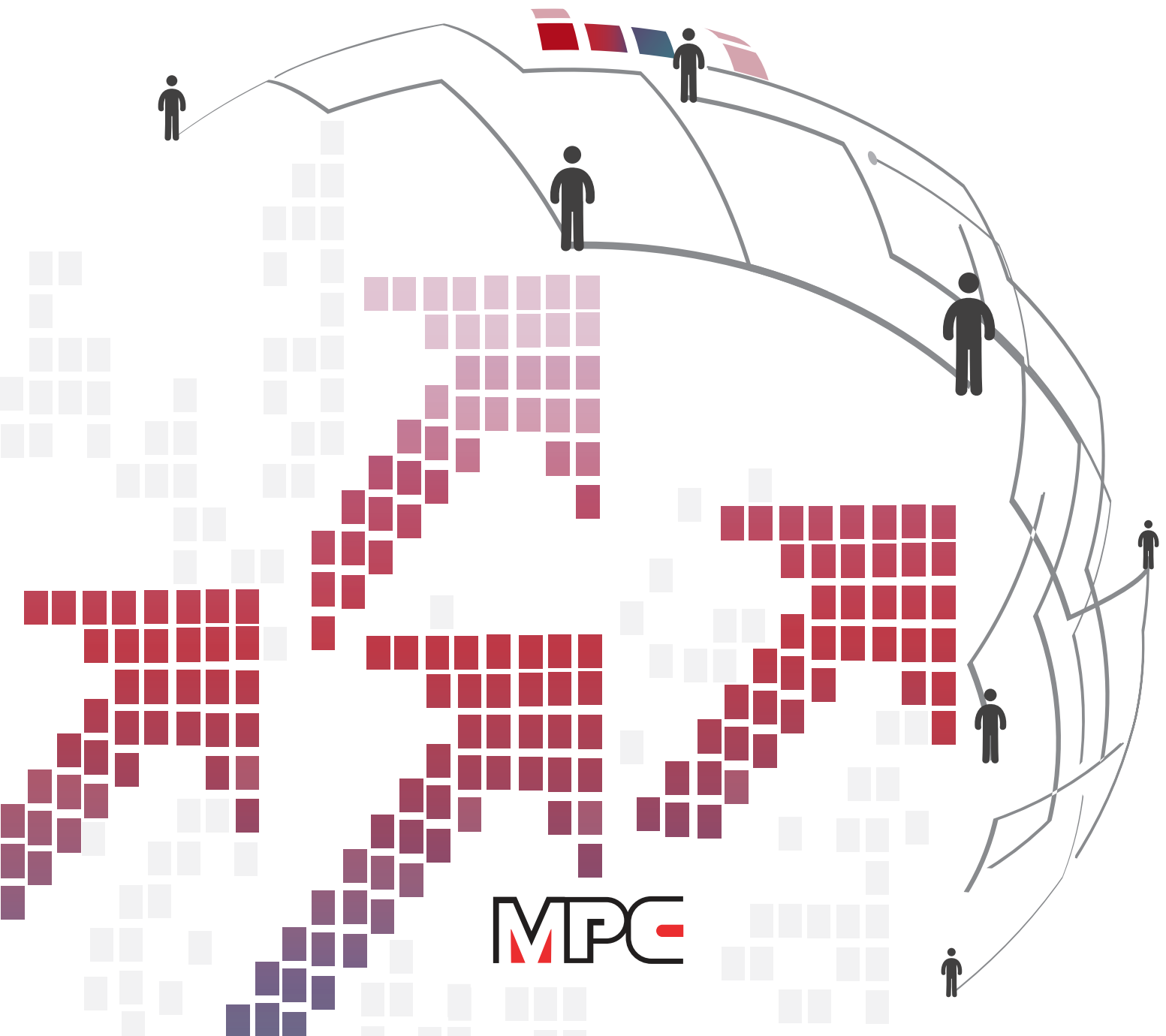


MALAYSIA

PRODUCTIVITY REPORT 2018/2019





DRIVING PRODUCTIVITY OF THE NATION

Malaysia has been making clear strides towards transforming into an advanced economy and inclusive nation, with a strong economic growth record. As Malaysia approaches its vision to become an advanced economy and inclusive nation, productivity improvement is critical for sustaining this positive trajectory.



26th PRODUCTIVITY REPORT 2018/2019


© 2019 Malaysia Productivity Corporation


All rights reserved

No part of this publication may be reproduced, stored in retrieval systems or transmitted in any form or any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of Malaysia Productivity Corporation.

For further information, please contact:

Director General
Malaysia Productivity Corporation
P.O. Box 64, Jalan Sultan
46904 Petaling Jaya, Selangor
MALAYSIA

 : +(603) 7955 7266

 : +(603) 7957 8068

 : marketing@mpc.gov.my

 : www.facebook.com/MPCHQ

 : www.twitter.com/@MPC_HQ

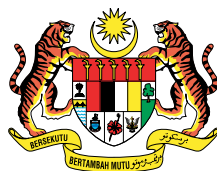


STATUTORY STATEMENT

This report is published for the
Minister of International Trade and Industry in accordance with Section 7 of
the Malaysia Productivity Corporation Act (Incorporated) 1996.

CONTENTS

MESSAGE FROM THE MINISTER	vi
CHAIRMAN'S STATEMENT	viii
MALAYSIA PRODUCTIVITY CORPORATION	
• Board of Directors	x
• Management Team	x
• MPC Consultative Panels	xi
• Subsector Productivity Nexus	xi
• Highlights on Competitiveness	xii
• Executive Summary	xiii
PART 1 National Productivity Performance	1
PART 2 Sectoral Productivity Performance	9
PART 3 Enhancing Productivity Through Better Governance	63
PART 4 The Way Forward For Sustainable Productivity	93
APPENDICES	109
ACRONYMS AND ABBREVIATIONS	121



MESSAGE FROM THE MINISTER

2020 AND BEYOND: ELEVATING PRODUCTIVITY PERFORMANCE

Malaysia has successfully developed strong trading networks and diversified sectors over the years, despite the recent trade uncertainties which had led trade partners to limit the advancement of globalisation. Though the negative sentiments caused by trade wars has affected the business community, fortunately, this has enabled the Malaysian domestic companies to seek new opportunities and alternative market for a better business environment.

Despite the uncertain climate of the global economy, Malaysia has weathered the storm and achieved a GDP growth of 4.7% that was largely driven by a domestic demand growth. The performance of key economic sectors was accelerated through technological advancements, capital deepening and widening, and the quality of labour. Consequently, the local economy recorded a labour productivity growth rate of 2.2% with a productivity level of RM91,972 as compared to RM89,953 in 2017.

Malaysia's productivity growth surpassed many developed countries including Japan (-0.4%), Korea (0.2%), Australia (1.1%) and the USA (1.5%). On the other hand, stronger productivity growth was seen from Indonesia (3.8%) and Thailand (4.5%) due to vigorous contribution from the domestic sectors. As Malaysia sustains its current momentum, there is still room for improvement in terms of global impact.

International reports have taken note of Malaysia's steady progress as a competitive economy. Malaysia was ranked 15th in the World Bank Doing Business Report 2019, climbing nine ranks from the previous year. Meanwhile, the International Institute for Management Development (IMD) World Competitiveness Yearbook (WCY) 2019 revealed that Malaysia sustained its 22nd position for the second year, reflecting the business community's positive sentiments towards the new Government.

While Malaysia's performance and progress is encouraging, it is important not to ignore the market challenges that still persist. Market demands are evolving and becoming more sophisticated, and it is critical for Malaysia to meet these market demands if we are to become a high-income nation. As such, the Government is taking pre-emptive actions to maintain global competitiveness.

To turn this vision into a reality, both the Rakyat and industries must "leap-frog" to a higher level of competitiveness by setting our sights on the mutual end-goal. As a nation we also need to embrace a stronger mentality that inculcates a culture of quality and attention to detail. Every step, no matter how small, is what will set us apart and transform our local industries into global players.

The Government has invested in various measures that will continue to strengthen structural reforms and accelerate the country's progress to be on par with global benchmarks. These include investing in the conducive ecosystem infrastructures, improving quality of education and training, enhancing innovation and adoption of technology as well as unlocking the potential of the digital economy as a driver of future growth.

Echoing the message by the Honourable Prime Minister, Malaysia needs to move from input-driven to productivity-driven growth to achieve sustainable economic expansion. By staying true to this mentality, the nation will be more in sync with the initiatives outlined in the Malaysia Productivity Blueprint (MPB), which focuses on five thrusts - building workforce of the future, driving digitalisation and innovation, making industry accountable for productivity, forging a robust ecosystem and securing a strong implementation mechanism.

I have faith that by embodying a productivity-focused mindset across all sectors, we as a nation are well on track to meeting our targets beyond 2020. We are proactively working to ensure that the public and private sectors collaborate strongly in realising the vision to become a high-income economy.



DATUK DARELL LEIKING
Minister of International Trade and Industry
Malaysia



CHAIRMAN'S STATEMENT

Stepping Stones to Reaching Productivity Targets

As the leading organisation for productivity enhancement, the Malaysia Productivity Corporation (MPC) continues to work together with the Ministry of Economic Affairs (MEA) and Ministry of International Trade and Industry (MITI) to lead the relevant ministries, agencies and stakeholders in monitoring the progress of productivity efforts, initiatives and strategies that have been carried out since 2017 under Malaysia Productivity Blueprint (MPB).

In support of sector-level initiatives of MPB, 9 Productivity Nexus have been established namely retail and food & beverages (F&B), professional services, tourism, information and communication technology (ICT), private healthcare, electrical and electronics, chemicals and chemical products, machinery and equipment (M&E) and agro-food.

The Productivity Nexus have strengthened productivity across 43 sector-level initiatives by encouraging collaborations between industry players, associations, academicians and relevant agencies. Such public-private sector cooperation has created awareness, better understanding and facilitated the adoption of programmes including Industry Productivity Specialists (IPS), recognition for High Productivity Enterprise (HPE) using local talent, ezBE Assessment Tool and e-Productivity Gain Measurement (ePGM).

MPC has also shown unwavering support for the Government's agendas in providing efficient business environments conducive to Good Regulatory Practice (GRP), which work to enhance transparency, predictability and accountability. Under GRP, various programmes were carried out such as Modernising Business Licensing (MBL), Regulatory Impact Analysis (RIA), Cutting Red Tape (MyCURE), Reducing Unnecessary Regulatory Burdens (RURB) and Removing Non-Tariff Measures (NTMs) that impede business growth.

In terms of business productivity, MITI and MPC have joined forces to encourage SMEs to reach their fullest potential whilst preparing for the Industry 4.0 revolution. The ultimate aim is to enable the efficient use of data, information and smart technology and machines to build a more productive work environment. MPC has allocated resources to carry out INDUSTRY4WRD readiness assessments in collaboration with other agencies to assist up to 500 SMEs in migrating to Industry 4.0 technologies. As at 2018, 287 SMEs have registered for this assessment through various outreach programmes.

To always stay ahead of the curve and identify areas for improvement, MPC has strategically collaborated with renowned international organisations such as Asian Productivity Organisation (APO), the Organisation for Economic Cooperation and Development (OECD), The Conference Board (TCB), World Bank, World Economic Forum (WEF), the International Institute for Management Development (IMD), Office of National Statistics UK (ONS), Australian Government Productivity Commission (AGPC) and American Productivity and Quality Center (APQC).

With access to such a strong global productivity network, I am confident that we will rise to the occasion despite uncertainties in the global market. To improve the quality of life for all Malaysians, improving future skillsets, digital technology and productivity are compelling targets. By tackling every challenge head-on and driving productivity initiatives, we can take pride in assuming our part to take our nation to greater heights.

I extend my sincere thanks to MITI, MPC's Board of Directors and the Productivity Nexus Champions for their support, valuable insights and guidance that have been instrumental to the development of this report.



Mr Tian Chua
Chairman
Malaysia Productivity Corporation

MALAYSIA PRODUCTIVITY CORPORATION

BOARD OF DIRECTORS

CHAIRMAN

Mr. Tian Chua (Present)
Malaysia Productivity Corporation

YBhg. Tan Sri Azman Hashim (1988-November 2018)
AmBank Group

DEPUTY CHAIRMAN

YBhg. Datuk Talagavathi a/p R. Karapayah
Ministry of International Trade and Industry

MEMBERS

YBhg. Dato' Mohd Sallehuddin Hassan
Ministry of Agriculture and Agro-Based Industry

YBhg. Prof. Tan Sri Dato' Dzulkifli Abdul Razak
International Islamic University Malaysia

YBhg. Tan Sri Dato' Azman Shah Dato' Seri Haron
Malaysia Employers Federation

YBhg. Dato' Muhammad Noor Yacob
Private Sector

YBhg. Dato' Jamelah Jamaludin
Pergola Capital Sdn. Bhd.

YBhg. Datuk Ruben Emir Gnanalingam Abdullah
Westports Holdings Berhad

YBhg. Dato' Mohd Razali Hussain
Malaysia Productivity Corporation

Ms. Zakiah Jaafar
Ministry of Economic Affairs

Ms. Roszanina Wahab
Ministry of Finance

Mr. A. Balasubramaniam
Malaysia Trade Union Congress

Mr. Ir. Daniel Lim Kim Chuan
AD Consultants (M) Sdn Bhd

Mr. Mohd Sofiyuddin Ahmad Tabrani
Zaid Ibrahim & Co

MANAGEMENT TEAM

DIRECTOR GENERAL

YBhg. Dato' Mohd Razali Hussain

DEPUTY DIRECTOR GENERAL

YBhg. Dato' Abdul Latif Abu Seman

DEPUTY DIRECTOR GENERAL

Mr. Ab. Rahim Yusoff

DIRECTORS

Mr. Burhanuddin Hj. Saidin
YBrs. Dr. Daud Talib
Mr. Kabir Ahmad Mohd Jamil
Mr. Kamaruddin Mohamad
Ms. Norzirin Ariffin
Mr. Mohd Zaki Ibrahim
YBrs. Dr. Rahmat Md. Smail
Mr. Rosmi Abdullah
Ms. Sarimah Misman
Mr. Suhaimi Hamad
Mr. Zahid Ismail
YBhg. Datin Zainon Bakar

DEPUTY DIRECTORS

YBrs. Dr. Shaik Roslinah Bux
Mr. Md. Shubri Ismail
Mr. Mohd Yazid Abdul Majid
Mr. Nik Rosdi Nik Yusoff
Ms. Nor Fazila Hashim
Ms. Nor Robaayah Mohd Noor
YBhg. Datin Roseleena Hashim
Ms. Saliza Saari
Ms. Sawiah Abdul Samad
Ms. Shezlina Zakaria
Mr. Sugumar a/l Saminathan
Ms. Wan Fazlin Nadia Wan Osman
Mr. Zainudin Hj. Elias
Ms. Zulaifah Omar

REGIONAL DIRECTORS

Mr. Azlan Kassim (ECR)
Mr. Izani Ishak (SBO)
YBrs. Dr. Mazrina Mohamed Ibramsah (NRO)
Ms. Roziana Hj. Othman (SRO)
Ms. Waila Mohd Nasir - Covering Director (SKO)

MPC CONSULTATIVE PANELS

PRODUCTIVITY MEASUREMENT PANEL

CHAIRMAN

YBhg. Dato' Muhamad Noor Yacob
Private Sector

MEMBERS

YBrs. Dr. Nirwan Noh
Ministry of Finance

Mr. Tan Kay Kiang
Ministry of Economic Affairs

Mr. Megat Harris Shah Zahari
ICU, Prime Minister Office

Mr. Fraziali Ismail
Bank Negara Malaysia

Ms. Noraliza Mohamad Ali
MBLS, Department of Statistics Malaysia

YBrs. Dr. Mohd Yusof Saari
Universiti Putra Malaysia

PRODUCTIVITY CULTURE PANEL

CHAIRMAN

YBhg. Tan Sri Dato' Prof. Dzulkifli Abdul Razak
International Islamic University Malaysia

MEMBERS

YBhg. Dato' Mohd Razali Hussain
Malaysia Productivity Corporation

Ms. Zakiah Jaafar
Ministry of Economic Affairs

YBhg. Assoc. Prof. Madya Datuk Dr. Ismail
Sualman
Universiti Teknologi MARA

Mr. Mikhail Raj
BERNAMA

YBhg. Dato' Shakir Husein Khalid
Shamawar ElektriKA

Ms. Low Ngai Yuen
Persatuan Kakiseni

Ms. Sarah Joan Mokhtar
Persatuan Penulis dan Ilustrator Buku
Kanak-Kanak

Mr. Ganesh Muren
Soara Industries

Mr. Zhariff Afandi
The Zhariff Initiative

SUBSECTOR PRODUCTIVITY NEXUS

RETAIL AND FOOD & BEVERAGES

CHAMPION

YBhg. Dato' Bruce Lim Aun Choong
Malaysia Retail Chain Association

TOURISM

CHAMPION

Mr. Uzaidi Udani
Malaysia Inbound Tourism Association (MITA)

ICT

CHAMPION

Mr. Ganesh Kumar Bangah
National ICT Association of Malaysia (PIKOM)

PROFESSIONAL SERVICES

CHAMPION

YBrs. Ts Choo Kok Beng
Malaysia Service Providers' Confederation

PRIVATE HEALTHCARE

CHAMPION

YBhg. Dato Dr. Jacob Thomas
Association of Private Hospital of Malaysia

ELECTRICAL & ELECTRONICS

CHAMPION

YBhg. Dato' Wong Siew Hai
Malaysia Industries Council of Malaysia

CHEMICALS AND CHEMICAL PRODUCTS

CHAMPION

YBhg. Dato' Dr. Hapiz Abdullah
Chemical Industries Council of Malaysia

MACHINERY AND EQUIPMENT

CHAMPION

Mr. Mac Ngan Boon
Machinery and Engineering Industrial Federation

AGRO-FOOD

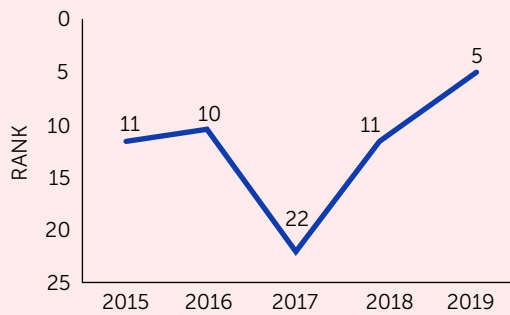
CHAMPION

YBrs. Dr. Nungsari Ahmad Radhi
Prokhas Sdn. Bhd.

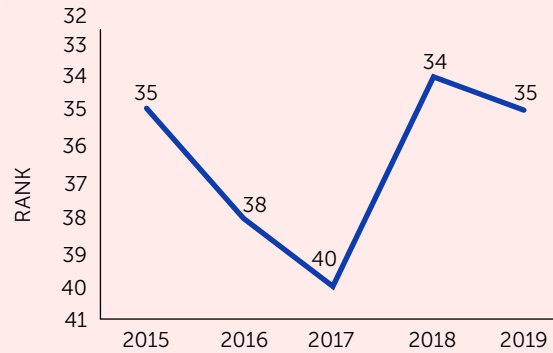
HIGHLIGHTS ON COMPETITIVENESS

Malaysia's competitiveness performance in selected indicators, 2015-2019.

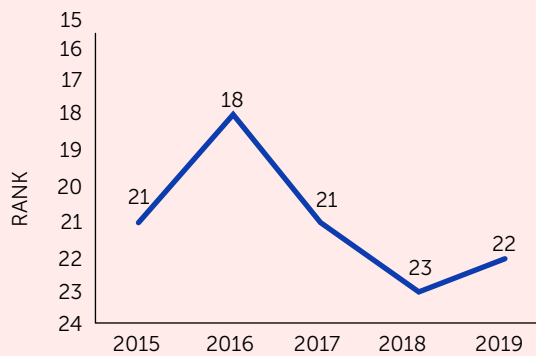
Skilled Labour is Readily Available



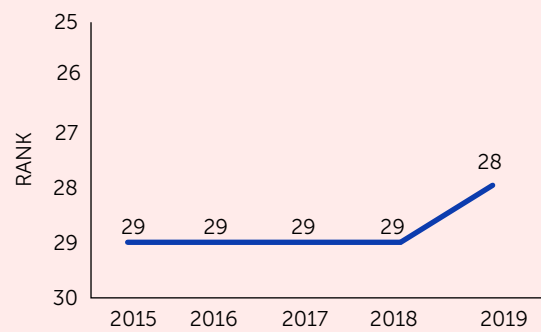
Education



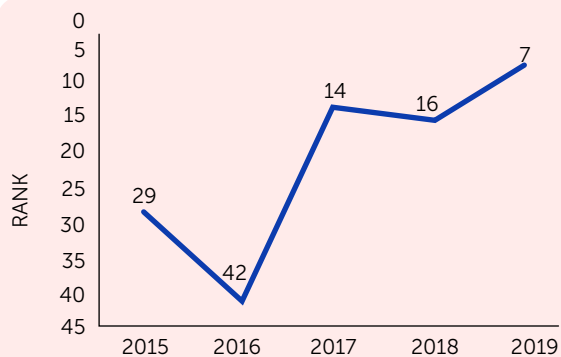
Workforce Productivity is competitive by international standards



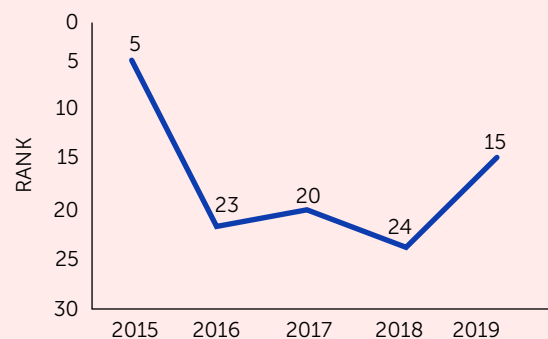
Scientific Infrastructure



Unit Labour Costs for Total Economy
Percentage change



Technological Infrastructure



Note : Number of countries
2015-2016 : 61 Countries
2017-2019 : 63 Countries

Source : IMD World Competitiveness Yearbook

EXECUTIVE SUMMARY

The Productivity Report is an annual report published by MPC in accordance with Section 7 of the Malaysia Productivity Corporation Act (Incorporated) 1996.

The main purpose of the publication is to report on the nation's productivity performance at the national and sectoral level for that specific year. The report highlights issues and challenges faced, as well as the activities and programmes that have been undertaken or recommended to enhance productivity in both the public and private sector.

With the theme 'Driving Productivity of the Nation', the Productivity Report for 2018/2019 will give the readers, who are mostly from the industries, ministries and Government agencies, an in-depth view on the importance of productivity in the nation's economic growth and quality of life of the *Rakyat*. Whereas the sub-theme of 'Digitalisation Leads to Innovation Through Workforce of the Future' will focus on the role of innovation and human capital in the Industry Revolution 4.0 era.

The report starts with an overview of Malaysia's economy and its competitiveness in the global market, especially with regards to the Mid-term Review of the 11MP where new strategies, targets and their impact on the nation's productivity have been highlighted. It responds to questions such as - What is the productivity performance of the nation? Where do we stand in comparison to selected countries? Are we globally competitive? Part 1 hence highlights labour productivity performance at the national level. A comparative analysis was also outlined to benchmark Malaysia's performance against selected Asian and developed countries. Taking the 2018 performance into account, this part also gives a glimpse into the outlook of the nation's productivity and economy in 2019.

There are 5 main economic sectors that are the key contributors to Malaysia's economy. It becomes necessary to evaluate the performance of these sectors to determine national progress. Part 2 reports on the performance of the main economic sectors in terms of added value, employment and labour productivity. Among these sectors, the 3 sectors of Services, Manufacturing and Agriculture have a large share in Malaysia's economy in terms of contribution to GDP. In order to evaluate these sectors' performance, this part examines the contribution of the priority subsectors initiatives that have been identified in the Malaysia Productivity Blueprint (MPB) to enhance sectoral productivity performance. Besides that, best practice case studies will also be identified and discussed for each priority subsector.

Productivity performance at the national and sectoral level was accelerated through better governance. Public services facilitate and support the industry in creating a conducive and friendly business climate. With that, the public sector needs to be efficient and productive. Part 3 delves into the public sector productivity framework and highlights benchmark countries through 5 thematic areas namely Innovation Leadership, Service Quality, e-government, Regulatory Reform and Citizen-centered services. Furthermore, this part will also discuss Good Regulatory Practices (GRP) undertaken by the Government at ministries, agencies and at the state level. It will also look into The Special Taskforce to Facilitate Business (PEMUDAH), which is another initiative that leverages on public-private sector collaboration to create a conducive business environment.

In conclusion, the report will look into the activities and initiatives carried out towards sustainable productivity. Part 4 discusses such activities and programmes covered at the national, sectoral and enterprise level. This would include initiatives such as the productivity movement, productivity game changers and accelerating initiatives for productivity improvement.

00.0008

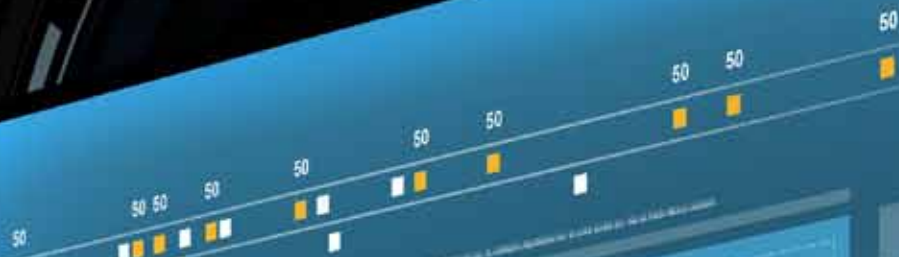
Quality of System

Lorem ipsum dolor sit amet, id pri ferri ornatus quali-
tatem, ut erit virtute pro-
prie in timore periculi lau-
derunt. At tale expetenda
mei, et existantur dispa-
tationi mei, ut errem propter
pro. Qui ad nihil dixerit
autem. Sed ne errem
graves putant, soluta acri-
pulis mei et.

Lorem ipsum dolor sit amet,
id pri ferri ornatus quali-
tatem, ut erit virtute pro-
prie in timore periculi lau-
derunt. At tale expetenda
mei, et existantur dispa-
tationi mei.

National Productivity Growth 2018

2.2%



LOREM IPSUM

Lorem ipsum dolor sit amet,
id pri ferri ornatus quali-
tatem, ut erit virtute pro-
prie in timore periculi lau-
derunt. At tale expetenda
mei, et existantur dispa-
tationi mei, ut errem propter
pro. Qui ad nihil dixerit
autem. Sed ne errem
graves putant, soluta acri-
pulis mei et.

Lorem ipsum dolor sit amet,
id pri ferri ornatus quali-
tatem, ut erit virtute pro-
prie in timore periculi lau-
derunt. At tale expetenda
mei, et existantur dispa-
tationi mei, ut errem propter
pro. Qui ad nihil dixerit
autem. Sed ne errem
graves putant, soluta acri-
pulis mei et.

01 02 03

04 05 06



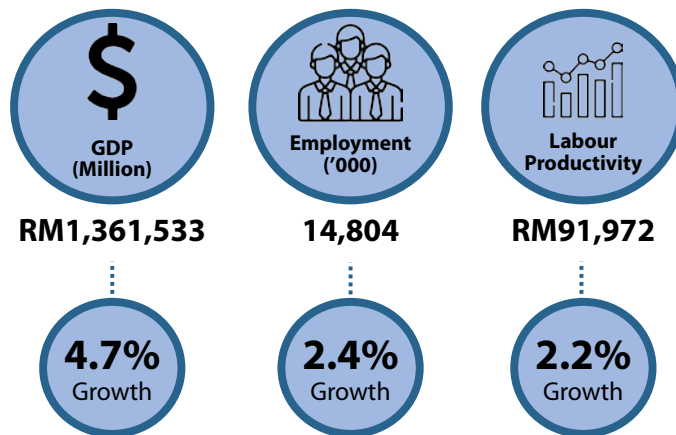


1

NATIONAL PRODUCTIVITY PERFORMANCE

This part reviews Malaysia's labour productivity performance at national level, as well as in comparison to the benchmarks set by selected developed and Asian countries. By analysing and charting the progress of the productivity performance and economic status of Malaysia, the Government and respective industries can gain more competitive drive to attain the country's desired level of productivity. Achieving higher productivity invites widespread benefits for the country, organisations and individuals through higher revenues, better reputation and less wastage of resources. While acknowledging successes of the past year, this section also briefly explores what to expect in the coming year.

National Productivity at a Glance, 2018



Source : Department of Statistics, Malaysia

As one of the most important determinants of a country's living standards, productivity illustrates how optimally an economy uses its available resources by measuring the output in correspondence to the input. A substantial level of productivity growth at the economic level gives industries and businesses within that sector a competitive advantage over other economic sectors with regards to resources such as materials, machinery, labour and capital.

The competitiveness gained from higher productivity levels will in turn lead to even greater quality output and more resourceful production, not only in the local market but in the international marketplace. Recognising the significance of productivity to the economic growth, Malaysia shifted from an economy that was input-driven to one that is productivity-driven under the Seventh Malaysia Plan (7MP).

Building on this stance, the Eleventh Malaysia Plan (11MP) drew out a blueprint that further focuses on productivity as a game changer for economic growth. Under the Mid-Term Review (MTR) of 11MP for 2018-2020, productivity remains a key economic driver of the country's vision to become a developed and high-income nation.

With the current situation of the global economy and national economic growth trend, the productivity target for 2020 has been revised to RM88,450 with an annual growth of 3.2%. It is believed that the performance will be achieved by narrowing the productivity performance gap among sectors and industries through strengthening the growth of the sector and

reforming the structure, accelerating innovation and adoption of technology and providing quality infrastructure in addition to quality workforce.

A major force in driving industrial and sector growth lies in the presence of an efficient and dynamic workforce that meets the future needs of the job market. To draw attention to this, the Malaysia Productivity Blueprint (MPB) outlined Thrust 1: Building Workforce of the Future, which looks into restructuring the workforce by raising the number of high-skilled workers, tightening the entry of low-skilled workers and meeting future economic demands in the labour market.

The 11MP MTR has also shed light on the importance of human capital development under Pillar IV: Empowering Human Capital. In addition to improving efficiency and labour productivity, this plan also pinpoints the need for labour market reform.

To accelerate the adoption of technology and innovation, the MPB also focuses on the significance of technology and innovation under Thrust 2: Driving Digitalisation and Innovation. This thrust will focus on strengthening the readiness of enterprises adopting technology in order to gain a digital advantage.

Having taken great strides on a national scale, Government and industry initiatives have enhanced the growth of both present and future productivity in the economy. The reflection of this focus in both the MPB and 11MP shows the Government's dedication to developing the economy and improving the quality of life for the betterment of the people in the long run.

MALAYSIA'S PRODUCTIVITY PERFORMANCE

Measured by real added value per person employed, Malaysia's labour productivity expanded to 2.2% in 2018, with RM91,972 as compared to RM89,953 in 2017 (Figure 1.1). This performance was behind the targeted growth of 3.2% annually under the 11MP MTR.

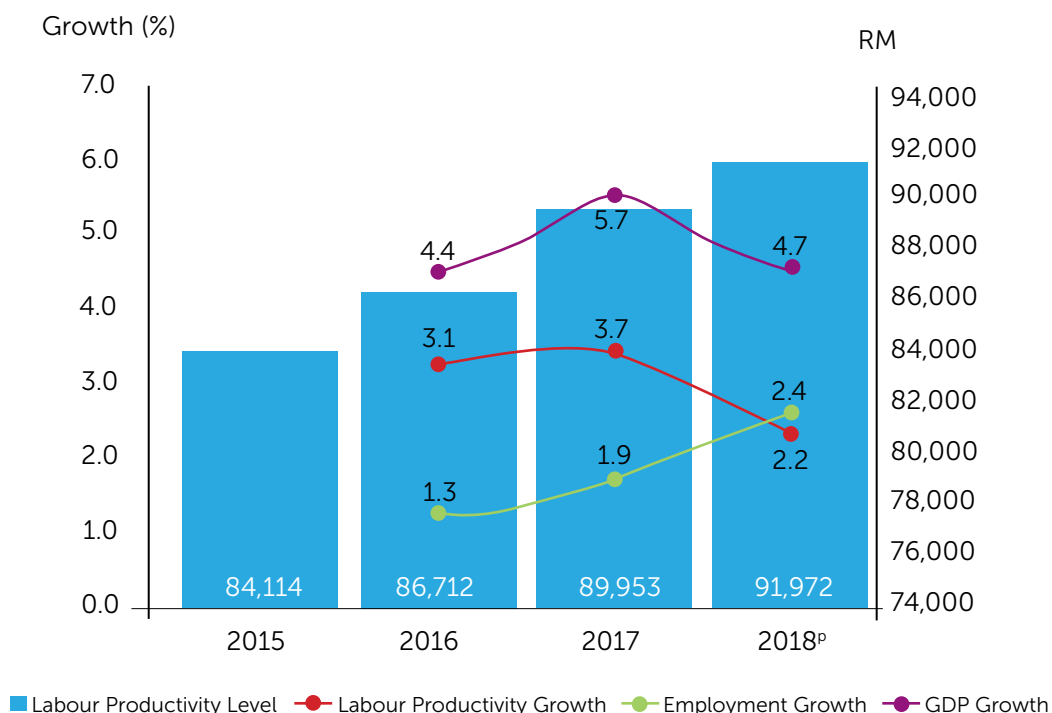
Overall, national performance was boosted by the significant growth in domestic demand and steady global growth and trade, which has also resulted in the growth of Gross Domestic Product (GDP) at 4.7%. Further complemented by the stability in employment growth of 2.4%, a conducive financial condition and steady inflation, the country's economic growth has been well sustained.

The country's sustained economic condition is well reflected in its positive employment growth trend. In 2018, Malaysia's labour market conditions remained stable, as the country experienced a growth of 2.5% in total labour

force, reaching 15.3 million persons¹. Meanwhile, total employment recorded a growth of 2.4% and 14.8 million employees as compared to 14.4 million employees in 2017 - with the largest number in the services sector at 8.9 million employees or 60.0% of total employment.

Despite uncertainties in the global market in the past year, the country has created 101,000 jobs in total, even though the number of job vacancies was downsized to 198,000 in 2018, from 206,000 in 2017. To put this in perspective, a total of 8.5 million positions were offered in the market, of which 8.3 million were filled. This meant that the unemployment rate remained at 3.4%. Additionally, according to Bank Negara Malaysia Annual Report 2018, the gain in employment was mainly contributed by high and mid-skilled workers. Such a trend indicates a shift in the employment pattern from low-skilled to mid/high-skilled workers.

Figure 1.1: Malaysia's Labour Productivity Performance, 2015-2018^p



Note : P-Preliminary
Data is based on constant price 2015
Source : Department of Statistics, Malaysia

¹ Economic Outlook 2019, Ministry of Finance and BNM Annual Report 2018, Bank Negara Malaysia

Labour Productivity of Selected Countries

Among selected developed countries, the highest labour productivity per person employed was recorded by Singapore, with USD145,864. Likewise, in terms of labour productivity per hour worked, USA registered the highest level with USD72 (Figure 1.2). Comparatively, Malaysia's labour productivity growth exceeded the benchmarks set by selected developed economies, both in terms of output per person employed and output per hour worked. Malaysia recorded a productivity of USD68,321 per person and USD31 per hour worked, remaining very much ahead when compared with selected Asian countries such as Thailand, China, Indonesia and Philippines.

At the same time, labour productivity growth in selected Asian countries is accelerating. China, for instance, experienced the highest productivity growth of 7.5% (USD32,848 per person, USD15 per hour), followed by Thailand at 4.5% (USD33,839 per person, USD15 per hour) and Indonesia at 3.8% (USD28,057 per person, USD14 per hour), as shown in Figure 1.3. The moderate growth of domestic demand in these economies had positive effects on their labour productivity despite the slowdown in external demand.

Figure 1.2: Labour Productivity Performance of Malaysia vs Selected Developed Countries, 2018

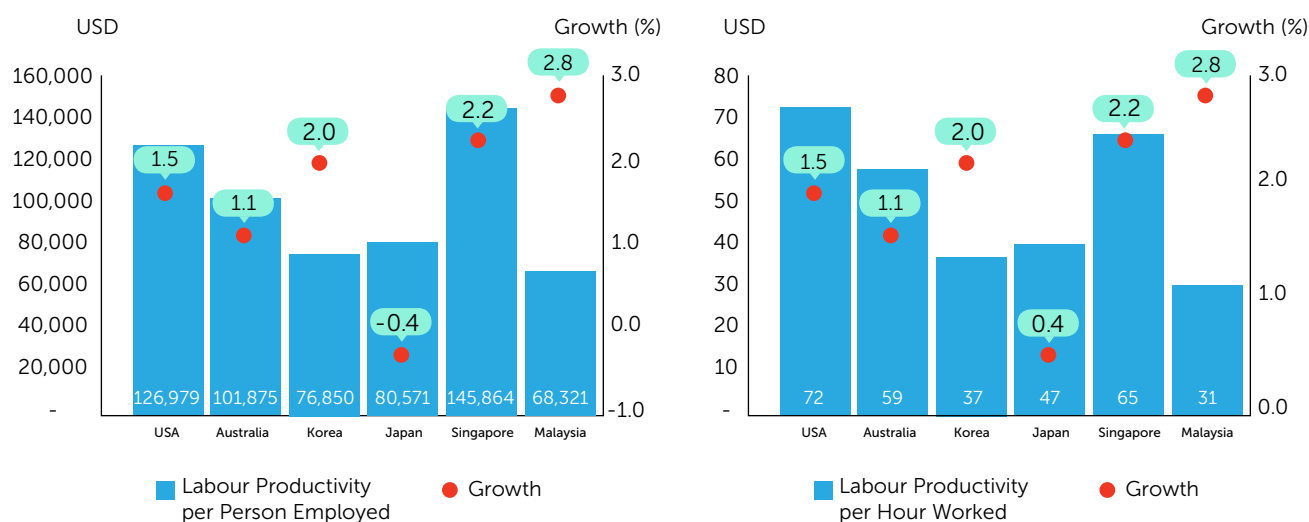
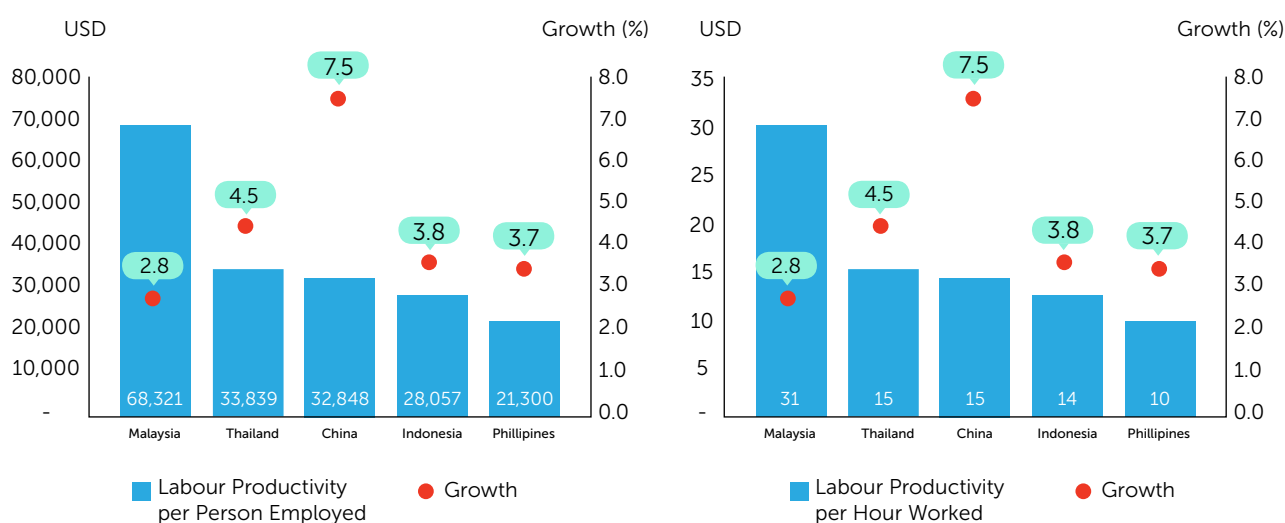


Figure 1.3: Labour Productivity Performance of Malaysia vs Selected Asian Countries, 2018



Note : Labor productivity per hour worked and labour productivity per person employed in 2017 USD
Source : Total Economy Database (Adjusted Version) as at November 2018, The Conference Board

Determinants of Labour Productivity

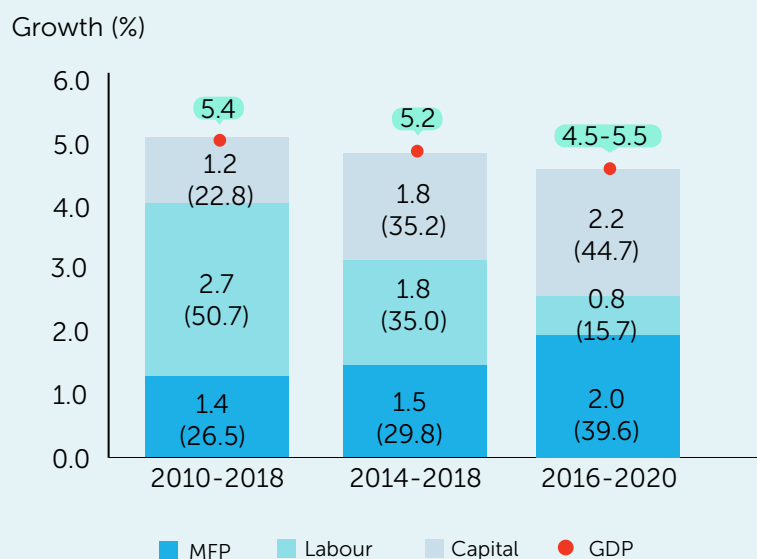
Malaysia's economic development and growth are determined by changes in our employment and labour productivity growth. Labour productivity growth means that more value added to products and services which will create more income for distribution. Labour productivity growth is affected by a composite of factors, namely multi-factor productivity (MFP) growth and capital intensity. MFP brings about technological dynamism while capital intensity refers to the utilisation of capital within the workforce. Investments on capital alone will not reflect higher productivity but must rather be complemented with efficient managerial practices and work procedures, advanced machineries & technology and skilled labour. These 2 factors will measure improvements in the qualitative aspects of labour and capital inputs.

Multi-Factor Productivity (MFP)

MFP is a measure of efficiency in the utilisation of inputs. Better quality inputs directly result in the generation of greater output especially when inputs are utilised effectively and efficiently. Higher contribution of MFP in relation to economic growth will lead to a higher standard of living.

From 2010 to 2018, Malaysia's economy was supported by labour growth where labour contributed 50.7% to GDP growth while MFP was 26.5%. Nevertheless, in the last 5 years from 2014 to 2018, the performance was relatively productivity-driven as MFP's share to GDP has increased. During this period, MFP demonstrated a growth of 1.5% that contributed 29.7% to GDP which is behind the target of 39.6% as stated in the 11MP MTR. On the other hand, capital and labour shared the same amount of growth with 1.8% respectively.

Contribution and Growth of Capital, Labour and MFP to GDP



Notes : Values in brackets represent contribution to GDP (%)
 : Data is based on constant price 2010
 Source : Department of Statistics, Malaysia
 Computed by : Malaysia Industrial Productivity Database (MIPD), MPC

With this performance, improving MFP to further drive productivity in Malaysia will need an increase in the utilisation of technology for productivity gains, better organisational management, training and engaging human capital and business friendly regulations. MPB is another avenue to boost the MFP in a holistic approach through greater collaboration and integration to implement productivity enhancement initiatives at national, sectoral and enterprise levels.

NATIONAL OUTLOOK IN 2019

The national economy is anticipated to sustain its momentum of growth in 2019, despite the global economy being projected to expand moderately due to slower growth in both advanced and emerging markets. With this slowdown in global growth, the Malaysian economy will be heavily dependent on domestic demand to steer its domestic growth and keep it on track to achieving its national economic targets. As the nation is now maintaining its growth projection, the growth is expected to further increase within the range of 4.5 to 5.5%.²

To sustain economic growth, Malaysia needs to look at workforce enhancement and adoption of technological innovations to digitally transform Malaysia's job market and accelerate the adoption of Industry 4.0 (I4.0). What Malaysia needs right now is the direction of where the economy is headed. More importantly, the new economic vision must also cater to the challenges of the 21st century.

With continued employment and income growth, the labour market conditions are expected to remain favourable as the unemployment rate is to be sustained at 3.3% with the creation of new jobs. Total employed persons are projected to increase to 15.1 million in 2019, with a forecasted 9.3 million people

recruited into the services sector. Meanwhile, the total number of employees in the manufacturing and agriculture sectors is projected to be sustained at 1.9 million in 2019.³

To further build on these successes, the Government is also rolling out policies on reducing the reliance on foreign labour and spurring the creation of high-skilled, high-income jobs that will enhance the country's economic growth and labour productivity. In 2019, labour productivity is projected to grow by 2.9% on account of productivity improvement in the manufacturing (3.9%) and construction (3.4%) sectors.⁴

As Malaysia moves towards digital technologies and I4.0, private investment is expected to record a higher growth of 5% in 2019. This can be attributed to capital spending in technology-intensive manufacturing and services sectors, whereby investments will focus on growth catalysts such as Internet of Things (IoT), software, advanced electronics, smart machinery, automation and robotics, automated guided vehicle, aerospace and medical devices. The convergence of digitalisation, innovation and a future-ready workforce will prepare Malaysia for the transition into I4.0.

