STRENGTHENING DEFENCE R&D ECOSYSTEM

Contribution of R&D to Economic Growth

Unit Perancang Ekonomi
Jabatan Perdana Menteri

NATIONAL SEMINAR ON DEFENCE S&T 2021

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Outline

1 Introduction

2 Issues & Challenges

3 Moving Forward

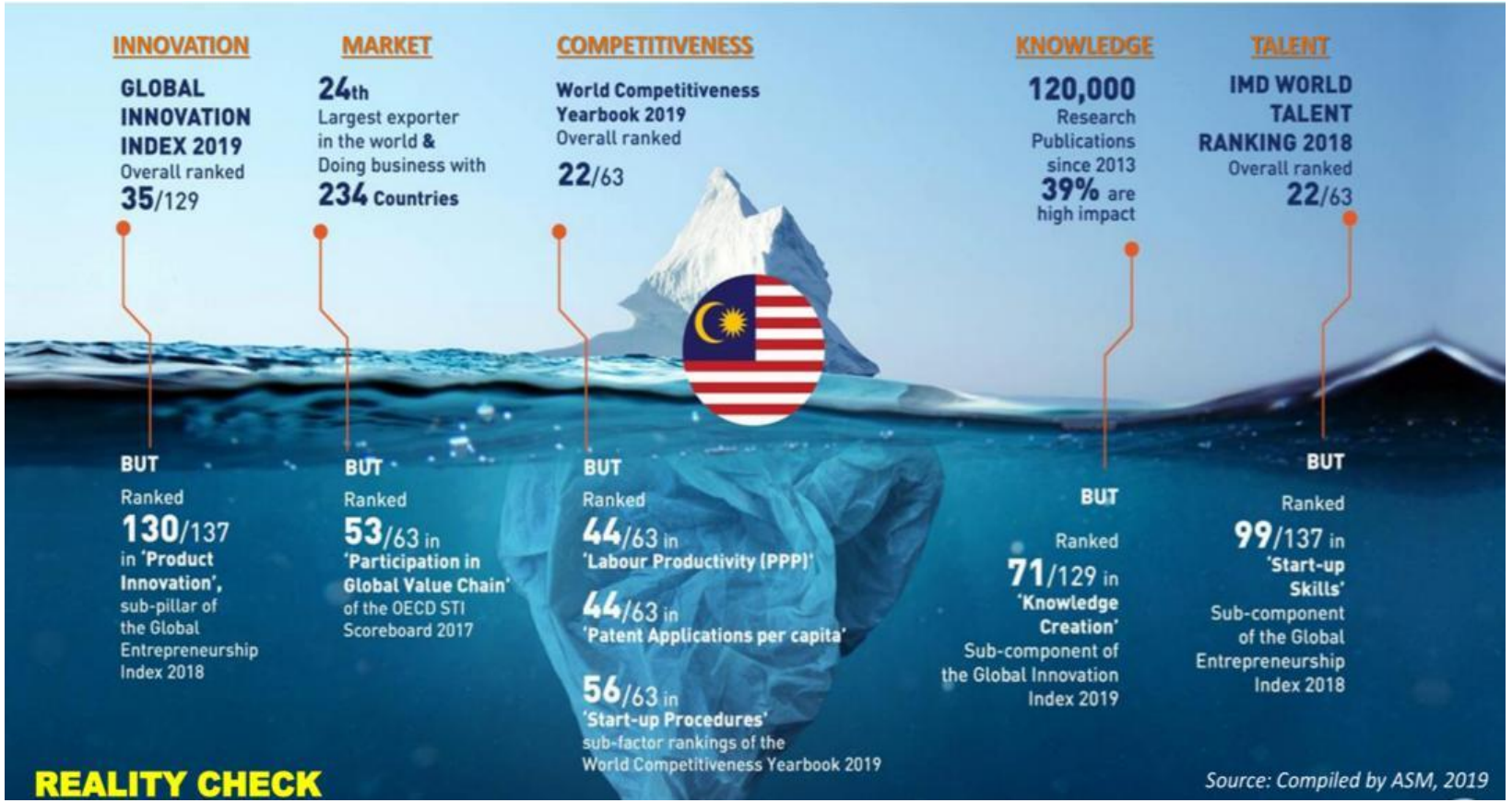
4 Defence S&T for Economic Growth

5 Conclusion

