MINISTRY OF INTERNATIONAL TRADE AND INDUSTRY

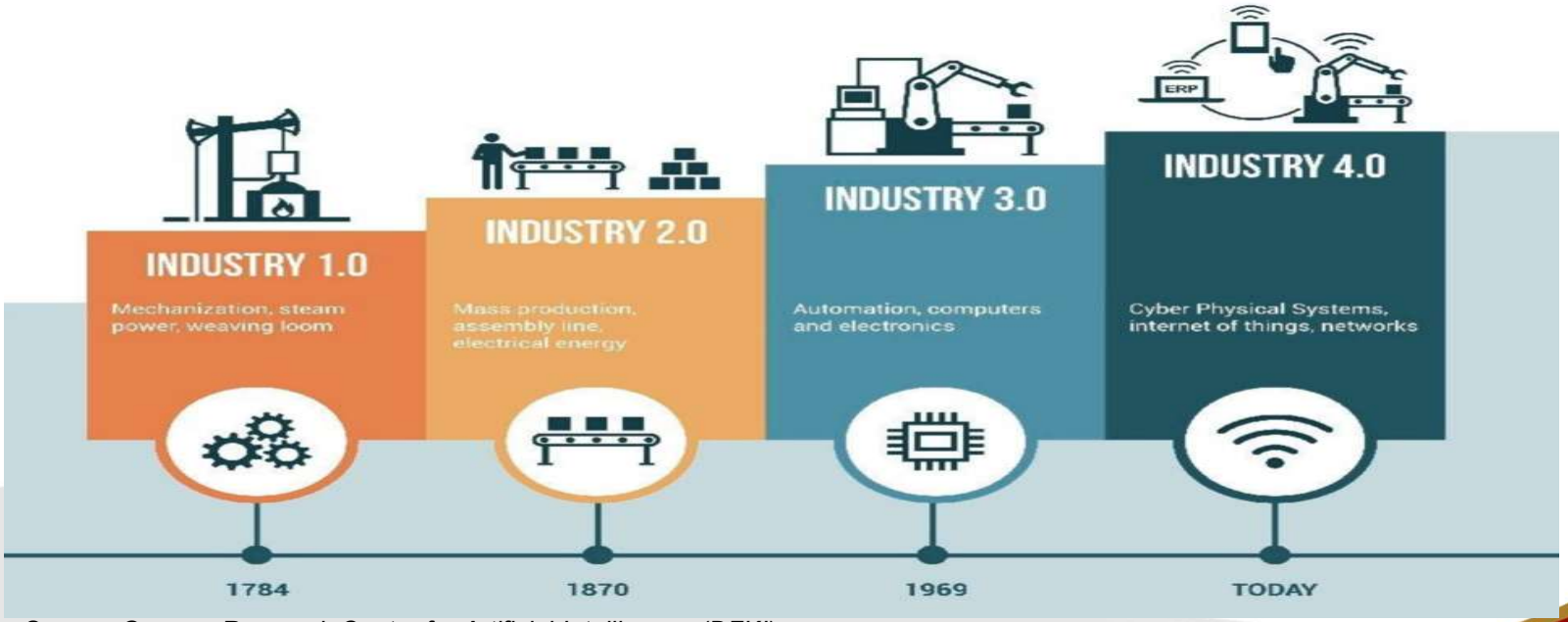
National Policy on Industry 4.0
Industry*4WRD*

Sectoral Policy Division

'Driving Transformation, Powering Growth'

The Journey

*"**Combination** of the **internet** with a new ability to directly **control the physical world**, including the machines, factories and infrastructure that define the modern landscape" – WEF, 2016*



Source: German Research Centre for Artificial Intelligence (DFKI)

Industry 4.0 Differentiation

4th Industrial Revolution

Total transformation of all industries' sectors:

- Primary: Palm Oil, Rubber…
- **Secondary: Production, Manufacturing..**
- Tertiary: Services, Hospitality…
- Quaternary: Value Added Services e.g. R&D…

into new system and/or way of life that will change the way we do businesses.

Industrie 4.0

Started from German Government's strategic initiative to transform the secondary industry into modernized cybernetic based manufacturing and production system that are efficient and more cost effective.