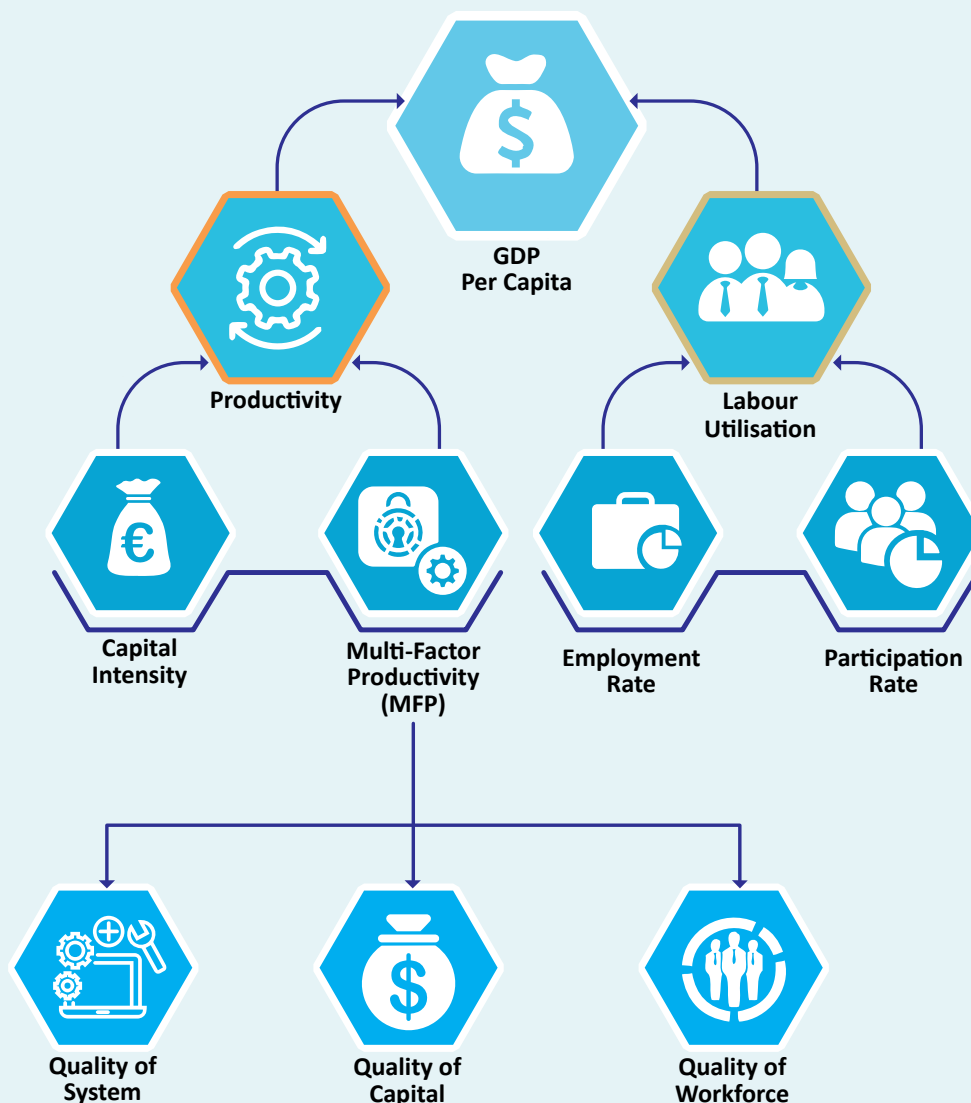


² Executive Summary, Malaysian Economic Outlook, Malaysian Institute of Economic Research, 2019

³ Macroeconomic Outlook, Economic Outlook 2019, Ministry of Finance Malaysia, 2019

⁴ Macroeconomic Outlook, Economic Outlook 2019, Ministry of Finance Malaysia, 2019

Drivers of GDP Per Capita Growth



Quality of life, measured through GDP per capita growth, can be decomposed into changes in productivity and employment. The changes in employment, which is labour utilisation of labour force participation in the country, depends on the activity rate of the working-age population either by reducing unemployment or by bringing more people into the labour market.

Changes in productivity depends on several factors such as the quantitative expansion of physical capital per worker or capital intensity and changes in productivity within sectors or MFP. The growth in MFP is a result of efficient utilisation of new machineries and innovative technology, quality of workforce and quality of system that allow more output with the same amount of input used.

The growth in productivity can also be attributed to structural changes due to reallocation of jobs across sectors. This can be seen when workers move from low to high productivity sectors such as in the case of employment shift from agriculture to either manufacturing or services sector.





2 SECTORAL PRODUCTIVITY PERFORMANCE

To propel the nation forward certain key economic sectors have been highlighted as drivers of Malaysia's economic growth through their productivity performance. Leveraging on the initiatives outlined by the Government, the productivity of sectors and the priority subsectors can be boosted to meet national targets by 2020.

The country's economic growth is driven by the performance of its main economic sectors, which is summed up by the achievement of each of its respective industries and enterprises. Further strengthening the nation's economic progress, the Eleventh Malaysia Plan (11MP) Mid-Term Review (MTR) of 11MP 2016-2020 was rolled out with several measures to support economic expansion. The measures focuses on strengthening sectoral growth and structural reforms, accelerating innovation and technology adoption and providing quality infrastructure.

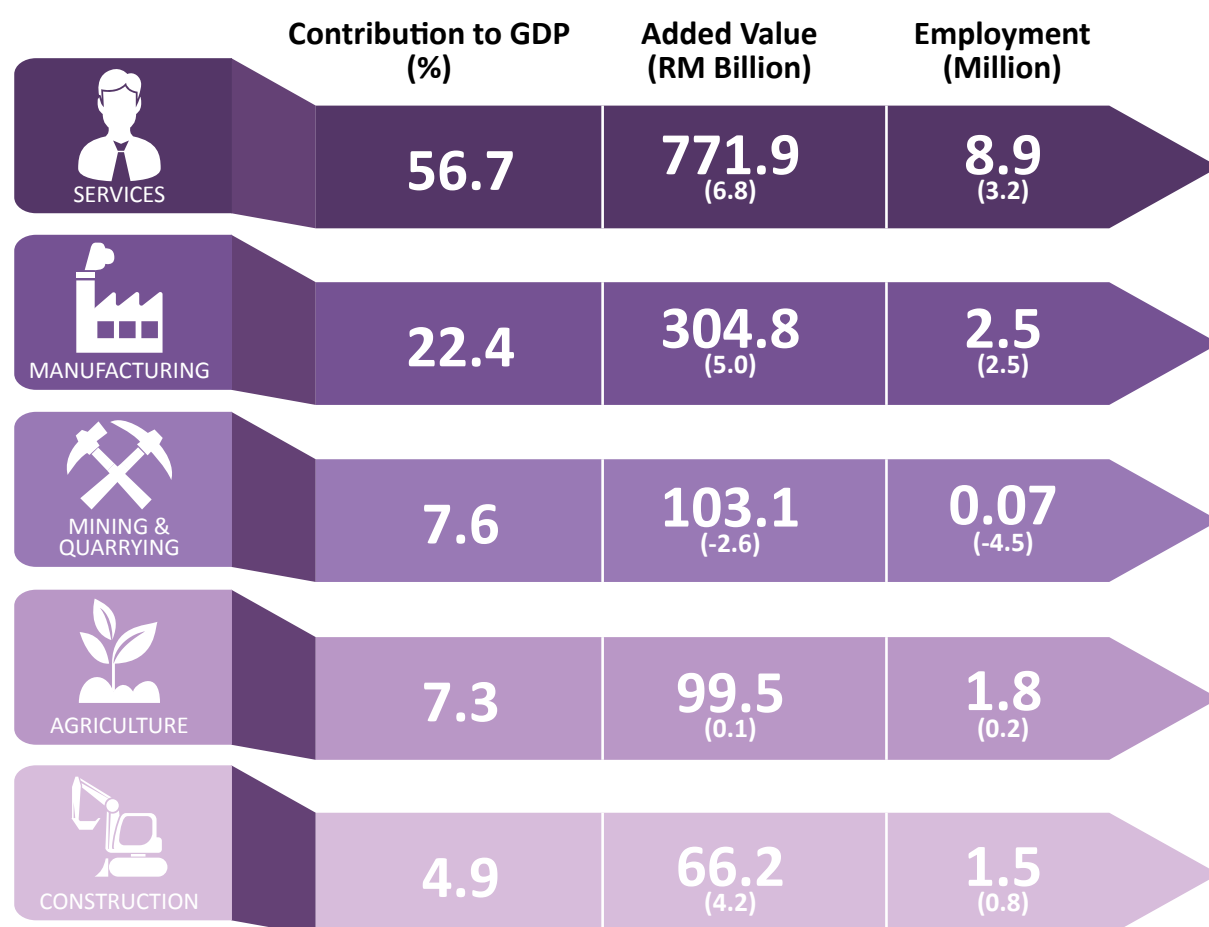
There are 5 main sectors on which the economic performance is based on, namely services, manufacturing, construction, agriculture and mining and quarrying. While services, manufacturing, construction and mining and quarrying witnessed growth in 2018, the agriculture sector registered contraction. The

services sector remained the largest contributor to the country's GDP at 56.7% with a value of RM771.9 billion in 2018, and also employed the largest number of people at 8.9 million.

The second largest contributor at 22.4% was the manufacturing sector with added value of RM304.8 billion and 2.5 million employees. This was followed by the mining and quarrying sector, which contributed added value of RM103.1 billion at 7.6% with 69,000 employees. In comparison, this sector recorded the lowest employment number among the main economic sectors.

With 7.3% contribution to the country's GDP, the agriculture sector stood at RM99.5 billion. While the construction sector contributed 4.9% to GDP amounting to RM66.2 billion. This is followed by 1.8 million and 1.5 million employees employed in the agriculture and construction sectors respectively.

Performance of the Main Economic Sectors, 2018^p



Note : P-Preliminary
Values in brackets represent growth
Data is based on constant price 2015
Source : Department of Statistics, Malaysia

PRODUCTIVITY PERFORMANCE OF THE MAIN ECONOMIC SECTORS

For 2018, the services sector recorded the highest productivity growth of 3.5%, followed by construction at 3.4%, manufacturing at 2.4% and mining and quarrying at 2.1% (Figure 2.1). On the other hand, the agriculture sector registered a contraction of 0.2%. While comparing the main sectors, labour productivity of mining and quarrying recorded at RM1,489,000 followed by manufacturing at RM121,841, services sector at RM86,921 and the agriculture sector at RM53,943.

Though the construction sector had the lowest productivity level at RM43,882, it still demonstrated significant growth. Its low productivity level indicated that industries in this sector need to be more aggressive in adopting modern technologies and practices to reduce its over-dependence on low-skilled labour. Also due to the nature of this sector, the output for construction projects will only be realised in 1 to 2 years.

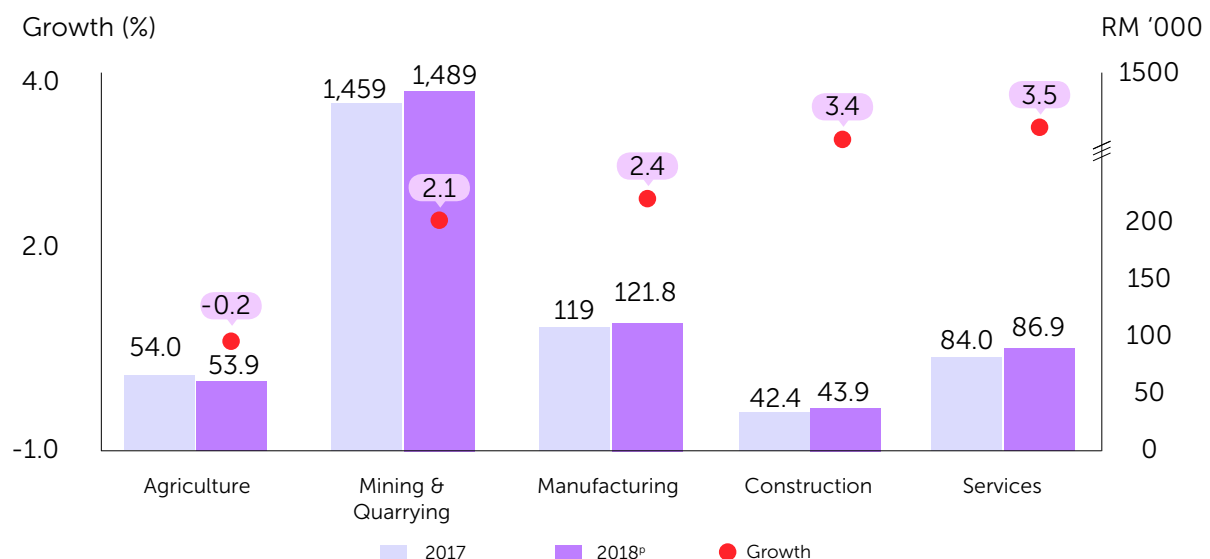
EXPORT GROWTH IN MAIN ECONOMIC SECTORS

Manufactured goods were the largest share of the country's total exports, coming in at 83.7% in 2018 and recorded a growth of 9.1% at RM835.5 billion. Helping to shore up the performance of the sector, the export of electrical and electronic products contributed the highest at 45.6% in 2018^p with a growth of 11.0%. This performance was due to the front loading of exports globally in anticipation of higher trade tariffs between the USA and China.

In terms of total export growth, chemicals and chemical products (excluding plastics in non-primary forms) recorded the highest growth of 22.5%, followed by non-metallic mineral products at 21.0% and iron and steel products at 19.1%.

As for the agriculture sector, the total export valued at RM67.0 billion, recorded a contraction of 14.2% in 2018^p due to lower commodity prices and production. Although palm oil has the largest export share in agriculture, its contraction in export of 16.2% was not the main contributor to the fall in agriculture commodity exports. It was the exports in sawlog that saw the highest contraction at 34.4%.

Figure 2.1: Labour Productivity Level & Growth of the Main Economic Sectors, 2017 - 2018^p



Note : P-Preliminary
Data is based on constant price 2015
Productivity growth sourced from Department of Statistics, Malaysia
Productivity level computed by Malaysia Industrial Productivity Database (MIPD)

Determinants of Labour Productivity by Sectors

Labour productivity growth of main economic sectors are mainly contributed by capital intensity, both in period 2010-2018 and 2014-2018, except constructions and services sectors.

The role of capital in driving the productivity performance of the main economic sectors is undeniable. All economic sectors experienced a growth in capital intensity from 2014 to 2018. A similar pattern was seen throughout the 9-year period from 2010 to 2018, where agriculture recorded the highest growth at 3.3%. This is reflective of the Government's efforts and initiatives to shift the agricultural sector towards higher-value downstream activities, in addition to the adoption of ICT and modern farming technology.

Statistics shows that it is imperative that higher MFP growth is needed in all of Malaysia's key economic sectors if the country is to attain its aspiration of becoming a high-income economy. From 2014 to 2018, the productivity of construction and services sector were mainly MFP-driven. The highest MFP growth contribution to productivity was in the construction sector at 5.8%, due to the demand intensity from mega construction projects nationwide. Additionally, the adoption of more advanced building techniques such as the Industrialised Building

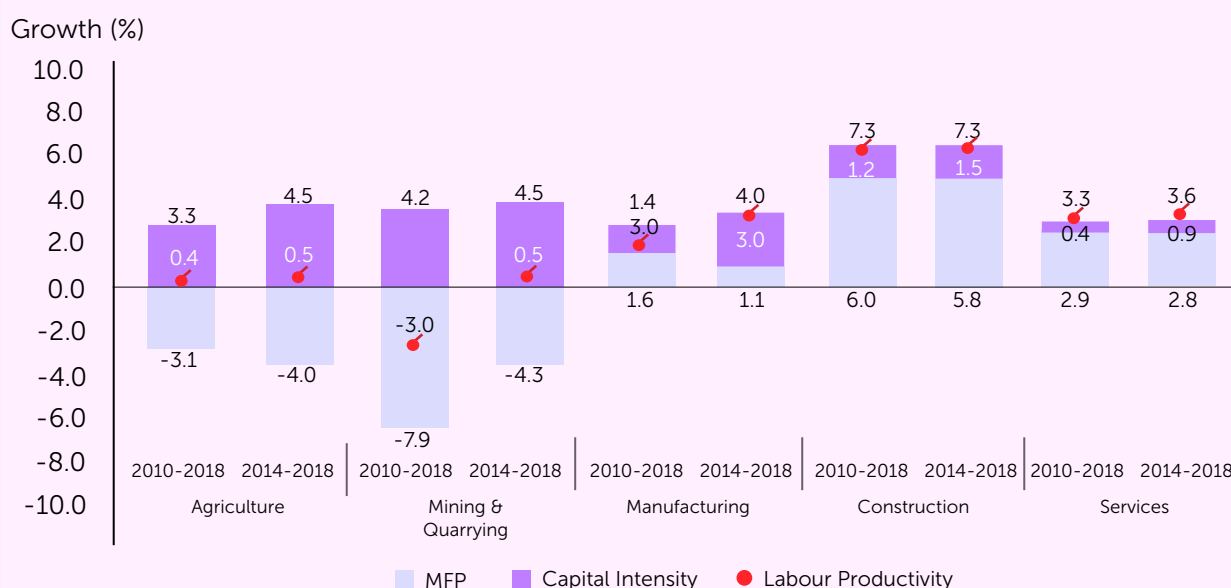
System (IBS) and Building Information Modelling (BIM) also contributed to improve construction sector performance.

For the services sector, MFP growth remained the driver of labour productivity from 2010 to 2018 with a growth of 2.9%. The modernisation of the services sector has gradually taken place with greater use of ICT in transactions and the adoption of operational systems that emphasise quality, speed, reliability and customer satisfaction.

As for the manufacturing sector, MFP saw a higher growth of 1.6% in the 9-year period between 2010 to 2018, as compared to the last 5-year period between 2014 and 2018. This indicates that during the last 5 years, manufacturers have focused on building capacity by investing more on capital in preparation for the Fourth Industrial Revolution (IR4.0). Investment in advanced machinery and automation will enable industries to be more competitive and resilient in the global market.

Additionally, the upskilling of the manufacturing sector's workforce in preparation for the industry revolution has slowed down the MFP growth. On the other hand, MFP growth for the agricultural sector dropped by 4.0% from 2014 to 2018, due to high investments in capital input which were expected to yield greater future gains.

Capital Intensity, MFP and Labour Productivity Growth of the Main Economic Sectors



Note : Data is based on constant price 2010
Source : Department of Statistics, Malaysia
Computed by : Malaysia Industrial Productivity Database (MIPD), MPC

PRODUCTIVITY NEXUS

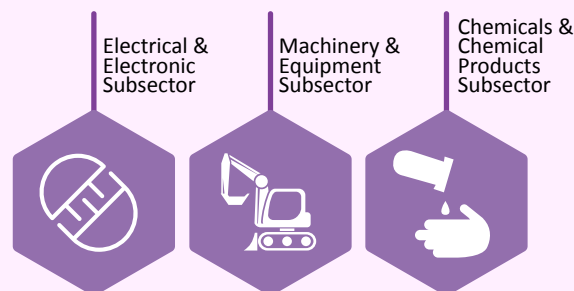
The Productivity Nexus was implemented for all 9 priority subsectors under 3 main economic sectors; services, manufacturing and agriculture. It was established to drive the implementation of productivity initiatives as proposed by the MPB and serves as a one-stop platform that provides assistance to enterprises to boost productivity, increase innovation and capture growth opportunities.

The Productivity Nexus supports sector-level initiatives by creating awareness, improving understanding and facilitating the adoption of the sector-level initiatives. It is to empower enterprises by developing and disseminating tools to boost productivity and foster knowledge-sharing through productivity experts who can help enterprises identify their productivity challenges and share best practices and solutions. This will strengthen partnerships between government, enterprises, trade associations and chambers.

SERVICES SECTOR



MANUFACTURING SECTOR



AGRICULTURE SECTOR












Source : Malaysia Productivity Blueprint (MPB)

LABOUR PRODUCTIVITY GROWTH OF THE 9 PRIORITY SUBSECTORS

Under the 11MP, Malaysia sets out to increase labour productivity from 1.8% to 3.7% year-on-year growth. In order to achieve this, it is critical that productivity improvement is accelerated. By increasing quality output within these 9 priority subsectors, the national labour productivity can be pushed further upward.

In 2018, the highest labour productivity growth among the 9 priority subsectors was professional services at 6.3%, followed by tourism and ICT both at 4.5%, retail and F&B at 4.3%, electrical and electronic (E&E) at 3.3%, private healthcare at 2.9%, agro-food and chemicals and chemical products both at 1.2% and machinery & equipment (M&E) at 1.1%. When compared with 2017, the tourism, M&E and private healthcare subsectors recorded a higher percentage of labour productivity growth in 2018.

		2017 (%)	2018 ^P (%)
	Agro-Food	2.5	1.2
	Chemicals & Chemical Products	3.7	1.2
	Machinery & Equipment	-1.0	1.1
	Electrical & Electronics	7.2	3.3
	Retail & F&B	5.6	4.3
	Tourism	3.6	4.5
	ICT	2.0	4.5
	Professional Services	6.4	6.3
	Private Healthcare	-0.3	2.9

Note : P - Preliminary
 : Data is based on constant price 2015
 Source : Department of Statistics, Malaysia

PERFORMANCE OF THE SERVICES SECTOR

The services sector consists of 8 main subsectors, which includes utilities, wholesale & retail trade, food & beverage (F&B) and accommodation, transportation and storage, information and communication, finance and insurance, real estate and business services, and other services that will continue to be the primary driver of economic growth.

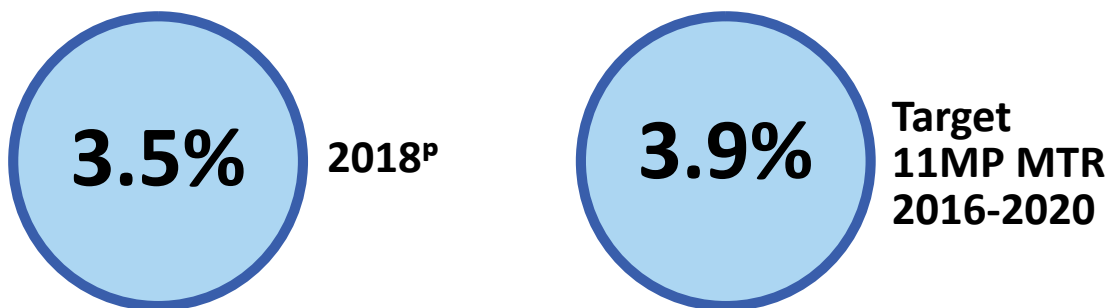
By strengthening the sector's value-added growth and structural reforms, its labour productivity is expected to reach the targeted growth of 3.9% by 2020. This can be achieved through 4 key strategies, which is:

- i. Enhancing sectoral growth through productivity improvements to increase competitiveness;
- ii. Increasing export capacity to enhance internationalisation;
- iii. Improving market efficiency to promote fair competition; and
- iv. Facilitating ease of doing business to improve business climate.

Accelerating the transformation of the services sector remains important, which is why building on human resource capacity is a critical factor to enhance the economic performance. Efforts in promoting knowledge-intensive services need to be strengthened by developing skilled human capital.

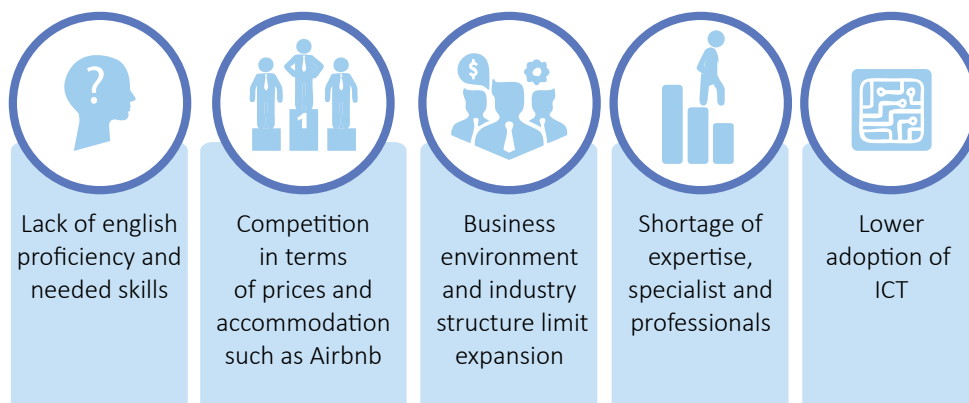
Measures such as improving industry readiness of new graduates and encouraging small and medium enterprise (SMEs) to provide training for employees will help the labour market make the best use of human resources. This will enable the sector to maximise contribution to productivity growth and the creation of more high-paying jobs. The transformation of the services sector will shift the industry focus from supply to demand-driven, user to producer, low to high-knowledge intensive and high value-added activities.

Productivity Growth of the Services Sector



Note : P-Preliminary
: Data is based on constant price 2015
Source : Mid-Term Review of Eleventh Malaysia Plan (11MP MTR)
: Department of Statistics, Malaysia

Issues and Challenges Related to Services Sector



Source : Malaysia Productivity Blueprint (MPB)

CONTRIBUTION TO NATIONAL ECONOMY

Added Value

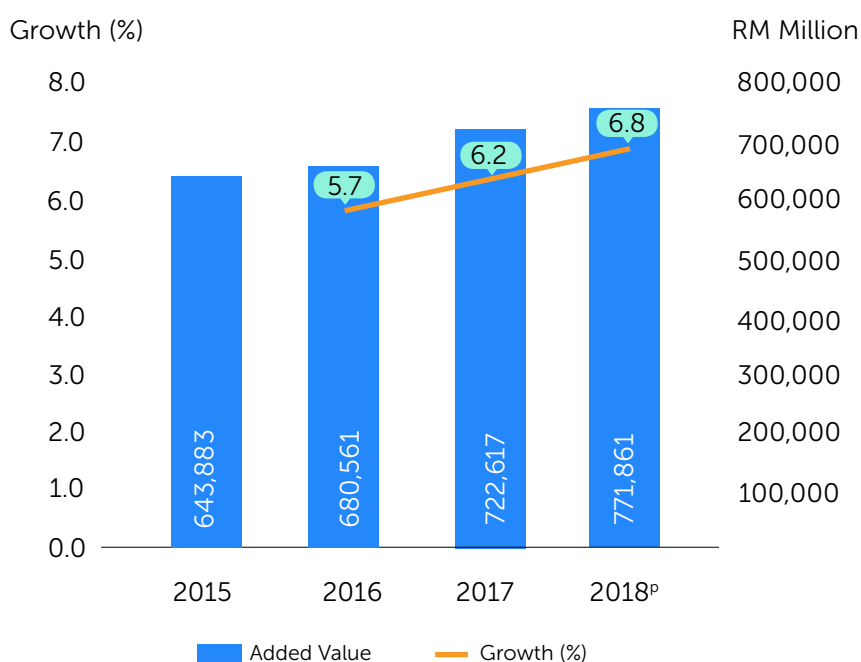
The services sector accounted for 56.7% of the country's GDP in 2018, making it Malaysia's most dominant economic sector. However, the sector's contribution has hovered around the 54% mark for the past 5 years, indicating that more needs to be done to push the sector towards the 80% mark, that is benchmarked in many developed countries.

Added value in the services sector grew marginally by 6.8% as compared to 6.2% in 2017. The highest growth was recorded in the F&B and accommodation subsector at 8.9%, followed by information and communication at 8.3%,

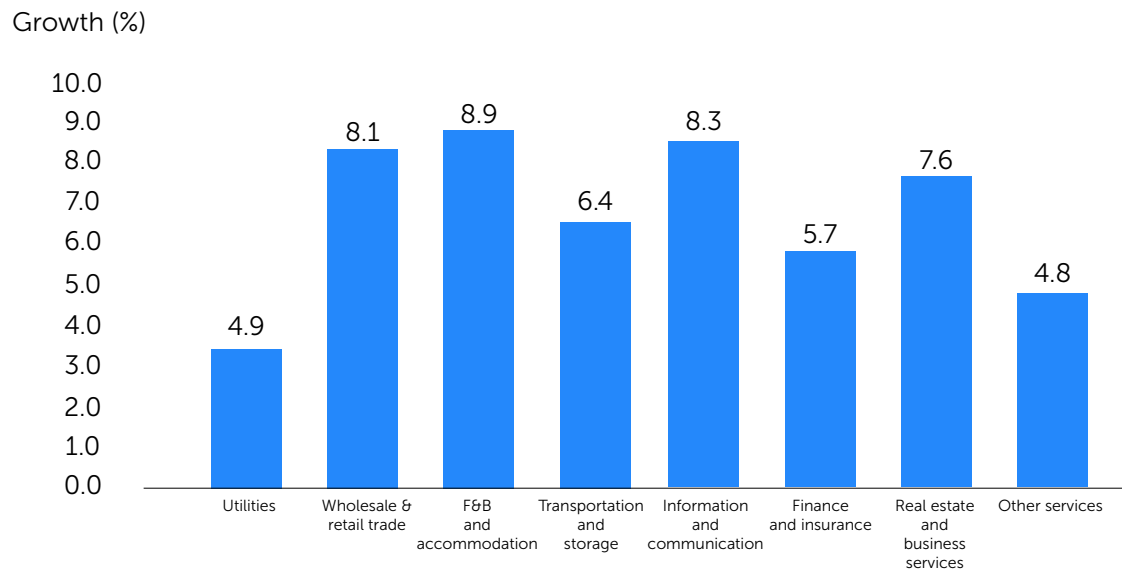
wholesale and retail trade at 8.1% and real estate and business services at 7.6%. (Figure 2.3 and Figure 2.4).

Under the sector, the added value of the wholesale and retail trade subsector was the largest contributor to services sector at 29.4%, followed by finance and insurance at 11.6% and information and communication at 10.2%. There was also marginal contribution from the utilities subsector at 4.7%, F&B and accommodation subsector at 5.9% and transportation and storage subsector at 6.5%.









Figure 2.3: Added Value of the Services Sector, 2015 - 2018^P



Note : P - Preliminary
: Data is based on constant price 2015
Source : Department of Statistics, Malaysia

Figure 2.4: Added Value Growth of the Services Subsector, 2018^P

Added Value and Employment Contribution of the Services Subsector, 2018^P

SUBSECTOR		ADDED VALUE (%)	EMPLOYMENT (%)
Utilities		4.7	1.1
Wholesale and Retail Trade		29.4	27.6
Food & Beverages and Accommodation		5.9	17.1
Transportation and Storage		6.5	5.9
Information and Communication		10.2	2.5
Finance and Insurance		11.6	4.1
Real Estate and Business Services		8.2	12.3
Other Services		23.5	29.3

Note : P - Preliminary
: Data is based on constant price 2015
Source : Department of Statistics, Malaysia

Employment

The services sector is the nation's biggest employer for 2018, accounting for 60.0% of Malaysia's total employment. Among the services subsectors, wholesale and retail trade subsector ranked largest employee with 27.6%, followed by F&B and accommodation at 17.1% and real estate & business services at 12.3%. Meanwhile, there was also marginal contribution from the utilities subsector at 1.1%, information and communication subsector at 2.5% and finance and insurance subsector at 4.1%.

Having employed 8.9 million employees across various subsectors, the services sector recorded an employment growth of 3.2% in 2018 (Figure 2.5). Among the subsectors, F&B and accommodation recorded the highest growth at 8.1% with 1.5 million employees, followed by information and communication at 3.7% with 0.2 million employees and real estate & business services at 3.5% with 1.1 million employees.

Figure 2.5: Employment of the Services Sector, 2015-2018^P

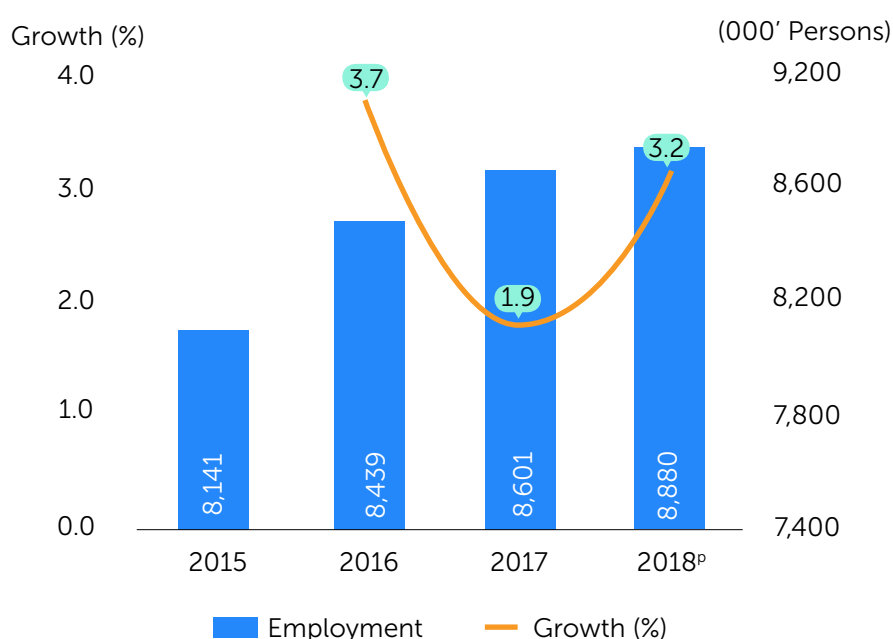
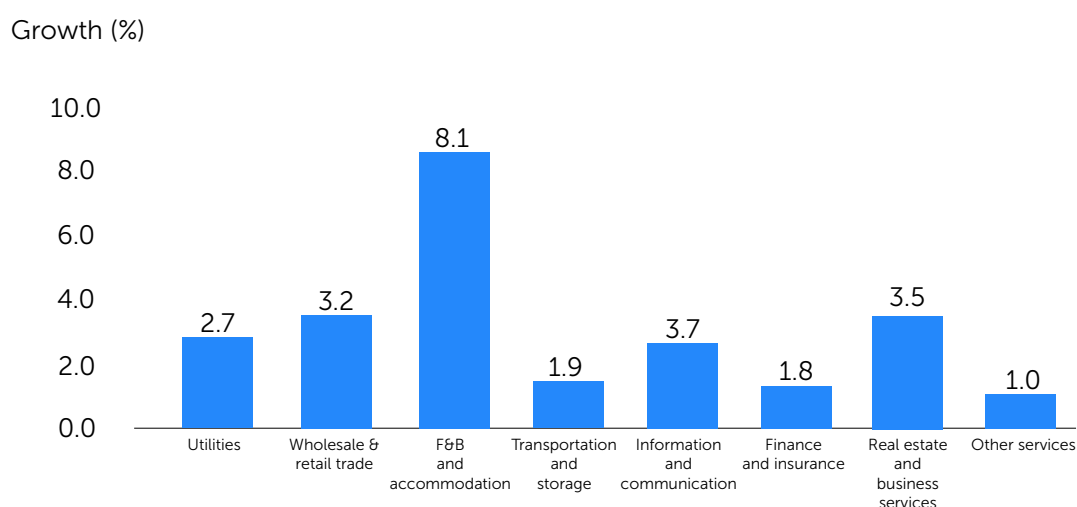


Figure 2.6: Employment Growth of the Services Subsectors, 2018^P



Note : P - Preliminary
Source : Department of Statistics, Malaysia

Labour Productivity

Labour productivity growth in the services sector was recorded at 3.5% amounted to RM86,921 in 2018 compared to 4.2% in the previous year (Figure 2.7). Labour productivity growth within the various subsectors ranged from 0.8% to 4.8%. The wholesale and retail trade subsector marking the highest improvement at 4.8%, followed by information and communication which recorded 4.5% growth in contrast to 2.0% in the previous year.

To enable the sector to maximise productivity performance and create more high-paying jobs, developing skilled human capital by promoting knowledge-intensive services is essential. In addition, the subsectors need to reduce dependency on low-skilled labour, leverage industry readiness of fresh graduates and encourage SMEs to provide training for employees in order to reduce labour market mismatch.

Figure 2.7: Labour Productivity of the Services Sector, 2015 – 2018^p

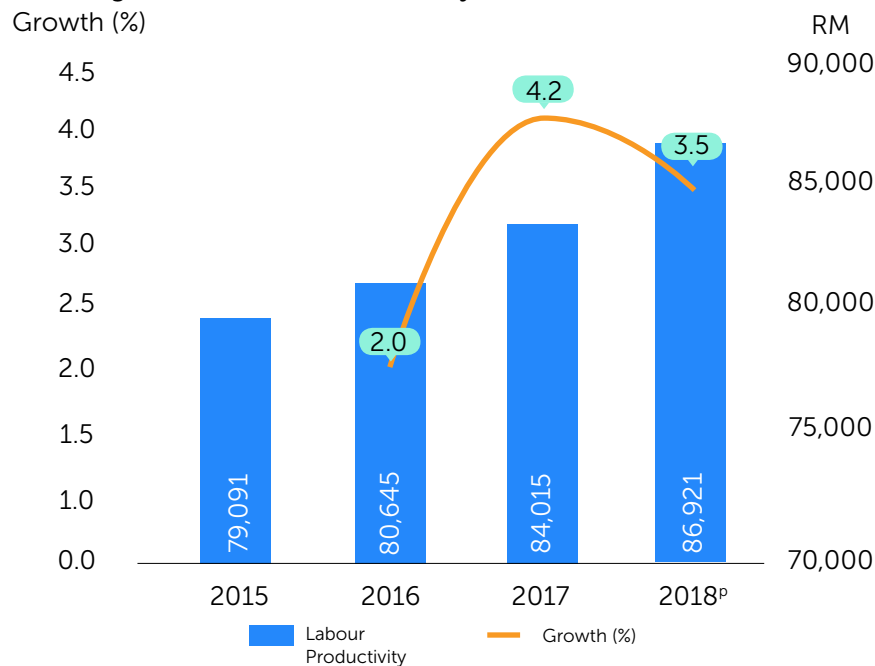
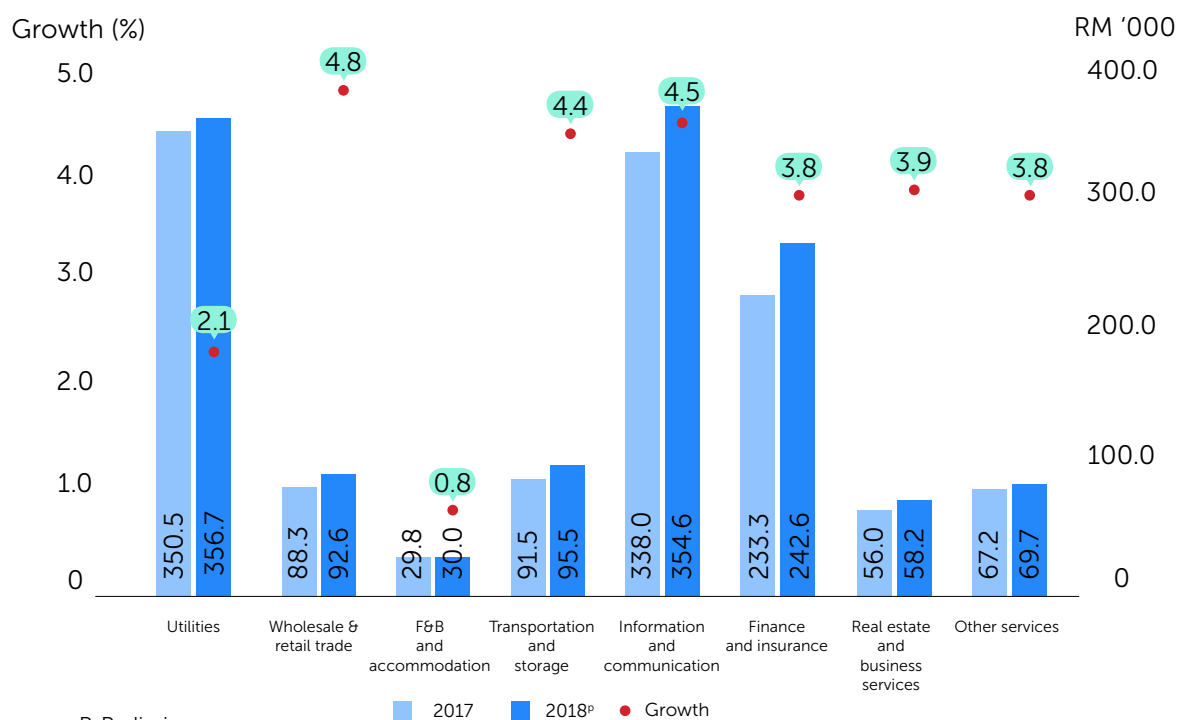


Figure 2.8: Labour Productivity of the Services Subsectors, 2017-2018^p



Note : P-Preliminary
Data is based on constant price 2015
Productivity growth sourced from Department of Statistics, Malaysia
Productivity level computed by Malaysia Industrial Productivity Database (MIPD)

SERVICES SECTOR: PRIORITY SUBSECTORS

To boost the productivity performance of the subsectors, the MPB has identified 5 priority subsectors under services, which are retail and F&B, professional services, private healthcare, ICT and tourism. Positive performance in these subsectors could push the services sector's productivity and help in reaching the target of 3.9% by 2020.

RETAIL AND FOOD & BEVERAGES (F&B) PRODUCTIVITY NEXUS

In 2018, the labour productivity performance of the retail and F&B subsector recorded slower growth of 4.3% as compared to 5.6% in 2017. The retail industry in Malaysia is currently experiencing a rapid transformation from the traditional business models to the adoption of more online and offline platforms to better serve customer demands. This would provide a more immersive experience to shoppers, as Malaysian retailers would benefit from adapting to the latest innovations and trends in the industry. While a challenge, it would benefit the business within the sector and boost productivity.

Within the retail and F&B subsector, a large part of businesses are dominated by SMEs and data has revealed that SMEs are only half as productive in comparison to large enterprises. Owing to this, there is a lot of potential to raise overall productivity by focusing on overcoming challenges faced by SMEs. Furthermore, the retail subsector relies heavily on low-skill, low-wage workers that accounts for over 70% of the subsector's workforce. Increasing the number of employees in managerial or technical roles will help with labour productivity, as quality output can be enhanced.

Retail: Consumer Behaviour and Market Trends

Over the course of transformation, innovation, consolidation, integration and automation will be required to reinvigorate commerce, profoundly impacting the way retailers do business now and in the future. Furthermore, transformation is required to adapt to change in consumers' behaviour, as consumers in Malaysia are becoming increasingly accustomed to shopping online and see this channel as a convenient way to browse and shop.

In response to a strong demand for online stores, retailers in Malaysia are focusing on growing their presence in internet retailing by launching new online stores and mobile applications. These services offer exclusive online promotions and improved delivery experience.

The latest trend in Malaysia's retail landscape demonstrated the mushrooming of smaller and more convenient retail grocery formats. Stores with easy-to-navigate layouts that provide comprehensive products are getting more popular especially among the urban consumers. It allows consumers to spend less time browsing for products and enables them to reduce time spent for grocery shopping.

This trend of more compact convenience stores is evident from the high number of convenient retail grocery outlets such as:

- 7 Eleven with 2,240 stores nationwide and the largest convenience store chain in Malaysia serving over 900,000 customers daily;
- 99 Speedmart with 1,200 stores and the market leader under the mini market category;
- myNews that evolved from a single news stand to the largest home-grown retail convenience store chain with 430 outlets majority located in the urban areas of Peninsular Malaysia;
- KK Super Mart with 300 outlets mainly in Klang Valley, Putrajaya, Cyberjaya, KLIA2, Malacca and Seremban; and
- FamilyMart, a Japanese convenience store chain with 37 stores.

F&B: Consumer Behaviour and Market Trends

A similar scenario is faced by the F&B industry in Malaysia where digital transformation and leveraging technologies to deliver a dining experience is gaining traction among the F&B players. Generally, there are 3 types of F&B operators, which are restaurant and mobile food service, beverage serving and event catering. The restaurant segment accounts for 70% of total food service sales, with the growth of fast food restaurants and 24-hour restaurants being the main contributor to the F&B industry.

Changing lifestyles and a growing middle class underpin the demand for dining out. Middle-income consumers with families, young working adults and teenagers are the main patrons of fast food restaurants, whereas the patrons of regular restaurants are the middle to upper-income families, business people and affluent young working adults. The key attributes that restaurant diners look for include dine-in, comfort and the highest culinary standards.

An increasing number of mobile food services can be seen in recent years, but they are tapping into a different clientele. Food trucks are a fast-growing trend hyped by the millennials and Gen Y, as the mobility of the trucks provide the ability to reach multiple consumer segments. The lower cost of setup, overheads, rental and others have attracted young newcomers or entrepreneurs in the food truck segment.

Under the restaurant segment, the big players are:

- i. Secret Recipe with 299 outlets
- ii. OldTown White Coffee with 179 outlets
- iii. Sushi King with 120 outlets

Meanwhile under fast-food restaurants, the leading players are:

- i. KFC with 624 outlets (subsidiary of QSR Brands (M) Holdings Bhd.)
- ii. Pizza Hut with 288 outlets (subsidiary of QSR Brands (M) Holdings Bhd.)
- iii. McDonalds with 269 outlets

With the arrival of the Industrial Revolution 4.0 (IR4.0), the F&B industry is revolutionising their processes to enhance and optimise customer service delivery. For example, one of McDonald's outlets in Bukit Bintang was refurbished and transformed with new technologies and innovative customer service concepts. The new technology introduced at the restaurant is the Self-Ordering Kiosks (SOK) where customers can place their own orders and customise their meals. This dual-point service enables customers' orders to be placed through SOK or over the counter, with cashless transaction and digital menu boards.

For beverage services, Gloria Jean's is one of the top coffee shops with 38 outlets, mostly located in the urban areas of Kuala Lumpur and Selangor.

While the leading drink stalls or 'kiosks' is Tealive with 170 outlets, followed by Juice Works with 29 outlets, TeoChew Chendol with 28 outlets and Tutti Frutti Frozen Yogurt with 14 outlets.

Productivity Nexus for Retail and F&B (RFBPN) was established to drive the implementation of productivity initiatives proposed by the MPB that will pave the way to achieve the desired labour productivity growth for this subsector. In 2018, RFBPN successfully implemented 16 enterprise-level productivity initiatives, which are driven by the industry players. In total, 435 retail and F&B enterprises participated in various enterprise-level projects that addresses key challenges faced by the respective enterprises to drive sector-level initiatives.

The selected enterprises are required to assess their business performance using ezBE (Business Excellence) and e-PGM (Productivity Gain Measurement) which are the productivity tools developed by MPC. ezBE is a self-assessment tool that provides enterprises with a quick assessment of their business excellence practices while the e-PGM provides an accurate estimation of overall efficiency and help enterprises measure their productivity performance, profitability and labour cost competitiveness.

"Productivity thinking means putting efforts today and realising manifold returns over the long run."

**- YBhg. Dato' Bruce Lim Aun Choong,
Retail and F&B Productivity Nexus
Champion**

Based on the 16 projects at enterprise-level, the achievement of key performance indicator (KPI)s set are far behind the targets and Retail and F&B are going to work closely with industry productivity specialists and industry players to spearhead the implementation of projects at the enterprise level. A few activities have already been undertaken to strengthen the productivity growth of the subsector, which is illustrated in the RFBPN activities.