Introduction

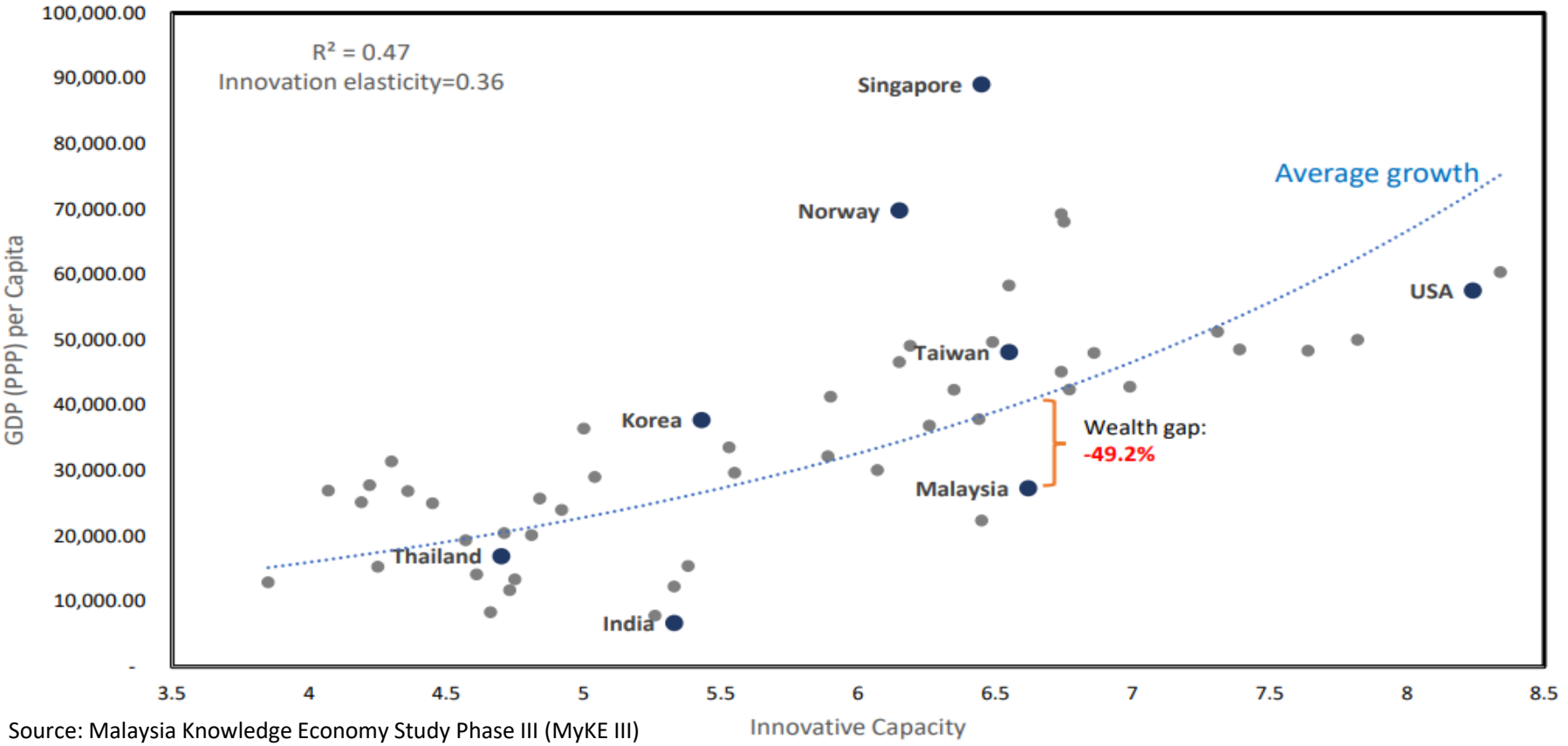
- The Malaysian STI approach is an **innovation-led approach.**
- Malaysia needs to constantly keep abreast with the **rapid changes in technology and the growth of knowledge.**
- Malaysia aspires to build a balanced, sustainable and inclusive **economy, driven by** science and technology-based **knowledge capital.**

Malaysia Global Outlook



- Malaysia's competitiveness is driven by good talent & infrastructure not innovation
- Innovation capacity & skills need to be strengthened to move STI-based enterprise

Relationship between Innovative Capacity & Wealth, 2016



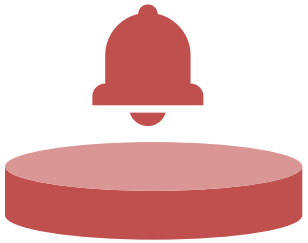
Source: Malaysia Knowledge Economy Study Phase III (MyKE III)

- Based on average growth trend, **increase in innovation will increase wealth at a faster pace**.
- Every 1% increase in innovation increases wealth by 0.36%.
- **GDP growth Malaysia was significantly lower than its potential output level with a gap of 49.2%**.

Issues & Challenges

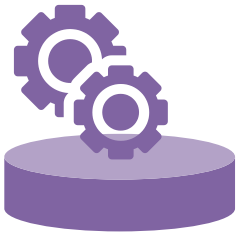
Insufficient Investment in R&D&C&I

Lack of investment (Public & Private Sectors)



Lack of investment in high-end R&D

Low commercialisation & experimental research



Poor coordination among agencies

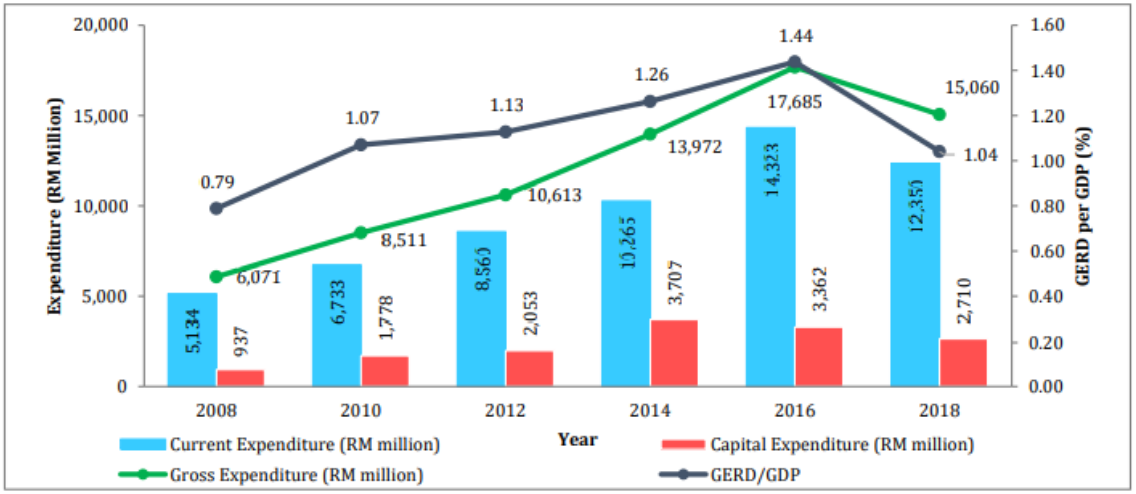
Insufficient STI talent

Global Entrepreneurship Index (GEI): 65th out of 137 countries

Global Innovation Index (GII): dropped from 32nd position in 2015 to 33rd in 2020