Retail and F&B Productivity Nexus Activities to Enhance Enterprise Performance

Productivity Improvement Projects at Enterprise Level, 2018

Initiative R1: Provide support to high potential SMEs for digitalisation of business operations and build e-commerce capabilities



Developing ezBE a Quantitative Productivity Assessment
Enterprises adopt ezBE as tool to measure business excellence.
Users: 227 enterprises



Skim Peningkatan Produktiviti Enterpris (SPPE) for Retail and F&B
Intervention programme for Retail and F&B on LEAN Management, 5S Certification, Retail Software solution; 41 enterprises participated



Retail Digitalisation Programme : Market Growth Programme
Developing webstore for SMEs retailers.
12 enterprises participated



Data Technology
ON-THE-GO mobile application for cash, retail, gap & pre-sales management.
10 enterprises participated



Self-Ordering Kiosk
Enhancing restaurant productivity by deploying technology self ordering kiosk.
20 enterprises participated



Technology Ecosystem and Culture (TEC) Programme
Commersion experience to foster a mindset change for business owners and entrepreneurs from Retail and F&B enterprises
Participation of 36 business owners

Initiative R2: Promote opportunities for sharing economy



Industry Profile and Value Chain of Retail and F&B
The profiling of retail and F&B players and the supply network
Retail: Participation of 385 enterprises
F&B: Participation of 101 enterprises



Development of Industry Productivity Specialist (IPS)
Programme is designed primarily for retail practitioners and professionals who are keen to deepen their capability to lead and manage productivity improvements at enterprise level.
21 registered IPS



Best Practices Cases of Retail and F&B enterprises
Documentation of best practices of the retail and F&B enterprises.
12 Best practices articles



Awareness Programmes
Industry sentiment diagnostic workshop, digitalisation & sharing economy breakfast talk, briefing on O2O Growth Venture Programme by FAVE, Up close with Iron Chef and ERAT Briefing by MATRADE

Initiative R3: Strengthen Retail and F&B Competencies



Certification of Retail Workforce (RPEL)
The programme is to recognise skill workers based on their skill achievement via up-skilling and skill work experience assessment.
143 existing workforce certified with SKM3 and DKM 4



Certificate for Retail Frontliner
The certificate is custom designed to fit the role of individuals performing frontline function and manage day-to-day frontline operations of a retail store or department.
21 participants



Operation and Process Mapping Programme – Franchise & Exports
Training on preparation to grow internationally. Understand the fundamentals of franchising and exporting.
23 participants



SIMSales Retail
Training on how to generate and forecast sales, understand the needs of omnichannel customers and to support an omnichannel strategy.
28 participants



Certified Halal Assurance Management System
Training on managing and services safety system with Halal Assurance Management System.
25 participants

Initiative R4: Provide assistance to Retail and F&B players to grow internationally



Business Matching Session for Non-Franchise
Provide a venue for Retail and F&B enterprises (non-franchise enterprises) to attract leading investors, master franchisees, licensees, entrepreneurs, mall operators for new business opportunity in the Middle East markets.
Participation of 4 enterprises

FRAMEWORK OF SECTOR-LEVEL PRODUCTIVITY INITIATIVES OF RETAIL AND F&B PRODUCTIVITY NEXUS (RFBPN), 2017-2020

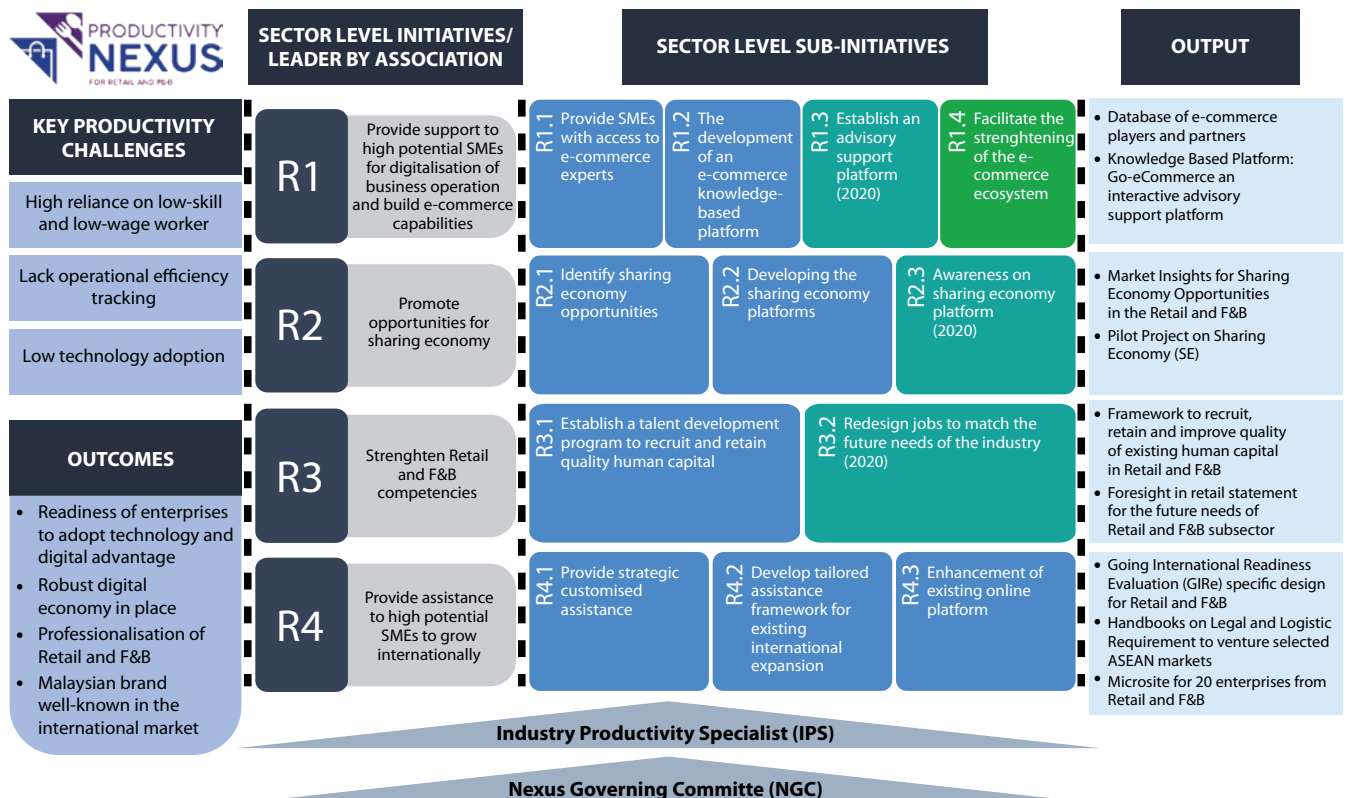
The sector level productivity initiatives were drafted to address the key challenges of the retail and F&B industry, associated with technology, workforce and the industry structure. Technology advancement in the retail and F&B industry is low as it is mainly made up of SMEs and there is a lack of a productivity-oriented mindset.

Challenges for these businesses include low investment in e-commerce and digital technology, lack of efficient systems for

operations, workforce upskilling and retention issues, too much reliance on cheap and low-skilled foreign labour and lastly being domestic oriented and having difficulty penetrating new markets.

To address the issues and overcome challenges working against productivity, sector-level initiatives were implemented as follows:

Framework on Sector-Level Productivity Initiatives of RFBPN, 2017-2020



LOOB: Looking Out of the Box to Inspire Growth in Modern Tea Drinking Culture

LOOB Holding Sdn. Bhd. stands for 'Looking Out of the Box' and its business approach embodies just that, thus helping home-grown company successfully introduce the well renowned Tealive brand. As of date, Tealive has 170 outlets nationwide and over 1000 employees. But to get to this point was no easy task. LOOB and specifically Tealive's exponential growth over the years was driven by the motto – think big, start small, scale fast.

Thinking Big – A Desire to Expand

- **Forward-Thinking:** Tealive is people driven and prides itself on honesty and teamwork. Its employees are rewarded with incentives for top sales performance.
- **Strength in Manpower:** 10% of foreign employees known as the 'Parachute Team' cover areas of work during peak or festive seasons.
- **Blackbox Insights:** To formulate accurate business decisions, this business intelligence solution is used to monitor operations.
- **e-Learning System:** A mobile application made easily available to educate employees.
- **Breakthrough Campaigns:** These campaigns were introduced to instill emotion into the brand. Every month, the campaign offers once-in-a-lifetime opportunities to winners.
- **Customer Base:** As well as rewarding members with freebies, the loyalty programme also helps to identify the buying behaviour and forecast business strategies using big data analytics.
- **Global Market:** Before tapping into foreign markets, market intelligence surveys were carried out to align with demands and tastes.
- **Synergistic Partners:** The global success is spurred by the ability to work with synergistic business partners for Tealive's expansion across the Asia Pacific region.

Starting Small and Scaling Fast

- **Scaling Up:** After submitting a proposal in 2011 to 98 shopping malls, Tealive saw a revolutionary expansion to 40 outlets.
- **Risks Paid Off:** Still a newcomer, LOOB decided to start out by bringing out tea in a hotspot location that gathers a crowd. It proved a success as it reached the right target audience.
- **Rebranding:** LOOB made the decision to rebrand all its Chatime licenses to Tealive in 2017 following disagreements with the Taiwanese franchisor.
- **Financing:** Financing business expansion required the selling of the direct business model as licensees as funds were limited. As a result, franchises were sold and traded for direct stores. Through this strategy, the company had sufficient funds.
- **Menu Expansion:** To add to the good response to the bubble tea drinks, the menu was expanded to be 70% tea drinks and 30% food. The research and development team worked diligently to create new products to be introduced 5 times a year.
- **Market Growth:** Tealive went from a staff of just 2 to over 1000 employees, with over 170 outlets nationwide and a menu of 70 delicious drinks.



Source : bond.mpc.gov.my

PROFESSIONAL SERVICES PRODUCTIVITY NEXUS

To build on the productivity growth of the professional services subsector, there is a need to relook businesses involving legal, accounting, architectural, engineering, advertising and consultancy. The professional services subsector is highly differentiated and offers high-value skills and services which are both knowledge and information intensive. This allows companies within the industry to charge a premium fee, which translates into higher wages and profit margins. With this progress in the sector, significant multiplier effects are provided on a wider scale to other sectors of the economy.

No matter the nature of the business, a social media presence goes a long way in building business-client relationships. There is a positive trend among firms in professional services becoming more adept at using social media platforms to start a conversation and interact with clients online. It has proven to be beneficial for many firms as a way to market their services and potentially enhance their value-adding services.

Building a strong social media presence is a good way for businesses to increase market reach and awareness of their services among potential clients. Online channels also present a platform

where businesses can better understand their customers through instant feedback. It gives you a two-way form of communication and providing customers a space to share their thoughts. Through this, firms can improve customer satisfaction and thereby have better customer loyalty and retention.

"In order to accelerate the growth of professional services, I choose to use engineering services as the driver because it cuts across the board and involves every sector."

YBrs. Ts. Choo Kok Beng,
Professional Services Productivity Nexus
Champion

In 2018, the professional services subsector's productivity grew by 6.3% as compared to 6.4% in the previous year. To enhance productivity performance in this subsector, the Professional Services Productivity Nexus (PSPN) was established. Among the activities held in 2018 are productivity talks and dialogue sessions to gather information on the industries under professional services subsector and awareness programmes on productivity.

Classification & Initiative of the Professional Services

Professional Services Subsector At a Glance



Consultancy



Advertising



Engineering



Accounting



Architecture



Legal

INITIATIVES

PS1

Provide input to colleges and universities to ensure curriculum and training are industry-relevant

PS2

Encourage adoption of technology solutions, such as to track progress digitally rather than on paper

PS3

Form cross-country professional services consortiums to increase capability to compete abroad

PS4

Encourage adoption of operational metrics and performance-linked KPIs by professional services firms

PS5

Address regulatory inconsistency and constraints to enable the set up of alternative business models that are in line with global trends

Professional Services Productivity Nexus Activities to Enhance the Subsector Performance

PS1

Provide input to colleges and universities to ensure curriculum and training are industry-relevant

- MPB-PS Conversation & Professional Talk on Market/ Industry Needs
- Professional Talk on Architectural & Engineering Industry Needs at International College of Advanced Technology Sarawak (i-CATS)
- MPB Conversation & Professional Talk on Technology & Legal Industry Needs
- MPB & Professional Talks on Architectural and Accountancy Industry Needs

PS2

Encourage adoption of technology, such as to track progress digitally rather than on paper

- Interview Session with Astro Awani for #CadanganRakyat Astro Awani
- Presentation on MPB to Wanita Industri Binaan Malaysia (WIBM)
- CIDB Jelajah MyBIM, MyCREST & QCLASSIC 2018

PS3

Form cross-country professional services consortiums to increase international competitiveness

- Collaborative Meeting between PNPS Secretariat, Bar Council, MITI, MATRADE and MIDA

Productivity Nexus Activities to Enhance the Subsector Performance

PS4

Encourage adoption of operational metrics and performance-linked KPIs by professional services firms

- MPB & Professional Services Nexus Conversation
- Research Grant Presentation by Universiti Sains Malaysia (USM) on Productivity Performance of BIM Adoption in Construction Projects and Companies

PS5

Address regulatory in consistency and constraints to enable the setup of alternative business models that are in line with global trends

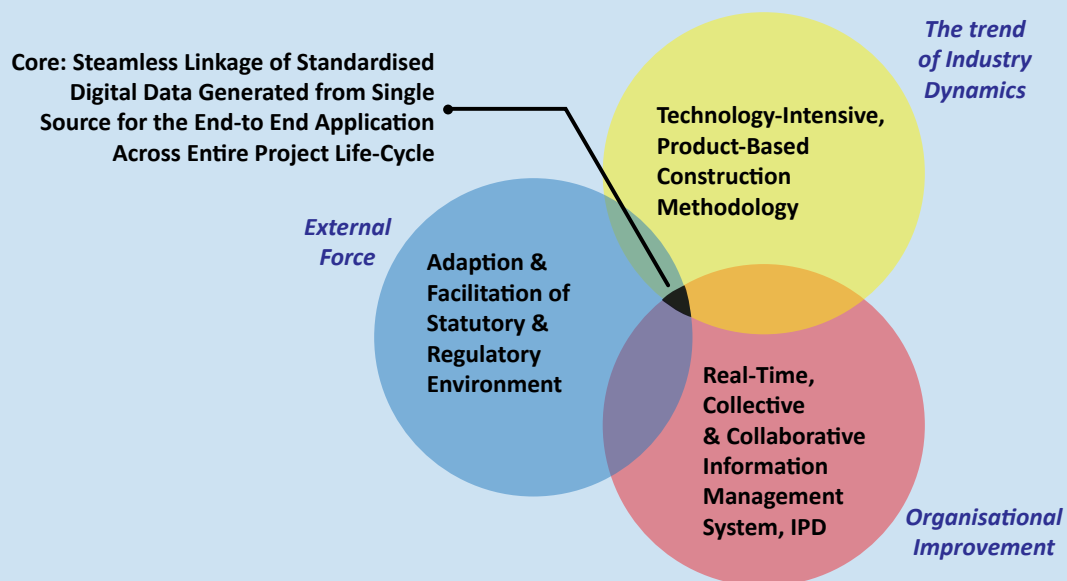
- Productivity Dialogue between YB MITI Minister & Engineering Fraternity
- Productivity Dialogue with Architectural Fraternity
- Seminar on Transformation of Engineering Services & Construction Industry

Unleashing Productivity with Digital Transformation of Construction Industry

Compared to other industries, the construction industry has been registering lower growth rates. To remedy this, the nation needs to overcome hindrances to productivity like over-regulation, lack of cohesive industry dynamics and absence of efficient operation structure on an organisational level.

Construction Industry Transformation Programme (CITP) Efforts

The implementation of the CITP of 2016-2020 sought to overcome these challenges and to build a sustainable construction industry through 3 key efforts:



Adoption of Digitalisation Through Building Information Modelling (BIM)

- 1) The Construction Industry Board (CIDB) promotes adoption of BIM, a digitally-oriented information management system over the whole life cycle of a built asset.
- 2) BIM is to be used as benchmark for building plan approval in the shift towards digitalisation.

How BIM Unlocks Productivity

To facilitate the adoption of BIM across the construction industry, nationwide efforts need to be made with regards to:

- i) Establishment and enrolment of an international BIM standards for practice
- ii) Early stage adoption of BIM as project innovation by the professional services sector
- iii) Upgrading the education system to instil BIM skill in human resource capacity building
- iv) Capturing the value of digitalisation into the parallel processes of the supply chain

Source : bond.mpc.gov.my

INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) PRODUCTIVITY NEXUS

ICT is one of Malaysia's largest economic subsectors, as it has proven to be a transformative avenue that has empowered communities and fuelled economic growth through decades. With the ICT industry expanding the size of the digitised ecosystem, the domestic ICT subsector is set to generate medium to long-term positive growth especially with the growing emergence of Big Data Analytics (BDA), Artificial Intelligence (AI) and Robotics as drivers of the 4th Industrial Revolution.

The Government played a pivotal role in the encouragement of the subsector's growth by providing support through funding schemes, including the MSC Development Grant Scheme (MGS) and the Industrial Research and Development Grant Scheme (IGS) for idea generation and R&D. Factors that contributed to the growth include better training and development, improved working conditions, sourcing for the right employees, more financial and non-financial incentives and incentive-driven wage policies.

MPB has listed productivity initiatives for the ICT Productivity Nexus (ICTPN) which helps to

boost productivity of the ICT subsector with its moto "For the Industry, By the Industry". With the initiative undertaken in 2018, the labour productivity performance of the ICT subsector has recorded a significant growth of 4.5% as compared to 2.0% in 2017.

"Once Malaysians improve on their skills and know-how about how to go to market, more Malaysian-made inventions and innovations will be available locally and internationally."

Ganesh Kumar Bangah,
ICT Productivity Nexus Champion

During the 11MP MTR, new priorities were introduced by the Government from 2018 to 2020, to propel Malaysia into becoming a knowledge-based and high-income nation. The establishment of the ICTPN will further realise the 11MP MTR objectives on ICT subsector. Among the activities conducted by the ICTPN includes sharing of best practices, development of productivity specialists and holding of ICT services entrepreneur programmes.

Classification & Initiatives of the ICT

Information & Communication Technology (ICT) Subsector

At a Glance



INITIATIVES

I1

Strengthen collaboration between industry and academia to reduce mismatch of supply and demand of workforce

I2

Improving the access of Pricing Framework for providers

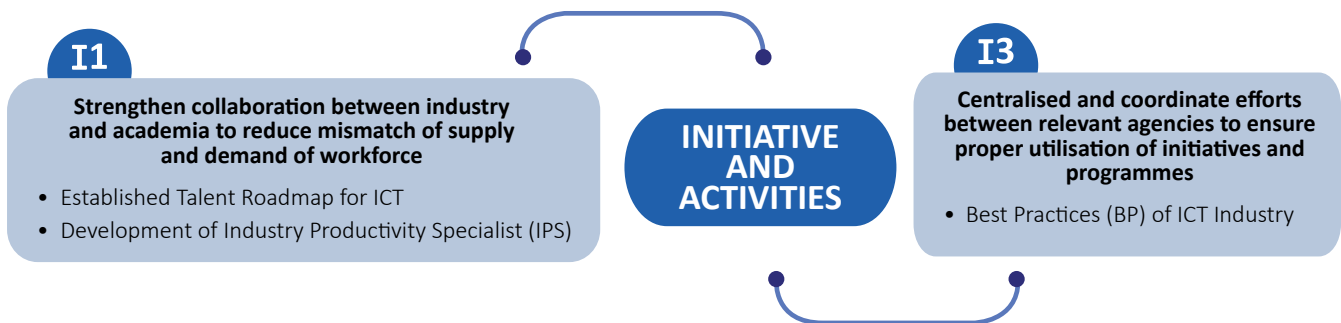
I3

Centralised and coordinate efforts between relevant agencies to ensure proper utilisation of initiatives and programmes

I4

Raise awareness of available incentives to ensure proper utilisation and adoption of ICT

ICT Productivity Nexus Activities to Enhance the Subsector Performance



Mutiara Teknologi's 5 Key Pillars of Productivity

The digital revolution has led to a new era of human empowerment, redefining the way companies do business. As a pioneer in providing public safety services through IT and telecommunication systems, Mutiara Teknologi Sdn. Bhd. is at the pinnacle of this technological transformation. The company provides ICT services such as data centre management, 24/7 system operations and support, system training and ICT system implementation.

Mutiara Teknologi prides itself on its fundamental business values based on the acronym – PEARL. P – Professionalism, E – Efficiency, A – As One, R – Responsibility and L – Loyalty. Leveraging on this, there are 5 key pillars that have helped propel the company to where it is:

1) Carving a Niche

- Positioning as ICT-driven public safety services (i.e. Malaysia Emergency Responses (MERS 999) and Flood Warning System)
- Core services Pearl Care®, Pearl Response®, Pearl Query® and Pearl Trekker® were patented

2) Human Capital Development

- 7% of the annual income goes towards human capital development such as training for employees locally and internationally
- Sharing knowledge among employees after attended trainings or seminars
- Low turnover rate is reflective of the rewarding work culture and employee retention

3) Rewarding Work Culture

- Employees benefit from relaxing work environment, with many office spaces designed by them

4) Customer Satisfaction

- Trust among customers if always prioritised, which is why feedback is heavily valued and issues are promptly rectified

5) Business Sustainability

- Constantly looking at venturing into other markets includes other countries and new system developments



Source : bond.mpc.gov.my

PRIVATE HEALTHCARE PRODUCTIVITY NEXUS

With Malaysia's population of 32.6 million in 2018 and GDP growth of 4.7%, the nation's healthcare subsector is eyeing a RM5 billion contribution to national GDP. Malaysia's healthcare system consists of 2 tiers, which is a state-owned healthcare system for national citizens running alongside a private sector serving more affluent citizens and international patients. This subsector recorded productivity growth of 2.9% in 2018 a rebound from a contraction of 0.3% in the previous year.

The private healthcare industry landscape has changed significantly over the years, with the modernisation of care services, facilities and courses of treatments being moulded to fit the needs of patients. Patient growth is dependent on the choices of healthcare treatments and facilities offered in these dynamic times.

During the 11MP MTR, new priorities and pillars were introduced from 2018 to 2020. These initiatives were drawn up to propel the private healthcare subsector's productivity in contributing towards Malaysia's goal of becoming a high-income nation. Out of the 6 pillars in the MTR, Priority Area B of Pillar II states the Government's

vision to "improve the well-being of all". The strategy to achieve this vision is to enhance the healthcare delivery system to increase the health status of the *Rakyat*.

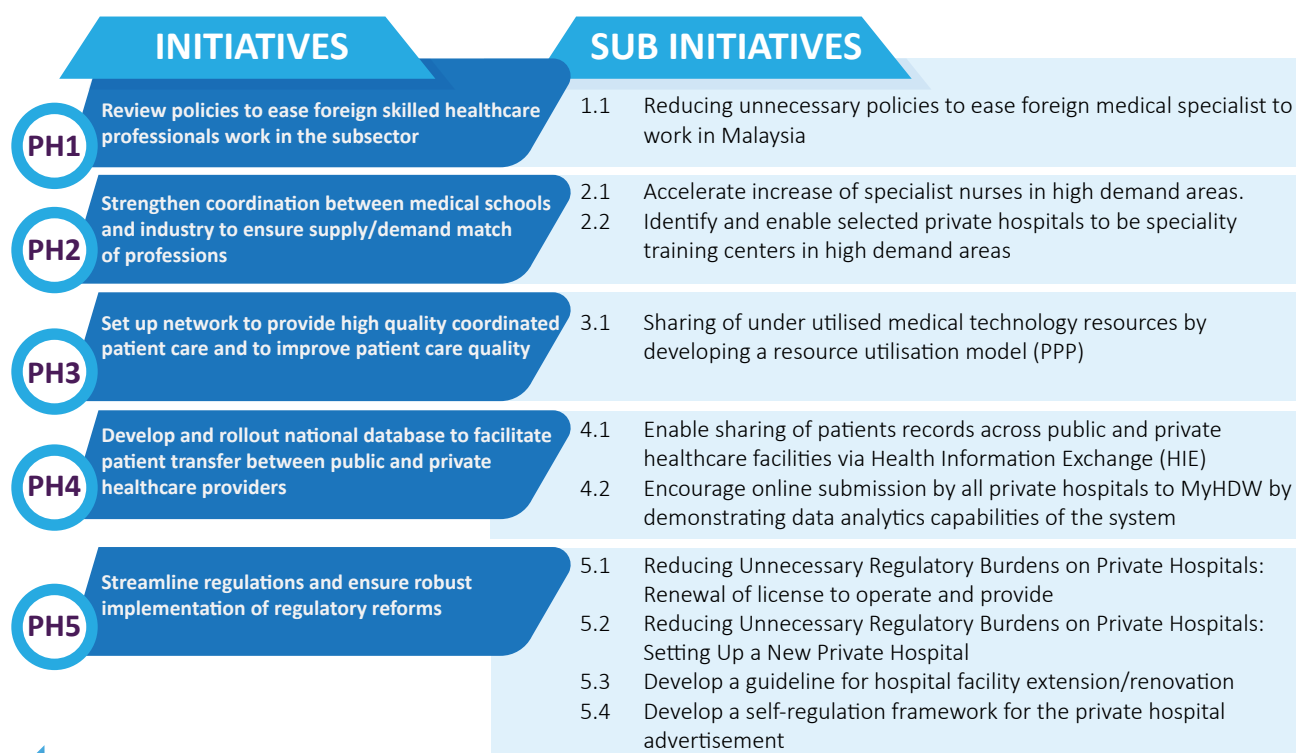
"In the end, we want our Malaysian healthcare to be accessible for all and of the highest quality. If patients need treatment, they will get the best treatment possible in a timely manner. All these efforts will also help ensure that our patients have good outcomes."

**YBhg. Dato' Dr. Jacob Thomas,
Private Healthcare Productivity Nexus
Champion**

With the establishment of the Private Healthcare Productivity Nexus (PHPN), there is a basis for public-private sector collaboration to drive multi-stakeholder initiatives and increase the productivity of the healthcare subsector. Amongst the many activities undertaken includes awareness of productivity to the private healthcare subsector and the sharing of best practices through the Benchmarking Online Networking Database (BOND) System.

FRAMEWORK OF SECTOR-LEVEL PRODUCTIVITY INITIATIVES OF THE PRIVATE HEALTHCARE PRODUCTIVITY NEXUS (PHPN), 2017-2020

Under the PHPN, 10 initiatives have been identified to pinpoint what needs to be done to achieve services sector productivity growth rate of 3.9% by 2020:



Private Healthcare Productivity Nexus Activities to Enhance the Subsector Performance

To achieve productivity growth target of 3.9% for private healthcare industry by 2020

WORKFORCE & PERFORMANCE

- Identify and enable selected private hospitals to be specialty training centers in high demanding areas
- Accelerate increase of specialist nurses in high demand areas

TECHNOLOGY & INNOVATION

- Enable sharing of patient records accross public and private healthcare facilities via Health Information Exchange (HIE)
- Encourage online submission by all private hospitals to MyHDW by demonstrating data analytics capabilities of the system.
- Sharing of under utilised medical technology resources by developing a resource utilisation model (Public-Private, Private-Private)

REGULATORY

- Reducing unnecessary policies to ease foreign medical specialist to work in Malaysia
- Reducing Unnecessary Regulatory Burden on private hospitals: Renewal of license to operate and provide
- Review and amend regulatory processes to accelerate approval for new application and renewal of hospital licenses
- Develop guidelines for hospital facility extension/renovation
- Self-regulatory of private healthcare advertisement via Regulatory Sandbox



The National Heart Institute: Establishing a Centre of Global Excellence in Healthcare

The National Heart Institute (IJN) is built around a model that makes healthcare solutions affordable for the needy and government-sponsored civil servants as well as catering to the needs of privately-insured and self-financed Malaysians. Driven by a vision to become a global centre of excellence in cardiovascular and thoracic care, IJN is committed to serving and providing patients' needs with the safest and highest quality healthcare services.

Balancing Public and Private Interests

- **Patient-Centric:** IJN's top positions are held by doctors. This unique organisational aspect enables IJN to grow rapidly as it is led by physicians who understand the needs of the patients as well as the need to stay competitive.
- **Cost Conscious:** The profits gained by IJN are reinvested into technology, equipment and human resources to provide top quality healthcare at lower costs.
- **Giving Back:** In the interest of the public and the less fortunate, the IJN Foundation helps needy patients and enables IJN to invest in buying new sophisticated medical devices and conducts clinical research without having to use a larger portion of its annual revenue.
- **Patients Come First:** IJN itself contributes between RM4 million and RM5 million to the IJN foundation. Of this amount, 50% is allocated to subsidise needy patients' treatment, 25% as investment for equipment and 25% for clinical research.



Championing Healthcare

- **Knowledge Sharing:** Since its inception, IJN has trained more than 1,000 specialists from hospitals in Penang, Kota Kinabalu, Johor Bahru and Serdang as well as many young doctors from Indonesia, Vietnam, Japan and Middle Eastern countries.
- **Cutting Edge:** As an early adopter of cutting edge treatment technology in Asia-Pacific, IJN's doctors get hands-on experience. IJN publishes its studies in high-impact international publications, as each doctor is required to conduct a study to discover medical breakthroughs.
- **Building Resources:** IJN encourages its doctors to learn new skills by sponsoring or reimbursing them upon completion of their studies. There is also a great deal of joint research between engineers, PhD students and IJN doctors that furthers medical research and innovations.

People-Centric Ideology

- **Healthy Culture:** IJN encourages a work-life balance among its employees by encouraging them to join Balqis, an IJN club that organises activities for its members.
- **Going the Extra Mile:** To ease the minds of working mothers, IJN rented a bungalow which was turned into a kindergarten and nursery for their children.
- **Compensation:** IJN extends cash benefits to employees who are not utilising their medical benefits and leave. This is to promote a healthy workplace culture to avoid illness and inculcates personal health improvement.



Source : bond.mpc.gov.my

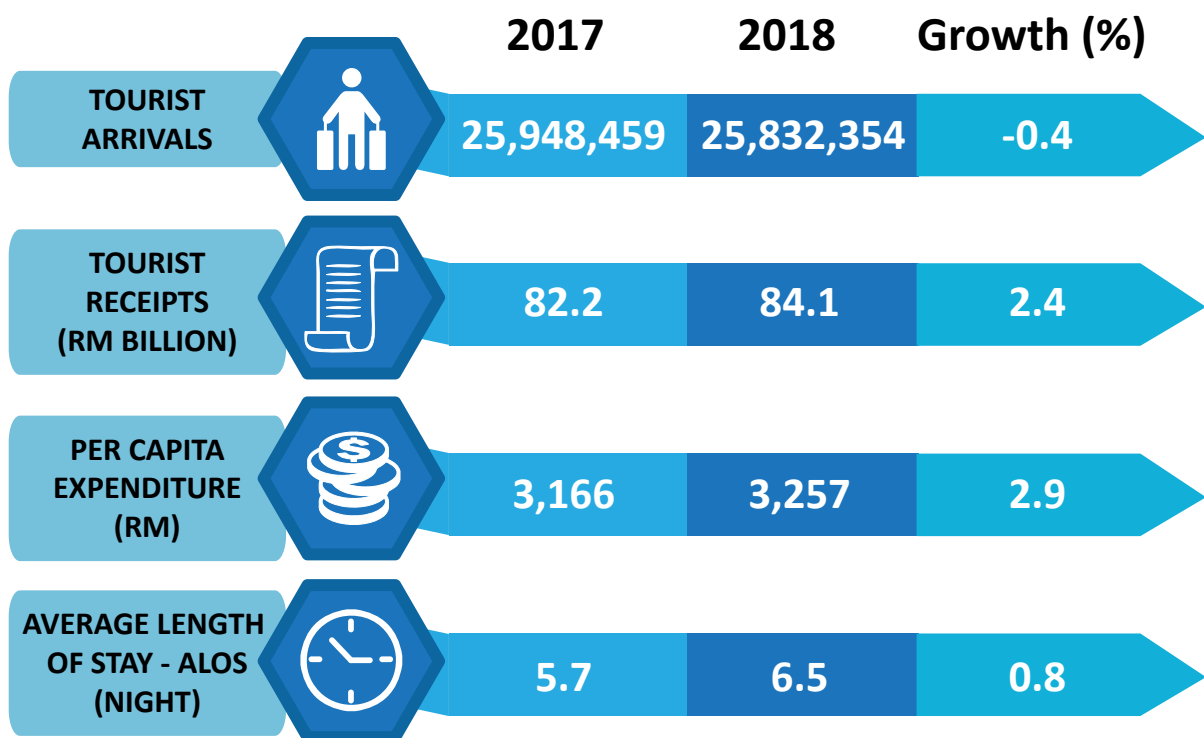
TOURISM PRODUCTIVITY NEXUS

Malaysia attracted 25.8 million tourists in 2018, raking up a total of RM84.1 billion in tourism receipts. This boosted the tourism subsector substantially, recording labour productivity growth of 4.5% in 2018 as compared to 3.6% in 2017. Despite the slight decline in arrivals by -0.4% as compared to 2017, tourism receipts contribution increased by 2.4%. Tourism performance also saw growth in terms of per capita expenditure, rising by 2.9%, while the Average Length of Stay (ALOS) climbed by 0.8 nights.

Dominating the share of tourist arrivals, the ASEAN region contributed 70.1%. While the medium-haul

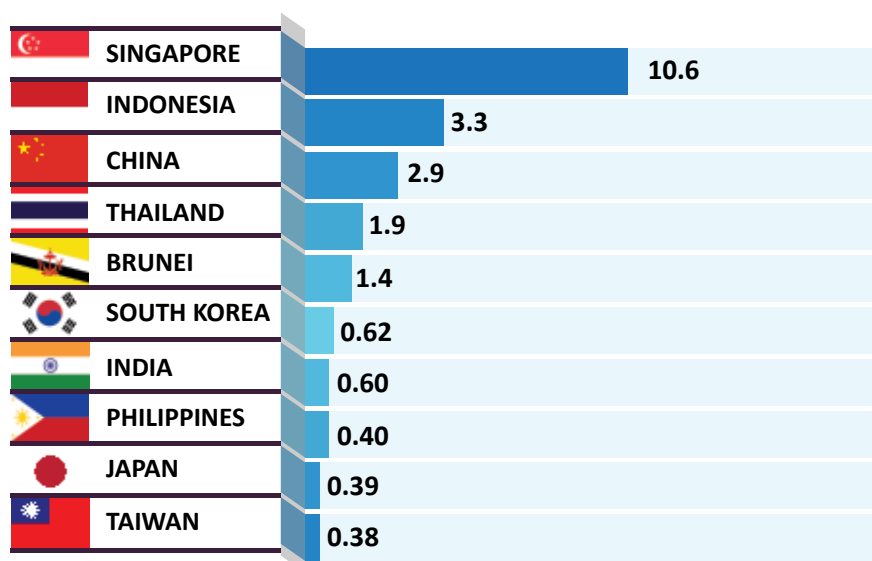
and long-haul market occupied a 20.3% share and a 13.3% share respectively. Tourist arrival growth was seen for Central Asia (81.9%), Africa (49.1%), the Americas (26.3%), West Asia (25.3%), East Asia (24.3%), South Asia (13.4%) and Europe (7.8%), while declines were recorded for Oceania (-0.8%) and ASEAN (-7.0%) markets. The ASEAN region was the biggest contributor in terms of overall tourist expenditure, contributing a total of RM48.5 billion. Meanwhile, West Asia tourists recorded the highest per capita expenditure with RM9,947, an increase of 6.1% as compared to RM9,378.50 in 2017.

TOURISM STATISTICS



Source : Tourism Malaysia

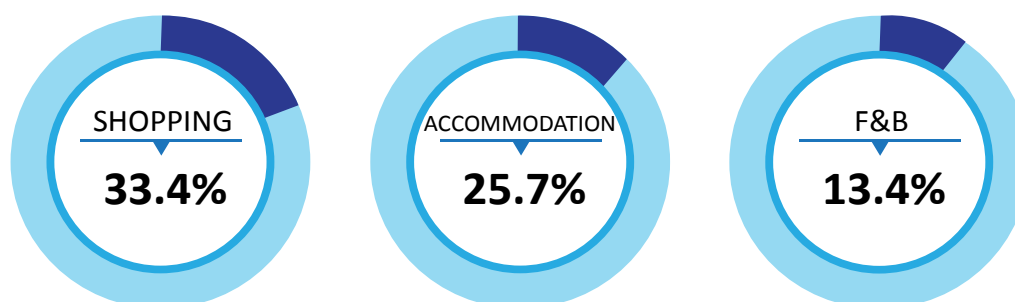
Top 10 International Tourist Arrivals for 2018 (million)



Note : The figure may be different from actual figures due to decimal place

Source : Tourism Malaysia

Top 3 Areas of Distribution for Tourist Receipts



Source : Tourism Malaysia

Once again, shopping receipts exceeded that of accommodation, growing from a 32.7% share in 2017 to a 33.4% share in 2018. Markets showing increase in average length of stay included West Asia (9.7 nights), Europe (8.6 nights), South Asia (6.2 nights) and East Asia (6.1 nights).

"In response to the competitive nature of the tourism industry, tourism players and stakeholders must maximise their productivity by optimising tourism assets and labour. Let's be the game changer in tourism productivity!"

Uzaidi Udanis,
Champion of the Tourism Productivity Nexus

The Tourism Productivity Nexus (TPN) was established to drive the subsector's productivity further. Amongst the activities undertaken by TPN:

- Enhancement programmes that address the gap between the industry and the internships;
- Certification enhancement through smart partnerships and tourist experience feedback sessions;
- Showcasing e-productivity toolkit and nation-wide marketing with public-private collaboration; and
- Crucial areas of the tourism industry were further explored to add value through the exercise of Reducing Unnecessary Regulatory Burden (RURB).

FRAMEWORK OF SECTOR-LEVEL PRODUCTIVITY INITIATIVES OF TOURISM PRODUCTIVITY NEXUS (TPN)

TPN has been mandated with the responsibility to facilitate and support the industry to partake in driving the productivity of tourism sector. In 2018, the following initiatives were undertaken:

INITIATIVE	SUB INITIATIVE	OUTCOME
T1 Strengthen the collaboration between industry & academia	Academia industry partnership to develop tourism industry-based internship programme	Pilot programme will be launched in 2019
T2 Establish a certification/ accreditation programme for tourist sites to boost tourist volume & improve service delivery	Promotion of MyTQA through TPN programmes	Promotion to more than 500 industry players through TPN outreach programme and showcasing tourism products
T3 Product owners to review pricing system of sites	Baseline study on pricing system of tourism sites	Workshop on Tourism User Fee will be held in ECTC states in April and June 2019
T4 Review industry standards and regulations	RURB - Tourism Policy Recommendation Roadmap on Home Sharing Economy Platform RURB - Review Existing Regulation on Tourism Transportation	Recommendation on short term accommodation and tourism transportation regulatory related issues
T5 Align marketing strategy on targeted tourist segments	Showcasing Tourism Products (STP) East Coast Tourism Corridor (ECTC)	<ul style="list-style-type: none"> Gathered on average 160 industry players at each of STP - Negeri Sembilan, Pahang, Terengganu, Sarawak and Sabah Developed integrated marketing strategy through ECTC
T6 Promote opportunities for knowledge sharing	Outreach Programme 1.0, 2.0 & 3.0 Digital Productivity Toolkits Tourist Arrival Performance System (TAPS) and Tourism KM Exchange Best Practices	<ul style="list-style-type: none"> Engagement with 400 Industry players 177 Industry players utilised Digital Productivity Toolkits Developed TAPS 7 Best Practices published

Tourism Productivity Nexus Activities to Enhance the Subsector Performance

T1

Strengthen collaboration efforts between industry and academia to match industry needs

- Academia-Industry Partnership (AIP) Lab on Tourism Industry-based Internship Programme

T4

Review industry standards & regulations

- RURB on Business: Tourism Policy Recommendation Roadmap on Home Sharing Economy Platform
- Regulatory Review on Tourism Transportation

Tourism Productivity Nexus Activities to Enhance the Subsector Performance

T5

Align marketing strategy on targetted tourism segments

- Showcasing Tourism Products (STP) in Negeri Sembilan, Pahang, Terengganu, Sarawak and Sabah

T6

Promote opportunities for knowledge sharing

- Tourist Arrival Performance System (TAPS)
- Outreach Programme 1.0 – Tourism Professional Meet in conjunction with MITA Travel Fair 2018
- Outreach Programme 2.0 – Tourism Productivity Day in MaTIC Kuala Lumpur
- Outreach Programme 3.0 – Tourism Productivity Day in Kuala Terengganu
- Best Practices Articles – 7 Articles



The Frangipani Langkawi: Attracting Tourists With its Eco-Friendly Hospitality

The award winning 4-star Frangipani Langkawi has turned its eco-friendly hospitality and services into a major tourist attraction. Since 2005, the management started making changes to transform it into a green resort. To further this, its very own 'Sustainable Department' assesses and improves green practices. Through Research and Development (R&D), the best green practices are constantly being identified and implemented.

Sustainability in Numbers

- 99% of methods used are natural and environmentally harmless
- Developed more than 250 green practices which is demonstrated during the free eco walk
- Increased energy efficiency aligned with target to reduce electricity use by 5% annually
- Successful reduction of water consumption by 40%

At the Forefront

- Antioxidant Spa Service: The only resort to offers antioxidant spa service to keep body's cells healthy
- Wetland Wastewater Treatment: The only resort in the country with a constructed wastewater treatment system called wetland, where water is filtered through a bioengineering process

Effective Waste Management

- Fruitful Composting: Composting dried leaves and food waste in the resort, to be used as fertilisers
- Separating Waste: In the main kitchen, rubbish is separated into 7 different bins. The Recyclable items will be collected and recycled accordingly
- Wastewater Disposal: Grease trap in the kitchen to keep the waste from entering drainage system

Water Conservation

- Conserving Water: Water from air conditioner condensation is collected and conserved. 12 hours of use especially during the hottest months will collect approximately 10 to 12 litres of water
- Rainwater Harvesting: The rainwater is collected, filtered and stored in poly tanks, to be used for cleaning and irrigation

Source : bond.mpc.gov.my

Energy Efficiency

- Solar Panels: Solar hot water panels to reduce operational costs in water heating
- Natural Lighting: Transparent corrugated roofs and large windows to allow natural light in
- Harnessing Wind: Rooftop wind-powered exhaust fans were used to reduce the temperature indoors
- Solar Dehydrators: To make organic drinks, flowers and leaves are dried using a solar dehydrator

Green Awareness

- Water Quality: Collaborated with water quality testing company MYC02 to conduct water analysis twice a year
- Organic Farming: Promotes organic farming with vegetable farms, nurseries, compost areas, stingless bee nests, duck and chicken rearing.
- Plant Adoption: Guests can pay to plant their own trees. By the end of 2017, 318 trees were adopted
- 'What's in the Sea' Programme: To educate children on the benefits of a clean ocean and ways to reduce pollution
- Educational Workshops: Holds awareness drives with universities, and workshops for non-governmental organisations and other industry players



PERFORMANCE OF THE MANUFACTURING SECTOR

For Malaysia to achieve high-income nation status, the manufacturing sector will be one of the key drivers to re-engineer economic growth under the 11MP. Hence, under the 11MP MTR, the targeted productivity growth for manufacturing sector has been revised to 3.9% annually.

The sector comprises both export and domestic-oriented subsectors. The domestic-oriented subsectors include food products, transportation equipment, beverages and tobacco products, non-metallic mineral products, basic metal and fabricated metal and transport equipment, other manufacturing and repair, machinery & equipment and pharmaceutical product.

Electrical and electronic products, chemicals and chemical products, refined petroleum products, wood and wood products & textiles, wearing apparel and footwear, paper and paper products and rubber & plastic products form the majority of export-oriented subsectors.

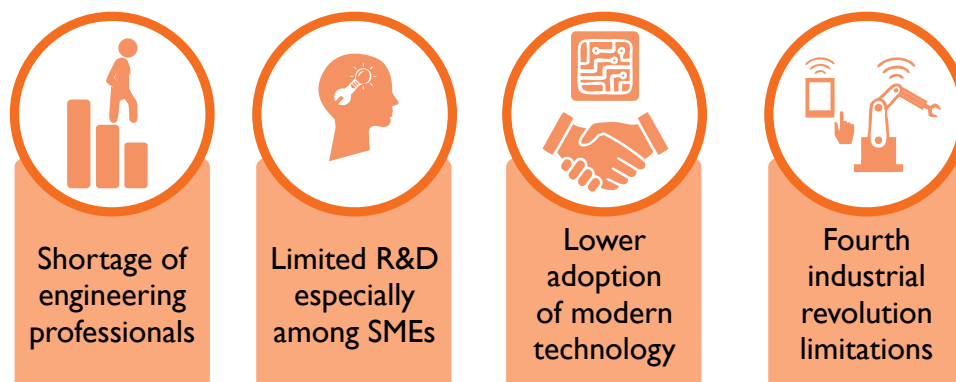
The Government is actively involved in the continued promotion of export-related activities with an emphasis on productivity and innovation across the manufacturing sector. Focus will continue on the value added manufacturing activities and the downstream production of products from palm oil, rubber, petroleum and gas.

Productivity Growth of the Manufacturing Sector



Note : P - Preliminary
: Data is based on constant price 2015
Source : Department of Statistics, Malaysia
Mid-Term Review of Eleventh Malaysia Plan (11MP MTR)

Issues and Challenges related to Manufacturing Sector



Source : Malaysia Productivity Blueprint (MPB)

CONTRIBUTION TO NATIONAL ECONOMY

Added Value

The manufacturing sector's contribution to GDP in the past few years has been stable and continues to hold steady. Despite the challenges presented by a volatile market and pending operational costs, the manufacturing sector's business activities showed some development in 2018. Its contribution to the country's economy was through added value, external trade activities and job creation.









Even with a slight slowdown in the economy, the manufacturing sector contributed 22.4% to GDP in 2018 worth RM304.8 billion, making it the second largest sector of the economy in terms of value. While that was an improvement, the

sector's added-value growth eased moderately by 5.0% in 2018 as compared to 6.0% in 2017.

The highest added value contribution of 29.0% came from petroleum, chemicals, rubber and plastic products, followed by E&E and optical products at 28.3%, while non-metallic mineral products, basic metal and fabricated metal products stood at 11.9%.

In terms of added value growth, transport equipment and other manufacturing and repair registered the highest growth of 6.4%, followed by electrical, electronic and optical products at 6.3% and non-metallic mineral products, basic metal and fabricated metal at 4.9%

Added Value and Employment Contribution of the Manufacturing Subsectors, 2018^P

SUBSECTOR		ADDED VALUE (%)	EMPLOYMENT (%)
Vegetables and Animal Oils & Fats and Food Processing		9.7	17.1
Beverages and Tobacco Products		2.9	0.8
Textiles, Wearing Apparel and Leather Products		1.9	9.6
Wood Products, Furniture, Paper Products and Printing		6.7	12.1
Petroleum, Chemicals, Rubber and Plastic Products		29.0	15.8
Non-metallic Mineral Products, Basic Metal and Fabricated Metal Products		11.9	14.4
Electrical, Electronic and Optical Products		28.3	22.5
Transport Equipment, Other Manufacturing and Repairs		9.6	7.8

Note : P - Preliminary
: Data is based on constant price 2015
Source : Department of Statistics, Malaysia

Figure 2.9: Added Value of the Manufacturing Sector, 2015 – 2018^P

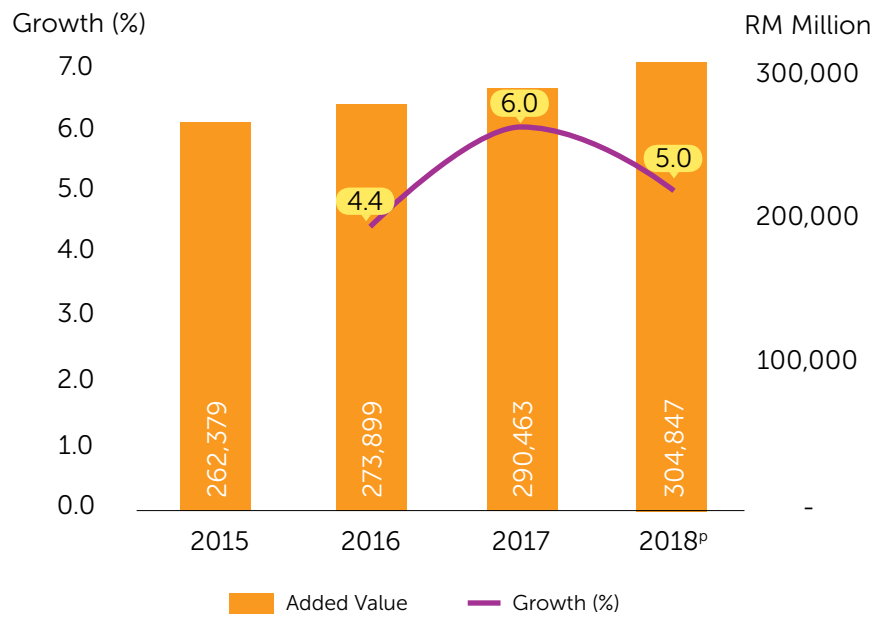
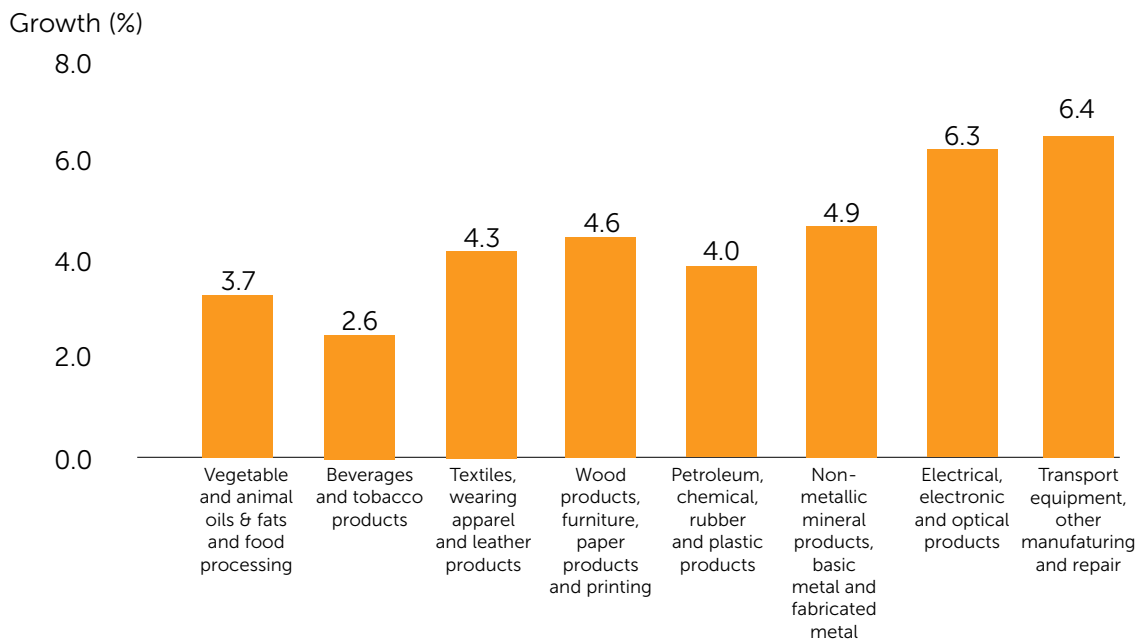


Figure 2.10: Added Value Growth of the Manufacturing Subsectors, 2018^P



Note : P - Preliminary
 : Data is based on constant price 2015
 Source : Department of Statistics, Malaysia

Employment

Employment in the manufacturing sector grew by 2.5% to 2.5 million employees in 2018, making up 16.1% of the total Malaysia employment (Figure 2.11). Electrical, electronic and optical products registered the highest number of employees at 562,000. While the vegetable and animal oil & fat and food processing subsector employed 17.1%

of the manufacturing workforce with 429,000 employees. In terms of employment growth, textiles, wearing apparel and leather products recorded the highest growth at 6.6% followed by beverages and tobacco products at 3.5% and electrical, electronic and optical products by 3.2% (Figure 2.12).

Figure 2.11: Employment of the Manufacturing Sector, 2015 – 2018^p

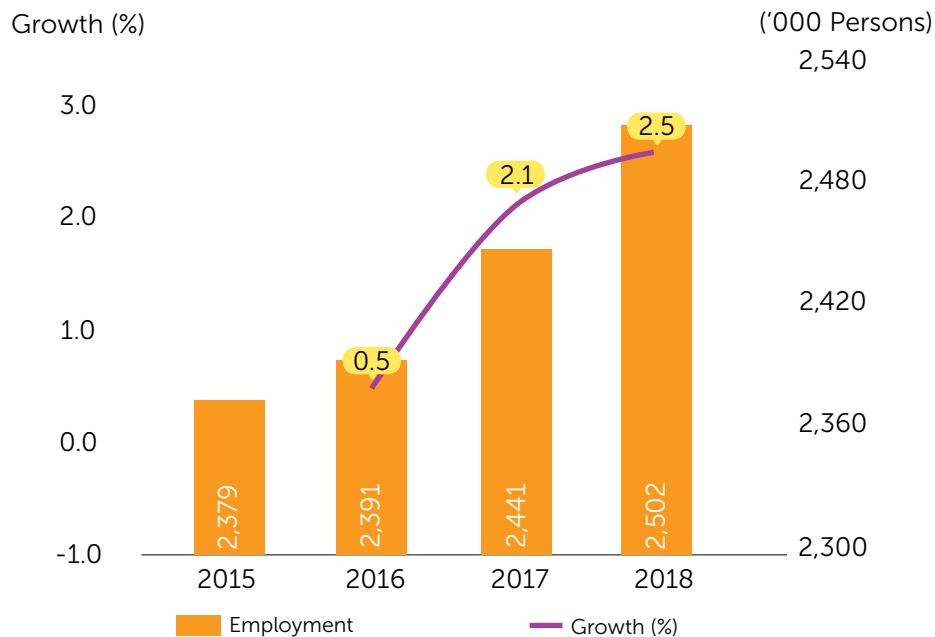
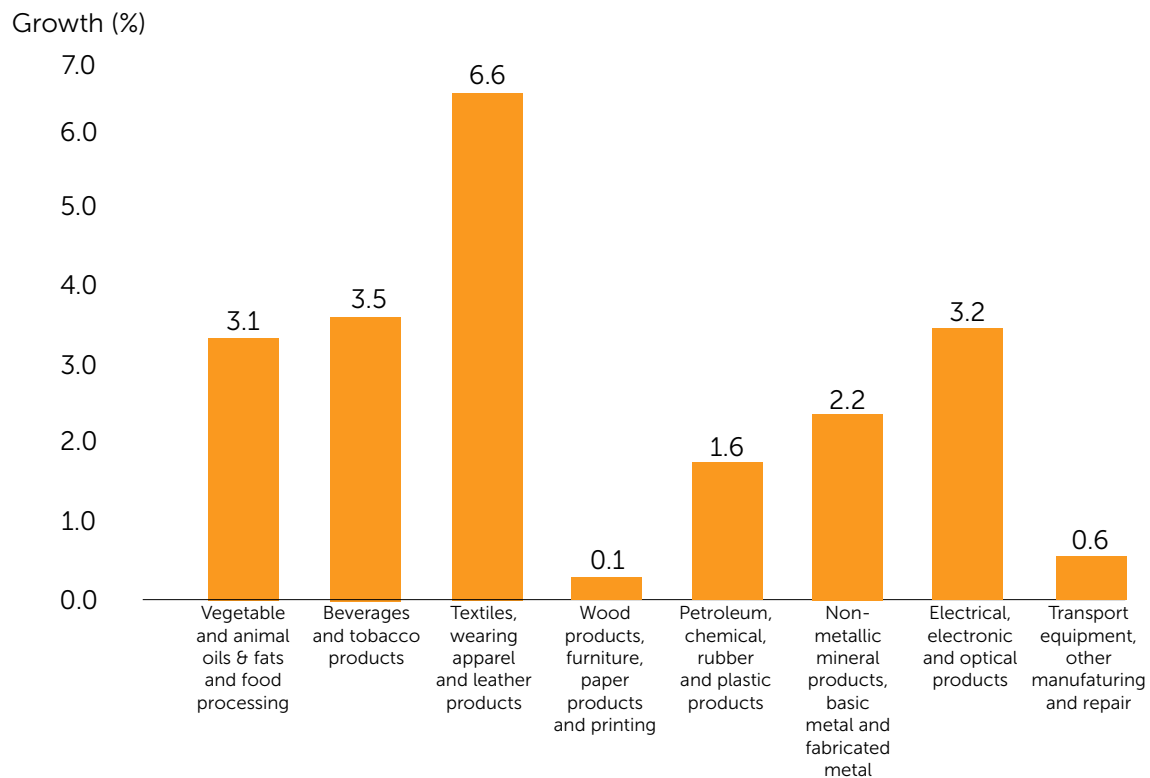


Figure 2.12: Employment Growth of the Manufacturing Subsectors, 2018^p



Note : P - Preliminary
Source : Department of Statistics, Malaysia

Labour Productivity

In 2018, the manufacturing sector's labour productivity grew by 2.4% to RM121,841 up from RM118,993 in 2017 (Figure 2.13). Productivity growth in the transport equipment, other manufacturing and repair subsector was the highest at 5.8%, followed by wood products, furniture, paper products and printing at 4.5%.

by 0.9%, as the growth in employment was faster than the growth in value added.

Judging from the labour productivity performance, there is a need for more efforts in enhancing productivity. With that, the MPB identified 3 priority subsectors, namely electrical and electronics, machinery & equipment and chemicals & chemical products that could lead the manufacturing sector to reach the productivity target of 3.9% by 2020.

Figure 2.13: Labour Productivity Performance of the Manufacturing Sector, 2015-2018^p

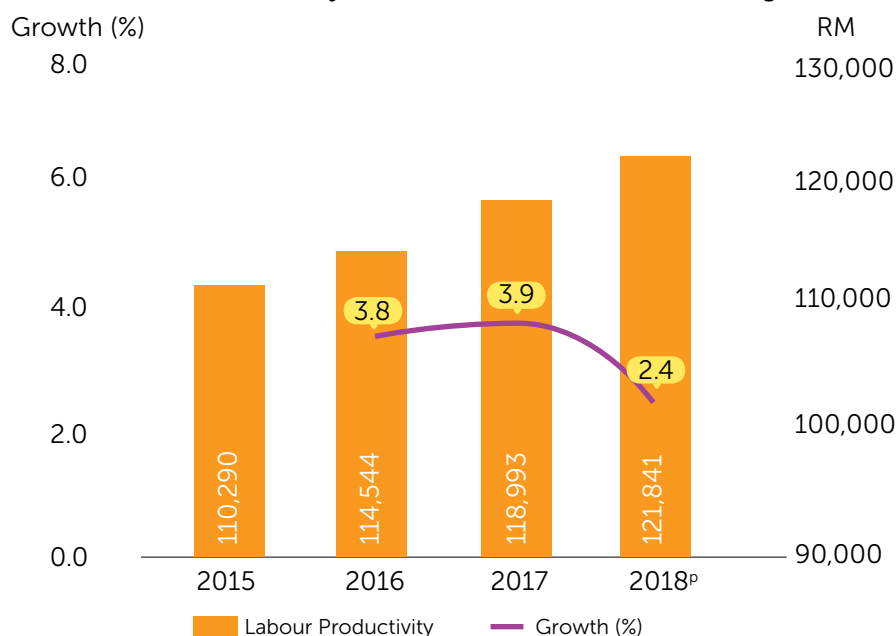
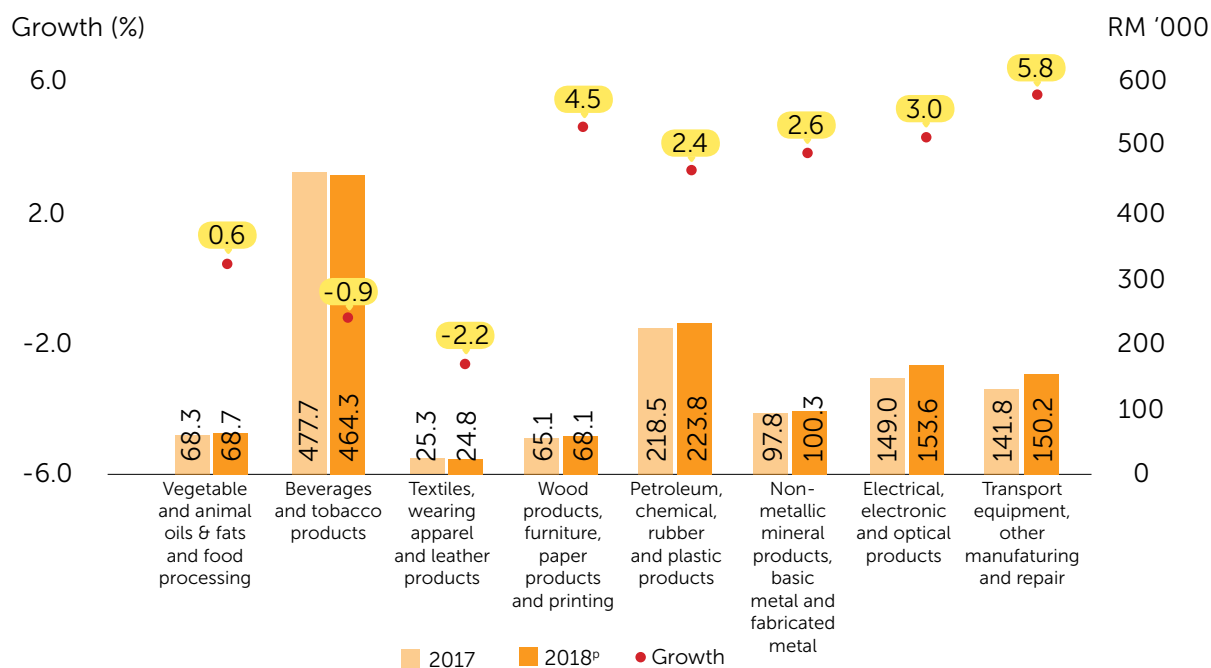


Figure 2.14: Labour Productivity Level of the Manufacturing Subsectors, 2018^p



Note : P-Preliminary
Data is based on constant price 2015
Productivity growth sourced from Department of Statistics, Malaysia
Productivity level computed by Malaysia Industrial Productivity Database (MIPD)

MANUFACTURING SECTOR: PRIORITY SUBSECTORS

Transitioning towards the provision of more high-value, diverse and complex products, the manufacturing sector is driven by 3 catalytic subsectors, which are electrical & electronics (E&E), machinery and equipment (M&E) and chemicals and chemical products. To ease the transition, the sector's activities will be underpinned by R&D initiatives, advanced manufacturing processes, greater compliance to standards and collaborations between stakeholders.

ELECTRICAL AND ELECTRONICS (E&E) PRODUCTIVITY NEXUS

The E&E industry has been the prime catalyst for the manufacturing sector's economic growth, having attracted foreign investments, which have created more employment opportunities. In 2018, the subsector recorded productivity growth of 3.3% as compared to 7.2% in the previous year. Given the subsector's significant contributions to Malaysia's total export of 45.6% that is equivalent to RM380.8 million, it has been pegged as a priority for economic progress.

The subsector is divided into 2 main industries, which are computers, electronics and optical products and electrical equipment. Due to its importance, the subsector is one of the 12

National Key Economic Areas (NKEAs) as well as a focal point under 11MP and MPB. In an effort to boost the E&E subsector's contribution to the national economy, the Electrical & Electronics Productivity Nexus (EEPNN), led by industries and supported by the Government, was formed in 2017.





"SMEs need to be inspired, encouraged, and educated about needing to evolve, and to increase their productivity through automation."

**- Datuk Seri Wong Siew Hai,
E&E Productivity Nexus Champion**

Additionally, the Government has prioritised direct support and investments towards this subsector to ensure that it remains competitive internationally. A flourishing E&E subsector will be advantageous to other subsectors in the country, both on the supply and demand side, due to the large impact of its forward and backward linkages. Programmes, seminars and roadshows such as the Industrial Internet of Things (IIoT) PLUGFEST and Seminar on MPB for manufacturing sector are platforms to strengthen collaboration and knowledge sharing between industry players. These activities will focus on an outcome-based approach, where participants are encouraged to adopt the best practices learnt.

FRAMEWORK OF SECTOR-LEVEL PRODUCTIVITY INITIATIVES OF ELECTRICAL AND ELECTRONICS PRODUCTIVITY NEXUS (EEPNN)

E&E Key Initiatives

THRUSTS	INITIATIVES	SUB INITIATIVES
 WORKFORCE	E1. Strengthening collaboration between industry, government and universities to ensure supply of industry-ready engineers E2. Upskill workers to prioritise innovative thinking to foster productive culture	i. Develop Post Finishing School (PSF) for IC Design ii. Develop Structured Industry Apprenticeship (SIAP) Program i. Develop talents for employment
 TECHNOLOGY	E3. Accelerate collaboration and strengthen knowledge sharing between industry players, through Centre of Excellence	i. Collaborating with industry player to develop a robust design and development ecosystem ii. Nurturing and incubating 4.0 activities iii. Strengthening SME development to develop local champion
 INDUSTRY STRUCTURE	E4. Promote higher value add activities, including Research, Development and Design and produce complex products.	i. MIDA's incentive process enhancement ii. Maximise value from E&E Directory, emphasising SMEs agenda iii. National policy paper on testing capability for E&E chapter, comparative advantage from competency, price and funding perspective
 BUSINESS ENVIRONMENT	E5. Enforce minimal guaranteed service levels for utilities and infrastructures in key industrial zones	i. High technology within Industrial Zone

Productivity Nexus Activities to Enhance the Subsector Performance

E1

Strengthening collaboration between industry, government and universities to ensure supply of industry-ready engineers

- Develop Post Finishing School (PSF) Program for IC Design 2019
- Develop Structured Industry Apprenticeship Program (SIAP) Program 2019
- Universities Curriculum Enhancement Programme for IC Design
- Advance Upskilling Industry 4.0 Training 2019

E2

Upskill workers to priorities innovative thinking to foster productive culture

- Competency enhancement for SME CEOs 2018
- Developing Stronger SMEs Owner Programme 2019

Productivity Nexus Activities to Enhance the Subsector Performance

E3

Accelerate collaboration and strengthen knowledge sharing between industry players, through Centre of Excellence

- Industrial Internet of Things (IIoT) PLUGFEST 2018
- Industry 4.0 Week 2018
- EEPN National Productivity Seminars 2018
- Intel Next Generation Manufacturing Conference 2018
- Productivity Seminar for Electrical & Electronics Sector 2018
- Industrial Internet of Things (IIoT) PLUGFEST Convention 2019
- Industrial Internet of Things (IIoT) PLUGFEST 2019
- Regional I4.0 technology hackathon 2019
- Productivity Seminar of Electrical & Electronics Industry 2019

E4

Promote higher value add activities, including research, development and design and produce complex products

- Study on Current Labs and Testing Capabilities of E&E
- Manufacturing Ecosystem in Malaysia 2018
- Study on Productivity Impact and Contribution of E&E Industry in Malaysia 2018-2019



V-ONE: Revolutionising Smart Data-Driven Decisions

Who is ViTrox?

A leading global player in the vision inspection field, ViTrox Corporation Bhd. is renowned in the industry. The Penang-based company designs and manufactures innovative, cutting-edge, cost-effective automated vision inspection equipment and system-on-chip embedded electronics devices for semiconductor and electronics packaging industries worldwide.

What is V-ONE?

ViTrox launched its latest product – Industrial 4.0 Solution V-ONE – a smart software-based solution that acts as a one-stop platform for decision making. The software enables users to exercise control remotely, visualise, monitor and implement condition-based alerts to shorten the downtime and boost production.

V-ONE's Core Principles Aligned with Industry 4.0 Revolution

- Connect: Automatically collects data from different inspection and production systems
- Visualise: Uses real-time data to visualise machine utilisation and effectiveness
- Pro-Act: Fulfils the pillars of big data and real-time data-driven solutions

Why is V-ONE Revolutionary?

Product Feature	Benefits
Integrated One-Stop Platform	<ul style="list-style-type: none"> • User friendly and streamlines decision making
Remote Control and Access	<ul style="list-style-type: none"> • Allows users to access remotely, even via mobile phone • Eases troubleshooting process or fine-tuning as the Machine PC can be remotely accessed
Real-Time Data Dashboard	<ul style="list-style-type: none"> • Configurability allows graphical chart view based on process needs • Allows real-time machine monitoring • Predicts machine downtime with predictive maintenance • Optimises data usage to determine the operational status of each machine • Monitors Overall Equipment Effectiveness and yield
Data Analysis	<ul style="list-style-type: none"> • Enables monitoring of process performance and executes production planning • Comprehensive data enables users to make the right decision to minimise operational cost • Increases product quality by reducing reject rate • Guide to ensure production line runs smoothly
Production Status Monitoring	<ul style="list-style-type: none"> • Enables users to monitor production line • Facilitates smart manufacturing • Optimises factory resources • Monitors operational performance
Alert System	<ul style="list-style-type: none"> • Automatically notifies operators based on specific triggering conditions according to user's requirements
Ticketing System	<ul style="list-style-type: none"> • Increases efficiency by enabling operators or technicians to grab available jobs



Source : bond.mpc.gov.my

MACHINERY AND EQUIPMENT (M&E) PRODUCTIVITY NEXUS

The machinery and equipment (M&E) subsector is an enabler for the economic progress of all other subsectors and has been of strategic importance throughout the global industrial revolution. It is one of the most innovative economic subsectors as it combines key technologies of the future such as electronics, robotics and software integration. All in all, the subsector is a key player in IR4.0, as it cuts across all economic segments, especially the primary manufacturing and services sectors.

In Malaysia, the M&E subsector is dominated by locally-owned SMEs who mainly produce in small batches (instead of mass production) and provide customised solutions for bigger manufacturers. A large portion of these SMEs are largely risk-averse and tend to stick to traditional methods of business management, which does little to contribute to the productivity of the subsector in today's business environment. This needs to be challenged as more developed nations are becoming increasingly competitive by adopting new technologies and business methods.

M&E is typically a labour-intensive subsector, where the workforce needs to be equipped with both technical and management skills so that they can truly understand the intricacies of the processes involved. With the increase of automation in the subsector, SMEs will require

fewer workers to produce the same output, with better control and fewer defects.

Upskilling the local M&E workforce will increase their income, raise the subsector's productivity levels and reduce the nation's dependence on low-skilled labour. In 2018, the subsector recorded significant productivity growth at 1.1% as compared to -1.0% in 2017.

"The Malaysia's M&E companies must be productive and competitive by adopting new technologies and methods of conducting business otherwise will soon be left behind Vietnam and Thailand."

**- Mac Ngan Boon,
Machinery and Equipment (M&E)
Productivity Nexus Champion**

To uplift productivity, the MPB has identified 3 broad challenges that need to be addressed at sectoral level with regards to MPB pillars namely, workforce, technology and industry structure. The MPB initially identified 4 M&E sectoral initiatives to boost productivity from large enterprises and SMEs, which led to the M&E Productivity Nexus (MEPN) being established to realise the key objectives. Under this directive, several activities were undertaken to enhance productivity.

FRAMEWORK OF SECTOR-LEVEL PRODUCTIVITY INITIATIVES OF M&E PRODUCTIVITY NEXUS (MEPN)

Productivity target set for M&E Sector growth is 3.5% by 2020

Sectoral Initiatives	Set up partnership between government and industry associations to up-skill existing employees			Set up Centre of Excellence for skilled professionals to share industry expertise and develop new technologies			Set up more product testing facilities to ensure standards are met			Update of domestic product standards to be at par with international standards and enforce compliance		
	• MITI	• Giatmara	• MOHE	• MITI	• SIRIM	• MATRADE	• MITI	• MATRADE	• Customs	• MITI	• MATRADE	• SIRIM
Key Stakeholders	• MOE	• UTeM	• JPK	• MATRADE	• Skill	• DOSM	• MIDA	• SME Corp	• SIRIM	• MIDA	• SME Corp	• MEA
	• DOSM	• Skill	• TVET	• DOSM	• Development	• ILMIA	• MDeC	• CIDB	• MEA	• MDeC	• CIDB	• ILMIA
Driven by	• ILMIA	• Development	• Institutions	• MIDA	• APO	• PEMUDAH	• MARii	• SSM	• JPJ	• MARii	• MOF	• JPJ
	• CIDM	• ABM	• HRDF	• PEMUDAH	• MDeC		• NIOSH	• PEMUDAH	• MOF	• NIOSH	• PEMUDAH	• MOF
Driven by	• MIDA	• SME Corp	• DOSM							• PUSPAKOM	• Customs	
	MEIF											
	• MATA • MEMA • MMCOA • TEEAM • SME MALAYSIA • MSTMA • PERKEM											

Machinery and Equipment Productivity Nexus Activities to Enhance the Subsector Performance

M1

Set up partnership between government and industry associations to up-skill existing employees

- Establish workgroup
- Baseline report on M&E workforce landscape in Malaysia
- Public-private collaboration framework for M&E talent development

M2

Set up centre of excellence for skilled professionals to share industry expertise and develop new technologies

- Identifying COEs for M&E industry
- Series of seminars to inculcate the productivity mindset
- Best practices documentation and articles
- M&E industry profiling and value chain
- Development of M&E Industry productivity specialist
- Government Incentives for M&E Industry listing

Productivity Nexus Activities to Enhance the Subsector Performance

M3

Set up more product testing facilities to ensure standards are met

- Establish database on product testing facilities available for M&E industry
- Series of workshops to identify challenges faced by M&E industry on testing facilities and services

M4

Update of domestic product standards to be at par with international standards and enforce compliance

- Designed programmes related to standards to elevate Malaysian M&E SMEs' capabilities



How DF Automation and Robotics Sdn. Bhd. Optimises Productivity to Meet Industry Demands

DF Automation and Robotics Sdn. Bhd. is a company specialises in designing, manufacturing, marketing and maintaining Automated Guided Vehicles (AGVs) especially for manufacturing industries. More than just business-driven, its innovations are also helping instigate industrial transformation by increasing national productivity.

Product Development and Industrial Revolution

The current AGV produced by DF has undergone countless improvements throughout production to ensure optimal efficiency in meeting productivity needs. As a result, the AGV was made mobile by using technical programming and moves with the help of magnetic waves from within the AGV. It moves in accordance with magnetic tapes installed at specific work areas to determine the pathways for AGV in assisting line production.

AGVs are essentially known as 'Mobile Robots' which comprise a sensor system and programming features that aids in transporting cargo or parts from one point to a designated point. Such innovations are a result of research and development, in which DF invests about 15% of its profits with a goal to produce at least two new products annually.

To further product development, DF prioritises innovation among employees and in its work practices. Employees are encouraged to attend yearly training in the field of automation and have also won robotics competitions at the national level. Such experiences have been crucial in providing the skills and knowledge that have been instrumental to DF's progress.

Identifying and Filling a Demand

To meet the rising requirements of a number of industries in the region, AGVs help alleviate non value-added activities that rely on manpower. Where there is a lack of manpower, an AGV is an incredibly affordable investment. Supply chains can be more readily controlled with automation in data at every level of the manufacturing and delivery process. This computer-controlled system is more reliable and consistent in relation to productivity and output and leads to reduce labour dependency, market growth and increase profits.

It is clear that there was a notable demand as DF records annual sales increment of 60% and by leveraging on this growth it aims to establish itself as a leading entity in South East Asia in the field of designing and manufacturing of AGVs. But it does not stop here, as DF also wants to provide efficient and affordable after-sales service to cement client relations.

Value Added Features and Services

- i) **Robotic Arms** was added specifically to assist manufacturers in other areas of specialisation beyond just carrying loads.
- ii) **NavWiz** is a software which allows users to navigate through topological maps, allowing for minimal monitoring and more efficient manpower utilisation.
- iii) **AI Integration** system made the AGV capable of making decisions on selecting shortest routes, performing localisation, and executing detailed navigation.



Source : bond.mpc.gov.my

CHEMICALS AND CHEMICAL PRODUCTS PRODUCTIVITY NEXUS

Accounting for 6.9% of Malaysia's total export for manufacturing goods in 2018, the chemicals and chemical products subsector is one of the nation's leading economic subsector. In terms of productivity growth, the subsector registered 1.2% as compared to 3.7% in the previous year. This sector is very diverse and complex, encompassing basic chemicals, pharmaceuticals, other chemicals and man-made fibres.

The chemicals and chemical products subsector is fairly mature given the presence of large and successful Government-Linked Companies (GLCs), which contributed to raise the productivity level. However, the subsector is fragmented with different segments such as petrochemicals, oleochemicals, agrochemicals, pharmaceuticals, soap and detergents, fertilisers and pesticides, plastics, etc.

Based on the Department of Statistics, Malaysia (DOSM) data for 2015, out of 1,473 companies in the chemicals and chemical products subsector, 1,380 are SMEs which contributed to about 94% of the total number. In addition, about 91% of SMEs in the chemicals and chemical products subsector contributed to only 29% to the subsector's added value based on the Manufacturing Survey 2012 by the DOSM. This clearly shows that SMEs hold a large share of the market, but more needs to be done to increase their impact on the subsector's current and future productivity.

About 80% of the chemical manufacturers operate in the base chemical segment. Thus, the chemicals and chemical products subsector has many opportunities to significantly increase the subsector's added value by shifting towards higher value-added segments. Further, to enhance the subsector's productivity, the Chemicals and Chemical Products Productivity Nexus (CCPN) was formed in 2017 to address the 4 key productivity challenges that has been identified in the MPB, which are:

- Limited presence in high value-added segments
- Insufficient talent development
- Inability of SMEs to adapt to technological change
- SMEs unequipped to effectively expand internationally

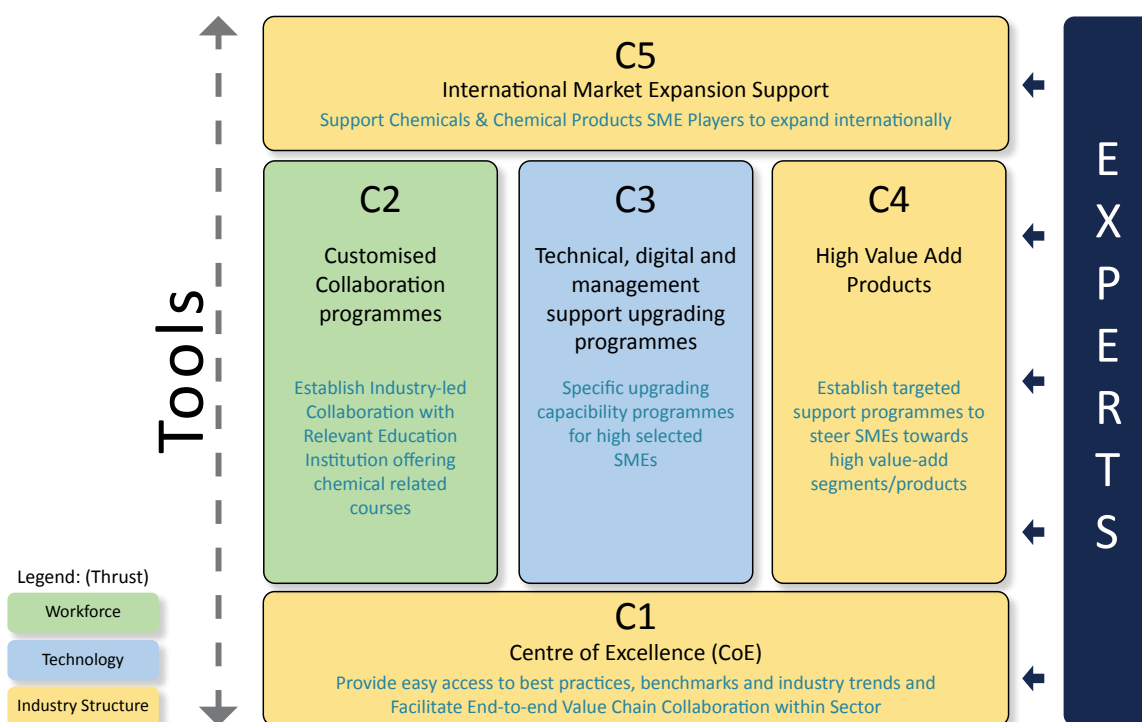
"The upskilling of local talent is necessary for Malaysia to remain relevant in the global market. It is important to train, certify and pay workers accordingly, in order to change the perception that certain jobs are less dignified."

**- YBhg. Dato' Dr. Abd Hapiz Abdullah,
Chemicals and Chemical Products
Productivity Nexus Champion**

To counter these challenges experienced by the subsector, CCPN in turn conducted activities to spread awareness to overcome the current limitations preventing further growth.

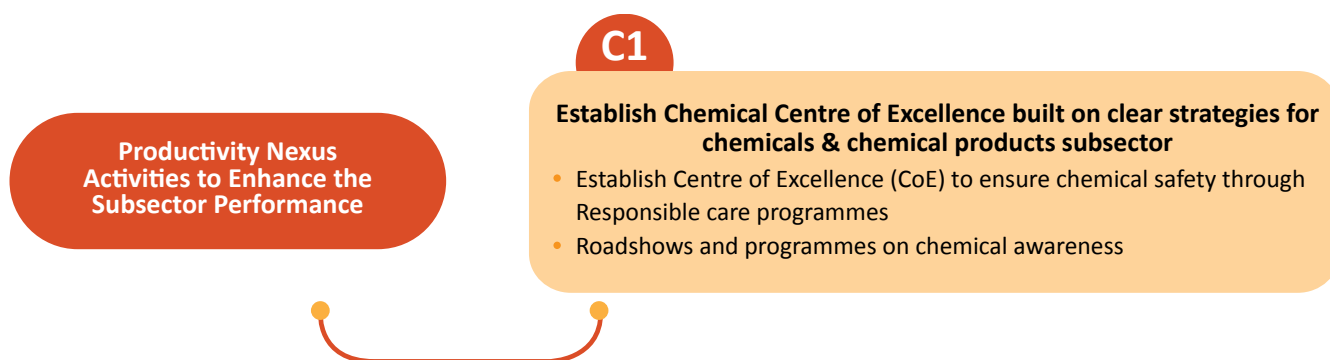


FRAMEWORK OF SECTOR-LEVEL PRODUCTIVITY INITIATIVES OF CHEMICALS AND CHEMICAL PRODUCTS PRODUCTIVITY NEXUS (CCPN)



As illustrated above, each of the 5 individual initiatives support each other in achieving their individual goals. Initiative C1 casts a foundation for C2, C3 and C4, whereas C5 would embrace the vertical initiatives (C2, C3, C4) to increase the value-added creation and productivity level of all 5 initiatives. Through this model and the implementation of pilot programmes, SMEs will be better equipped to venture transition towards high value-added components along the value chain.

Chemicals and Chemical Products Productivity Nexus Activities to Enhance the Subsector Performance



Malaysian Vaccines and Pharmaceuticals Enhanced Customer Experience Through LEAN Transformation

Being the only company in Malaysia that produces vaccine for livestock, Malaysian Vaccines and Pharmaceuticals Sdn. Bhd. has tapped into a market where few have ventured. To date, 16 vaccine products have been manufactured including live viral vaccines, killed viral vaccines and bacterine vaccines, as well as an animal diagnostic service known as MyLab Diagnostic Centre.

While it is easy to rely on the high-quality vaccines and market strength alone, Malaysian Vaccines and Pharmaceuticals places importance on efficient sales service to boost customer satisfaction. In this way, the customers appreciate not only the high-quality products, but also the service.

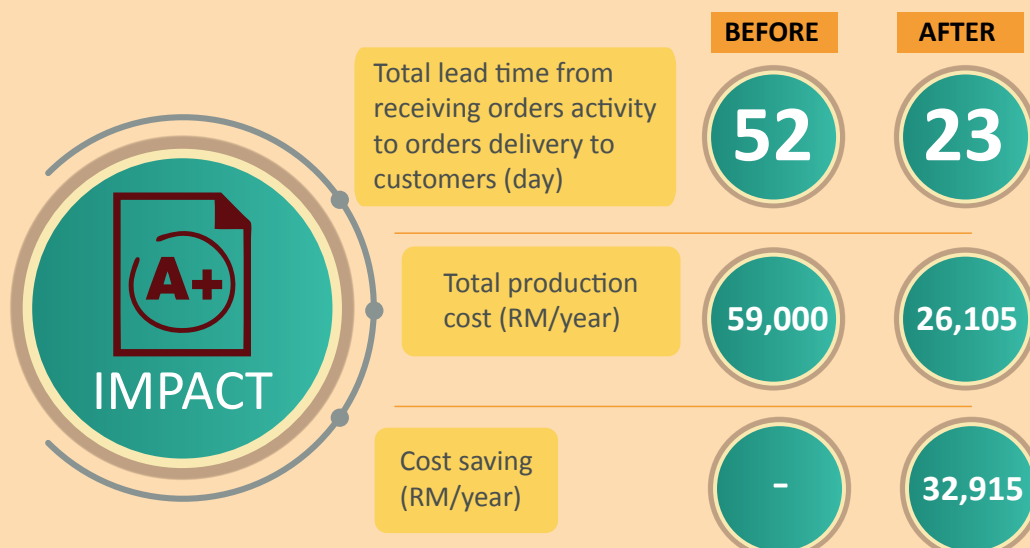
As the products are a top choice from a health and safety aspect, customer demand kept increasing. With this, the company experienced delays in certain deliveries, mismatched product packaging and inadequate product quantities. Due to this, complaints were lodged by

customers who at times received wrongly labelled products.

Though these cases were few and far between, Malaysian Vaccines and Pharmaceuticals sought to remedy these issues by heightening efficiency in handling customers' orders through the implementation of the LEAN Management Project. Three simple resolutions were carried out and have reduced the lead time of work processes from receiving orders to product deliveries.

By following the LEAN implementation diligently, the warehouse acts as the centre responsible for ensuring the products are ready to be shipped to the customers in cooperation with Production Department and Quality Control and Quality Assurance Department. Before, the marketing department acted as the hub to ensure products were shipped according to customers' orders. With the LEAN resolutions in place, Malaysian Vaccine and Pharmaceuticals saw significant changes:

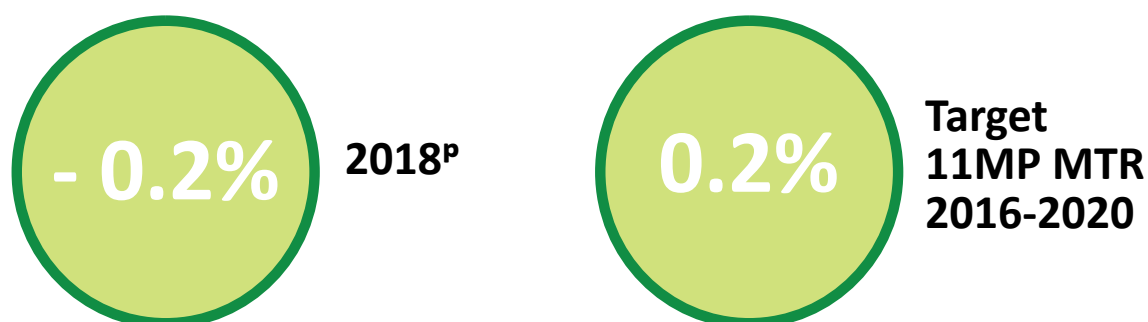
Lean Resolution	Implementation	Impact
Restructuring Workflow Process	Visual Stream Mapping was used to develop the workflow process. A total of 10 activities were identified to minimize errors and wastage	<ul style="list-style-type: none"> • Lead time was reduced • Timely deliveries • Better accuracy in delivery of information
Rearranging Storage	Arranged the vaccines in transparent plastic containers by numerical and colour coding	<ul style="list-style-type: none"> • Reduced search time for vaccines • Lesser errors in giving vaccine
Stock Schedule	Vaccine schedule was developed according to quantities. It was developed in a way that the data can be used and retrieved by all departments	<ul style="list-style-type: none"> • Smoother stock monitoring • Useful data for production planning purposes



Source : bond.mpc.gov.my

PERFORMANCE OF THE AGRICULTURE SECTOR

Productivity Growth of the Agriculture Sector



Note : P-Preliminary

Data is based on constant price 2015

Source : Mid-Term Review of Eleventh Malaysia Plan (11MP MTR)
Department of Statistics, Malaysia

The agriculture sector plays a vital role in Malaysia's economic development. Beyond its contribution to GDP, it also provides job opportunities and elevates incomes in rural areas while helping to ensure national food security. At a time of high global demand for agricultural products due to the growing world population and a strengthened world economy, Malaysia's agriculture sector needs to take hold of the opportunity to expand its capacity, to achieve its full potential and thereby increase its contribution to national income.

In the past, agriculture used to be a mainstay of Malaysia's economic growth. While it remains an important sector, it is falling short of the country's current consumption demands. There are 2 main types of agriculture in Malaysia, which are plantation and food production. While the plantation side is showing great promise, the food production side could be pushed to boost its productivity.

The agriculture sector contributed 6.7% to Malaysia's total exports, which was valued at RM67.0 million in 2018. Out of this, 71.4% or RM47.8 million were from the main exports comprising palm oil, rubber and forestry & logging. Judging by the exports, it is clear that the plantation element is contributing to the sector's productivity growth.

On the other hand, food production requires a lot of manpower and better technology to minimise damage to crop yield. To overcome

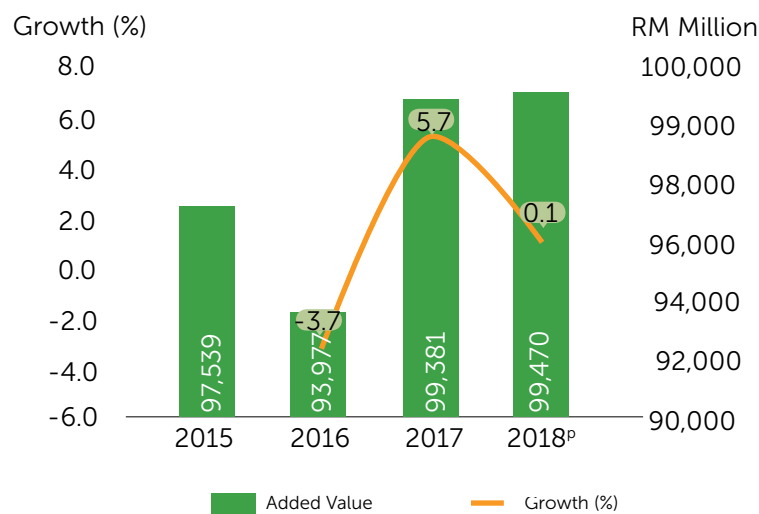
these limitations, adopting modern techniques and ensuring competitiveness will relieve some of those burdens off the farmers. This is the approach being undertaken in line to the 11MP MTR, where there is an emphasis on developing a modern and more productive approach within the agriculture sector. It outlines a need for reforms in the agro-food subsector and a renewed focus on the expansion of downstream activities along the value chain to help the sector tap into a growing market of higher value-added products.

CONTRIBUTION TO NATIONAL ECONOMY

Value Added

To grasp the nature of the sector's businesses, the agriculture sector can be broken down into 2 sub-sectors, namely industrial commodities and agro-food. Industrial commodities consist of rubber, oil palm, forestry and logging, cocoa and pepper products while agro-food comprise paddy, fruits, vegetables, fisheries, livestock and other agro-based produce.

In 2018, the agriculture sector contributed 7.3% of Malaysia's GDP amounted to RM99,470 and registered a growth of 0.1% as compared to 5.7% in 2017. The slow growth may have been due to the external factor which is unpredictable weather that affected palm oil and rubber production.

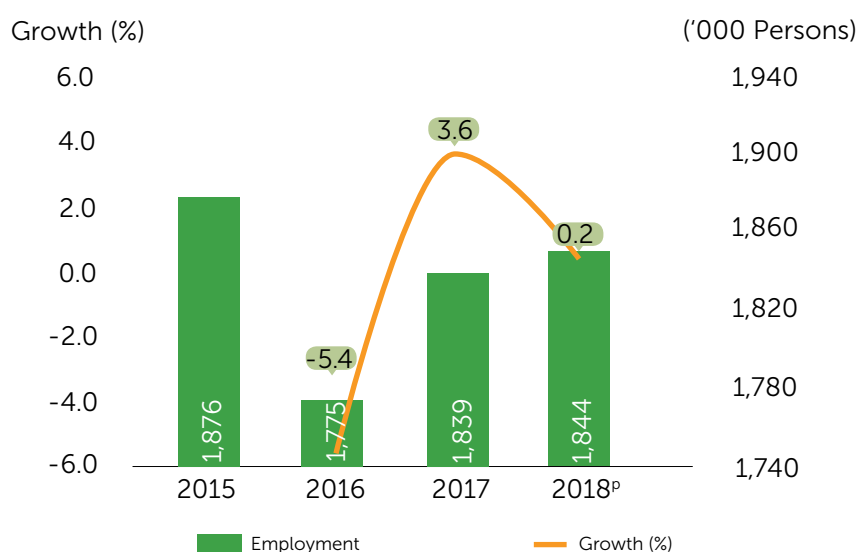
Figure 2.15: Added Value of the Agriculture Sector, 2015 – 2018^P

Note : P-Preliminary
Data is based on constant price 2015
Source : Department of Statistic, Malaysia

Employment

Employment in the agriculture sector accounted for 12.5% of the national employment. There was a slow growth of employment of 0.2% in this sector in 2018, which could be attributed to the mobility of the employees to the agriculture sector from other unproductive sectors. Currently, the

Government is continue to strengthen existing human capital through continuous training and encourages the use of modern technology and mechanisation to reduce dependency on low-skilled labour.