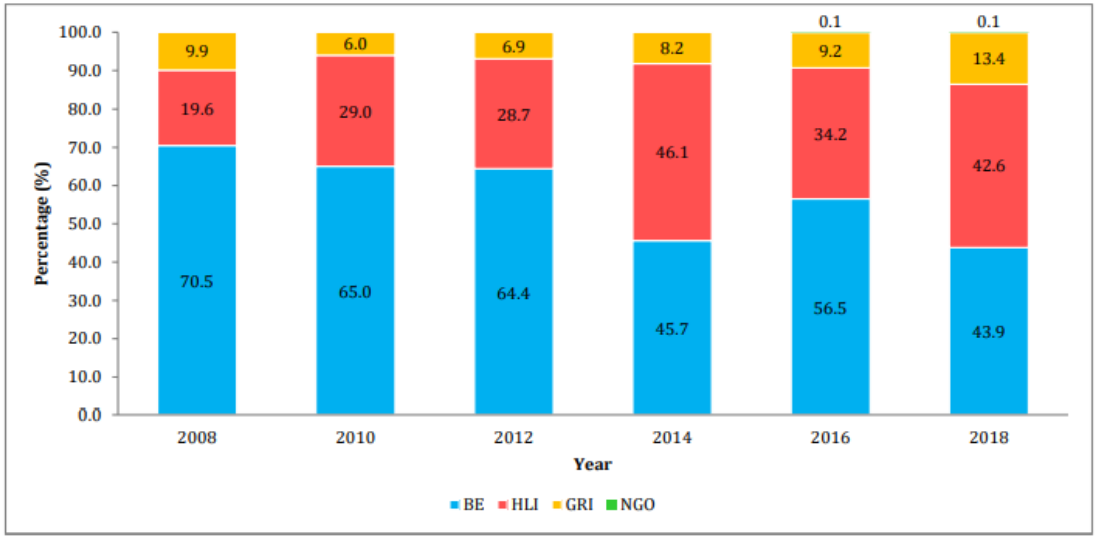
Expenditure for research & development increased but not sufficient enough to drive growth

Gross Expenditure by Type of Cost in R&D, 2008-2018



Source: National Survey of Research and Development (R&D) in Malaysia

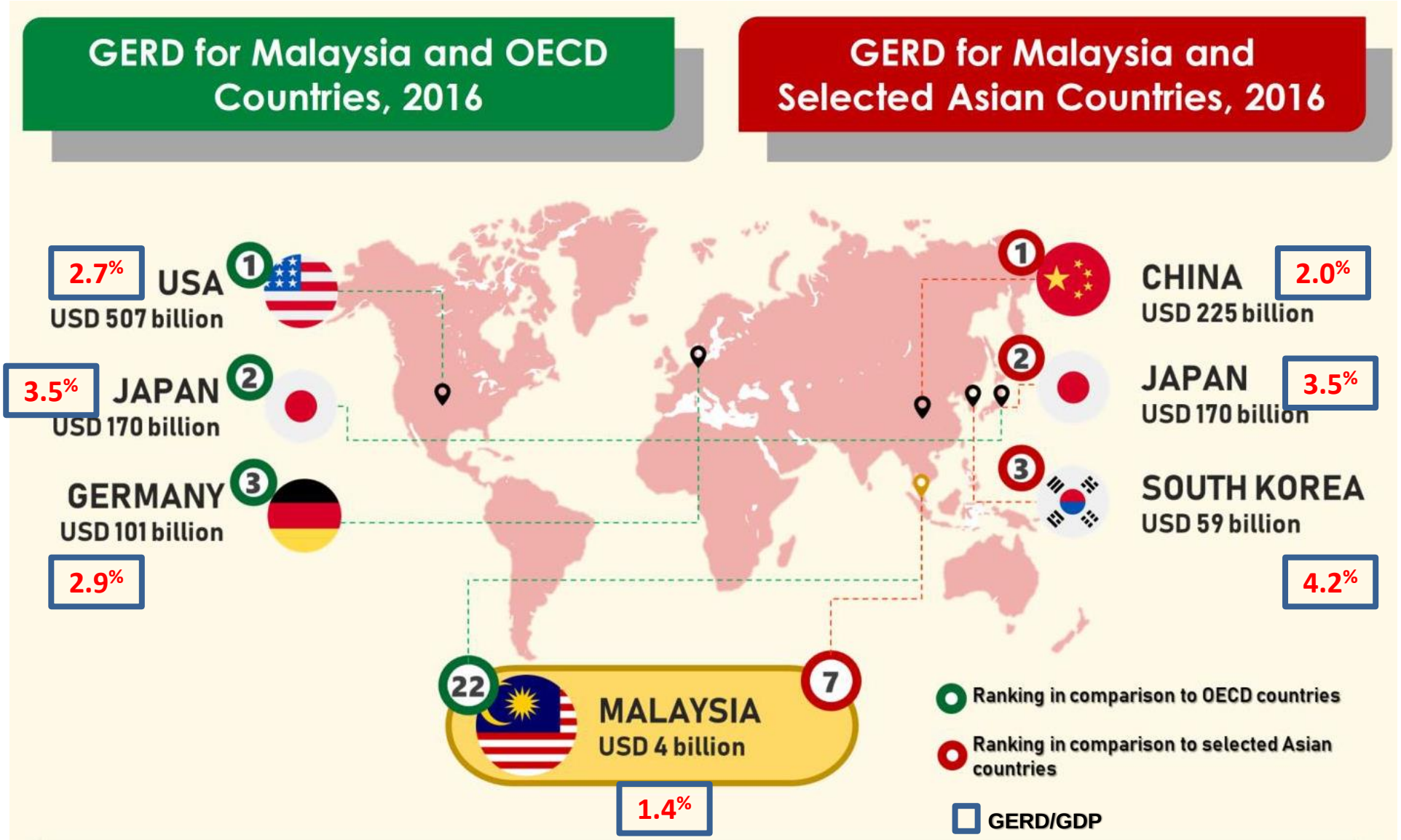
GERD by Sector, 2008-2018 (Percentage)