Figure 2.16: Employment of the Agriculture Sector, 2015 – 2018^P

Note : P - Preliminary
Source : Department of Statistics, Malaysia

Labour Productivity

The agriculture sector is often characterised by substantial volatility in productivity over time, with fluctuations in climatic conditions such as droughts, severely impacting output. In 2018, adverse weather and production constraints has impacted the productivity growth of the sector as it contracted at 0.2%. The sector recorded a labour productivity of RM53,943 from RM54,041 in 2017.

Over the years, some key factors have shaped the productivity trends including changes in Government policies, technological advancements and innovation and emerging environmental concerns. There is also the continuous challenge of variations in weather conditions, which are hard to manoeuvre as they are beyond the control of the farmers themselves.

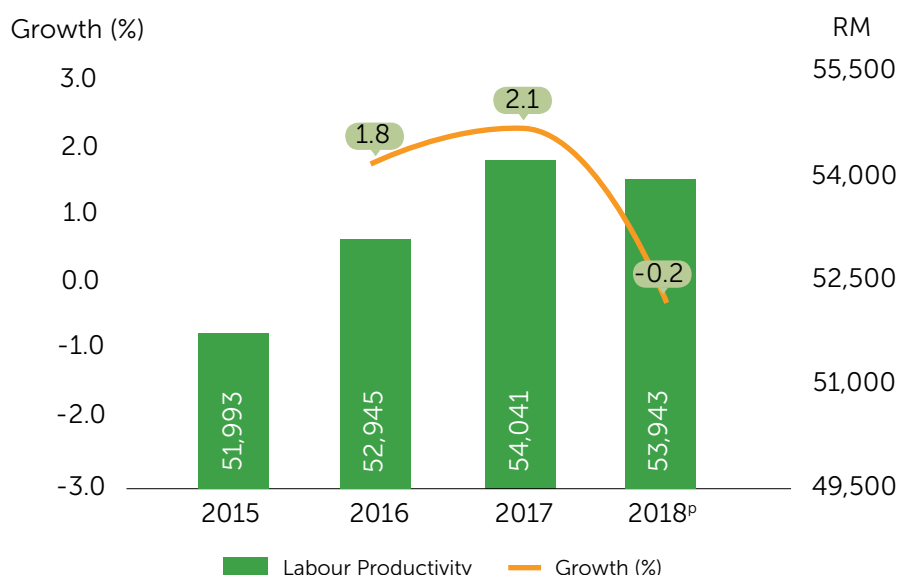
The quality of the land, the meteorological environment surrounding the property and farming methods also had significant impact on the production capacity of farms in particular geographical regions. Thus, integrated farming of

industrial commodities would enable an increase in productivity and income through greater optimisation of land use.

To have a greater impact on the sector's productivity, there has been a shift towards more intensive farming in the last few years. This was also reflected in the structural shift towards enterprises using more intensive production systems (livestock, fisheries and food crops) and adopting more intensive production techniques (use of feeds, chemicals and irrigation).

Agriculture in general has also become more closely integrated with the agro-food chain. An increasing proportion of the agricultural output is now supplied to processors or major retailers under comprehensive pre-arranged contracts. To facilitate this shift, certain aspects of the statutory marketing arrangements in many agricultural industries were liberalised to allow farmers greater control over the management and marketing of their output.

Figure 2.17: Labour Productivity of the Agriculture Sector, 2015-2018^P



Note : P-Preliminary
Data is based on constant price 2015
Productivity growth sourced from Department of Statistics, Malaysia
Productivity level computed by Malaysia Industrial Productivity Database (MIPD)

AGRICULTURE SECTOR: PRIORITY SUBSECTOR

AGRO-FOOD PRODUCTIVITY NEXUS

With agro-food as a priority subsector, its total contribution to value added is expected to increase the productivity performance for the subsector as a whole. As targeted in the National Food Agency Policy (2011-2020), agro-food potentially contribute up to 50% of the total value added to the agriculture sector by 2020. In 2018, agro-food registered 1.2% in labour productivity growth compared to 2.5% in 2017.

The policy was formulated to further enhance Self-Sufficiency Level (SSL) and to reduce the vast sums spent on importing agro-food. This policy is also aimed at:

- i. Addressing food security and safety;
- ii. Guaranteeing the availability, affordability and accessibility of food;
- iii. Ensuring the competitiveness and sustainability of the agro-food industry; and
- iv. Increasing the income levels of agropreneurs.

In developing a modern and productive agriculture sector, the Agro-Food Productivity Nexus (AFPN) was established under the MPB to accelerate high value-added activities across the value chain. The main reasons to focus on

agro-food are that the industrial commodities subsector is quite mature, given the presence of large and successful GLCs in the mix that have contributed to high productivity in the sector. On the other hand, the agro-food subsector is more fragmented and dominated by small players, leaving more room to grow through further guidance and intervention.

"The Nexus is more focused on helping the firms (by funding sensors and building protocols) and the industry (by improving food safety and setting farm standards),"

**YBrs. Dr. Nungsari Ahmad Radhi,
Agro-food Productivity Nexus Champion**

AFPN is an enriching platform for government agencies, farmer associations and cooperatives to collaborate, plan and implement initiatives that uplift productivity. While this will look at enhancing the value added to the agro-food subsector through established organisations, youth participation will also be encouraged particularly through cooperatives so as to pool resources together to get better bargains and achieve economies of scale.

Issues and Challenges Related to Agro-food Sector



Insufficient focus on value-added activities and disconnections along the value chain



Many small players with low levels of productivity



Issues with quality and standards across the sub-sector



Low rate in adoption of technology and modern techniques

Source : Malaysia Productivity Blueprint (MPB)

To address these core issues hindering heightened growth, the MPB recommends 6 subsector-specific initiatives, which directly correspond with the national thrusts:

- i. Facilitate better matching along the supply chain by linking downstream demand to upstream supply
- ii. Embed robust contract-farming model across the subsector
- iii. Push for enforcement and adoption of relevant standards and practices to strengthen end-to-end value chain
- iv. Boost awareness and adoption of technological upgrades and modern farming techniques
- v. Establish industry-led collaboration with educational institutions
- vi. Encourage agro-food players to move into high value add products and markets

To enhance the subsector's productivity growth further, activities have been undertaken throughout the course of 2018. Among the activities including spreading awareness through workshops, seminars and roadshows, research

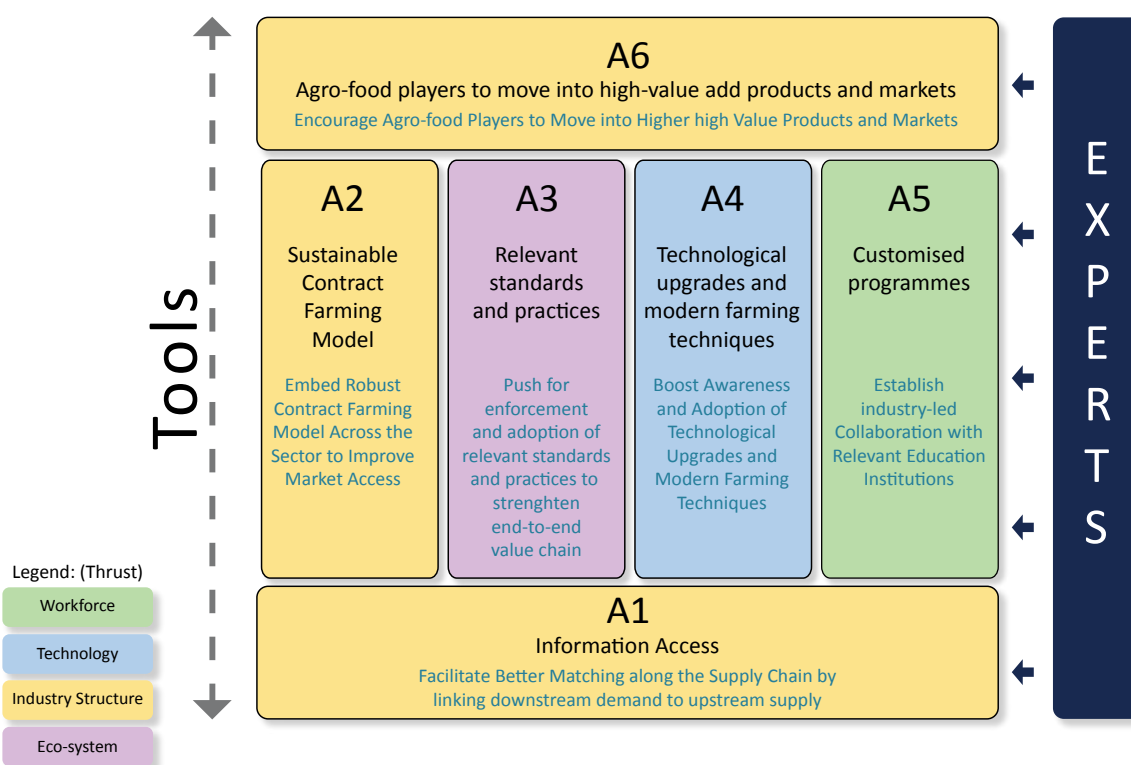
on industry profiling, data profiling for agro-based participants in Malaysia Agro Horticulture and Agro Tourism (MAHA) and various best practices documentation.

The 6-Priority Initiative Model

As illustrated below, 6 individual initiatives as identified in the MPB, attempt to develop and provide the experts, tools, resources, mechanisms, systems and connectivity that the farmers and the stakeholders can utilise in improving the productivities of their value chain.

These initiatives are linked with each other through their imperative exchange of information and how each of the initiatives interacts in activities that support and propel each other in achieving their individual goals. Initiative A1 casts a foundation for A2, A3, A4 and A5, whereas A6 would embrace the 4 vertical initiatives (A2, A3, A4 and A5) with support systems and strategic partnerships to energise and raise the total value addition of all of the activities of the 6 initiatives.

FRAMEWORK OF SECTOR-LEVEL PRODUCTIVITY INITIATIVES OF THE AGRO-FOOD PRODUCTIVITY NEXUS (AFPN)



Initiative A1

Initiative A1 attempts to develop an information exchange platform (Agro-food Information Tool Box), where the technical information service provider can deposit their information and technology which then can be accessed by the users (farmers, processors, marketers, etc.). When information is open, freely and easily accessible, the stakeholders will find their best role within the supply chain and improve productivity and competition.

Initiative A2

The Contract Farm Model has been a well-implemented and documented model for market access by the small farmers and marketers. Initiative A2 will examine and benchmark the various contract modalities to find the best suited Contract for Malaysian conditions. The Contracts may focus on approaches of market access, procurement logistics, transfer of technology or certification of quality standards, all of which would raise the quality of the crop product. With the development of this mechanism under the initiative, it will work to reduce risks in the implementations and operations of the Contracts.

Initiative A3

The impasse in the uptake of food safety and food quality certification among the food producers is due to the lack of demand pull and the compliance requirement of the regulators, the retailers and consumers. Initiative A3 attempts to address these laggards by creating a (social/communal) movement of demand awareness for certification of food safety and food quality, with the retailers and consumers. To do this, the initiative will examine the existing food quality certification scheme, MyGAP, Organics and Hazard Analysis and Critical Control Points (HACCP), to identify its functional role in implementing food quality standards.

Initiative A4

In the attempt to boost awareness and the adoption of modern farming techniques and technology, initiative A4 plans to develop an AgroFood Technology Exchange where effective technologies and affordable can be accessed by the Users. Both experienced and young entrepreneurs will be targeted by training programmes that will inculcate them with new and unknown technologies that would effectively raise their production productivity. New ideas such as an advance warning system (AWS), rain harvesting, remote sensing and geographical information systems, precision cultivation and intensive cultivation techniques would benefit the users. While other concepts like urban farming, vertical farming or farm factories would draw young entrepreneurs into farming.

Initiative A5

The mismatch of talent that the agricultural industry seeks against what the education institutions are producing, stems from the past hierarchy issues of agricultural policy, economic growth priorities and industries seeking the easy way out. These challenges will take some time to neutralise. Initiative A5 seeks to tackle and resolve the problem closest at hand, i.e. creating a structured internship programme for the appropriate (and effective) placement of interns in the industry. The project also will look into medium-term solutions to reintroducing apprenticeship for graduates into the industry, benefiting both parties in transfer of technology; inadvertently creating employment in the process.

Initiative A6

The work done in the four vertical pillars of A2 to A5, are supported by the information base of A1. Together they form the immediate structure in modernising the Malaysian Agro-food production system. Initiative A6 essentially encapsulates these initiatives' activities and bonds them together with supplementary connectors, e.g. logistics management, consultancy support, labelling and branding, information intelligence, start-ups and strategic partnership, etc. Additionally, the initiative will also tackle the contemporary issues of food and crop waste, consumer trends, building climate-resilient farming and moving from crop protection to mitigating environmental damage.

Optimising Poultry Farming With Closed-House Concept

To meet the demands for poultry products amidst a growing population, the supply side needs to be upgraded to elevate production and output. To counter the challenges that come with traditional farming such as risk of infectious diseases, and insufficient production output, Chop Cheong Bee Sdn. Bhd. (CCB) embarked on implementing the innovative closed-house concept.

Closed-House Concept: Multiplying Output and Reducing Cost

Sensor Technology

Integrated with cutting-edge sensor technology powered by EDGE Controller, which enables the sensors to be controlled on a single platform.

Temperature Regulation

The internal temperature will be adjusted accordingly with the external temperature to provide the optimal condition for the chickens to thrive and grow at a faster rate.

Thermometer Sensor

A thermometer sensor is placed outside the closedhouse to monitor the temperature changes and make the temperature adjustments according to the growth phase of chickens.

Evaporative Cooling System

If the temperature is hot outside, the temperature of the air conditioners inside the closed house is set at lower range with the help of the Evaporative Cooling System.

Less Labour Dependency

All these adjustments are done automatically through a designated system and reduces dependency on workers.

Feed and Water Automation

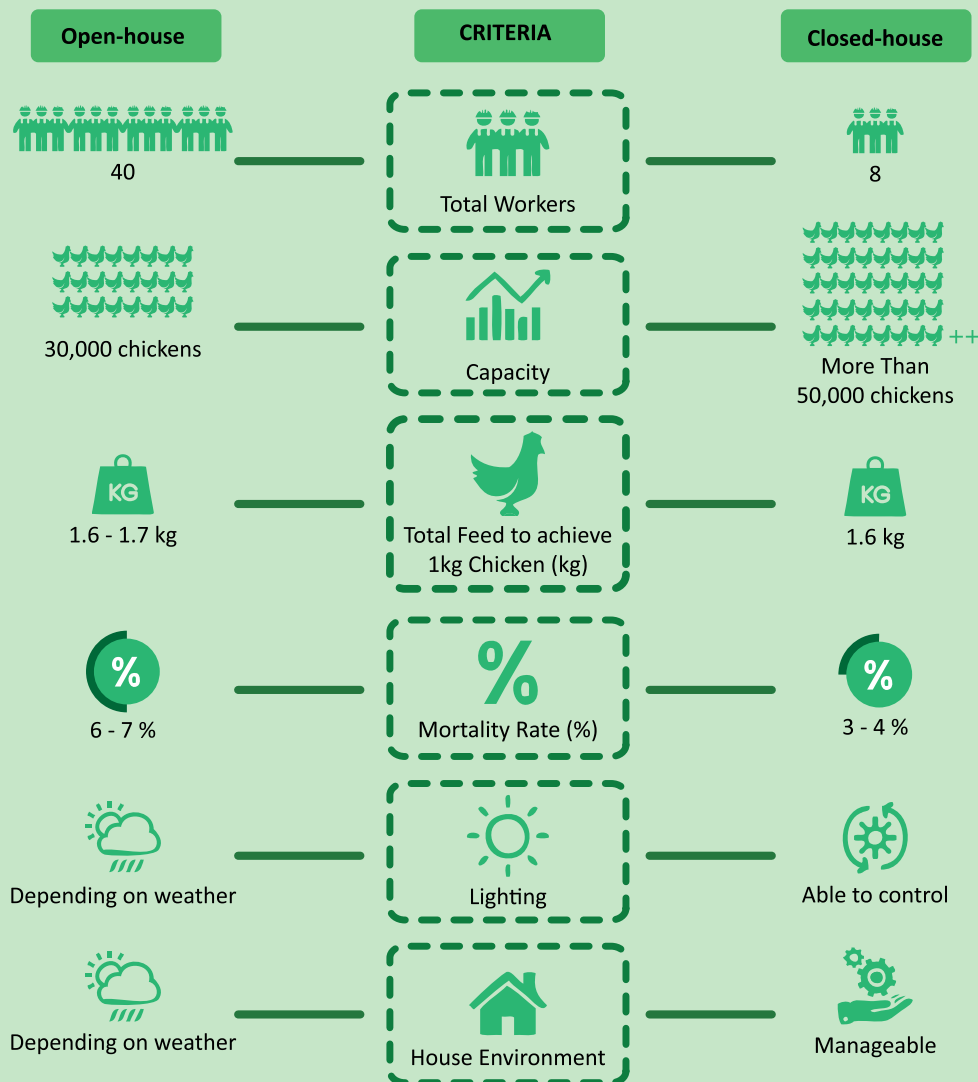
The auger system will bring feeds to the chicken feeder, filling empty feeders automatically. As for water, the chickens are taught to drink from the setup when thirsty.

Waste Management

Instead of a traditional dirt floor, CCB uses plastic flooring which allows solid waste to fall through and eases the cleaning process.



Open-house vs Closed-house concept



Developing Sustainable Closed-House Farming

Renewable Energy Sources

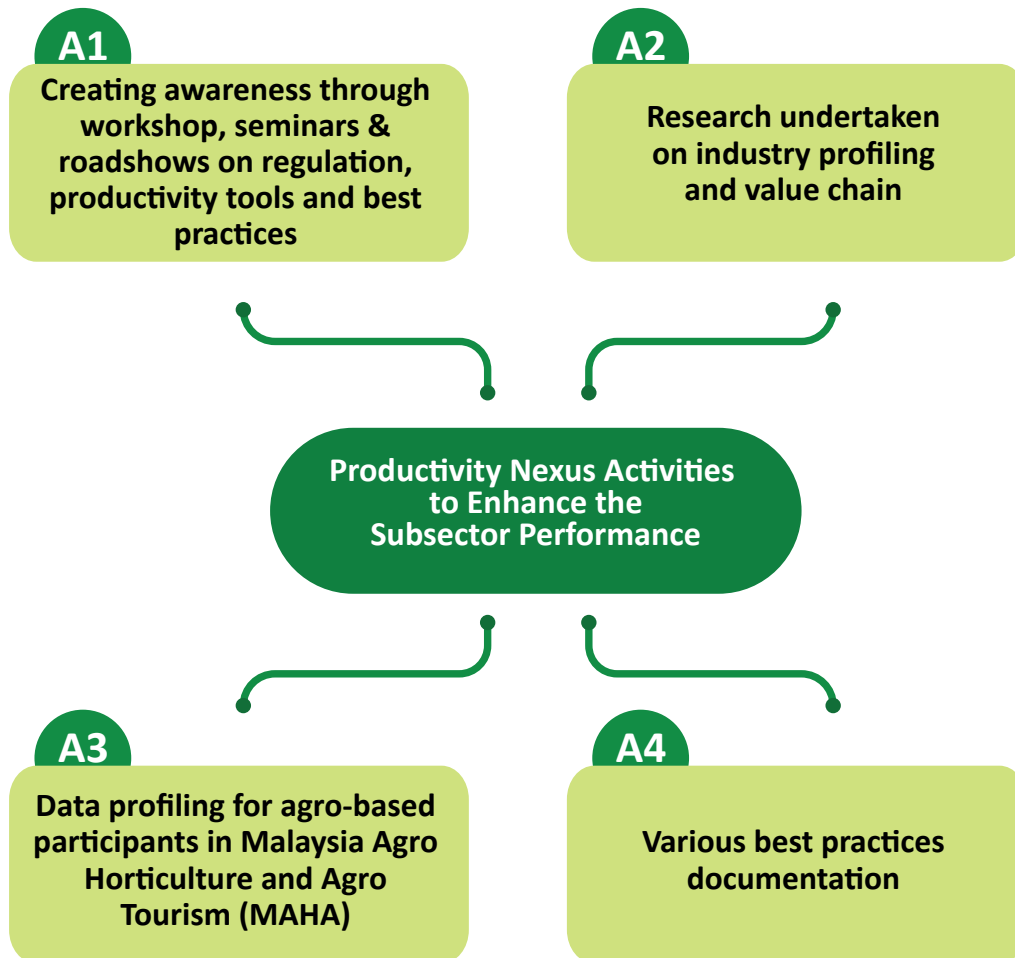
To use sensor technology requires a lot of energy, which is why CCB is looking into alternatives like solar energy with the help of TNB.

Augmented Intelligence

The latest technology collects data from the installed sensors, which will act as an input for the future Artificial Intelligence (AI) system implementation. The data obtained will be stored in the cloud where it can be retrieved in real-time.

Source : bond.mpc.gov.my

Agro-food Productivity Nexus Activities to Enhance the Subsector Performance



ELEVATING NATIONAL PRODUCTIVITY PERFORMANCE THROUGH SECTORAL GROWTH

Working hand in hand with industry stakeholders within these priority sectors and subsectors, the Government together with the Productivity Nexus have identified growth opportunities to spur sector level growth, empower enterprises and embrace knowledge-sharing for the betterment

of the economy and the country. Looking ahead, it is important to keep an eye on global market trends and use them as benchmarks to assess and accelerate Malaysia's potential economic growth in the coming years.

- Industry associations to be empowered as key change agents

- The Nexus' virtual centres will be led by sector champions

- Link performance management system to incentives

ROLE OF PRODUCTIVITY NEXUS



Support sector-level initiatives



Empower enterprises to help themselves



Enable enterprises through knowledge sharing

DESIRED OUTCOMES

- Buy-in that productivity has direct benefits for their companies
- Awareness of government resources
- Implementation of productivity enhancement projects at their companies



- Clear linkage between national productivity targets and strategy to reach targets
- Regular communication on productivity benefits at all levels of government
- Transparency in communication of key policy levers to be implemented to uplift productivity



- Awareness of benefits for improving individual productivity
- Professionalising & upskilling/reskilling of workforce



- Topic of productivity is 'top of mind' for Malaysians
- Public support of government initiatives to improve productivity
- Clear link between productivity and country's high income goal



9 PRIORITY SUBSECTORS

- Retail and F&B
- Electrical & Electronics
- Chemicals & Chemical Products

- Tourism
- Machinery & Equipment
- Agro-food

- Information & Communication Technology
- Professional Services
- Private Healthcare

Source : Malaysia Productivity Blueprint (MPB)





3

ENHANCING PRODUCTIVITY THROUGH BETTER GOVERNANCE

The Government proactively invested resources into identifying and implementing tools and programmes that work towards the enhancement of national productivity. In efforts to meet productivity benchmarks, the public sector's policies and regulations have had a significant impact on easing business environment in the business community, allowing domestic organisations to compete on a global level.

It is often said that the Government has no business being in business. But much to the contrary, without the Government's involvement, it would be very hard for businesses to thrive. The Government is able to facilitate a conducive environment through policies and reforms that allow for economic dynamism and productivity growth across all sectors. With this, Malaysia's national productivity and global competitiveness can reach greater heights.

Through governance, it is important to refine how the public sector operates in order to efficiently provide high quality goods and services to the public. To drive the momentum of productivity, the Government plays a central role in forming policies and regulations that propel both industry and economic growth. By promoting good regulatory practices from the public sector, the private sector can facilitate the way they conduct business and accelerate sectoral productivity and also national productivity performance.

OVERVIEW OF THE PUBLIC SECTOR

Public sector performance fundamentally depends on the Government's ability to deliver policy commitments for the benefit of the citizens.

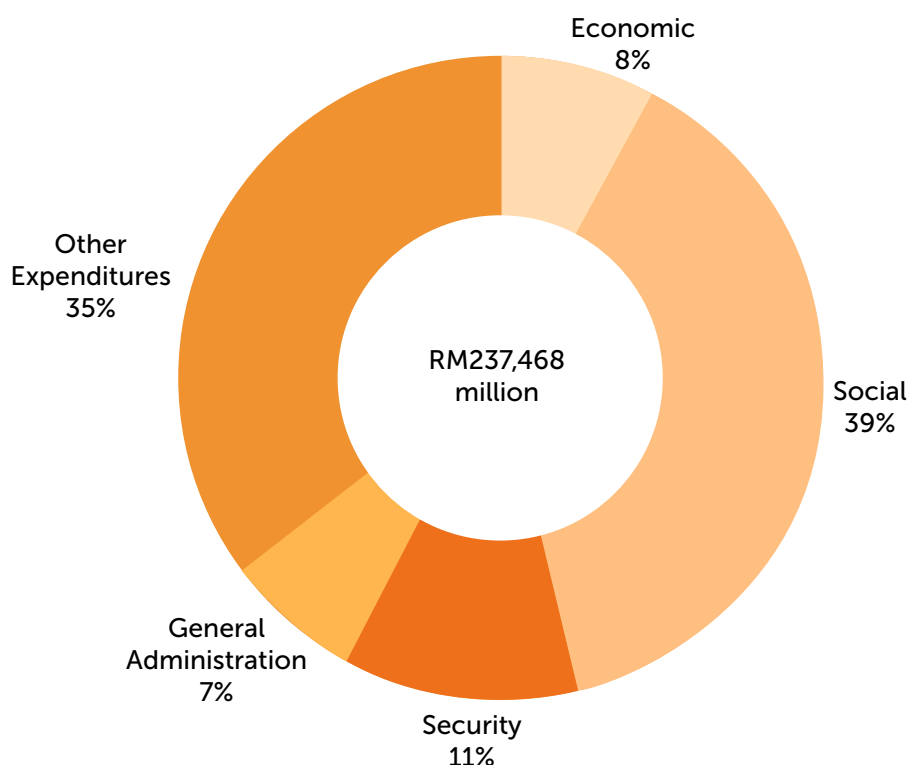
To provide high quality services at lower costs, the Government frequently undertakes public sector reform programmes to increase efficiency, effectiveness and transparency. However, in the absence of good quality information, the impact of these reforms can be difficult to determine.

Within the realm of public sector reforms, the Government has three main responsibilities including the provision of goods and services (e.g. education and health care); the regulation of interactions within the society and economy and the redistribution of income (e.g. through the tax and transfer system). Additionally, the Government is also responsible for managing risks, ensuring fairness in society, fighting corruption and protecting the environment.

Public Sector Expenditure






In 2018, the Government's operating expenditure was close to RM237,468 million and was distributed among the various economic sectors as shown in Figure 3.1. The social sector received the largest allocation with 39% of total operating expenditure (OE), followed by other expenditures (35%), security (11%), economic (8%) and general administration (7%).

Figure 3.1: Federal Government Operating Expenditure by Sector 2018



Source : Ministry of Finance (MOF)

Federal Government Operational Expenditure by Sectors and Subsector, 2018

	RM (Million)	Share (%)
 ECONOMIC	17,954	8
Agriculture and rural development	4,252	24
Energy and public utilities	329	2
Trade and industry	3,707	21
Transport	6,551	36
Communications	102	1
Environment	135	1
Others	2,878	16
 SOCIAL	91,263	39
Education and Training	54,227	59
Health	24,054	26
Housing	715	1
Others	8,413	9
 SECURITY	27,164	11
Defence	11,683	43
Internal Security	14,323	53
 GENERAL ADMINISTRATION	16,334	7
 OTHER EXPENDITURES	82,735	35

Source : Ministry of Finance (MOF)

Total expenditure for the social sector was estimated at RM91,263 million, which was allocated for education and training, health, housing and others. The main aim was to accelerate human capital development and improve the people's wellbeing and quality of life through the betterment of education, training, health services and rural development.

Of the total operating expenditure for the social sector, 59% was spent on the education and training subsector. These were specifically channelled towards Technical and Vocational Education and Training (TVET) programme to enhance high-skilled talent development that

meets industry requirements. The operating expenditure also took into account the expected 16.2% increase of GDP in 2018 to cater for emolument, supplier and services and debt service charges.

There are a total of 1,713,725 million public servants in 2017 compared to 1,712,407 million in 2016, an increase of 0.1% having delivered a diverse range of services across numerous ministries and agencies. The largest number is from the education sector, with 30.3% of total employees followed by security at 20.9%. Figure 3.2 shows the distribution of public service employment across a range of sub-programmes.

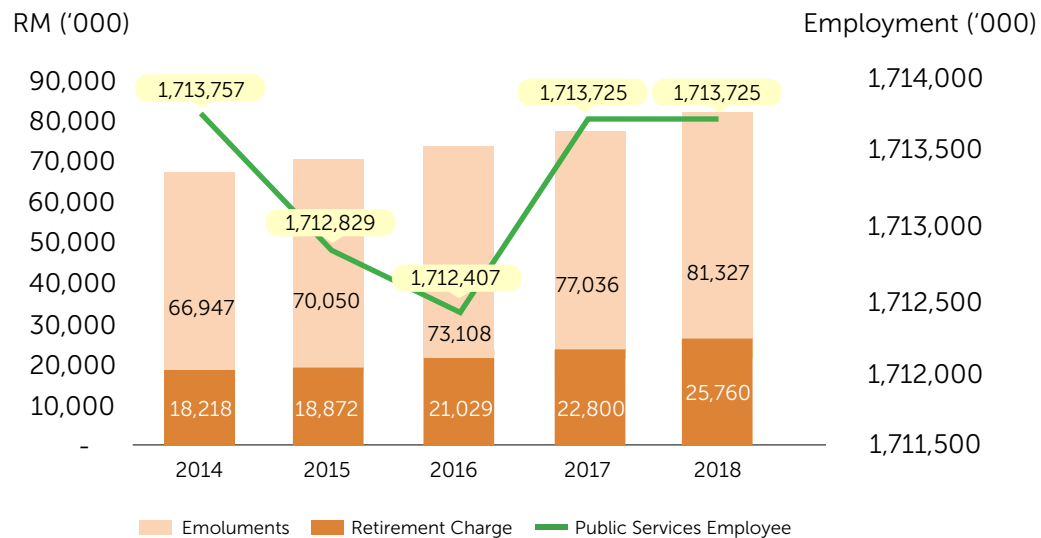
Figure 3.2: Posting Trends by Sector 2016-2017

SECTOR	2016	2017	Growth (%)
Education	515,801	519,642	↑ 1.5
Health	241,199	240,599	↓ -0.08
Social	169,024	180,318	↑ 2.0
Security	355,448	358,376	↑ 3.0
General Administration	261,105	251,334	↓ -5.8
Economy	169,830	163,456	↓ -4.4
Total	1,712,407	1,713,725	

Source : Anual Report, Public Service Department (PSD)

Despite the employment trend among public servants remaining relatively unchanged, the Government expenditure in terms of emolument and retirement charges gradually increased. Due to this, measuring public service productivity becomes essential to improving the sector's performance to justify the increase in emoluments (Figure 3.3).

Figure 3.3: Emoluments, Retirement Charge and Public Service Employees, 2014-2018



Source : Ministry of Finance (MOF)

PUBLIC SERVICES PRODUCTIVITY

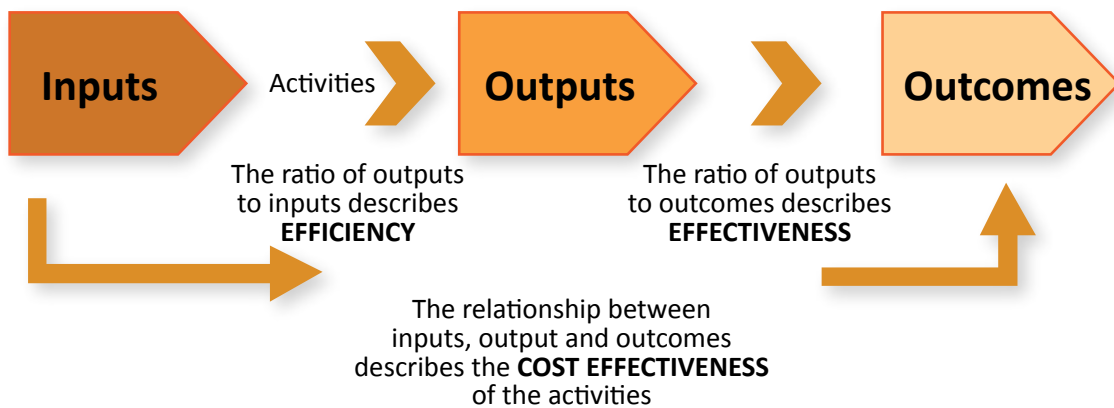
Productivity of public services measures the efficiency of the public sector in utilising its resources (inputs such as labour and capital) to produce goods and services (outputs). It is typically expressed as a ratio of outputs to inputs. In the context of public services, greater productivity means using less of what the society values to obtain more of what it wants, over time. When measured properly, productivity captures notable changes in both the volume and quality of services provided.

Higher productivity gives rise to more choices and greater sustainability, where the more productive the Government departments and agencies are,

the more high-quality public services offered to the people. With pressures on public spending to deliver on quality, affordability and efficiency, the Government has made it a priority to raise productivity levels. This will in turn free up more revenue, which can be used to build on other existing or new services.

Productivity improvements release resources that can be used for other quality services, investment in new infrastructure or tax relief for citizens. It is clear to see why measuring the productivity of public services can make decisions more transparent and trade-offs clearer.

Figure 3.4: The Relationship Between Inputs, Outputs and Outcomes



Essentially, the public sector is responsible for producing a large proportion of goods and services for the people. Its consumption and investments contribute to nearly 20% of Malaysia's economy, providing a large majority of health and education services, welfare administration, as well as the justice and security system.

In providing all these public services, there is a responsibility to ensure that the community receives the most value. Officials need to be concerned with the efficacy and cost-effectiveness of services, as well as how efficiently they are delivered (Figure 3.4).

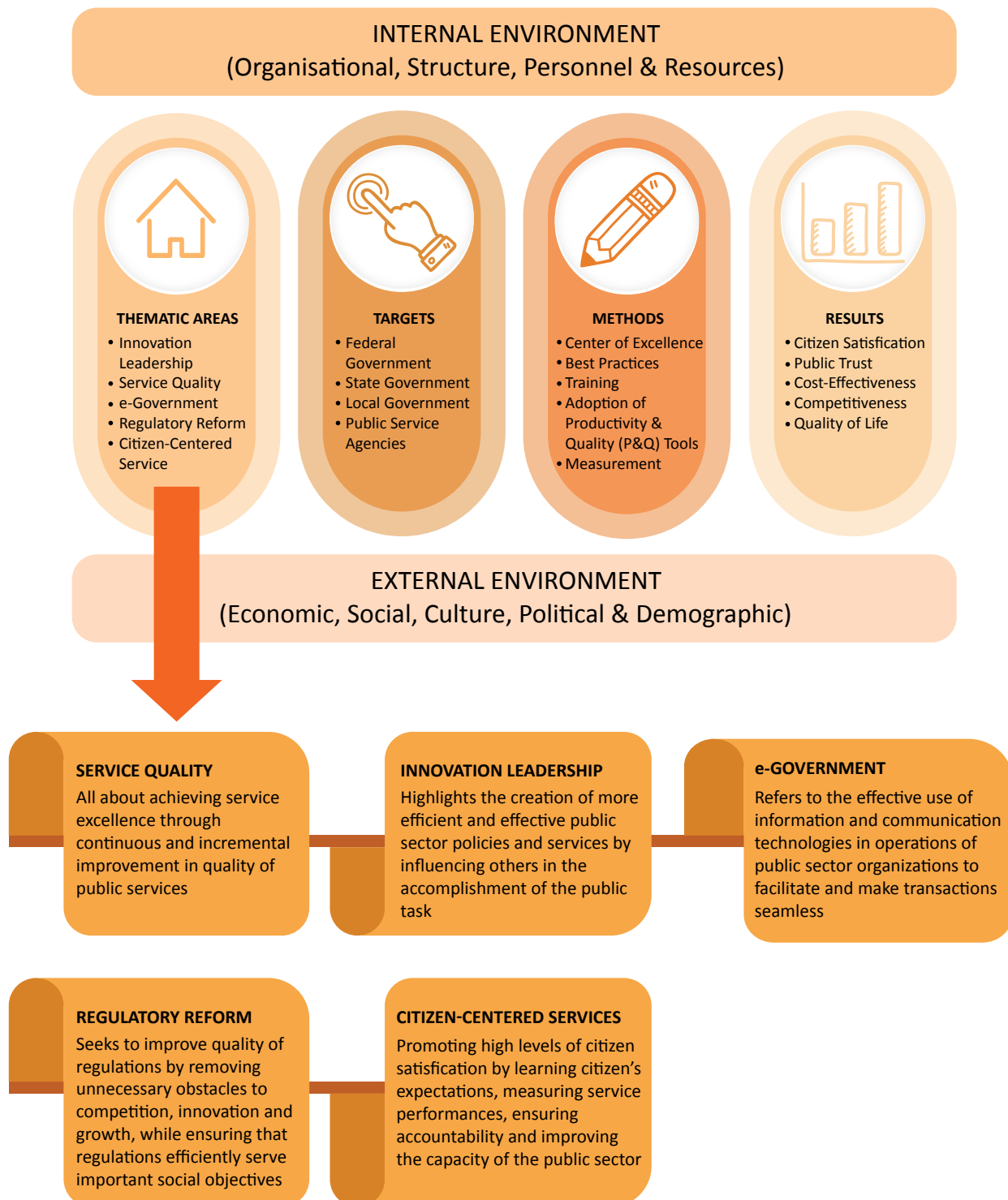
PUBLIC SECTOR PRODUCTIVITY FRAMEWORK

Substantial improvements in public sector efficiency and effectiveness have been made possible by increasing public servants' motivation and skills, strengthening management systems and through performance measurement. Under these key initiatives, the public sector has also introduced incentive schemes, restructuring of job scopes and work processes, reengineering of bureaucracy and budget reform, improvement of service quality, and the application of technology and operational innovations.

Building on these improvements, the public sector productivity framework outlines further steps that need to be urgently taken to address and refine the most essential elements in relation to the themes of innovation leadership, service quality, e-Government, regulatory reforms and citizen-centered services.



Public Sector Productivity Framework



Source : www.apo_tokyo.org/

Innovation Leadership

Innovation leadership embodies the influencing of decision-makers and employees in achieving Government mandates, accomplishing public sector tasks and creating more efficient, effective policies and services that meet the interests and preferences of the public.

There have been a few discernible trends with respect to public sector leadership development in Organisation for Economic Cooperation and Development (OECD) countries. Firstly, many have developed comprehensive leadership development strategies, including a public-sector leadership competency model.

For example, in 2004, Canada, firstly has established a leadership development framework for the Federal public service based on 4 key

leadership competencies of strategic thinking, engagement, management excellence and public sector values and ethics. Key leadership competency profile was subsequently revised in 2015 to reflect the complexities and challenges of the evolving Federal public service leadership roles.

Secondly, a typical response has been to create new institutions for leadership development, such as the Canada School of Public Service, the now-defunct National School of Government in the UK, or the National Council for Quality and Development in Sweden. Thirdly, in many instances, Governments have expanded their existing management training programmes to incorporate leadership development.



Leadership Development Framework for Public Service in Canada

Along with the changes that come with globalisation, technology advancements and changing expectations, Canada's Public Service has been evolving. These forces and factors are demanding new responses from everyone involved and call upon the public sector's ability to manage a more diverse workforce within a dynamic environment.

In this respect, the leadership development framework for Canada's Public Service is designed to serve several purposes that include setting out principles, describing respective roles and responsibilities and finally proposing specific objectives for the Public Service with regards to leadership development, expected results and measurement of impact.

Five Key Principles of Canada's Leadership Development Framework are:

- i. **Key Leadership Competencies:** People Management - Forms the foundation of leadership development in the public service.
- ii. **Leadership Competencies:** At Workplace - Developed primarily in the workplace, but also supported by those in the classrooms.
- iii. **Leadership Skills:** Building leaders with a variety of skills and a shared set of core values.

iv. Individual Employees Leadership Development:

Individual employees, with support from their managers, have a primary responsibility for their own leadership development.

- v. **Leadership Development:** Equips the public service with the ability to deliver results for Canadians while enriching individual careers.

Key Leadership Competencies Profile

In March 2015, the Clerk of the Privy Council approved a new Key Leadership Competency profile, which is aligned with the Clerk's vision for a public service that is collaborative, innovative, streamlined, high performing, adaptable and diverse. Among the best practices of effective behaviours for directors that can be learned from this journey includes creating a vision and strategy, mobilising people, upholding integrity and respect, collaborating with partners and stakeholders, promoting innovation, guiding change as well as achieving results.

During the process of leadership development for public service in Canada, important aspects to consider and follow include communicating with clarity and conviction, continuous learning, teamwork and a commitment towards citizen-focused services.

Source : <https://www.canada.ca/en/treasury-board-secretariat/services/performance-talent-management/leadership-development-framework-public-service-canada.html#Toc234979998>

Service Quality

In previous years, sector efficiency, performance and service quality were the main challenges faced by Government administrators. Accordingly, a customer-oriented service mindset was instilled into all tasks undertaken by the public sector and relevant organisations to address issues from a customer's perspective and enhance public sector productivity.

When going to the designated public sector offices for matters of public affairs, people often had to visit various departments, repeatedly filling

out similar forms, going to and from departments with documents due to no clear demarcation of department's jurisdiction.

Looking at this from the customer's point of view, the Government's customer service could be enhanced with regards to daily interactions, on the basis of administration and provision of accurate information. Attention to detail can go a long way in ensuring the smoothness of service and a good reception from the customers.



Kaizen Improving Quality and Efficiency of Public Services in Saitama City, Japan

In 2009, Saitama City openly declared its commitment to adopting Kaizen, which is a Japanese term for 'quality improvement'. The main objectives of the Kaizen implementation are to improve public services and satisfaction of citizens and employees, to increase job productivity and promote the Kaizen mindset among staff members. All 9,000 staff members of Saitama's Council were encouraged to identify opportunities and solutions for improving the efficiency and quality of public services at the council. As result, more than 6,000 Kaizen practices were submitted in 2016, of which the 6 best examples of Kaizen practices selected were:

- i. **Department of Early Childhood Development, Childcare Service:** Reducing injuries of younger children from falls
- ii. **Fire Services:** Making disaster prevention training effective for young children
- iii. **HR Department, Recruitment Services:** Sharing of work progress through a 'communication board'
- iv. **Neighbourhood Office of Urawa Ward:** Improving the planning of community events
- v. **Public Works Division:** Organising information through colour coding for easier and better access by citizens
- vi. **Community Service Office, Minami Ward:** Reducing waiting times for citizens to receive new social security and tax number card

Lessons learnt from the Kaizen implementation included the harnessing of ideas, creativity and the energy of staff members to design and implement better solutions. The enthusiasm shown by the 6 teams presenting at the 7th Kaizen Day showed that quality improvement does not have to be a dull paper-based exercise.

In Saitama City, all staff members are expected to be innovative to improve performance. Even front-line employees know that their ideas will be taken into account and valued. Successful innovations need to be shared and celebrated, which was carried out brilliantly at the Saitama Kaizen event.



Source : <http://www.city.saitama.jp/006/007/014/007/p050857.html>

e-Government

World Bank defined e-Government as government agencies applying information technologies (such as Wide Area Networks, the internet and mobile computing) to transform relations between agencies and citizens, businesses and other arms of the Government. e-Government essentially focuses on the effective use of information and communication technologies in the operation of public sector organisations, so as to improve overall productivity.

These technologies can serve a variety of different purposes, including better delivery of government services to citizens, improved interaction with businesses and industries, citizen empowerment through access to information and more efficient governmental management. As a result, there would be less corruption, increased transparency, greater convenience, revenue growth and/or cost reductions.

To see this through, Malaysia has been supporting the 2030 Agenda for Sustainable Development in line with the strategies and initiatives of the 11MP. This agenda introduces the concept of data-driven governance and highlights the challenge to significantly increase the availability of high-quality, timely, reliable and disaggregated data by 2030.

In 2018, the United Nations e-Government Survey analysed governments' efforts across

the globe towards increasing accountability, effectiveness, inclusiveness, openness and transparency by assessing multiple features of the government platforms and their online services. This is contributing to enhancement of these key governance principles.

For instance, detailed information on government websites about institutional arrangements, the availability of mechanisms for providing feedback or filing complaints about the quality of services, the ability to contact government agencies, among others, are contributing to transparency and openness of governments. Likewise, the availability of legal information and state regulations preventing discrimination, protecting against misuse of personal data and ensuring digital/cyber security for all citizens help to improve transparency and trustworthiness.

The survey also revealed that all 193 Member States have national portals and back-end systems automating core administrative tasks, improving the availability of public services and promoting transparency and accountability. Although not all the countries provide online transactional services, the coverage and availability of services in countries that do provide these services has increased from 18% to 47% in all service categories when compared to 2016 (Table 3.1). The 3 most commonly used online services in 2018 were paying for utilities (140 countries), submitting income taxes (139 countries) and registering new businesses (126 countries).

Table 3.1: Trends in Online Transactional Services

Trends of transactional services online	2014	2016	2018	Increase in percent of countries offering the service	
				2016 - 2018	2014 - 2018
Pay for utilities	41	104	140	26%	71%
Submit income taxes	73	114	139	18%	47%
Register a business	60	97	126	23%	52%
Pay fines	42	76	111	32%	62%
Apply for birth certificate	44	55	86	36%	49%
Apply for marriage certificate	39	53	82	35%	52%
Register motor vehicle	33	47	76	38%	57%
Apply for driver's licence	29	38	62	39%	53%
Apply for personal identity card	27	31	59	47%	54%

Source : 2018 United Nations e-Government Survey



Blockchain For Identity Management and Financial Inclusion: Finland Case Study

From January 2014 to June 2017, the Finnish immigration authority received more than 41,000 applications for asylum. Those who were accepted faced long waiting times to process residence permits and local identity papers. During the waiting period, refugees did not have access to the banking system which meant that monthly Government-to-Citizen payments had to be made in cash.

In 2015, the Government partnered with MONI, a Finnish start-up, to launch a pilot programme for digital financial services that enable refugees to receive money and pay bills without opening a bank account. MONI developed a prepaid debit card linked to a unique digital identity stored on a blockchain, which does not require a bank account or identity papers.

This digital service simplifies social welfare payments between the Government and the refugees, creating a digital trail that allows for credit scoring and increased access to other financial products such as credit. Account holders can apply for a loan through their mobile phone, either from friends or financial companies. The digital trail allows users to lend money to each other, setting a maximum amount. Loans between users have no fees and no interest and the service is free to use.

As of September 2017, the programme had about 4,000 active accounts. Activity started to pick up as the users began to find jobs, pay bills and transfer money to relatives. In the 4th quarter of 2017, the programme was launched across the European Economic Area (EEA), allowing adults over 18 to sign up online using a phone number and a residential address.

Source : https://publicadministration.un.org/egovkb/portals/egovkb/documents/un/2018-survey/e-government%20survey%202018_final%20for%20web.pdf

Regulatory Reform

Regulatory policy has already made a significant contribution to economic development and societal well-being. Economic growth and development is promoted through the contribution of regulatory policies towards structural reforms, the liberalisation of product markets, international market openness and a less-restricted business environment for innovation and entrepreneurship.

Regulatory policy has improved the rule of law and appeal systems through initiatives to simplify

and ease access to it. These efforts increasingly support quality of life and social betterment through increased transparency of regulation that reduces red tape for citizens. In a bid to streamline regulation, Malaysia's regulatory reform has journeyed from privatisation, deregulation and ad-hoc initiatives, to a systematic whole-of-government application for regulatory governance practices. Coming so far and having this integrated platform builds a foundation for further improvements and indicates a strong commitment to better regulatory regimes.

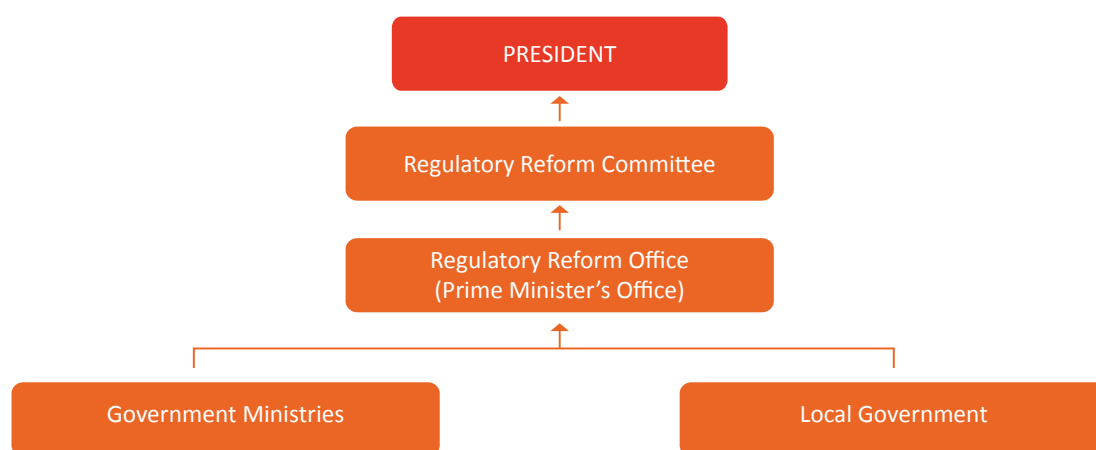


Regulatory Reform: Korea's Experience

The Asian financial crisis provided the push for the Korean government to launch a comprehensive regulatory reform programme as a vital economic recovery measure in the late 1990s. To boost economic recovery, the Basic Act on Administrative Regulations was enacted in 1997 to serve as a legal basis for regulatory reform. The Basic Act on Administrative Regulations included several principal measures such as the new regulatory registry system, regulatory impact analysis (RIA), review of new regulations, quality management of existing regulations and sunset review of regulations.

- Evaluate new regulations and those to be strengthened
- Evaluate existing regulations, drafting and executing comprehensive regulatory reform plan
- Register and publicise regulations
- Gather and consider opinions on regulatory reform
- Inspect and evaluate actual regulatory reform progress at each administrative level

The Korean Regulatory Reform System



Source : <http://www.better.go.kr/fzeng.page>AboutRRC.laf>

The Basic Act on Administrative Regulations came into force in 1998, with the establishment of the Regulatory Reform Committee (RRC). The RRC's role is to:

- Determine basic direction of regulatory policy and research/development of regulatory systems.

With the introduction of the Basic Act, all central administrative agencies are required to prove the legitimacy, necessity and goodness-of-fit of regulations they seek to introduce and to conduct their own internal review prior to the final review of the RRC. Towards the end of 1999, the number of regulations in Korea reduced to 6,308 from 11,125 in January 1998, of which 2,411 were modified.

Source : Report on Modernisation of Regulation 2018, MPC

Citizen-centered Services

Delivering services to citizens is at the heart of what most governments do. Today, citizens expect more transparency, accessibility and responsiveness from the public sector. Catering

to this, many governments across the globe have made efforts to improve service delivery through online portals or “one-stop shops” that operate like centralised call centres.

A Citizen-centric Approach to Delivering Government Services

A survey conducted by the McKinsey Center for government revealed that citizens continue to feel frustrated by complicated or confusing websites and often have to speak to multiple parties before their query is resolved. This leads to less satisfaction among citizens as well as increased costs with delivery services across multiple channels.

Drawing on the experience of the citizens, these 4 elements of implementing transformation efforts are aimed at increasing satisfaction and reducing costs:

i. Measuring Citizen Satisfaction

- Let citizens tell you what matters most but avoid asking them directly
- Identify natural break points in customer satisfaction
- Combine public feedback with internal data to uncover hidden pain points

ii. Understanding the Entire Citizen Experience

- Develop a map of how citizens experience those journeys when seeking a service
- Identify the internal processes that shape those journeys and which matter most

iii. Translating Improvement Opportunities into Front- and Back-end Solutions

- Proactive notifications and status updates
- Improved functionality of self-serve channels
- Polite, professional and consistent communication

iv. Thinking Long Term

- Measure and manage performance
- Build the right governance system

Transforming service delivery is not easy, but it can be achieved through a clear and proven roadmap. By taking a citizen-centric approach, leaders can better understand the needs of the citizens and cater to them through service-delivery improvements. This would in turn win them over through increased satisfaction and reduced costs.

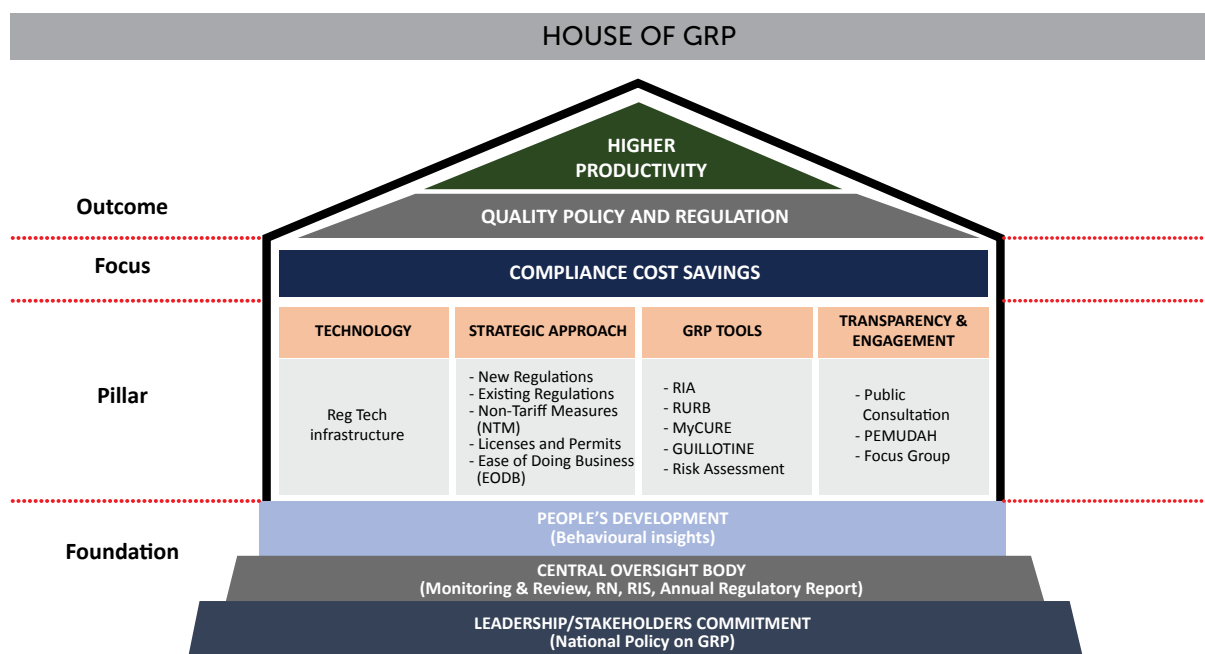
Source : <https://www.mckinsey.com/industries/public-sector/our-insights/implementing-a-citizen-centric-approach-to-delivering-government-services>



DRIVING MALAYSIA'S BUSINESS EFFICIENCY

As per the public sector productivity framework, regulatory reforms is one of the focal points to consider for the creation of a better regulatory environment for both businesses and citizens. This leads to lower costs and higher productivity for businesses, thereby attracting both domestic and international investments as well as innovations. As a result, the private sector is able to expand and this creates more jobs. This would increase competition in terms of pricing as well, leading to better prices, better quality and wider choices.

On the other hand, inefficient regulations can limit the ability of domestic firms to diversify and compete abroad as well as at home. Improving the regulatory environment for businesses, implementing good regulatory practices is seen as necessity. With that, a framework on Good Regulatory Practices (GRP) has been developed that is known as The House of GRP. Through this framework, initiatives, programmes and activities are implemented at the national and state level.



Source : <https://www.mckinsey.com/industries/public-sector/our-insights/implementing-a-citizen-centric-approach-to-delivering-government-services>

National Policy on Good Regulatory Practices (GRP)

The National Policy on GRP aims to promote a regulatory framework that is effective, efficient and accountable in support of greater policy coherence. The principles and processes apply to the amendment of existing regulations and the development of new regulations by all Federal Government ministries, departments, statutory bodies and regulatory commissions in Malaysia.

Efficiency and effectiveness are important because there are limits to the amount and types of regulations that are able to be absorbed by economies and enforced effectively by the Government. While regulations can bring benefits, any unnecessary costs and inappropriate

regulation can stifle economic growth by putting obstacles in the way of doing business and creating negative environments. Enforcing regulations also places heavy demands on the Government administration, which is why it is crucial that they are well thought out and formulated.

To accelerate economic growth, the Government places precedence on facilitating GRP. With regards to this, the initiatives undertaken include Regulatory Impact Analysis (RIA), Cutting Red Tape (MyCURE), Reducing Unnecessary Regulatory Burden (RURB), Modernising Business Licensing (MBL) and Non-Tariff Measures (NTMs).

Principles of National Policy on GRP

The National Policy on GRP establishes that all Federal Regulators must ensure that:

1. Government intervention is justified and regulation is the best alternative addressing defined problems with clearly established objectives.
2. Stakeholders are effectively consulted and have an opportunity to participate in the regulatory development process.
3. Impact analysis is conducted to demonstrate that benefits outweigh the costs to citizens, Government and businesses.
4. Adverse impacts on the capacity of the economy to generate wealth and employment are minimised and no unnecessary regulatory burden is imposed on any party. In particular, regulators must ensure:
 - i. All regulations implemented are supported by appropriate legislative provisions;
 - ii. Information and administrative requirements are limited to what is absolutely necessary and impose the least possible cost;
 - iii. Regulatory initiatives are not based on narrow interests of particular interest groups but rather address overall national concerns; and
 - iv. Special circumstances of small businesses are addressed and equivalent means that conform to regulatory requirements are given consideration.
5. Systems are in place to manage regulatory resources effectively.

Source : Report on Modernisation of Regulations 2018, MPC

Regulatory Impact Analysis (RIA)

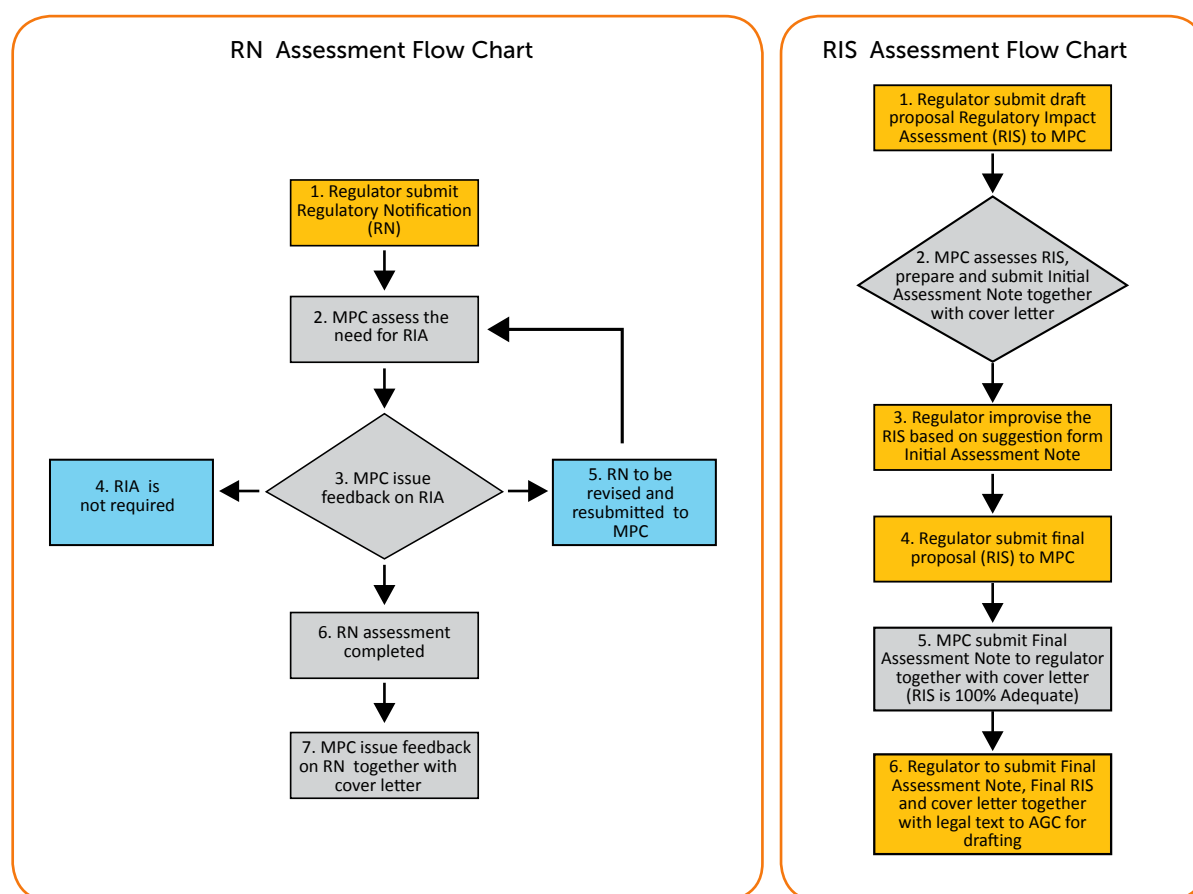
To ensure the implementation of high quality regulations in Malaysia, MPC has introduced Regulatory Impact Analysis (RIA). RIA is a process of systematically identifying and assessing the expected effects of regulatory proposals, using a consistent analytical method such as cost-benefit analysis (CBA). RIA is a comparative process, which determines the underlying regulatory objectives and identifies all the policy interventions that can achieve the targeted objectives. These potential alternatives must all be assessed using the same method to inform decision-makers about the effectiveness and efficiency of different available options, allowing only the most effective and efficient options to be systematically chosen.

To promote transparency in formulating policies, RIA should be integrated with public consultation. This two-way process is useful as the Government can welcome the feedback and views of businesses and the public. These insights can elicit a better understanding of those who will be impacted by the regulation and its potential repercussions. This can shine a light on the regulations that are the most efficient and effective before introducing

them. An efficient regulation achieves the set objectives at the lowest possible cost, positively impacting all members of society.

Under the National Policy on GRP, regulators are required to notify MPC on proposals to introduce new regulations or amend the existing one by filling in a Regulatory Notification (RN). Through the RN, MPC will determine if RIA is required. If RIA is required, regulators need to submit the Regulator Impact Statement (RIS) to MPC which will examine for compliance with adequacy criteria (fulfill all 7 elements of RIA). Exemptions from RIA are given if the impact of the proposed regulatory action is minor in nature and does not substantially alter the existing arrangement. Exemptions are also allowed for any regulations made for the purpose of security. In some cases, regulators may also withdraw the RN from consideration if they decided that they are not ready to proceed with the proposed regulation. This process is defined in Figure 3.5 on implementing the regulatory process management and preparation of RIS which is also provided in Best Practice Regulation Handbook prepared by MPC.

Figure 3.5: Regulatory Notification (RN) and Regulatory Impact Statement (RIS) Flow Chart



For the year 2018, MPC received 75 RNs from 49 regulators as compared to 70 RNs received from 14 regulators in 2017 (Table 3.2). This trend is encouraging as it indicates an increasing awareness of GRP among regulators.

Table 3.2: GRP Activities: RIA, 2014-2018

No	Status of Regulatory Proposal	2014	2015	2016	2017	2018	Total
1	RN Received	40	55	75	70	75	315
2	Exemption (RIA is not Required)	8	15	16	10	20	69
3	RN Withdrawn	0	5	18	4	1	28
4	RN in Progress	5	2	9	0	6	22
5	Proposal Undertaking RIA in Process	27	33	32	56	48	196
6	RIS Submission	6	6	21	25	16	74
7	RIS in Progress	4	0	8	9	7	28
8	Regulatory Coordinators Registered	297	319	357	332	387	N/A
9	Number of Regulators Submitted RN	17	11	18	14	49	N/A
10	Number of Regulators Submitted RIS	8	3	6	3	15	N/A

To further build on the awareness of RIA among regulators, outreach and capacity building programmes are an integral part in the implementation of the National Policy on GRP. Various awareness and public outreach programmes were undertaken from January to December 2018.

Table 3.3: Awareness and Public Outreach Programmes on RIA, 2018

No	Programme	No. of Programme
1.	Seminar	3
2.	Advisory Services	50
3.	Hands on Workshop on RIA	21

Cutting Red Tape (MyCURE)

The Cutting Red Tape (MyCURE) programme implemented by MPC is aimed at training regulators to cultivate data usage before making any decisions or suggestions for improvements. Additionally, public consultation initiatives are also encouraged to ensure that actual issues or problems can be investigated and resolved more effectively.

The issues related to the bureaucracy usually focus on aspects like regulatory inefficiencies, repeated work processes and excessive documentation requirements that are unnecessary. This excessive regulation of official rules that prevent or slow down actions or decisions, is also known as 'red tape'.

The Implementation of MyCURE is done through a systematic approach, which follows the Define, Measure, Analyse, Improve and Control (DMAIC) process. It is disclosed to the regulator through the following phases:

- i. Definition of Problems and Mapping Processes;
- ii. Data Collection and Compliance Costs;
- iii. Data Review and Validation; and
- iv. Identify Benchmarking Study and Suggesting Improvements.

In 2016, the MyCURE programme was implemented to address bureaucratic issues at the federal level through the PEMUDAH platform. Following its success, the MyCURE programme was introduced to several states including Kedah, Pahang, Perak, Penang and Perlis.

The success of the MyCURE programme is due to the dedication to its implementation, starting from the selection of the project titles till the preparation of project group members. With the help of appointed facilitators, phases of the MyCURE programme have been implemented according to plan. All project groups fully cooperated during the learning or presentation sessions, thus easing the process.

Table 3.4: Implementation of MyCure Programme, 2016-2018

Year	Category	No. of Projects	Total Compliance Cost (RM Million)
2016	Federal	6	330.4
2017/2018	States	26	54.78

The MyCURE programme was further expanded to the ministry level in order to strengthen and transform the public service delivery system. The Ministry of Water, Land and Natural Resources (KATS) became the first ministry to adopt the MyCURE programme and fully cooperated in its implementation.

The Travel Cycle of the MyCURE Programme at Ministry Level

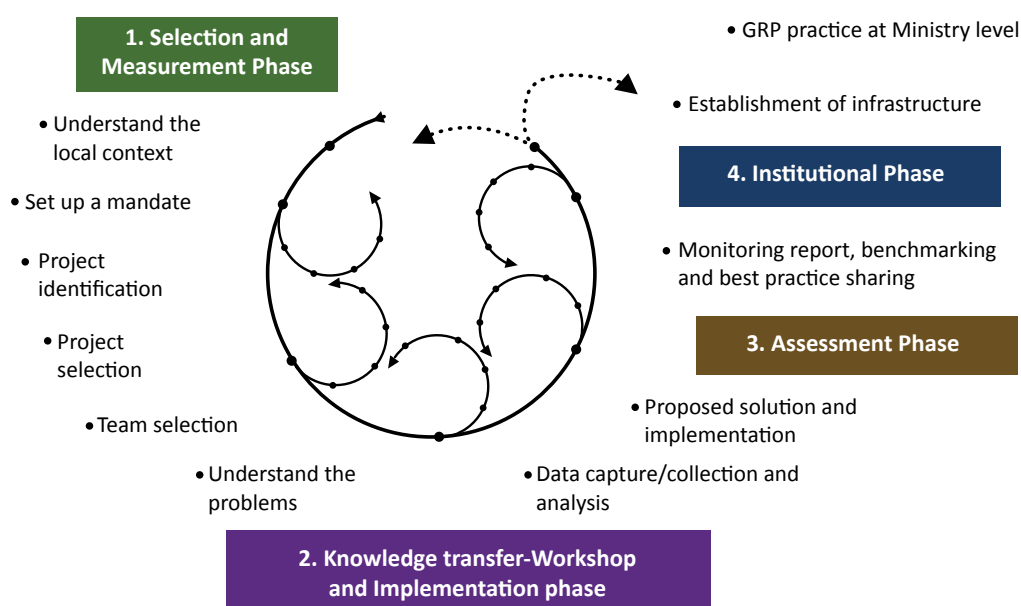


Table 3.5: MyCURE Projects Implemented at Ministries

No.	Agency	Title
1	Forestry Department Peninsular Malaysia (JPSM)	Delay in Approval of Transferor License
2	Department of Director General of Lands and Mines (JKPTG)	Delay of Sand Sea License Production under the Continental Shelf Act 1966
3	Department of Director General of Lands and Mines (JKPTG)	Delayed Approval for Federal Land Lease Approvals
4	Department of Irrigation and Drainage (JPS)	High Work Change (VO) In Work Contract & Delay Processing Work Change Application
5	Department of Mineral and Geoscience Malaysia (JMG)	Delayed Issue of Approval Letter of Mining Operation Scheme under Section 10 of the Mineral Development Act 1994 within 30 days
6	National Water Services Commission (SPAN)	Delay in Applying for a Permit Application and a Class License

Among the benefits of implementing the MyCURE programme is that it is not only improving existing work processes or services, but also helping direct regulators in identifying and conducting regulatory reviews on their own initiatives. Through MyCURE, simplified work processes can be used as examples and replicated by other similar organisations or agencies. All in all, the programme reduces compliance costs and enhances operational efficiency through proposed improvements.

For 2019, a total of 20 MyCURE projects will be implemented for the states of Johor, Negeri Sembilan and Selangor. There will also be 1 project from the Ministry of Agriculture and Agro-based Industry, targeting a compliance cost savings of RM60 million. With the implementation of the MyCURE me at the state and ministry level, the hope is that the regulators and MyCURE practitioners will practice improvements to processes and regulations so as to enhance productivity and competitiveness.

Reducing Unnecessary Regulatory Burdens (RURB)

Regulation is a crucial mechanism for attaining the social, economic and environmental policy objectives set by the Government. Government ministries, agencies, or organisations are empowered by legislations to administer and enforce regulations. It is then the role of the regulators to ensure that businesses comply with the regulations.

A regulated business complies with regulations through regulatory instruments such as licences, permits, registrations and notifications. However, poorly designed regulations and their weak enforcement results in unnecessary regulatory burdens and incurred costs such direct financial costs, compliance costs, long-term structural costs and hassle costs. If these costs could be reduced, the savings could be used for more productive business purposes.

The RURB methodology was developed by MPC based on advice from the international expert and has been applied widely across various economic sectors and industries in Malaysia. The unique value proposition of this methodology is that it addresses issues with an 'outside to inside' approach, involving collaborations between businesses and regulations to find solutions to challenges.

The application of the methodology starts with identifying and validating the unnecessary regulatory burdens experienced by businesses. These issues are then highlighted through public consultations with key stakeholders. Subsequently, the businesses and the regulator collaborate to develop proposed solutions. The most practical solution would be recommended based on cost-effectiveness analysis. In the final step of the RURB methodology, the regulator incorporates the solution into the design, enforcement, or administration of the regulation.

RURB reduces the cost of doing business, which essentially creates a competitive market by promoting the entry of new enterprises and forcing the non-competitive enterprises to exit. Enterprises will adopt new technology and innovations in order to remain competitive, thereby offering better value propositions to customers. This accelerated use of technology would generate higher output, employment and increased wages. Eventually, it would amount to higher productivity for enterprises and key economic sectors.

RURB on Landing Permits for Charter Flights

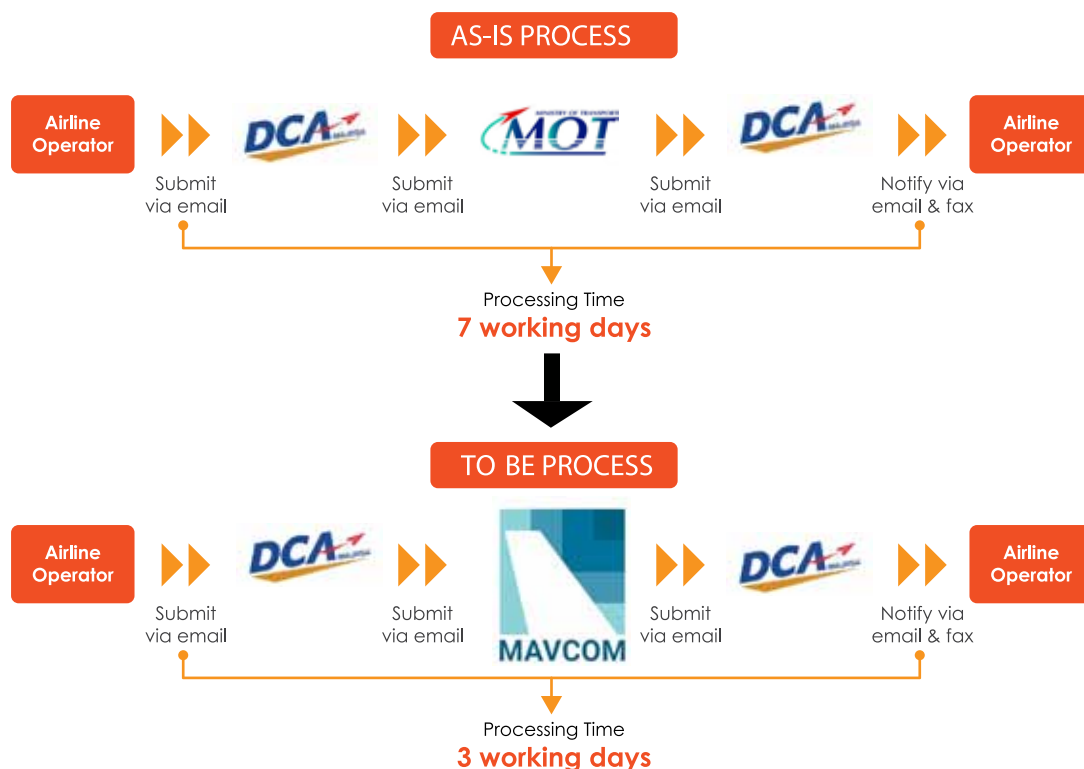
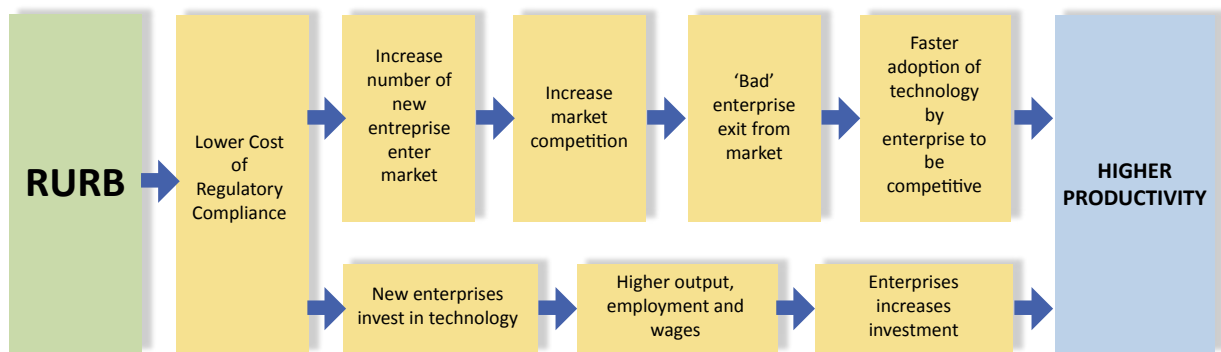


Figure 3.6: Relationship Between RURB and Sectoral Productivity



Source : Poschke, M. (2010), The Regulation of Entry and Aggregate Productivity, Economic Journal, 120, 1175-1200

Modernising Business Licensing (MBL)

The MBL initiative is designed to simplify and improve the business licensing system by partnering with federal ministries and local state governments. The initiative will focus on streamlining and simplifying the process and procedures, redesigning of the application form and strengthening rules and compliance for business licence approval at local authorities in Malaysia.

Since the implementation of MBL in 2011, MPC along with several departments in state agencies have taken efforts to enhance the business licensing environment. One of the accomplishments includes developing 'Garis Panduan dan Manual Pelesenan Perniagaan', which is a guideline and manual to be used as a reference to regulators, public and stakeholders in starting a business.

The guidelines assist all stakeholders in understanding the processes, procedures, application methods, compliance requirements/ conditions and any other requirements to be fulfilled when applying for a business license and conducting business activities after obtaining approval. Meanwhile, the objectives of the manual are to improve process efficiency and eliminate the red tape, to bridge the difference in business licensing processes, procedures and systems at each state licensing authority and to

ensure that decisions made are consistent and transparent.

The MBL initiative is also intended to facilitate and automate application, processing and business licensing issuance as well as enhance service delivery system. This is in response to businesses nowadays needing a simple, transparent, efficient and cost-effective way to formalise their enterprises.

In 2018, with regards to improving the business licensing system in Sabah, MPC collaborated with Sabah local authorities to develop SOP Manual and Guidelines for Business Licenses and Operational Licenses. For the record, a total of 31 licensing authorities issuing Trading Licenses and 25 local authorities have issued the Lesen Operasi in the state. The manual and guidelines are as follows:

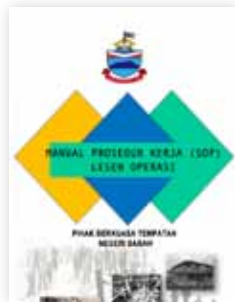
- i. *Garis Panduan Permohonan & Peraturan Lesen Berniaga Negeri Sabah;*
- ii. *Manual Piawaian Prosedur Lesen Berniaga Negeri Sabah;*
- iii. *Garis Panduan Permohonan & Peraturan Lesen Operasi Pihak Berkuasa Tempatan Negeri Sabah;* and
- iv. *Manual Piawaian Prosedur Lesen Operasi Pihak Berkuasa Tempatan Negeri Sabah.*



Garis Panduan Permohonan
Lesen Berniaga (Ordinan
Pelesenan Perniagaan
Sabah, 1948)



Garis Panduan
Permohonan & Peraturan
Lesen Operasi



Manual Prosedur Kerja (SOP)
Lesen Operasi



Manual Prosedur Kerja (SOP)
Lesen Berniaga

Modernising Business Licensing (MBL) Case Study at Majlis Perbandaran Seberang Prai (MPSP), Penang

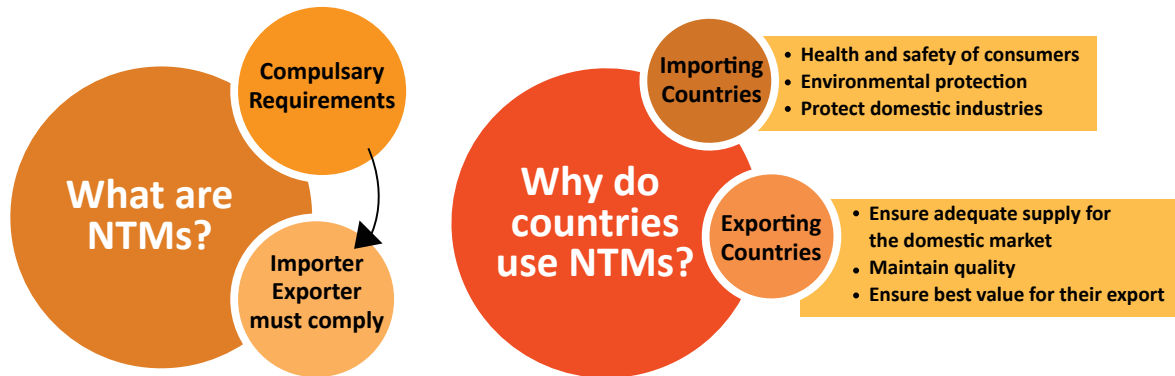
Beginning July 2016, Majlis Perbandaran Seberang Prai (MPSP) has implemented many improvements proposed by the MBL initiative. Some of the major advancements made by MPSP includes:

- i. Reviewing license applications according to high-risk (does not comply with development requirements) and non-risky business categories.
- ii. Expediting the license approval time to immediate approval for non-risky businesses and 7 to 30 days for risky businesses.

For non-risky business licenses, applicants can also opt for an annual or for 3-year license renewal period. As MPSP empowers regular field visit and audit activities, the need for Licensing Committee meetings and technical agency support letter is abolished. In achieving this objective, MPSP

has coordinated with the relevant technical agencies to eliminate recurring or overlapping work processes and long waiting time. With estimated savings of RM11 million for cost of compliance, MPSP managed to reduce the burden of compliance costs incurred by the business community as licenses are now approved immediately. The initiatives also enhanced the transparency and governance of MPSP, enabling them to receive the ISO 370001: 2016 Anti-Bribery Management System Certificate from SIRIM QAS International Sdn. Bhd on 20 October 2017. The MBL initiative at MPSP has improved the competitiveness of the business environment and the delivery system of business licensing services in Seberang Prai. Moving forward, MPSP will continue to ensure that these initiatives are sustained, constantly monitored and improved.

Snapshot of Non-Tariff Measures (NTMs)



Non-Tariff Measures (NTMs)

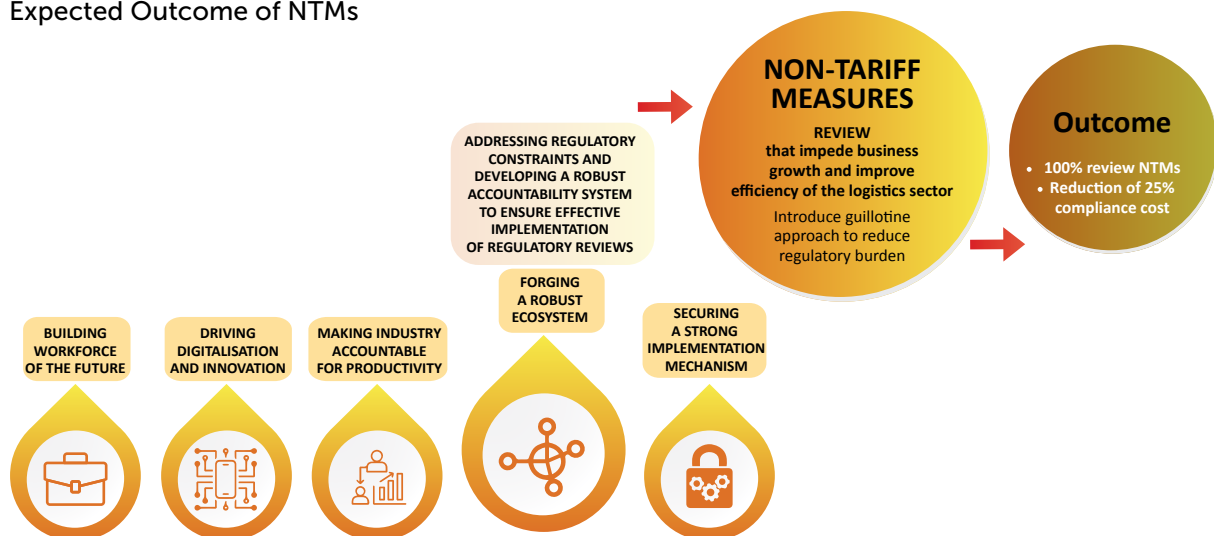
'Forging a Robust Ecosystem' has been identified as Strategic Thrust 4 under the MPB, which is aimed at addressing regulatory constraints and developing an accountability system to ensure the effective implementation of regulatory reviews. Under this thrust, there are 2 national-level initiatives of N7 and N8. N7 accelerates efforts to enhance a whole-of-government approach towards addressing regulatory constraints, while N8 establishes an accountability mechanism for the implementation of regulatory reviews by the Government.

One of the activities under national-level initiative N7 is Key Activity 13, which is to remove

non-tariff measures that impede business growth and thereby improve efficiency of the logistics sector. This will focus on the structuring of non-tariff measures including customs regulations to ensure streamlined processes and regulations for export and import permits.

For NTM, the activities identified include accelerating the implementation of uCustoms in improving logistics and trade facilitation, reducing regulatory burdens using the Guillotine Approach, establishing and institutionalising an innovative policy development engagement mechanism to embrace disruptive technology and escalating the implementation of the Logistics Masterplan.

Expected Outcome of NTMs



Reforming the NTM regime would increase economic productivity, which could help domestic industries to gain from less restricted trade. The positive effects of reviewing NTMs are as follows:

i. Transparency and Openness

All stakeholders should have easy access to information about regulations and procedures and must be given the opportunity to participate in consultations regarding regulations. Excessive discretion by field-level bureaucrats should be avoided and there should be procedures in place for stakeholders to appeal the decisions given by bureaucrats.

ii. Avoidance of Unnecessary Trade Restrictiveness

Governments should implement regulations that are not more trade and investment-restrictive than necessary to fulfil the legitimate public policy objectives. This requires the careful assessment of the impact of regulations to avoid any unjustified difficulties for the free flow of goods, services and investments.

iii. Administrative Simplification

To minimise the administrative burdens on industry complying with regulations, the process can be simplified with initiatives such as a one-stop centre, information technology-driven mechanisms and integration, simplification and streamlining of license and permit procedures and a set timeline for decision-making.

iv. Internationally Harmonised Measures

National authorities can minimise the burdens for industry having to comply with different standards and regulations for 'like products' in international trade by systematically examining whether a relevant international standard exists when proposing or reviewing a regulation and if so, whether it would be appropriate and effective for the regulation.

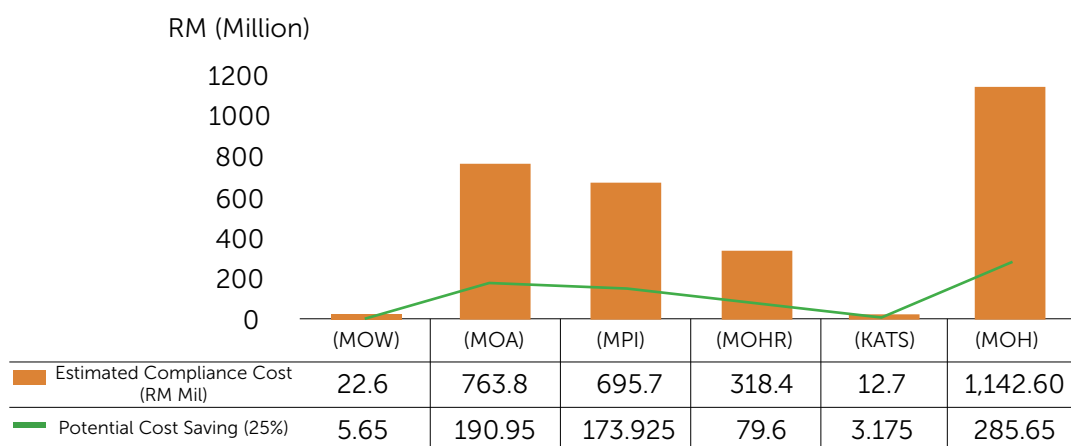
v. Conformity Assessment Procedures for High Quality Delivery

Conformity assessment procedures facilitate trade by increasing consumer confidence, if done without excessive time and costs. But conformity assessment procedures can raise barriers when there is a duplication of costs in different markets for identical tests against the same or equivalent standards. To ease conformity, options include mutual recognition agreements, recognition of supplier's declaration of conformity, unilateral recognition of conformity assessment results from other countries and voluntary agreements between conformity assessment bodies in different countries.

vi. Reducing Business Costs

Obligations set by legislations have led industries to comply with unnecessary requirements that delay trade activities at additional costs. Simplifying and streamlining the process and reducing the numbers of requirements imposed by regulations could help in reducing 25% of business costs.

Figure 3.7 : NTMs Estimated Compliance Costs (RM Million) and Potential Cost Savings (25%) for 6 Ministries, 2017



Total Estimated Compliance Cost = RM2,955.80 Million
Total Potential Cost Saving = RM738.95 Million

Source : Based on estimated 26 projects recommended for improvements (year 2018)

Review of NTMs for 6 Ministries, 2018

No.	Ministry/Agency/Commission	No. of NTMs	Findings	Legislations		Reviewed Status (%)
				Primary	Subsidiary	
1	Ministry of Agriculture and Agro-based Industry (MOA)	86	104	8	16	100
2	Ministry of Health (MOH)	502	84	5	6	100
3	Ministry of Primary Industries (MPI)	27	30	4	5	100
4	Ministry of Water, Land and Natural Resources (KATS)	39	29	7	3	100
5	Ministry of Works (MOW)	0	1	1	-	100
6	Ministry of Human Resources (MOHR)	14	14	3	3	100

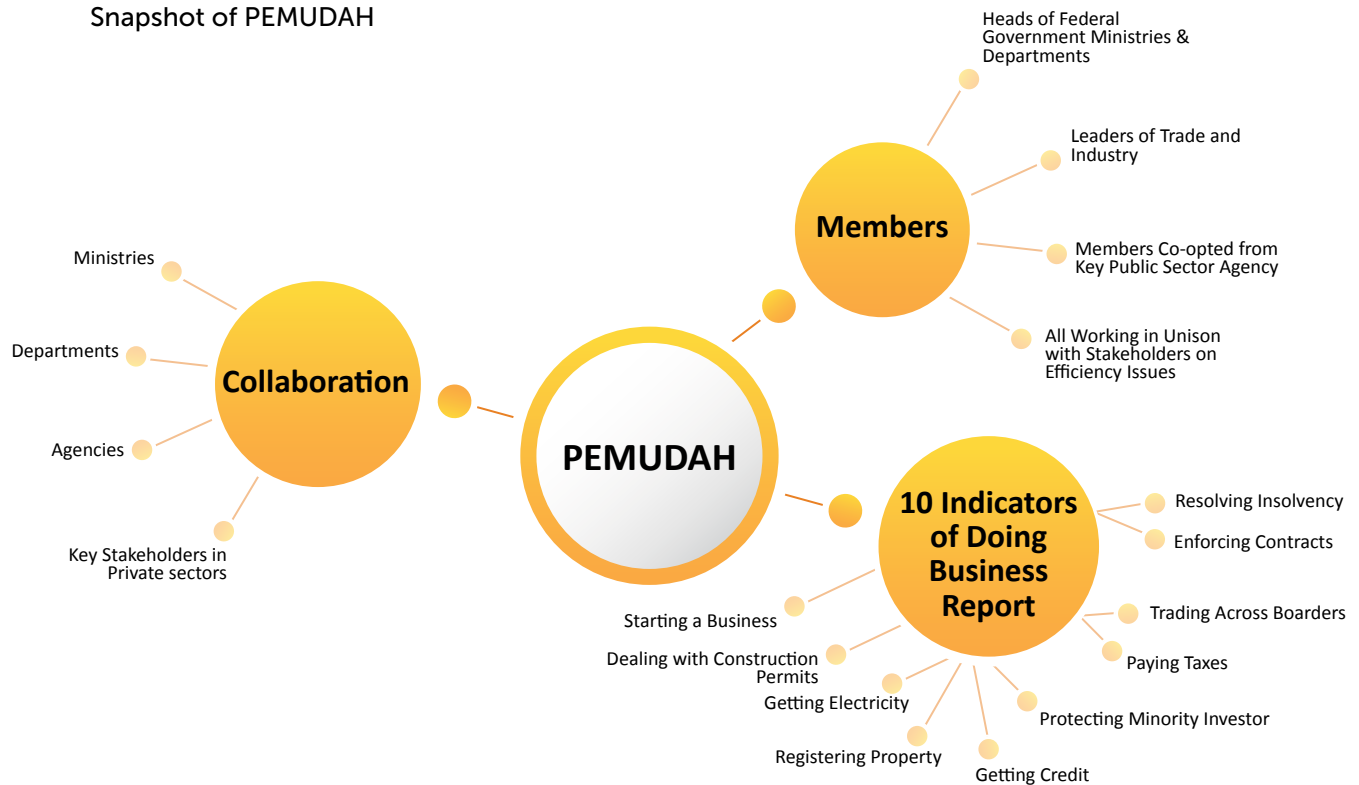
Sources : Customs (Prohibitions of Import & Export) Order 2017, Integrated Trade Intelligence Portal (I-TIP) 2015. Findings through the verification with respective Ministries and Agencies (2018). Total numbers of legislation of 28 primary and 33 subsidiary have been reviewed as per 23 Feb 2019

Proposed Review of NTMs to be Executed at the Ministries

No.	Ministry/Agency/Commission	No. of NTMs
1	Ministry of Tourism, Arts and Culture (MOTAC)	1
2	Ministry of International Trade and Industry (MITI)	38
3	Ministry of Energy, Science, Technology, Environment and Climate Change (MESTECC) - Energy Commission (EC)	36
4	Ministry of Domestic Trade and Consumer Affairs (KPDNHEP)	8
5	Ministry of Finance (MOF)	6
6	Ministry of Foreign Affairs (MOFA)	9
7	Ministry of Communications and Multimedia (KKMM)	5
8	Ministry of Home Affairs (MOHA)	15

Sources: Customs (Prohibitions of Import & Export) Order 2017, Integrated Trade Intelligence Portal (I-TIP) 2015.

Snapshot of PEMUDAH



THE SPECIAL TASK FORCE TO FACILITATE BUSINESS (PEMUDAH)

The Special Task Force to Facilitate Business (PEMUDAH) was established in 2007 to forge closer collaborations between the public and private sectors to improve business regulation, service delivery, ease of doing business and the proactive launch and pursuance of new initiatives that increase competitiveness and productivity in Malaysia. The unique public-private sector collaboration in PEMUDAH is the key to the effectiveness of its initiatives.