Source: National Survey of Research and Development (R&D) in Malaysia

- Malaysia's GERD
  - ⬇ from **RM17,685 million** (2016) to **RM15,060 million** (2018)
- GERD/GDP
  - ⬇ from **1.44%** (2016) to **1.04%** (2018)
- Business expenditure on R&D (BERD)
  - ⬇ from **57%** (2016) and to **43.9%** in 2018

Malaysia is no where near the OECDs and a few selected Asian countries



The commercialisation rate does not commensurate with the increase in R&D spending

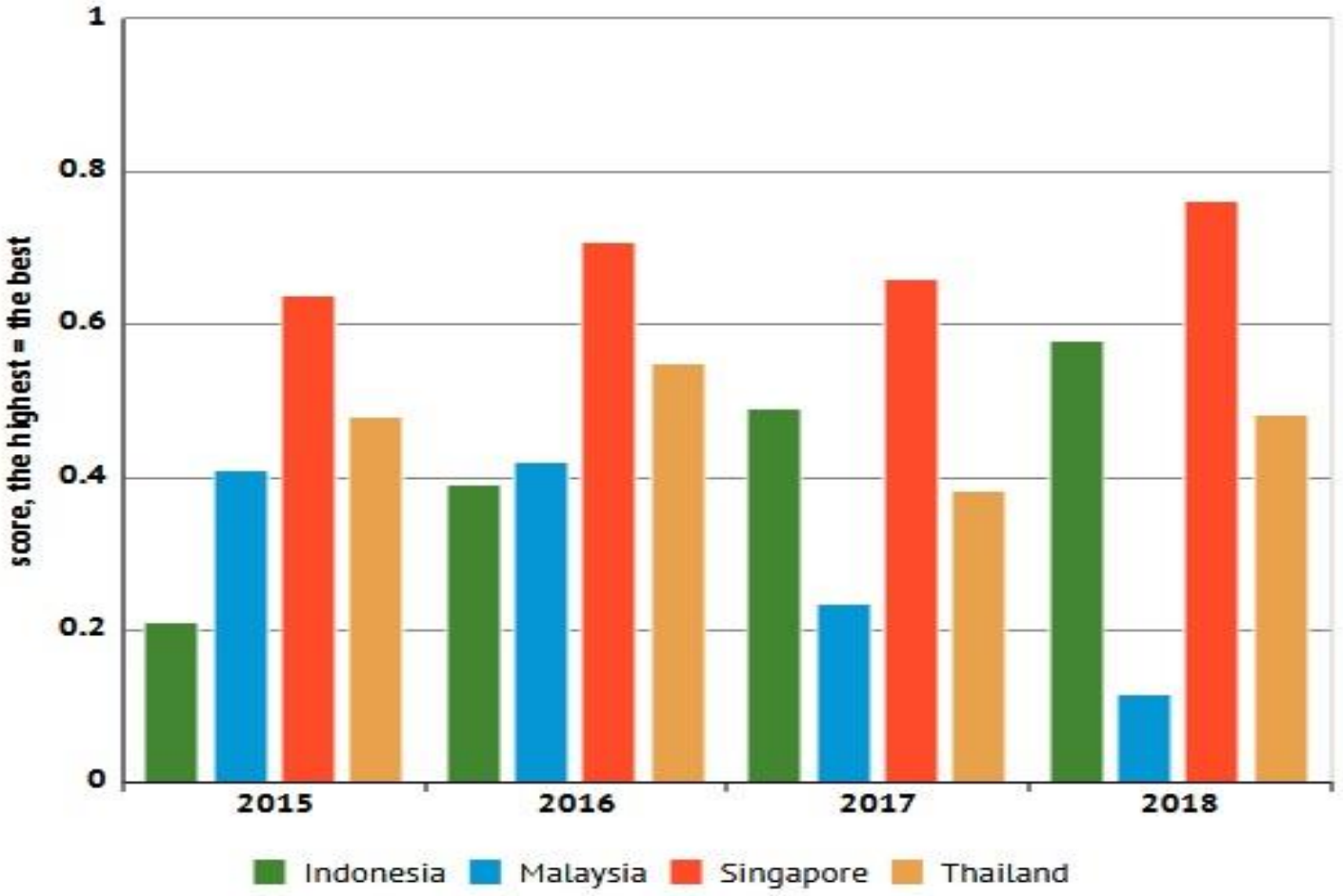
Number of commercialised products and revenue generated, 2016