PEMUDAH is responsible for improving the efficiency and effectiveness of public and private sector service deliverables and the regulatory framework through focus groups and task forces. The task force not only consistently identifies and addresses constraints in business regulation and policy issues, but also formulates solutions

and promotes resolutions that enhance business activities. The scope of work carried out by PEMUDAH receives impetus from the annual World Bank Doing Business (WBDB) Report which ranks economies on the ease of doing business.

Since its establishment more than a decade ago, PEMUDAH has accomplished many initiatives that have impacted the business environment significantly. This has resulted in enhanced national competitiveness, productivity and economic resilience, which has contributed to tremendous savings in time and costs. These initiatives have also enabled Malaysia to be perennially ranked among the highest percentile group of economies for ease of doing business in the annual WBDB Report.

World Bank Doing Business Report 2019

In the World Bank Doing Business (WBDB) Report 2019, Malaysia successfully improved its ranking by 9 places to occupy the 15th spot and rejoin the top 20 among 190 economies (2018: ranked 24th). In terms of scores, Malaysia achieved an improvement of 2.57 to an overall Ease of Doing Business (EODB) score of 80.60, as compared to overall Distance to Frontier (DTF) score of 78.03 recorded in the 'Doing Business' 2018 report.

The improvement in ranking was attributed to the acknowledgement by World Bank, ascertaining that Malaysia, through PEMUDAH, has maintained its reform momentum and had implemented reforms that resulted in the second highest regional improvement in EODB score. Malaysia has reforms in 6 out of the 10 areas measured by the WBDB Report 2019. The areas are - Starting a Business; Dealing with Construction Permits; Getting Electricity; Registering Property; Trading Across Borders, and Resolving Insolvency.

Reforms Implemented in 6 Areas Measured by the WBDB Report 2019

NO.	AREAS	REFORMS IMPLEMENTED
i.	Starting a Business	Introduced or improved online procedures <ul style="list-style-type: none"> The time to start a business (days) has been improved from 23.5 days (2016/2017) to 13.5 days (2017/2018).
ii.	Dealing with Construction Permits	Reduced time for processing permit applications and streamlined procedures <ul style="list-style-type: none"> The time to obtain construction permits reduced from 78 days (2016/2017) to 54 days (2017/2018). Success story : Kuala Lumpur City Hall's One Stop Centre (OSC) has been implementing ongoing reforms streamlining the steps required to obtain construction permits and utility connections. Clearance letters from several agencies have been centralised and can be obtained through the OSC.
iii.	Getting Electricity	Streamlined approval process <ul style="list-style-type: none"> The number of procedures to obtain an electricity connection reduced from 4 procedures (2016/2017) to 3 procedures (2017/2018). Success story : With regards to the Tenaga Express programme developed by Tenaga Nasional Berhad (TNB), commercial customers with a subscribed capacity between 100 and 140 KVA must submit, along with their application - the preliminary metering scheme, the layout plan, and the electrical drawings with the exact location for the connection. These documents allow the utility to prepare the estimated cost of the external work without a site visit.

NO.	AREAS	REFORMS IMPLEMENTED
iv.	Registering Property	<p>Reduced time for registering property</p> <ul style="list-style-type: none"> This reform resulted in reducing the number of procedures to register property from 8 procedures (2016/2017) to 6 procedures (2017/2018). Success story : The e-Tanah single-window search services portal became fully operational. It allows users to retrieve information from the land registry, the company registry, and the insolvency department in a single search.
v.	Trading Across Borders	<p>Introduced or improved electronic submission and processing of documents for export and imports, strengthened border infrastructure for exports and imports and enhanced customs administration and inspections for exports and imports</p> <ul style="list-style-type: none"> Malaysia made importing and exporting easier by improving infrastructure and the port operation system at Port Klang. It also managed to reduce the cut-off time at Port Klang. Made trading across borders easier with the introduction of electronic form D – ATIGA, required within the framework of the ASEAN Single-Window Gateway. Enhanced the existing risk-based assessment system and reduced the number of physical inspections and document checks. These reforms resulted in reducing the time to export: Border compliance (hours) from 45 hours (2016/2017) to 28 hours (2017/2018).
vi.	Resolving Insolvency	<p>Introduced a new restructuring procedure</p> <ul style="list-style-type: none"> Improved the strength of insolvency framework index (0-16) to 7.5 (2018/2019) from previous index of 6.0 (2016/2017). Introduced the reorganisation procedure for commercial entities, as an alternative to liquidation. On March 1, 2018, regulations related to corporate rescue mechanisms included in the Companies Act (2016) came into force.

'Doing Business Reform Memorandum' for Malaysia

The nature of the business environment in an economy depends on many factors, differing according to market size, macroeconomic conditions and business regulations. Several international benchmarks and surveys identify key constraints to a country's competitiveness and private sector development. While such benchmarks only give an indication of the ideal environment for firms, they can help identify specific area of business regulation in need of reform to create a more business-friendly environment for firms supporting private sector productivity and growth.

The Government of Malaysia through the Prime Minister's Office (PMO) and PEMUDAH/MPC has taken the initiative to work with World Bank Group (WBG) to further improve Malaysia's ranking especially with regards to business regulation. The WBG hence came out with a 'Doing Business Reform Memorandum' for Malaysia, which was shared in August 2018. There are 64 recommendations within the Reform Memorandum, of which 33 can be addressed within a short to medium term, while the remaining 31 are to be achieved over a long-term period.

The objective of this Reform Memorandum is to provide an analysis and accordingly advise the Government of Malaysia on identifying and prioritising reforms in the regulatory areas covered by the WBG's Doing Business report. In this respect, the memorandum provides recommendations for areas where the local and central governments can have a direct impact on business conditions and it also discusses how shortcomings can be addressed through legal and regulatory reforms.

The recommendations are based on Malaysia's results in the Doing Business 2018 Report, global regulatory trends and practices, interviews with key public and private sector stakeholders as well as relevant analytical work. There is a focus on regulatory and administrative reform options in the areas of business regulation measured by the Doing Business Report. While the recommendations do not address all aspects of the investment climate in the country, they focus on how to:

- Ease business entry and operation (with a primary focus on small and medium domestic firms), by reducing complexities, cost of regulatory processes and increasing transparency (e.g. by streamlining registration and licensing procedures).
- Strengthen the regulatory and institutional framework aimed at securing property rights and increasing access to credit (e.g. through strong secured transactions and insolvency frameworks, credit information sharing systems and effective contractual enforcement mechanisms).

ENHANCING GOVERNANCE FOR NATIONWIDE PRODUCTIVITY

The full potential of national productivity can only be reached by enhancing public-private sector collaborations on sector-level initiatives. Using these refined Government policies and regulations as a foundation, the private sector can further their own productivity with regards to high-skilled labour, innovation and digitalisation. With the public sector promoting good regulatory practices, it facilitates the way the private sector conducts business and accelerates enterprise-level productivity.

BEHAVIOURAL INSIGHTS FOR PUBLIC POLICY MAKING

Behavioural Insights (BI) are derived from behavioural and social sciences, including decision-making, psychology, cognitive science, neuroscience, organisational and group behaviour. These insights are being applied by Governments with the aim of making public policies work better and have been empirically tested to discover how humans make choices. In fact, individuals or companies often make inaccurate decisions because their behaviour varies over time and within different contexts. The reach of BI expands to a comprehensive

collection of various policy applications across the world, including consumer protection, education, energy, environment, finance, health and safety, labour market, public service delivery, taxes and telecommunications.

Regulatory interventions that reflect on the understanding of consumer behaviour will minimise internal and external biases to overcome inefficient market outcomes and unnecessary regulatory costs and burdens to both regulators and consumers.

Hyperbolic discounting

The tendency for people to over-evaluate the now

Ask people if they would put 30% of their current salary aside to save for their pension today and 95% of the people would say 'NO'. But if you ask people if they would be willing to put aside 30% of their next pay raise, 76% of the people would now say now yes. Policies that incorporate hyperbolic discounting have a bigger chance in achieving behavioral change in achieving behavioral change especially in achieving long-term goals.



Tax offices in the US have changed the position of the signature moving it from down to up. Research in Behavioral Economics has shown that when people have to sign a tax form first before filling it in, people are more likely to fill the form in truthfully.

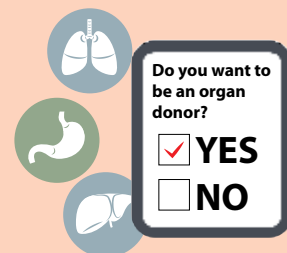
Salience

A stimulus that stands out from the rest

Default

When provided a default option people stick with that option if it is hard to make a choice.

In an online experiment concerning donor donations, participants were more likely to participate in an organ donation program when the choice to participate was made the default choice.

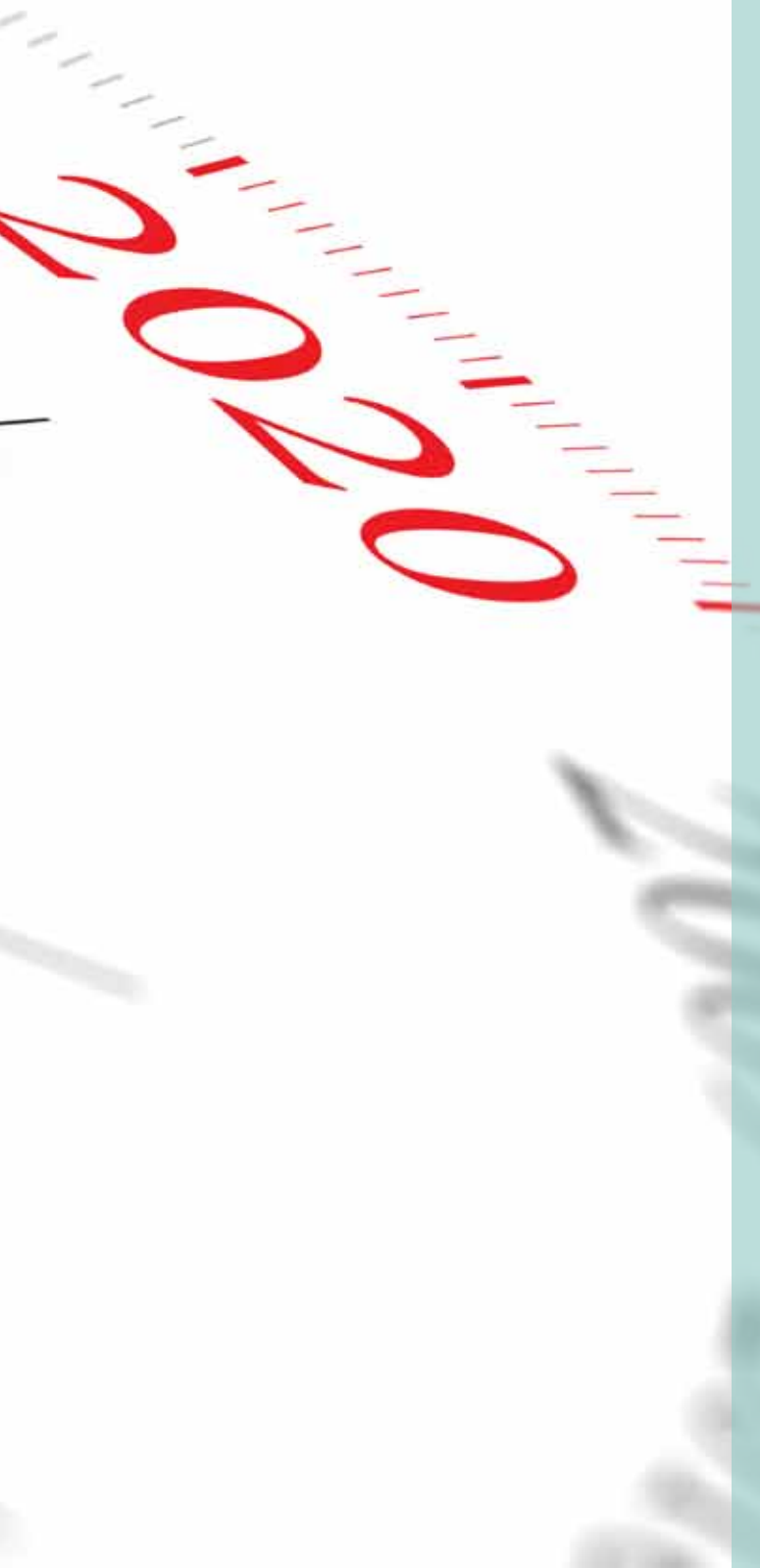


Government policies that apply humor in campaigns or interventions have been found to be more memorable, liked, accepted and shared with others.

Fun Factor

By adding 'fun' to the equation government policy designs become more effective.





4

THE WAY FORWARD FOR SUSTAINABLE PRODUCTIVITY

To truly make a positive long-term impact on national productivity, there is a pressing need for a change in mindset and the implementation of a more holistic approach. This needs to be carried out on all levels, from sectoral to national. With the help of programmes and tools from MPC, organisations can enhance labour productivity by equipping the current and future workforce with the right skills.

Economic prosperity and a higher quality of life are not overnight achievements and require persistence in assuring the nation's productivity levels are up to mark in the long run. To become advanced and self-sufficient, the public and private sectors need to join forces in driving digitalisation, innovation and the enhancement of the labour market with the accelerated adoption of innovative technology.

This can elevate Malaysia's current level of productivity through smart collaborations, appropriate technological infrastructure, e-commerce and adoption of innovative technology across all sectors. Apart from this, there is a need to build the future workforce to meet dynamic industry needs and strengthen productivity and competitiveness of SMEs.

Malaysia is within reach of a productivity renaissance, which can be a vital advantage to boost the national economy's international competitiveness. To continue the evolution of the economy's market position and the success of its long-term structural transformation, the objectives to be met include a well-educated labour force, a conducive climate for innovation, efficient market mechanisms, advanced physical infrastructure and highly capable public institutions.

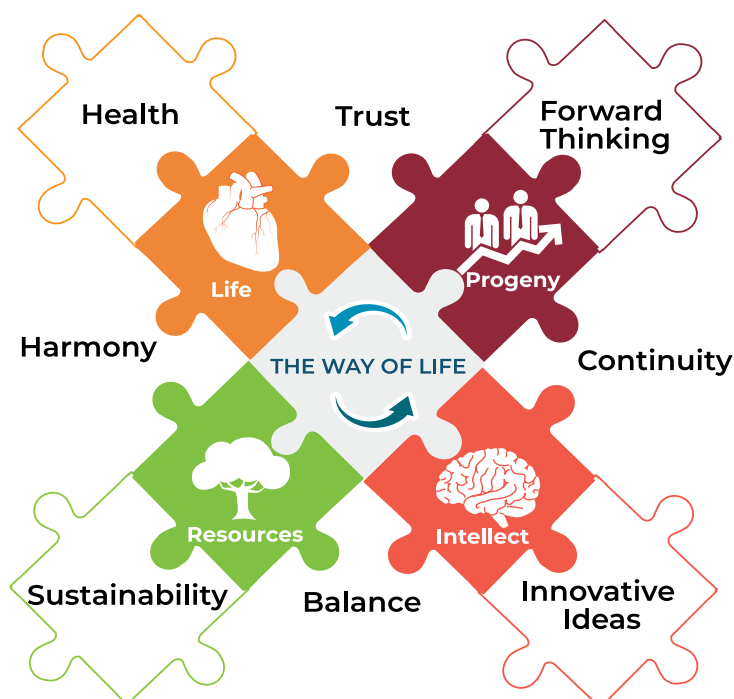
NATIONWIDE PRODUCTIVITY MOVEMENT

Inculcating a Culture of Productivity Nationwide

National productivity culture programmes and activities have been planned and executed in alignment with the MPB, welcoming the collaboration of many government agencies and industry players at national, sectoral and enterprise levels. These initiatives were consistently shared, advised and guided by the Panel of Productivity Culture to ensure that the concepts and policies used are in line with the national agenda.

The productivity concepts promoted to the targeted groups comprising public at large and the industries were based on 5 basic necessities namely promotion and protection of life (including health and safety), intellect, progeny, resources (natural) and the way of life, that formed the basis of actions taken to attain a productive life which is sustainable, balance and harmonious. These basic necessities are interdependently related to each other and better promote productivity holistically and sustainably.

Model of Sustainable Productivity



Various media channels and touchpoints have been utilised for this productivity culture campaign through engagement programmes such as seminars, visits, mural activities and out-of-home advertising with digital screens at LRT stations, TV, radio, portals, print and social media. The campaign has been designed to disseminate the relevant information in an easy-to-digest way to all the target segments.

A study was conducted in 2018 to determine the advertising effectiveness of productivity culture messages through these promotion channels. The study revealed that while the general public is aware of the meaning of productivity and how it relates to their daily lives, there was further refinement needed for the awareness and engagement activities that targeted specific groups. Owing to this, the next phase of the campaign will focus on the following strategies:

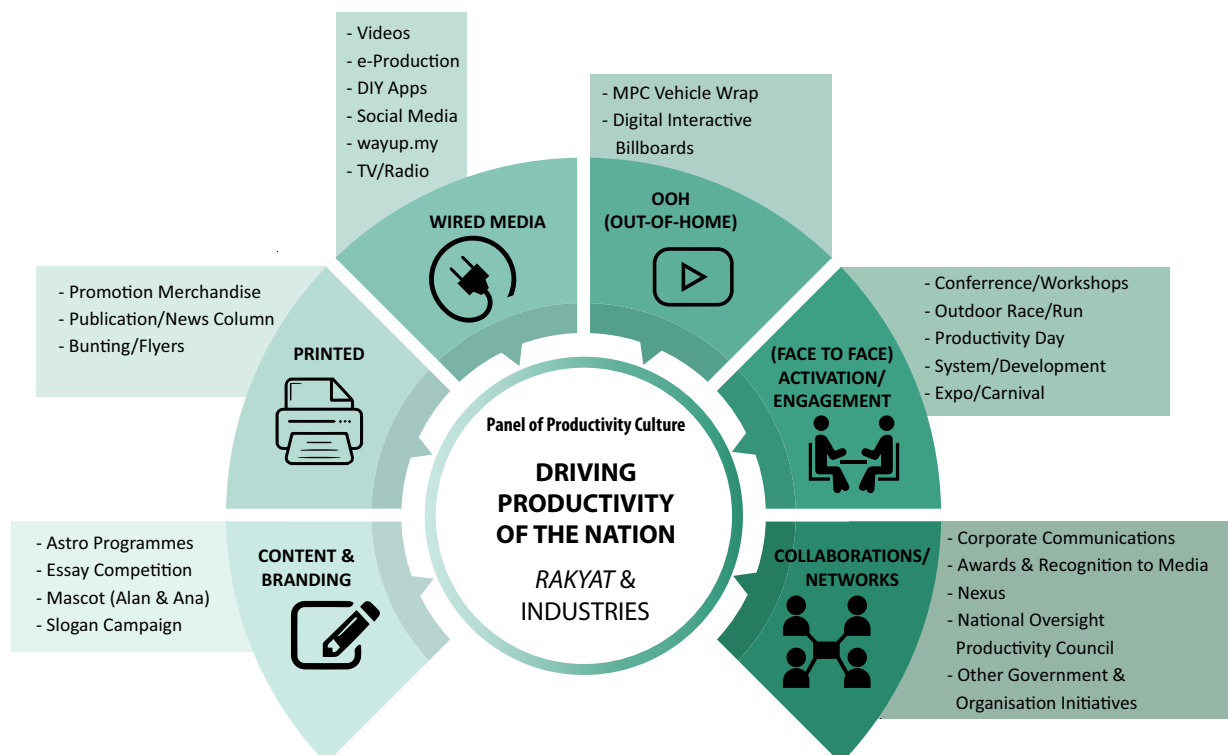
- i. The usage of social media and digital platforms for wider coverage;
- ii. Repetitive productivity advertisements via TV channels;
- iii. Engagements with students and young adults to inculcate the productivity culture through university programmes; and
- iv. Relevant advertising content for each target segment, depicting values that reflect efficiency and responsibility in their daily activities.

Building an active presence on social media will tap into a younger generation and will work towards building a productive mentality in the soon-to-be workforce of Malaysia. The engagement programmes with students and young adults will support this messaging by conversing with the youth one-on-one through workshops, expos and more.

Traditional advertising will be used to reach a mass audience through publications, merchandising, flyers, TV and radio, while the targeted advertising campaigns will engage specific audiences that have been identified as potential contributors to higher productivity growth. To broaden the reach, other mediums will also include out-of-home advertising on vehicle wraps and interactive billboards.

By building this integrated communication strategy that weaves together traditional and online media, it will invite a healthy collaboration between public and private sectors working towards the same purpose to enhance productivity performance. With this unified front, a strong message of productivity can be perpetuated across the masses.

Integrated Communication Strategies



PRODUCTIVITY GAME CHANGER

Productivity Champion

The Government continuously strengthens the economic base and stability by building on the overall productivity in line with the 11MP. Malaysia's approach to improve national productivity will shift from primarily government-driven initiatives at the national level to targeted actions across the public sector, industry players and individual enterprises. The Government will need to harbour the right ecosystem to drive productivity, with on-ground implementation led by the private sector at an enterprise level.

To embrace productivity across all levels, one of the initiatives outlined by the Government is to

recognise a Productivity Champion, whose main role is to assist members of industry associations in boosting productivity in their respective industries. In 2018, a total of 452 Productivity Champions have been awarded in various industries, who are market and innovation leaders in their respective industries and play a role in strengthening the productivity levels by providing information on industry requirements to the Government. This will assist the Government in formulating more effective and structured policies on productivity, as well as in improving industry-related economic growth.

Assessment Criteria of Productivity Champion

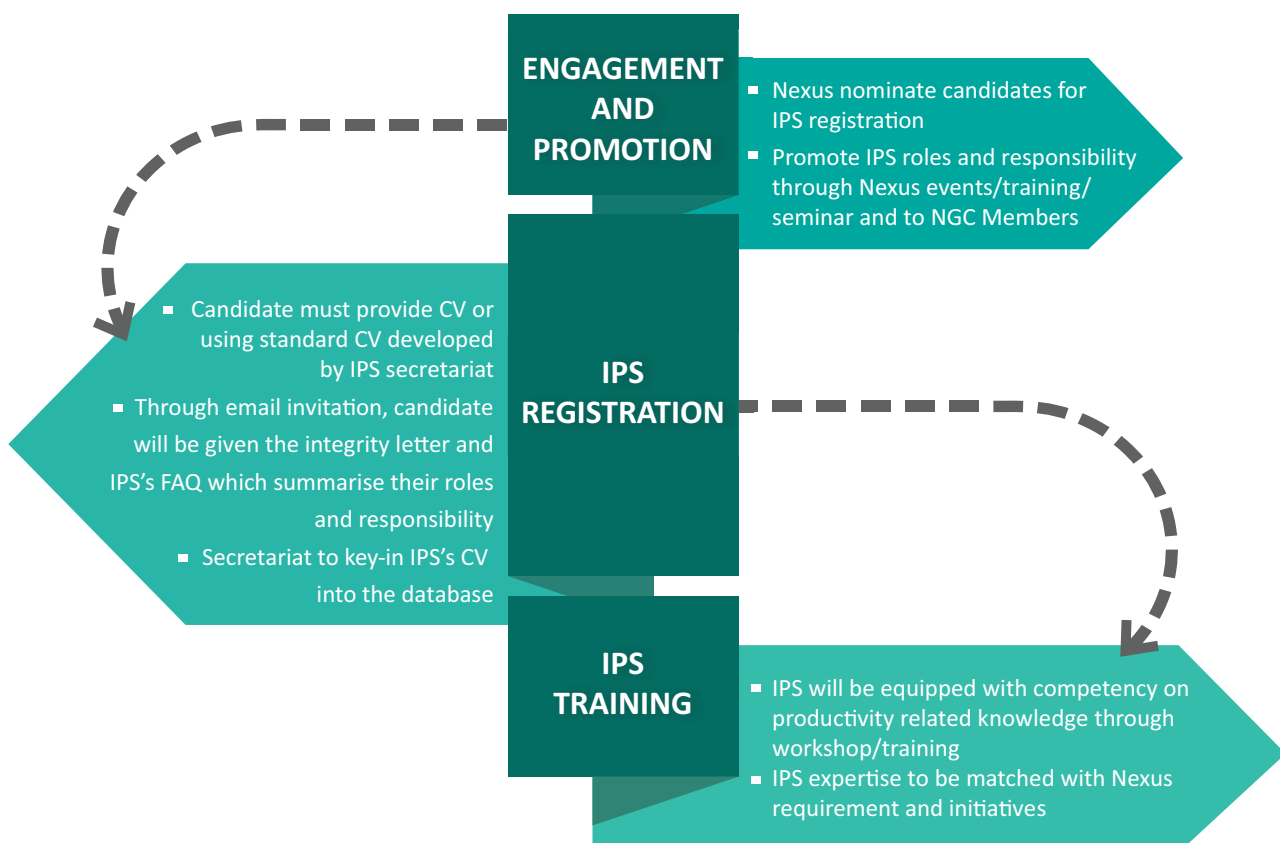


Industry Productivity Specialist (IPS)

In intensify the role of industry associations and industry players in implementing initiatives to increase enterprise-level productivity, MPB highlighted the development of IPS specially trained in productivity subject matters related to the 9 priority sub-sectors. The IPS will be equipped with competencies that facilitate productivity enhancement initiatives in respective industries. They should be analytically aware of changes faced by companies and be able to provide practical solutions to address the challenges. In the 3rd quarter of 2018, a total of 54 IPS were certified, which surpassed the targeted 45 IPS annually.

IPS generally elevate the performance of firms and individuals through various achievements that work towards the final goal. In this way, the public is aware of certain prerequisites and requirements to form best practices within a firm. Essentially there is a set of practical guidelines that assist the IPS to understand, evaluate and apply productivity measurement techniques effectively. IPS provides an extremely beneficial service to the firms in the profession which they represent, as individual who participate will add measurable value to their own strengths and to the economy as a whole.

The Establishment of IPS



ACCELERATING INITIATIVES FOR PRODUCTIVITY IMPROVEMENT

Elevating Industry Benchmarks

In a new era of productivity for Malaysia, there is a requirement to build momentum on the adoption of best industry practices and high-productivity enterprises for the nation to achieve its full business and economic potential. Among the programmes introduced for this purpose are High Productivity Enterprise (HPE), Best Practices Online Database (BOND) and e-Benchmark.

High Productivity Enterprise (HPE)

HPE is a programme that recognises high-productivity enterprises operating in Malaysia using local talent. This is especially important for Malaysia to fulfill its goal to be a developed nation driven by excellent work culture, good labour management relationship and high productivity.

MITI has given the mandate through MPC, to deliver this programme with strong support from all relevant ministries and agencies. Presently, a total of 9 ministries and agencies are involved in the programme and is open for participation from SMEs, large local companies and multinational companies.

The programme's main objective is to recognise enterprises demonstrating high productivity performance. At the same time, it aims to use local talents to achieve excellent performance. Together, participating businesses can foster a healthy and productive work culture in both employers and employees. It is expected that the involved enterprises will support fellow businesses to improve productivity and competitiveness by identifying the best business practices.

High Productivity Enterprise (HPE) Terms for Company Participation and Assessment



More than 85% local workforce



Existed for at least three (3) years



Respond to assessment criteria and share information on related practices



Provide audited financial statement for the past three (3) consecutive years



Open to all companies incorporated in Malaysia in accordance with the Companies Act 1965



From manufacturing and services sector and from SME, local large and multinational companies

Assessment Criteria



Business Excellence (BE) Framework for organizational excellence practices



Productivity Gain Measurement (PGM) for measuring productivity at firm level using company's financial information



Productivity indicators used by company

The participating companies will be assessed using Business Excellence (BE) criteria, Online Productivity Gain Measurement (e-PGM) for productivity measurement and other productivity indicators related to the company's operation, such as delivery performance, lead time, reject rate and cost savings from process innovation.

A total of 13 companies participated in this programme in 2017 and were recognised as High Productive Company Employing Local Talent during the Showcase on Innovation for Productivity (SHIP) programme. For the second cycle in 2018, a total of 18 companies participated and were assessed on their business excellence performance.

Best Practices Online Database (BOND)

An organisation's competitive advantage depends on its corporate culture encompassing shared values and beliefs on how its employees should behave and interact, how decisions should be made and how work processes should be carried out. Learning from exemplary organisations and adopting their relevant best practices accelerates the process of developing a strong work culture. BOND was developed by MPC ensures such information is easily accessible by industry players. Regular updates on best practices, latest trends, and real testimonials across sectors by

award-winning companies give rise to an informative platform that educates industries on productivity improvement.

BOND is a unique system for best practices dissemination, which combines the Business Excellence Framework and the American Productivity and Quality Center (APQC) Process Classification Framework. Users are guided based on these frameworks that can facilitate document searching activities in BOND. A total of 333 best practices documents are available on BOND, categorised under Leadership, Planning, Information, Customer, People and Process.

Each category displays various initiatives and efforts implemented at the firm level. The documents are segregated according to case studies, success stories, infographics, key performance indicators, news clips and videos. Almost 50% of the documents were produced internally, while the remaining was collected from various sources of information. This strategy upholds BOND as the ultimate hub of best practices referrals in Malaysia and has been regularly promoted through e-bulletin, which targets key industry players every month. Featuring a fresh and insightful take on top-performing businesses, the e-bulletin features articles to inspire recipients to work towards these best practices for continuous productivity improvements.

10 Ways BOND Can Help to Enhance Organisation's Performance and Prospects

- 1 Easy to access web-based system
- 2 Detailed definitions on benchmarking
- 3 Learn from the best with award winners' success stories
- 4 Gaining new insights from best practice case studies
- 5 Effective measures based on Key Performance Indicators (KPI)
- 6 Infographic presentation on best practices by renowned companies
- 7 E-benchmark self-assessment tool with real-time reports
- 8 Video presentations on the impact of mpc project improvement
- 9 An integrated platform to share your best practices
- 10 Referral hub for best practices and benchmarks in Malaysia

Sunway Construction: Benchmarking Industry Best Practices

The most trending article on the BOND platform is 'Sunway Construction: Building Excellent Through People, Knowledge and Technology', which covers a set of systematic approaches implemented at Sunway Construction. Best practices can be adopted from this article are:

- **Building Future Leaders**

Sunway Construction brings out the future leaders in their employees through the Sunway Managerial Advancement for Recruited Talents (SMART) and Project Manager Development Programmes by giving them critical information to help them go far in the business and impact the industry and economy positively.

- **Knowledge Sharing**

To ensure all departments can benefit from the information, the business performance key processes are captured, shared and applied company-wide using web-based technology such as an Electronic Document Management System (eDMS) – standardises, centralises and consolidates all project data into a single platform for easier retrieval at any time.

- **Powered by Technology**

The extensive use of ICT enables enhanced collaboration and provides a platform for synergistic efficiency. The Enterprise Resource Planning (ERP) system was even customised to be more applicable to the Malaysian construction industry and additionally has been marketed to other fellow contractor companies in joint venture projects. Sunway Construction has also been a pioneer in the field of Virtual Design and Construction (VDC) in Malaysia or more commonly known as Building Information Modelling (BIM) – having used it in all phases from pre-construction to operations and maintenance.

These approaches just skim the surface of the best practices featured on Sunway Construction. Using their successes as a benchmark, other businesses in the same industry can adopt their own best practices suited to their operations. In this way, the benefits gained will create a positive ripple effect across the industry and also the national economy.

Source : bond.mpc.gov.my

e-Benchmark

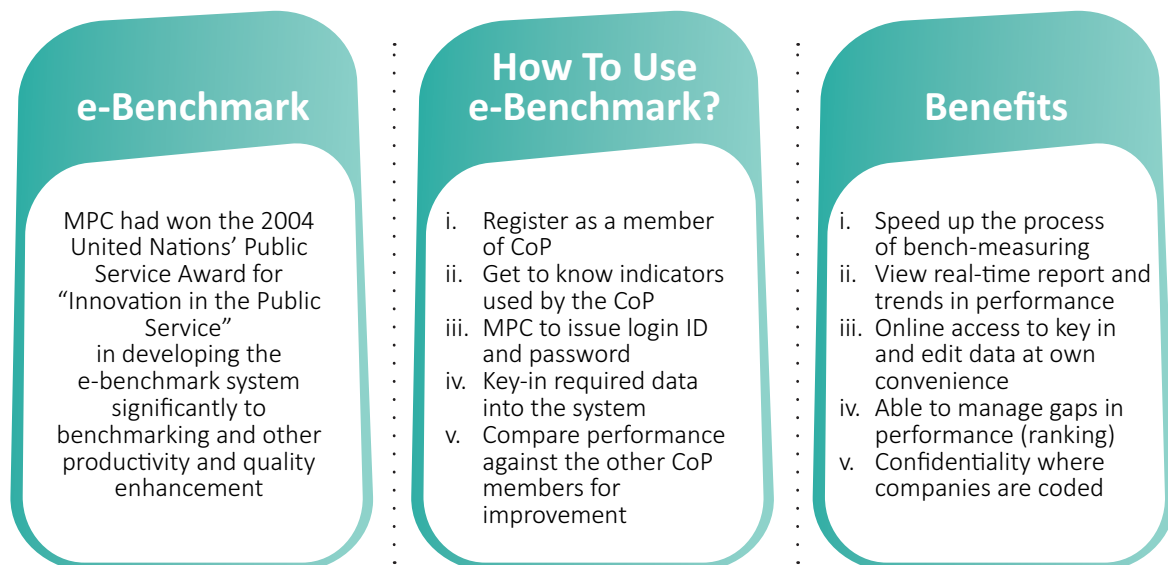
The e-Benchmark system was developed by MPC in early 2001 to cater the growing needs of a burgeoning business community. Since then, the system has undergone a redevelopment phase, embedding up-to-date features and technology solutions for users. The platform makes it possible to establish benchmarks for performance comparison between companies across the globe.

It is a web-based tool that enables organisations to have a win-win situation in communicating their scores and identifying benchmarks for all types of KPIs. Previously, more than 500 private-sector and public-sector organisations utilised this system for measuring and comparing themselves against

others in the areas of human resources, process efficiency, customer analysis and performance management, excellent service delivery, health, safety & environment (HSE), technical efficiency & environmental management, energy use efficiency, organisational excellence and service efficiency.

The availability of benchmark data is highly important, facilitating the management team in any organisation to make prudent decisions for business expansion. For this reason, it is pivotal that MPC works closely with trade associations and government agencies to promote the use of the e-benchmark system in enhancing productivity, quality and competitiveness.

Speeding Up the Process of Measuring Performance Using e-Benchmark



Effective Measurement Tool

To get a clearer idea of where a company's productivity stands, effective and easy-to-use tools are a good way to determine the status of the company's current performance, set future targets and inspire others to work together to achieve business goals and profitability. With the implementation of a more user-friendly web-based system, companies are even able to self-assess their productivity.

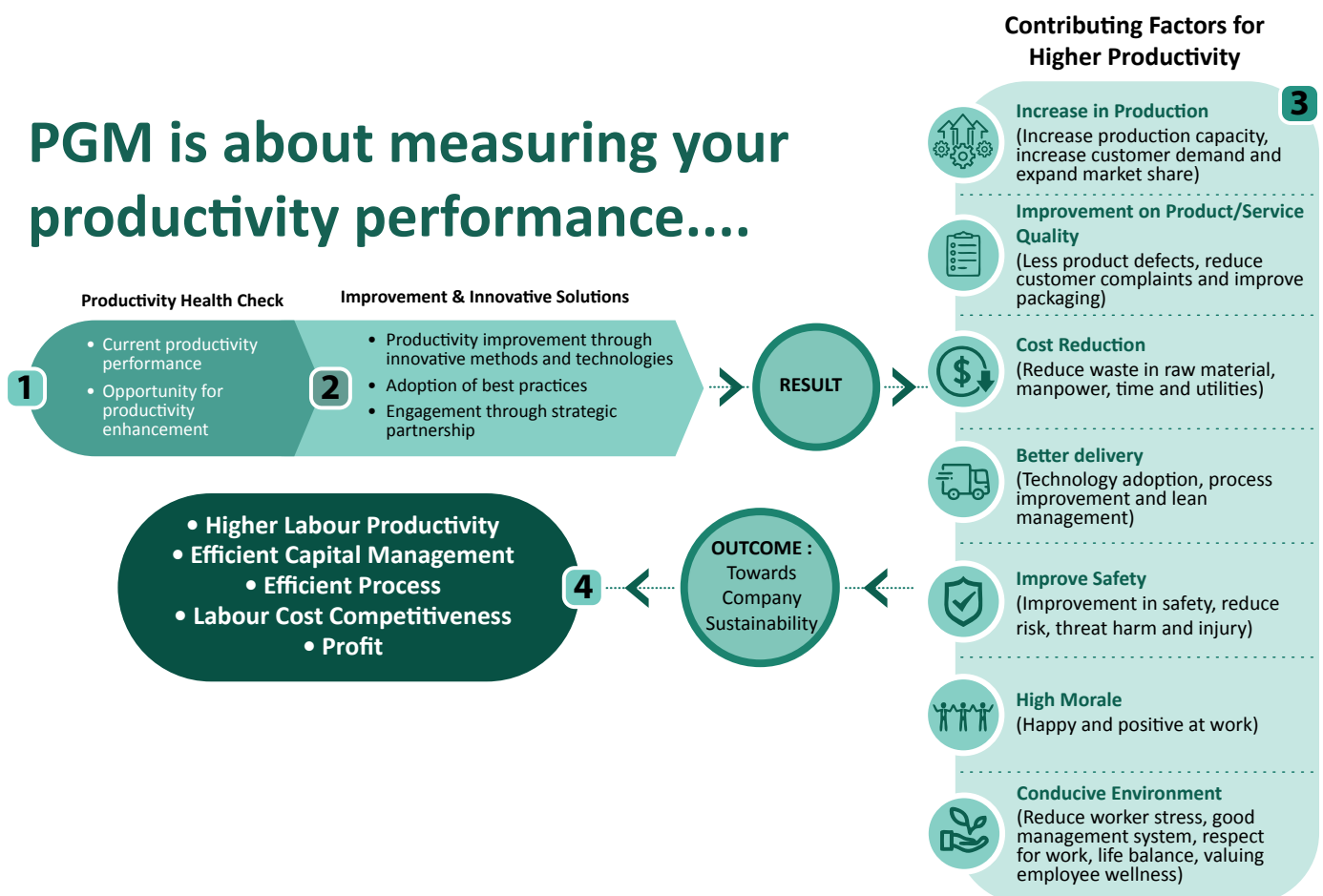
Online Productivity Gain Measurement (e-PGM)

e-PGM is an online self-assessment tool that can be used to measure productivity at the firm's level. The measurement tool available in the form of electronic software is a part of the initiatives

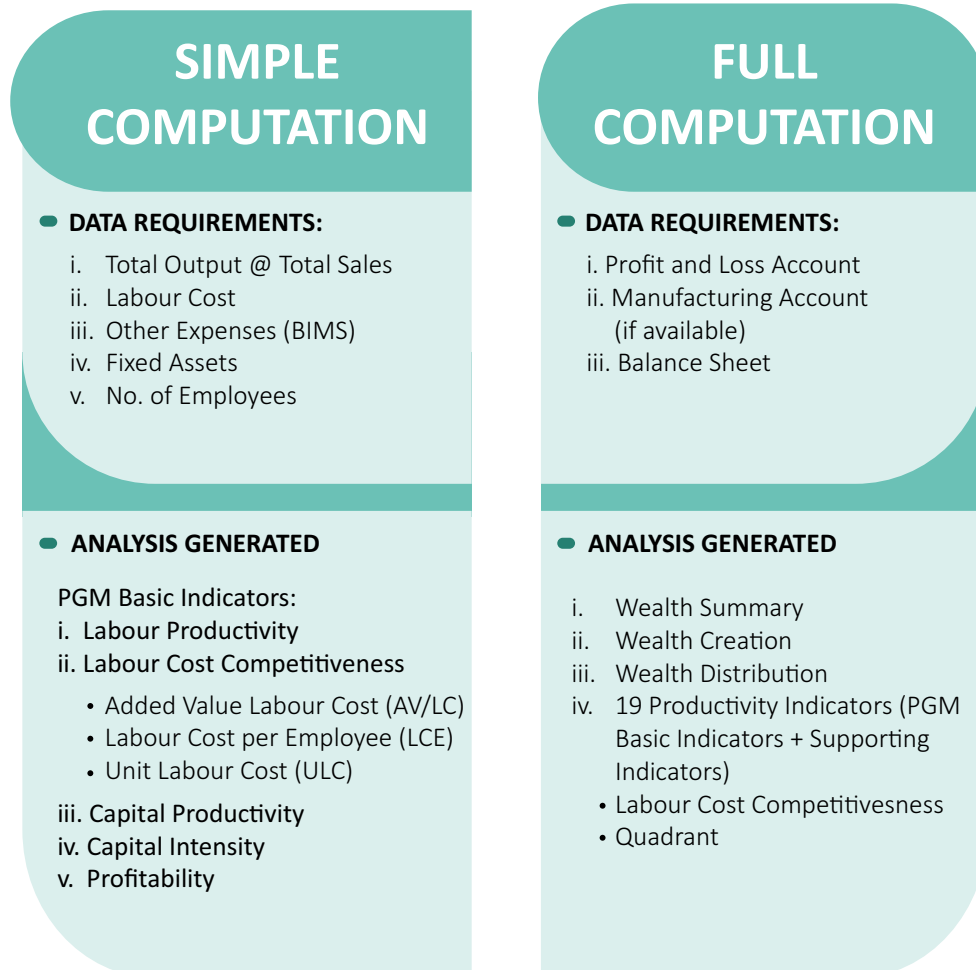
to promote knowledge management, by making it easily accessible at anytime and anywhere. Through this service, the e-system assists companies with their productivity measurement and efficiency.

e-PGM measures productivity performance improvement before and after the implementation of productivity and quality initiatives. The system identifies problems as well as opportunities for improvement and will assist companies in determining their productivity performance in line with strategic objectives. Accordingly, the company can work towards reaching or exceeding benchmarks set by best-in-class companies within the group or other industries.

PGM is about measuring your productivity performance....



To measure their productivity performance, the user needs to key in the required data, based on which the e-system will generate the company's productivity performance trend up to ten years. The company can choose between simple computation or full computation for measurement, allowing companies to customise according to their preferences. The differences between simple computation and full computation are as illustrated.



Technology Enhancement

Malaysian industries are inevitably being transformed by I4.0, driven by the digital revolution and the Internet of Things (IoT) in line with global modernisation. Through MITI, the Government has outlined 13 strategies under the National Policy on I4.0 known as Industry4WRD as part of its roadmap to transform Malaysia's manufacturing industry landscape in the next 10 years.

The policy was formulated to chart Malaysia's digital transformation in manufacturing and its related services sector. The strategies would be carried out through 5 strategic enablers (FIRST) namely Funding, Infrastructure, Regulation, Skills & Talent and Technologies along with targeted action plans developed to address the areas surrounding I4.0. To then further transform the manufacturing sector to be I4.0 ready, the policy has also introduced an assessment tool.

Five Strategic Enablers (FIRST) of The Industry4WRD

FIRST will assist in addressing the challenges in transforming the sectors towards I4.0 technologies:

Funding and Outcome-based Incentives

The funding strategies are aimed at encouraging companies to adopt new manufacturing technologies and processes and invest in R&D, specifically to develop local solutions targeted towards Malaysia's needs and priorities. Special attention will be given to collaborative efforts in developing and deploying I4.0 technologies.

Enabling Efficient Digital Infrastructure

Fast and secure data connection is a basic requirement for the realisation of I4.0. Good and reliable internet speed rate is needed for implementing internet-based production technologies or services, be it IoT solutions, use of augmented reality and wearables in production or the evaluation of real-time data. Although Malaysia has deployed High-Speed Broadband and 4G technologies on a widespread basis, there are still some gaps in key industrial and training locations.

Regulatory Framework and Industry Adoption

Regulation is a key enabler of Malaysia's I4.0 transformation and is of particular importance to SMEs who still have a limited understanding of digital adoption and I4.0. Moreover, to foster accelerated transformation, mechanisms will need to be put in place to help manufacturing firms understand their current capabilities and what it will take for them to transform and implement I4.0 technologies. In this regard, data integrity, security and analysis are important focal areas to ensure seamless data flow across value chains.

Upskilling Existing and Producing Future Talents

I4.0 is fundamentally reshaping the jobs landscape and will foster significant changes in how industrial workers perform their jobs. Entirely new jobs with very different skill requirements will be created, while some tasks will become obsolete. The shifting employment landscape has significant implications for industry, education systems and the Government. A qualified and skilled workforce is indispensable for the introduction and adoption of I4.0.

Access to Smart Technologies and Standards

An understanding of and access to advanced, cost-effective and interoperable I4.0 technologies are the core of unlocking the potential of I4.0. At present, the majority of Malaysian manufacturing firms surveyed adopt less than 50% automation. To encourage more adoption, the Government aims to work with global and local industry leaders to set up digital and I4.0 demonstration labs. Finally, developing and commercialising new technologies and processes that address specific needs in priority sectors will be crucial to retaining Malaysia's position as a preferred high-tech and manufacturing hub and supply chain partner.

Source : <https://www.miti.gov.my>

Industry4WRD Readiness Assessment (Industry4WRD-RA)

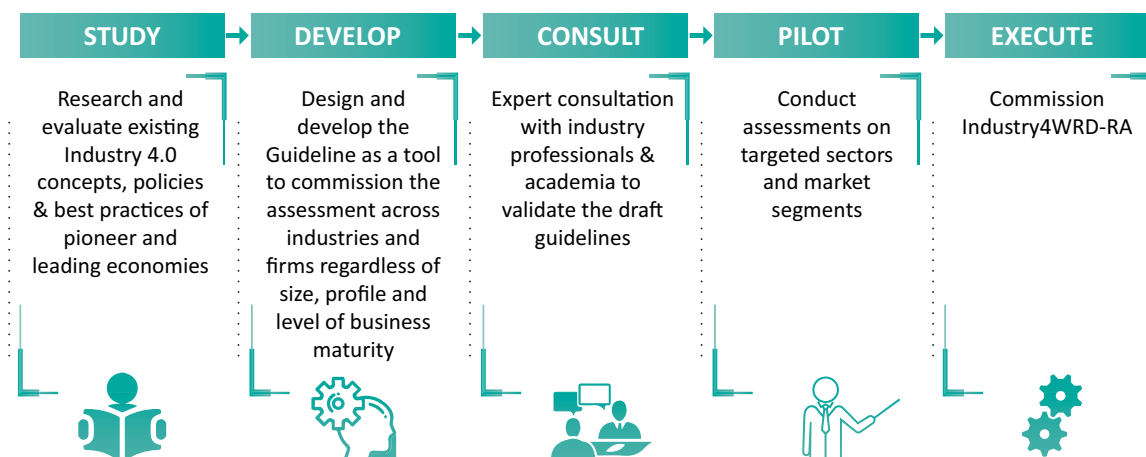
The Industry4WRD Readiness Assessment (Industry4WRD-RA) guidelines have been developed to establish a baseline for manufacturers that will enable businesses to assess their levels, current gaps existing in manufacturing line and the way forward into I4.0 through targeted intervention of experienced assessors. Industry4WRD-RA is tailored to Malaysia's industry landscape and needs to move forward, focusing on the manufacturing and manufacturing related services.

MPC has been given the task to facilitate Industry4WRD-RA to assist SMEs in migrating from existing methods to I4.0 technologies.

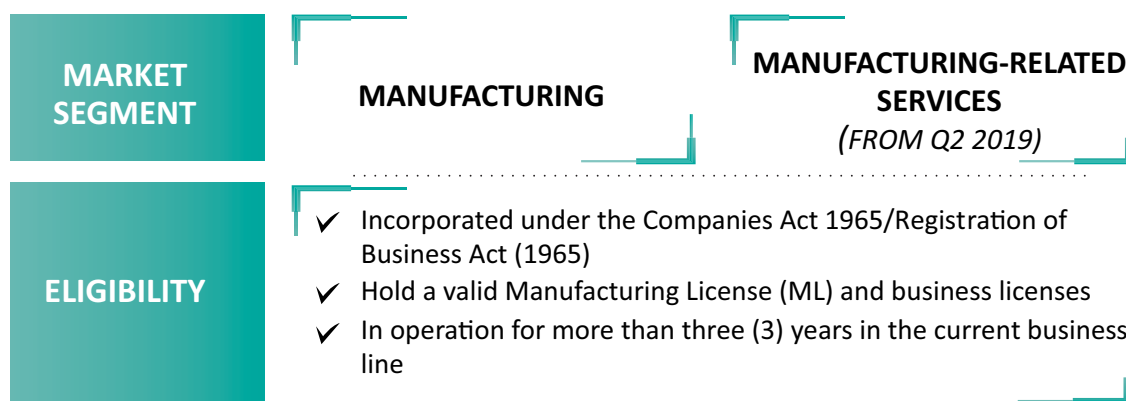
MPC is conducting a series of seminars in collaboration with SIRIM and MIDA, to spread awareness on Industry4WRD and Industry4WRD-RA as well as to share best practices.

A comprehensive programme is used to assess a firm's capabilities by using a pre-determined set of indicators that evaluate the firm's state of readiness in the adoption of I4.0 technologies, as well as identify areas for improvement. It also recognises opportunities for productivity improvement and growth and develops feasible strategies to perform outcome-based intervention projects.

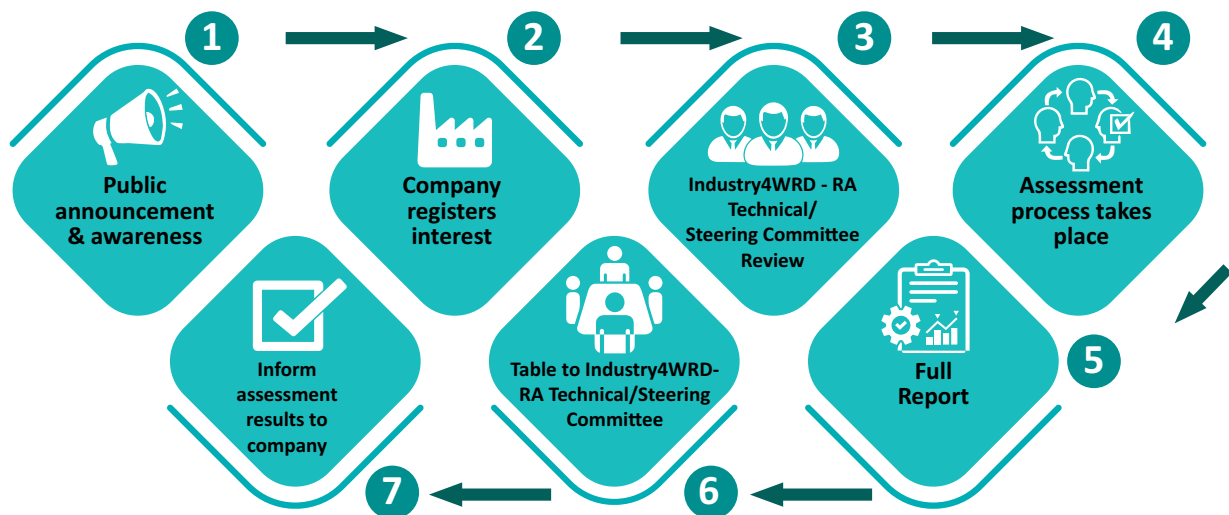
The Establishment of Industry4WRD-RA



Target Audience



Industry4WRD-RA Process

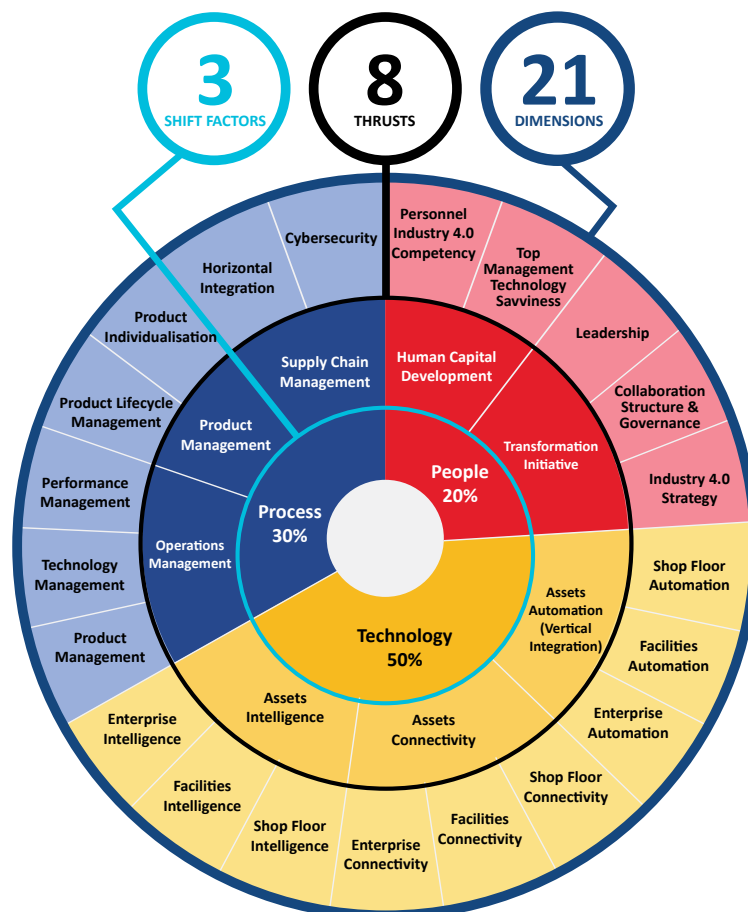


Readiness Criteria Model

The Industry4WRD-RA applies the Readiness Criteria Model to assess a firm's readiness. The model below consists of three interconnected layers of rings with three shift factors, namely technology, people and process (the core ring).

Each shift factor is then divided into thrusts (the middle ring) and each thrust is subsequently divided into dimensions (the third and outermost ring). The structure of interconnected shift factors, thrusts and dimensions is as illustrated.

Industry4WRD-RA : Readiness Criteria Model



i. **Shift Factors for Technology**

The shift factor for technology focuses on the application of intelligent, connected and automated technologies measured at 3 levels of implementation, starting from the shop floor where production activities take place, carrying onto the facilities level where the production area is located and finally at the enterprise level where administrative work is done. Under the business readiness assessment, these 3 dimensions are to be considered at each layer along with the 3 technology thrusts of asset automation (vertical integration), intelligence, and asset connectivity.

ii. **Shift Factors for Process**

This shift factor for process focuses on the management system involved in running business operations, supply chain and product life cycle, by emphasising smart and strategic public-private partnerships, security, sustainability and product co-creation.

For the readiness assessment, the 3 process thrusts of operations management, product management and supply chain management are to be considered. The dimensions of production, technology and performance fall under the operations management thrust, while product life cycle and product individualisation is under product management and horizontal integration of enterprise processes across organisation and cybersecurity elements come under supply chain management.

iii. **Shift Factors for People**

This shift factor for people focuses on the entire organisation by emphasising on strategies towards having the suitable set of workforces. This can be achieved through the development of the 2 main thrusts of human capital development and by sustainable transformation activities. The first thrust consists of the dimensions of leadership and governance collaboration structure and governance, and I4.0 related strategy and the second thrust comprises the dimensions of personnel I4.0 competency and top management technology savviness.

PAVING THE PATH OF PRODUCTIVITY

Revolutionising Productivity

Productivity is all about working smarter, rather than working harder. It reflects our ability to produce better output by combining inputs in the most efficient way thanks to innovative ideas, technological advancements as well as new and improved business models. Productivity growth is the main driver for living standards, which is why the slowdown in productivity over the past decade has raised concerns about long-term growth.

As Malaysia continues to accelerate economically, productivity growth has become the country's central economic policy challenge and has become increasingly important as the country's traditional economic engines have slowed down. There are 3 main aspects that contribute to the country's productivity performance, which are innovation, education and workforce skills and the labour market.

Innovation

With the arrival of I4.0, the convergence of technologies is blurring the lines between the physical and digital in ways that promise to disrupt almost every industry in every country. This all the more stresses the fact that technology-enabled platforms are upending traditional business models and forcing countries to rethink how they formulate economic growth and Malaysia is no exception. In impactful sectors like manufacturing and services, the combination of automation and digitalisation is set to revolutionise the market by increasing efficiency, optimising logistics, making prices more transparent and spurring greater competition.

There is evidence that Malaysia's economy is becoming more innovative, with local firms performing especially well in comparison to other regional countries on measures of non-technical innovation. With this trend taking shape, there is great economic potential to be unearthed, as Malaysian firms that innovate tend to be more productive.

The increase in productivity associated with both technical and non-technical innovation is particularly important for medium-sized firms. On the other hand, large firms and exporting firms tend to be more innovative than small firms and non-exporting firms. This is why larger firms in Malaysia are more likely to engage in all 3 key types of innovations, which are non-technical, technical and R&D.

In recent years, the amount that Malaysian universities spent on R&D, the number of academic researchers, the number of patents and the range of academic publications have all increased. However, there is still considerable scope to improve the overall quality of academic innovation. The limitations to academic innovation include having fewer platforms for conducting interdisciplinary research, a low number of publication citations, a need to enhance collaboration with the private sector and the non-commercialisation of many research outcomes.

The limitations to academic innovation are evident from the fact that Malaysian firms still have difficulty sourcing scientists and engineers from the local labour market. In fact, 1 specific barrier to innovation in the manufacturing and services sectors is the lack of highly-skilled local workers.

Although there is an increase in technological sophistication of modern products and production methods and a rise in knowledge-intensive service subsectors that have magnified the returns to human capital, the Malaysian education system has struggled to equip the workforce with the necessary skills to succeed in a complex and dynamic economy.

Education and Workforce Skills

In comparison, Malaysian workers are more educated than those in its peer countries. About 81% of Malaysian workers have completed secondary school, which is a higher rate than many comparable countries that have high-income and OECD economies.

Nevertheless, a substantial percentage of Malaysian firms report that acquiring workers with the necessary skills poses a significant challenge. The quality and quantity of higher

education and vocational training programmes in Malaysia is improving, but there still remain graduates who struggle to find permanent employment as their skills do not always fulfil the demands of industry.

This skill gap persists even though Malaysia spends more on education and training programmes than many comparable countries, which is why there is a need to continually adapt the education system to meet the demands of an evolving global market and maintain international competitiveness.

Labour Market

While Malaysia's labour market is relatively efficient on the whole, to achieve its goal of becoming a high-income economy, the country needs to embrace more proactive approaches. In order to identify what approaches to adopt moving forward, the nation needs to build on the existing efficiency of the current labour market. The key factors affecting the overall efficiency of Malaysia's labour market includes the few impediments to hiring and firing workers, the ability of firms to attract and retain talent, the close relation of pay and performance and the cooperative worker-employer relations.

Despite the productivity of the Malaysian workforce having increased over the past 25 years, the recent labour productivity growth has not been sufficient to bridge the gap with the higher-income economies in the region or with peer countries worldwide. Approaches to further increase labour productivity growth include taking a holistic approach to productivity, strong coordination, and prioritising a productivity mindset.

Building Productivity That Lasts

From innovation and technological advancements, to work culture and business mindsets, each element plays an integral role in steering the path of productivity across both the public and private sectors. With every citizen and corporation doing their part for I4.0 and the Government giving them the platform to grow, Malaysia can go far in realising its economic aspirations and to live a higher quality of life.



APPENDICES

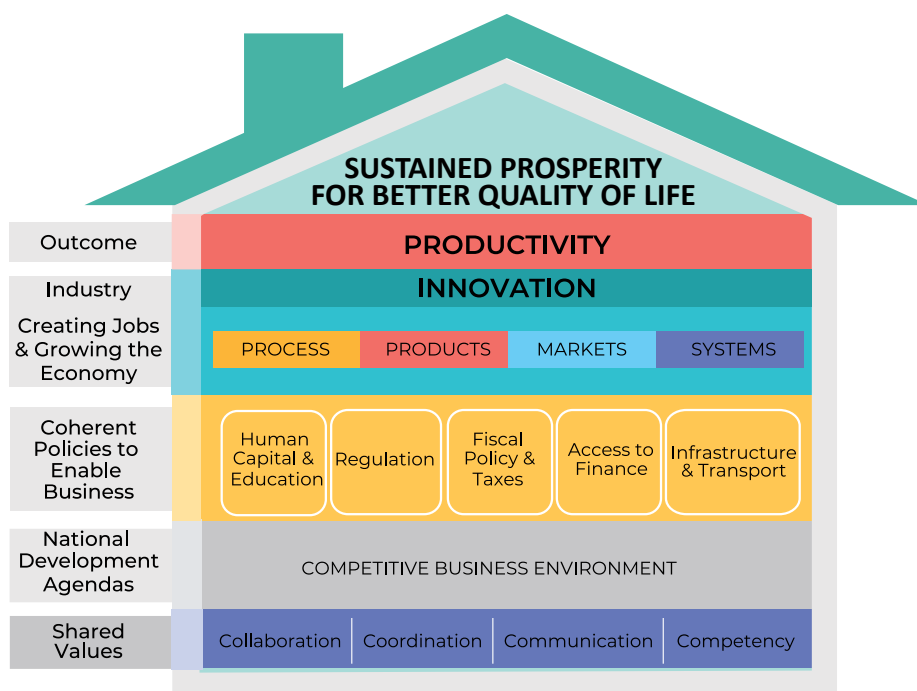
APPENDIX A.1: WHAT IS PRODUCTIVITY?

The Productivity Framework is based on shared Malaysian values that drive national development agendas such as the Economic Transformation Programme, the Government Transformation Plan and the Malaysia Plans. These initiatives form the policy and regulatory foundations of business in terms of human capital and education, regulation, fiscal policy, access to finance and infrastructure.

Policies and initiatives are required to strengthen the foundations of human capital and education, regulation, fiscal policy, access to finance and infrastructure to enhance the country's competitive business environment. This competitive environment is important to create more added value for enterprises, increase employment opportunities, attract investment and talent and create more revenue. It is crucial that the foundation itself encourage businesses to continuously improve their products, processes and systems as these will lead to greater markets through innovation.

Most innovation is incremental and involves a continuous process of applying new techniques, skills or technologies to the business and keeping what works. In this way, production costs are reduced incrementally over time, while product and service quality is improved in response to changing market needs. The innovation is then diffused throughout the industry as competitors copy the practices of these high productivity companies, thereby contributing to economy-wide improvements in productivity. The net result is a real gain in productivity growth.

Innovation and its diffusion is therefore a fundamental aspect of accelerating productivity growth. Successful innovation depends upon the support of sound government policies and regulations as the foundation of productivity. With these elements in place and working in tandem with each other, Malaysia will be able to sustain its prosperity and provide a better quality of life for all its citizens.



HOW WILL HIGHER PRODUCTIVITY BENEFIT THE COUNTRY?

Expands capital investment, upgrades technical capabilities of businesses and improves industry competitiveness	Enhances the country's competitiveness, expands its export base and attracts more foreign investments	Increases savings and lowers prices of goods and services	Ensures a higher standard of living by reducing the effects of inflation, creating more employment opportunities and eliminating social conflict as goods and services become more affordable	Develops personal skills and capabilities that leads to higher overall wages and salaries, improved working conditions, better job security and an improved well being
---	---	---	---	--

APPENDIX A.2: Measuring Productivity

Terminology and Definition

Productivity is the relationship between the amount of output produced and the amount of input used to produce the output. Higher productivity means achieving more with the same or lesser amount of input resources. An increase in productivity will lead to benefits such as higher standard of living, enhanced competitiveness and better quality of life.

Methods to Measure Productivity

Productivity may be measured in two ways: the ratio of output to only one input, or the ratio of output to more than one input. The method involving only one input is called the partial factor productivity measure, while the method involving more than one factor input is called the multi-factor productivity measure or total factor productivity (MFP) measure. Both output and inputs are commonly expressed in monetary terms.

APPENDIX A.2.1: Partial Factor Productivity Measurement

The partial factor productivity measure is the ratio of output to one type of input. Measures of output include Gross Domestic Product (GDP), added value and monetary value of production, while measures of inputs include total employed persons, total man-hours worked, capital or fixed assets, labour cost, energy and bought-in materials and services. Examples of partial productivity measures are labour productivity (the ratio of output to labour input) and capital productivity (the ratio of output to capital input).

VARIABLES	DESCRIPTION
Added Value	<p>Added value measures the wealth generated by the collective efforts of those who work in an enterprise (the employees) and the capital providers (investors and shareholders). Added value is different from sales revenue or value of production because it does not include the wealth created by the suppliers to the enterprise.</p> <p>There are two ways to calculate added value:</p> <p>i) Addition Method This is called the wealth distribution method.</p> <p style="text-align: center;">Added Value = Labour Cost + Interest + Tax + Depreciation + Profit</p> <p>It is called wealth distribution because the added value created is used to pay those who have contributed to its creation in terms of wages and salaries (labour cost) for the employees, interest for capital providers, taxes to the Government, depreciation for capital equipment usage and profits to the owners.</p> <p>ii) Subtraction Method This is called the wealth creation method.</p> <p style="text-align: center;">Added Value = Total Output less Bought-In Materials and Services (BIMS)</p> <p>In order to produce goods or services, a company has to purchase the necessary raw materials and other inputs. The difference between the total value of output and total cost of inputs i.e. all inputs and services bought from another company is called added value.</p>

VARIABLES	DESCRIPTION
Total Output	<p>Ex-factory value (Sales - Opening Stocks: finished goods + Closing Stocks: finished goods - Carriage outwards - Commission to selling agents - Tax on products)</p> <p>+ Income from industrial services rendered + Value of sales (from goods purchased for resale without further processing) + Value of other industrial work done + Income from other output + Professional fees received + Commission and brokerage earned + Capital expenditure for built / Self-produced + Closing Stocks: goods in process - Opening Stocks: goods in process + Closing Stocks: goods purchased for resale - Opening Stocks: goods purchased for resale</p>
Bought-In Materials And Services (BIMS)	<p>Cost of raw materials</p> <p>+ Packing materials and containers + Materials used for repairs and maintenance + Factory requisites & Stationery and office supplies + Utility, fuels, lubricants & gas purchased + Cost of goods sold (purchased for resale without undergoing further processing) + Payments for processing work done by others on materials supplied by company & payments for current repairs and maintenance work done by others on company's fixed assets + Payments for non-industrial services</p>
Employed Persons (Average for the period)	<p>All categories of employees, including working directors/proprietors/partners, unpaid family workers and part-time workers.</p>
Labour Cost	<p>Wages and salaries (including commissions, bonuses and benefits), remuneration paid to working directors/proprietors/partners, and EPF/ SOCSO paid by employers.</p>
Fixed Assets (Average for the period)	<p>All physical assets namely transport equipment, computers, machinery and equipment, and furniture and fittings.</p>

APPENDIX A.2.2: Decomposition of Labour Productivity Growth

The Solow-Swan model (Solow 1956, Swan 1956) is the starting point for most theoretical analyses of economic growth. Its main conclusion is that the accumulation of physical capital and labour cannot drive sustained, long run growth in output per person, and that this is instead driven by the rate of technological change (productivity growth). The model assumes that the production function takes the form:

$$Y = f(A, K, L)$$

Where A represents technology, and K and L represent capital and labour, respectively. A is chosen as an input to the model, rather than being determined within it, and can be interpreted in terms of the stock of knowledge or innovation, disembodied education and skills, the strength of property rights, the quality of infrastructure and cultural attitudes to entrepreneurship and work. New growth theories build on the Solow-Swan concepts so that technological growth, human capital, and institutions are determined within the model (Solow 2005). Microeconomic theory has additional insights regarding a country's position on its production possibilities frontier, which represents the most efficient means of producing a range of goods and services.

These concepts suggest ways by which a country can improve its economic growth. Firstly, a country can move to a more optimal position on its domestic production possibilities frontier by changing the combination of products it produces for a given set of inputs. Secondly, a country can 'catch up' to the global production possibility frontier, by adopting more efficient processes and technologies that have been developed elsewhere. Finally, a country that is producing optimally on the global production possibilities frontier can push that frontier outward, through innovation.

MFP indicates the efficiency with which inputs are being used in the production process, and includes pure technological change, A , along with changes in returns to scale. Labour productivity (LP) measures the level of output per unit of labour input (such as employee and hours worked). The relationship between labour productivity growth and MFP growth is:

$$\text{LP growth} = \text{MFP growth} + \text{a contribution from growth in capital deepening}$$

In practice, measured productivity performance is influenced by all the factors that affect the level of production and the use of labour and capital. This includes competition, business cycles, trade, financial markets, regulation, technological change, weather, population growth and ageing, education, infrastructure, geography and structural change. Some of these factors are within the influence of government policy and reform to varying degrees, while others are not.

APPENDIX A.2.3: Multi-Factor Productivity (MFP) Measurement

The MFP measure is the ratio of total output to the sum of all input factors. It measures the efficiency of the utilisation of all inputs to produce output. Formerly, the growth accounting technique was utilised to measure MFP, where inputs were limited to labour and capital. But the influence of knowledge-based economic factors in today's globalised economy has necessitated a new approach in measuring MFP known as KLEMS (Capital, Labour, Energy, Materials and Services).

The KLEMS methodology utilises more broadly defined input factors in which intermediate inputs such as energy and bought-in materials and services are included in the measurement. Both labour and capital input factors are now decomposed into more detailed segments to enable more detailed analysis in terms of labour quality and quantity for labour input, while capital input is now decomposed into ICT and non-ICT capital.

Model Specification in Deriving Sources of Long-Term Economic and Productivity Growth

The production functions are assumed to be separable in these inputs as the starting point:

$$Y_j = g_j(Y_{ij}) = f_j(K_j, L_j, X_j, T) \quad (1)$$

Where Y is output, K is an index of capital service flow, L is an index of labour service flows and X is an index of intermediate inputs, which consists of the intermediate inputs purchased from the other domestic industries and imported products. Under the assumptions of constant returns to scale and competitive markets, the value of output is equal to the value of all inputs as can be expressed as:

$$P_j^Y Y_j = P_j^K K_j + P_j^L L_j + P_j^X X_j \quad (2)$$

Where P_j^Y denotes the price of output, P_j^X denotes the price of intermediate inputs, P_j^K denotes the price of capital services and P_j^L denotes the price of labour services. Under the standard assumption of profit maximising behavior, competitive markets, such that factors are paid their marginal product, and constant returns to scale, we can define MFP growth ($\Delta \ln t_j$) as follows:

$$\Delta \ln t_j = \Delta \ln Y_{jt} - \bar{v}_{jt}^X \Delta \ln X_{jt} - \bar{v}_{jt}^K \Delta \ln K_{jt} - \bar{v}_{jt}^L \Delta \ln L_{jt} \quad (3)$$

Growth of MFP is derived as the real growth of output minus a weighted growth of inputs where $\Delta X = X_t - X_{t-1}$ denotes the change between year $t-1$ and t , and \bar{v}_{jt} with a bar denoting period averages and \bar{v} is the two period average share of the input in the nominal value of output. The value share of each input is defined as follows:

$$v_{jt}^X = \frac{P_{jt}^X X_{jt}}{P_{jt}^Y Y_{jt}}; \quad v_{jt}^L = \frac{P_{jt}^L L_{jt}}{P_{jt}^Y Y_{jt}}; \quad v_{jt}^K = \frac{P_{jt}^K K_{jt}}{P_{jt}^Y Y_{jt}} \quad (4)$$

The assumption of constant returns to scale implies $v_{jt}^X + v_{jt}^L + v_{jt}^K = 1$ and allows the observed input shares to be used in the estimation of MFP growth in equation (3). Rearranging (4) yields the standard growth accounting decomposition of output growth into the contribution of each input and MFP (denoted by A^Y):

$$\Delta \ln Y_{jt} = \bar{v}_{jt}^X \Delta \ln X_{jt} + \bar{v}_{jt}^K \Delta \ln K_{jt} + \bar{v}_{jt}^L \Delta \ln L_{jt} + \Delta \ln A_{jt}^Y \quad (5)$$

where the contribution of each input is defined as the product of the input's growth rate and its two period average revenue share.

In order to decompose growth at higher levels of aggregation, a more restrictive industry value-added function was defined, which gives the quantity of value added as a function of only capital, labor and time as:

$$V_j = g_j(K_j, L_j, T) \quad (6)$$

where V_j is the quantity of industry value added. Value added consists of capital and labour inputs, and the nominal value is:

$$P_j^V V_j = P_j^K K_j + P_j^L L_j \quad (7)$$

Where P^V is the price of value added. Under the same assumptions as above, industry value added growth can be decomposed into the contribution of capital, labour and MFP (A^V).

$$\Delta \ln V_{jt} = \bar{w}_{jt}^K \Delta \ln K_{jt} + \bar{w}_{jt}^L \Delta \ln L_{jt} + \Delta \ln A_{jt}^V \quad (8)$$

Where is the two period average share of the input in nominal value added. The value share of each input is defined as follows:

$$w_{jt}^L = (P_{jt}^V V_{jt})^{-1} P_{jt}^L L_{jt}; \quad w_{jt}^K = (P_{jt}^V V_{jt})^{-1} P_{jt}^K L_{jt} \quad (9)$$

$$\Delta \ln V_{jt} = \frac{1}{\bar{v}_{jt}^V} (\Delta \ln Y_{jt} - (1 - \bar{v}_{jt}^V) \Delta \ln X_{jt}) \quad (10)$$

Output and Intermediate Input Accounts

This methodology was introduced by Jorgenson, Gollop and Fraumeni (1987). We define the quantity of output in industry j as an aggregate of M distinct outputs using the Tornqvist index as:

$$\Delta \ln Y_{jt} = \sum_{i=1}^m \bar{v}_{ijt}^Y \Delta \ln Y_{ijt}$$

\bar{v}_{jt}^Y with a bar denoting period averages and is the two period average share of product i in the nominal value of output. The value share of each product is defined as follows:

$$v_{ijt}^Y = (\sum_i p_{ijt}^Y Y_{ijt})^{-1} p_{ijt}^Y Y_{ijt}$$

With P_{ij}^Y = the basic price received by industry j for selling commodity i .

The intermediate input quantity index for industry j is defined analogously by:

$$\Delta \ln X_{jt} = \sum_i \bar{v}_{ijt}^X \Delta \ln X_{ijt}$$

where $v_{ijt}^X = (\sum_i p_{ijt}^X X_{ijt})^{-1} p_{ijt}^X X_{ijt}$ with p_{ij}^X = the price paid by industry j for using product i .

Labour Accounts

The aim of the labour accounts is to estimate total labour input so that it reflects the actual changes in the amount and quality of labour input over time. In short, in this method the labour force is subdivided into types based on various characteristics, in this case age, gender and educational attainment. It is further assumed that the flow of labour services for each labour type is proportional to hours worked, and workers are paid their marginal productivities. Hence the corresponding index of labour services input L is a translog quantity index of individual types, indexed by l , and given by:

$$\Delta \ln L_t = \sum_l \bar{v}_{l,t} \Delta \ln H_{l,t}$$

where weights are given by the average shares of each type in the value of labor compensation $\bar{v}_{l,t} = \frac{1}{2}[v_{l,t} + v_{l,t-1}]$ with $v_{l,t} = (\sum_l p_{l,t}^L H_{l,t})^{-1} p_{l,t}^L H_{l,t}$ and $p_{l,t}^L$ the price of one hour work of labor type l .

Capital Accounts

For the measurement of capital services we need capital stock estimates for detailed assets and the shares of capital remuneration in total output value.

The most commonly employed approach in capital stock measurement is the Perpetual Inventory Method (PIM). In the PIM, capital stock (A) is defined as a weighted sum of past investments with weights given by the relative efficiencies of capital goods at different ages according to (industry subscripts are suppressed for convenience).

$$A_{k,t} = \sum_{\tau=0}^{\infty} \theta_{k,t,\tau} I_{k,t-\tau}$$

with $A_{k,t}$ the capital stock for a particular asset type k at time t , $\theta_{k,t,\tau}$, the efficiency of a capital good of age τ relative to the efficiency of a new capital good and $I_{k,t-\tau}$, the investment in period $t-\tau$. Hence with a given constant rate of depreciation δ , different for each asset type, $\theta_{k,t} = (1-\delta)^t$ and it follows that the capital stock of a particular asset k at time t , $A_{k,t}$ is given by:

$$A_{k,t} = \sum_{\tau=0}^{\infty} (1-\delta_k)^\tau I_{k,t-\tau} = (1-\delta_k) A_{k,t-1} + I_{k,t}$$

For the aggregation of capital services over the different asset types it is assumed that aggregate services are a translog function of the services of individual assets. It is further assumed that the flow of capital services for each asset type is proportional to its stock, independent of time. Hence the corresponding index of capital input K is a translog quantity index of individual assets in a particular industry given by:

$$\Delta \ln K_t = \sum_k \bar{v}_{k,t} \Delta \ln A_{k,t}$$

where weights are given by the average shares of each component in the value of capital compensation $\bar{v}_{k,t} = \frac{1}{2} [v_{k,t} + v_{k,t-1}]$ and with p_{kt}^K , the price of capital services from asset type k .

In equilibrium, an investor is indifferent between two alternatives: buying a unit of capital at investment price p_{kt}^I , collecting a rental fee and then selling the depreciated asset for $(1-\delta_k)p_{k,t+1}^I$ in the next period, or earning a nominal rate of return, i , on a different investment opportunity.

The equilibrium condition can be rearranged, yielding the familiar cost-of-capital equation:

$$p_{k,t}^K = p_{k,t-1}^I i + \delta_k p_{k,t}^I - [p_{k,j,t}^I - p_{k,j,t-1}^I] \text{ or } p_{k,t}^K = r_{k,t} p_{k,t-1}^I + \delta_k p_{k,t}^I$$

The nominal rate of return can be estimated as follow:

$$i_{j,t} = \frac{p_{j,t}^K K_{j,t} + \sum_k [p_{k,j,t}^I - p_{k,j,t-1}^I] A_{k,j,t} - \sum_k p_{k,j,t}^I \delta_k A_{k,j,t}}{\sum_k p_{k,j,t-1}^I A_{k,j,t}}$$

Where the first $p_{j,t}^K K_{j,t}$ term is the capital compensation in industry j , which under constant returns to scale can be derived as value added minus the compensation of labour.

APPENDIX A.2.4: Productivity Indicators

Labour Productivity

Labour productivity is one way of gauging the productivity performance of an industry. The most commonly used indicator is Added Value per Employee.

Ratio	Unit	What it Tells
i) Added Value Per Employee $= \frac{\text{Added Value}}{\text{No. of Employees}}$	Ringgit Malaysia (RM)	<p>Reflects the amount of wealth created by the company relative to the number of employees it has. It is influenced by:</p> <ul style="list-style-type: none"> • Management efficiency • Work attitudes • Price effects • Demand for the company's products <p>A high ratio indicates the favourable effects of labour factors in the wealth creation process.</p> <p>A low ratio means unfavourable effects working procedures such as:</p> <ul style="list-style-type: none"> • High price of bought-in materials and services (BIMS) • Time and/or material wastage • Inadequate salary or wage rates
ii) Total Output Per Employee $= \frac{\text{Total Output}}{\text{No. of Employees}}$	Ringgit Malaysia (RM)	The size of output generated by each employee of the enterprise.
iii) Added Value Per Hour Work $= \frac{\text{Added Value}}{\text{Total Hours Work}}$	Ringgit Malaysia (RM)	<p>Reflects the amount of wealth created by the company relative to the number of working hour according to types of employees:</p> <ul style="list-style-type: none"> • Full time • Part time • Self Employed

Appendix B.1 : Labour Productivity Performance of Services Sector, 2017 – 2018^P

	Added Value (RM Billion)			Employment ('000 Persons)			Labour Productivity (RM)	
	2017	2018 ^P	Contribution (%), 2018	2017	2018 ^P	Contribution (%), 2018	2017	2018 ^P
Services	722.6 (6.2%)	771.9 (6.8%)	100.0	8,601 (1.9%)	8,880 (3.2%)	100.0	84,015 (4.2%)	86,921 (3.5%)
Utilities	34.4 (2.8%)	36.0 (4.9%)	4.7	98 (-0.4%)	101 (2.7%)	1.1	350,510 (3.2%)	356,703 (2.1%)
Wholesale & retail trade	209.7 (7.1%)	226.8 (8.1%)	29.4	2,374 (4.1%)	2,449 (3.2%)	27.6	88,331 (2.9%)	92,604 (4.8%)
F&B and accommodation	41.7 (7.5%)	45.5 (8.9%)	5.9	1,403 (2.6%)	1,516 (8.1%)	17.1	29,756 (4.8%)	29,995 (0.8%)
Transportation and storage	47.2 (6.2%)	50.2 (6.4%)	6.5	516 (0.7%)	526 (1.9%)	5.9	91,525 (5.5%)	95,496 (4.4%)
Information and communication	73.0 (8.4%)	79.1 (8.3%)	10.2	216 (6.3%)	223 (3.7%)	2.5	337,903 (2.0%)	354,623 (4.5%)
Finance and insurance	84.5 (4.6%)	89.3 (5.7%)	11.6	362 (3.1%)	368 (1.8%)	4.1	233,345 (1.5%)	242,579 (3.8%)
Real estate and business service	59.0 (7.4%)	63.5 (7.6%)	8.2	1,055 (3.4%)	1,092 (3.5%)	12.3	55,958 (3.8%)	58,175 (3.9%)
Other services	173.1 (4.8%)	181.5 (4.8%)	23.5	2,576 (-1.1%)	2,603 (1.0%)	29.3	67,197 (6.0%)	69,715 (3.8%)

Note : P-Preliminary

Value in brackets represent growth

Data is based on constant price 2015 for value added and labour productivity

Added value (level & growth), Employment (person & growth), productivity growth is sourced from Department of Statistics, Malaysia

Labour productivity level is computed by Malaysia Industrial Productivity Database (MIPD)

Appendix B.2 : Labour Productivity Performance of Manufacturing Sector, 2017–2018^P

	Added Value (RM Billion)			Employment ('000 Persons)			Labour Productivity (RM)	
	2017	2018 ^P	Contribution (%), 2018	2017	2018 ^P	Contribution (%), 2018	2017	2018 ^P
Manufacturing	290.5 (6.0%)	304.8 (5.0%)	100.0	2,441 (2.1%)	2,502 (2.5%)	100.0	118,993 (3.9%)	121,841 (2.4%)
Vegetables and animals oils & fats & food processing	28.4 (11.2%)	29.5 (3.7%)	9.7	416 (2.2%)	429 (3.1%)	17.1	68,317 (8.7%)	68,676 (0.6%)
Beverages and tobacco products	8.6 (6.0%)	8.8 (2.6%)	2.9	18 (5.3%)	19 (3.5%)	0.8	477,722 (0.7%)	464,316 (-0.9%)
Textiles, wearing apparel and leather products	5.7 (7.9%)	5.9 (4.3%)	1.9	225 (1.4%)	239 (6.6%)	9.6	25,253 (6.5%)	24,787 (-2.2%)
Wood products, furniture, paper products and printing	19.7 (4.7%)	20.6 (4.6%)	6.7	302 (-1.6%)	302 (0.1%)	12.1	65,089 (6.4%)	68,113 (4.5%)
Petroleum, chemical, rubber and plastic products	85.0 (4.0%)	88.4 (4.0%)	29.0	389 (2.0%)	395 (1.6%)	15.8	219,506 (2.0%)	223,813 (2.4%)
Non-metallic mineral products, basic metal and fabricated metal	34.5 (4.9%)	36.2 (4.9%)	11.9	353 (5.7%)	361 (2.2%)	14.4	97,779 (-0.8%)	100,327 (2.6%)
Electrical, electronic and optical products	81.2 (7.5%)	86.3 (6.3%)	28.3	545 (1.6%)	562 (3.2%)	22.5	149,022 (5.9%)	153,584 (3.0%)
Transport equipment, other manufacturing and repair	27.4 (5.3%)	29.1 (6.4%)	9.6	193 (3.4%)	194 (0.6%)	7.8	142,829 (1.8%)	150,164 (5.8%)

Note : P-Preliminary

Value in brackets represent growth

Data is based on constant price 2015 for value added and labour productivity

Added value (level & growth), Employment (person & growth), productivity growth is sourced from Department of Statistics, Malaysia

Labour productivity level is computed by Malaysia Industrial Productivity Database (MIPD)

Appendix B.3 : Labour Productivity Performance of Agriculture, Mining and Quarrying & Construction Sectors, 2017 – 2018^p

	Added Value (RM Billion)			Employment ('000 Persons)			Labour Productivity (RM)	
	2017	2018 ^p	Contribution (%), 2018	2017	2018 ^p	Contribution (%), 2018	2017	2018 ^p
Agriculture	99.4 (5.7%)	99.5 (0.1%)	100.0	1,839 (3.6%)	1,844 (0.2%)	100.0	54,041 (2.1%)	53,942 (-0.2%)

	Added Value (RM Billion)			Employment ('000 Persons)			Labour Productivity (RM)	
	2017	2018 ^p	Contribution (%), 2018	2017	2018 ^p	Contribution (%), 2018	2017	2018 ^p
Mining and Quarrying	105.8 (0.4%)	103.1 (-2.6%)	100.0	73 (-1.1%)	69 (-4.5%)	100.0	1,459,000 (1.5%)	1,489,000 (2.1%)

	Added Value (RM Billion)			Employment ('000 Persons)			Labour Productivity (RM)	
	2017	2018 ^p	Contribution (%), 2018	2017	2018 ^p	Contribution (%), 2018	2017	2018 ^p
Construction	63.5 (6.7%)	66.2 (4.2%)	100.0	1,497 (-0.1%)	1,509 (0.8%)	100.0	42,433 (6.8%)	43,882 (3.4%)

Note : P-Preliminary
Value in brackets represent growth
Data is based on constant price 2015 for value added and labour productivity
Added value (level & growth), Employment (person & growth), productivity growth is sourced from Department of Statistics, Malaysia
Labour productivity level is computed by Malaysia Industrial Productivity Database (MIPD)

ACRONYMS AND ABBREVIATIONS

7MP	Seventh Malaysia Plan	EDMS	Electronic Document Management System
11MP	Eleventh Malaysia Plan	EEPN	Electrical & Electronics Productivity Nexus
AFPN	Agro-Food Productivity Nexus	EOBD	Ease of Doing Business
ALOS	Average Length of Stay	ERP	Enterprise Resource Planning
APQC	American Productivity and Quality Center	F&B	Food and Beverages
AGPC	Australian Government Productivity Commission	FIRST	5 Strategic Enablers
BE	Business Excellence	GDP	Gross Domestic Product
BP	Best Practices	GFCF	Gross Fixed Capital Formation
BIM	Building Information Modelling	GII	Global Innovation Index
BOND	Best Practices Online Database	GLC	Government-Linked Companies
CBA	Cost-Benefit Analysis	GRP	Good Regulatory Practice
CCPN	Chemicals and Chemical Products Productivity Nexus	HPE	High Productivity Enterprise
CIDB	The Construction Industry Board	HSE	Health, Safety & Environment
CSI	Customer Satisfaction Index	I4.0	Industry 4.0
DMAIC	Define, Measure, Analyse, Improve and Control	IBS	Industrialised Building System
DTF	Distance to Frontier	ICT	Information and Communication Technology
E&E	Electrical & Electronics	ICTPN	Productivity Nexus for ICT
e-PGM	Online Productivity Gain Measurement	IIOT	Industrial Internet of Things

Industry4WRD-RA	Industry4WRD Readiness Assessment	MEPN	M&E Productivity Nexus
IoT	Internet of Things	MFP	Multi Factor Productivity
IP	Intellectual Property	MGS	MSC Development Grant Scheme
IPS	Industry Productivity Specialist	MIPD	Malaysia Industrial Productivity Database
IR4	Fourth Industrial Revolution	MTR	Mid-Term Review
IT	Information Technology	MITI	Ministry of International Trade and Industry
JCI	Joint Commission International	ML	Manufacturing License
JKPTG	Department of Director General of Lands and Mines	MOA	Ministry of Agriculture and Agro-based Industry
JMG	Department of Mineral and Geoscience	MOH	Ministry of Health
JPSM	Forestry Department Peninsular Malaysia	MOW	Ministry of Works
KATS	Ministry of Water, Land and Natural Resources	MPB	Malaysia Productivity Blueprint
KLEMS	Capital, Labour, Energy, Material and Services	MPC	Malaysia Productivity Corporation
KPI	Key Performance Indicators	MPI	Ministry of Primary Industry
LFPR	Labour Force Participation Rate	MPSP	Majlis Perbandaran Seberang Prai
M&E	Machinery and Equipment	MyCURE	Cutting Red Tape
MATRADE	Malaysia External Trade Development Corporation	NKEAs	National Key Economic Areas
MBEF	Malaysia Business Excellence Framework	NTMs	Non-Tariff Measures
MBL	Modernising Business Licensing	OECD	Organisation for Economic Cooperation and Development
MEIF	Machinery & Engineering Industries Federation	ONS	Office of National Statistic UK



OOH	Out-of-home	SHIP	Showcase on Innovation for Productivity
OSC	One Stop Centre	SMART	Sunway Managerial Advancement for Recruited Talents
PEMUDAH	The Special Task Force to Facilitate Business	SME	Small and Medium Enterprise
PHPN	Private Healthcare Productivity Nexus	SOK	Self-Ordering Kiosk
PMO	Prime Minister 's Office	SPN	National Water Service Commission
PSPN	Professional Services Productivity Nexus	TCB	The Conference Board
R&D	Research and Development	TNB	Tenaga Nasional Berhad
RA	Readiness Assessments	TPN	Tourism Productivity Nexus
RFBPN	Productivity Nexus for Retail and F&B	TVET	Technical and Vocational Education and Training
RIA	Regulatory Impact Analysis	TWGs	Technical Working Groups
RIS	Regulatory Impact Statement	USD	United States Dollar
RM	Ringgit Malaysia	VDC	Virtual Design Construction
RN	Regulatory Notification	WBDB	World Bank Doing Business
RNF	Regulatory Notification Form	WBG	World Bank Group
RURB	Reducing Unnecessary Regulatory Burden	WCY	World Competitiveness Yearbook

HEADQUARTERS

Malaysia Productivity Corporation

Lorong Produktiviti, Jalan Sultan
46200 Petaling Jaya, Selangor
Malaysia
Tel: 603 – 7955 7266/7955 7050/7955 7085
Fax: 603 – 7957 8068/7955 1824/7958 1697
Website: www.mpc.gov.my
Email: marketing@mpc.gov.my

MPC REGIONAL OFFICES

Malaysia Productivity Corporation (Petaling Jaya Office)

A-06-01, Level 6, Block A, PJ 8
No. 23, Jalan Barat Seksyen 8
46050 Petaling Jaya, Selangor
Malaysia
Tel: 03-7960 0173 / 0176 / 0178
Fax: 03-7960 0211
Email: marketing@mpc.gov.my

Malaysia Productivity Corporation (Northern Region Office)

Locked Bag 206
Jalan Tun Hamdan Sheikh Tahir
13200 Kepala Batas, Seberang Perai Utara
Pulau Pinang, Malaysia
Tel: 604 – 575 4709
Fax: 604 – 575 4410
Email: nro@mpc.gov.my

Malaysia Productivity Corporation (Southern Region Office)

No. 8, Jalan Padi Mahsuri
Bandar Baru UDA
81200 Johor Bahru, Johor
Malaysia
Tel: 607 – 237 7422 / 237 7644
Fax: 607 – 238 0798
Email: sro@mpc.gov.my

Malaysia Productivity Corporation (East Coast Region Office)

Level 14, Menara Zenith
Jalan Putra Square 6
25200 Kuantan, Pahang
Malaysia
Tel: 609 – 513 1788 / 513 1789
Fax: 609 – 513 8903
Email: ecr@mpc.gov.my

Malaysia Productivity Corporation (Kelantan Office)

Level 3, Wisma PERKESO
Jalan Kota Darulnaim
15538 Kota Bharu, Kelantan
Malaysia
Tel: 09-741 6260 / 741 6262
Fax: 09-741 6263
Email: ecrk@mpc.gov.my

Malaysia Productivity Corporation (Terengganu Office)

Lot No. 1F 22,
Kompleks Usahawan Terengganu
Kubang Jela, Manir
21200 Kuala Terengganu, Terengganu
Malaysia
Tel: 609 – 615 6089
Fax: 609 – 615 6081
Email: ecrt@mpc.gov.my

Malaysia Productivity Corporation (Sabah Region Office)

Level 2, MAA Tower
No. 6, Lorong Api-Api 1
88000 Kota Kinabalu, Sabah
Malaysia
Tel: 6088 – 233 245 / 235 837
Fax: 6088 – 242 815
Email: sbo@mpc.gov.my

Malaysia Productivity Corporation (Sarawak Region Office)

Lot 894, Lorong Demak Laut 3A
Demak Laut Industrial Park
93050 Kuching, Sarawak
Malaysia
Tel: 6082 – 439 959 / 439 960
Fax: 6082 – 439 969
Email: sko@mpc.gov.my

NOTES



NOTES





Malaysia Productivity Corporation
Lorong Produktiviti, Jalan Sultan
46200 Petaling Jaya, Selangor
Tel: 603 - 7955 7266
Fax: 603 - 7957 8086
Website: www.mpc.gov.my