Item	Total Number	Revenue (RM)
BEs		
Patents licensing and technology know-how licensing: number and value	149	47,867,963
Total number and value of commercialised products	2,850	4,505,364,393
HLIs		
Patents licensing and technology know-how licensing: number and value	92	4,570,856
Total number and value of commercialised products	92	17,660,444
GRIs		
Patents licensing and technology know-how licensing: number and value	197	3,472,639
Total number and value of commercialised products	930	19,818,601
NGOs		
Patents licensing and technology know-how licensing: number and value	0	0
Total number and value of commercialised products	5	0
Total	4,315	4,598,754,896

Source: National Survey of R&D in Malaysia 2017

Malaysia's position in Production Innovation has deteriorated

Production Innovation sub pillar of the Global Entrepreneurship Index 2018



Source: The Global Entrepreneurship and Development Institute

Moving Forward

Overall Policy Framework

Twelfth Malaysia Plan

Moving Forward

National 4IR Policy

- **KPI**: 3.5% GERD, including for 4IR related R&D
- **Policy Thrust**: Accelerate 4IR technology innovation and adoption also **focuses on R&D&C&I**
- Prioritising public sector R&D&C&I funding for technological innovations (**Initiative 30**)
- **Transportation and logistics**: Support R&D&C&I for 4IR technologies to develop low carbon mobility solutions
- **Wholesale and retail trade:** Encourage R&D&C&I in advanced materials used for packaging

Malaysia Digital Economy Blueprint

- **KPI:**
  - More than 800,000 MSMEs adopt digitalisation
  - Contribute to the creation of at least 5,000 start-ups by 2025
  - More than 50,000 IP ownership by 2030
- **Thrust:** Boost economic competitiveness through digitalisation

National Policy on STI (NPSTI) 2021-2030

- To **identify niche areas for research** based on the priority areas set under 10-10 Malaysian Science, Technology, Innovation and Economy (MySTIE) Framework

Defence S&T for Economic Growth

- The proposed National Defence Industry Policy (NDIP) aims to strengthen the role of defence S&T and R&D as a catalyst for defence ecosystem and economic growth.
- Potential areas to focus on:

1	2	3	4	5
				
Human Capital Development	**Technology Development**	**Industrial Development**	**Towards Self Reliance**	**Penetrating Global Market**
Promoting various initiatives to produce experts with the right skills and knowledge	Providing funding for scientific research & acquiring critical technologies	Implementing new defence asset procurement policies Incentives to support local companies to improve industrial competitiveness	Prioritising the products developed and manufactured by capable local companies	Encouraging local companies to promote their products, penetrate international markets and participate in international defence exhibitions

Conclusion

- Malaysia should no longer be a consumer country; instead it should become a country that is **proficient in STI** that produces world-class products and services of its own.

- In order for a country to be self-reliant, it is important that the **defence and security industry excels in research and development**.

- Concerted efforts will need to be undertaken to boost advanced technology adoption to transform Malaysia into **a high technology-based economy** through, among others, increasing the **commercialisation of R&D outputs and investments**.

THANK YOU

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