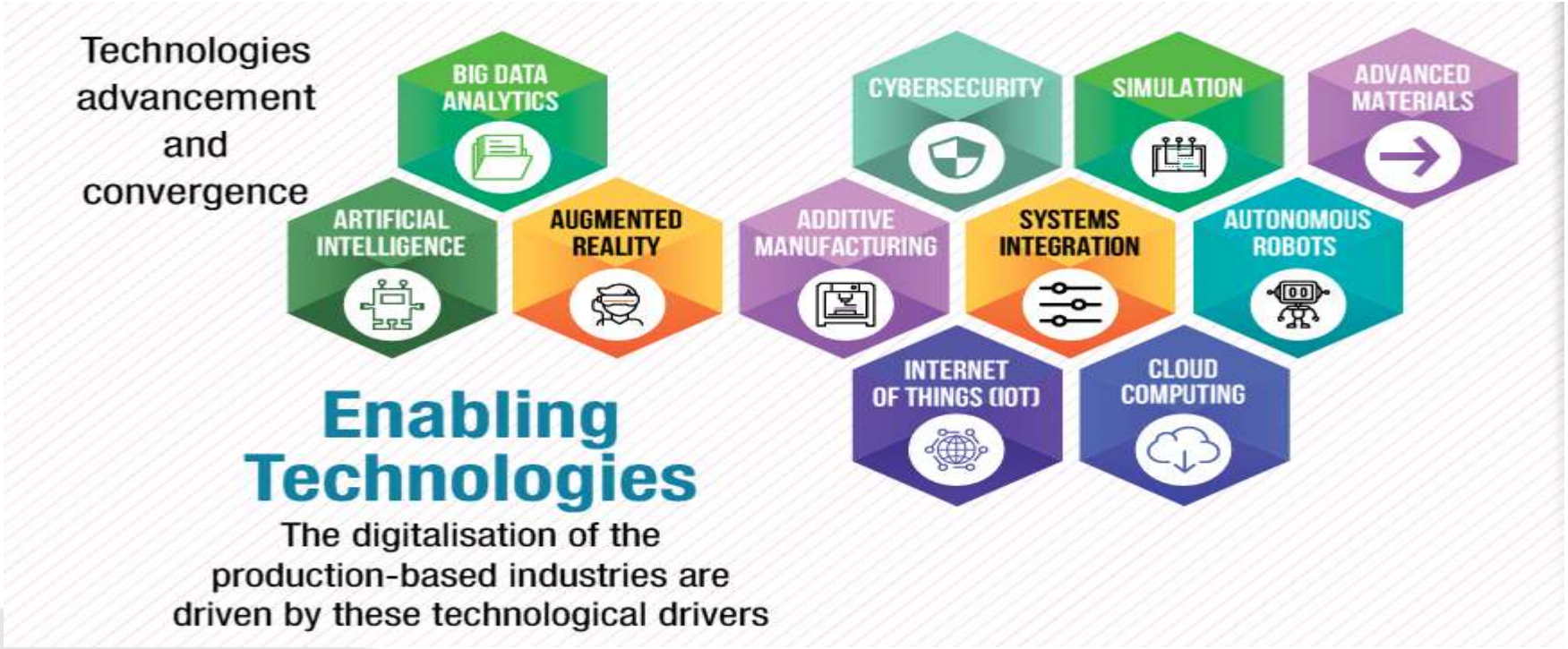
To establish Germany as a lead market and provider of advanced manufacturing solutions.

Other names:

- *Smart Manufacturing*
- *Industry Internet of Things*

Source: MIMOS

Enabling Technologies for Industry



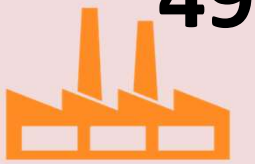
Adopted from BCG, Lux Research, McKinsey and A.T. Kearney

Manufacturing Landscape in Malaysia

MANUFACTURERS

Establishments

49,101



97.1%

SMEs

Source: DOSM, Economic Census 2016

EMPLOYMENT

2,477,000

employed in Manufacturing

17.1%

of total workforce

Source: BNM, Annual Report 2017

GDP

Manufacturing contribution

RM269.9 B

at constant 2010 prices

22.8%

share to GDP

Source: DOSM, Malaysia Economy Q417

INVESTMENTS

Approved Investment

RM63.7 B

FDI

33.9%

Source: MIDA, Malaysia Investment Performance Report 2017

EXPORTS

Exports Value

RM767.64 B

82.1%

to total gross exports

Source: MATRADE, Trade Performance 2017

LABOUR PRODUCTIVITY

RM110,839

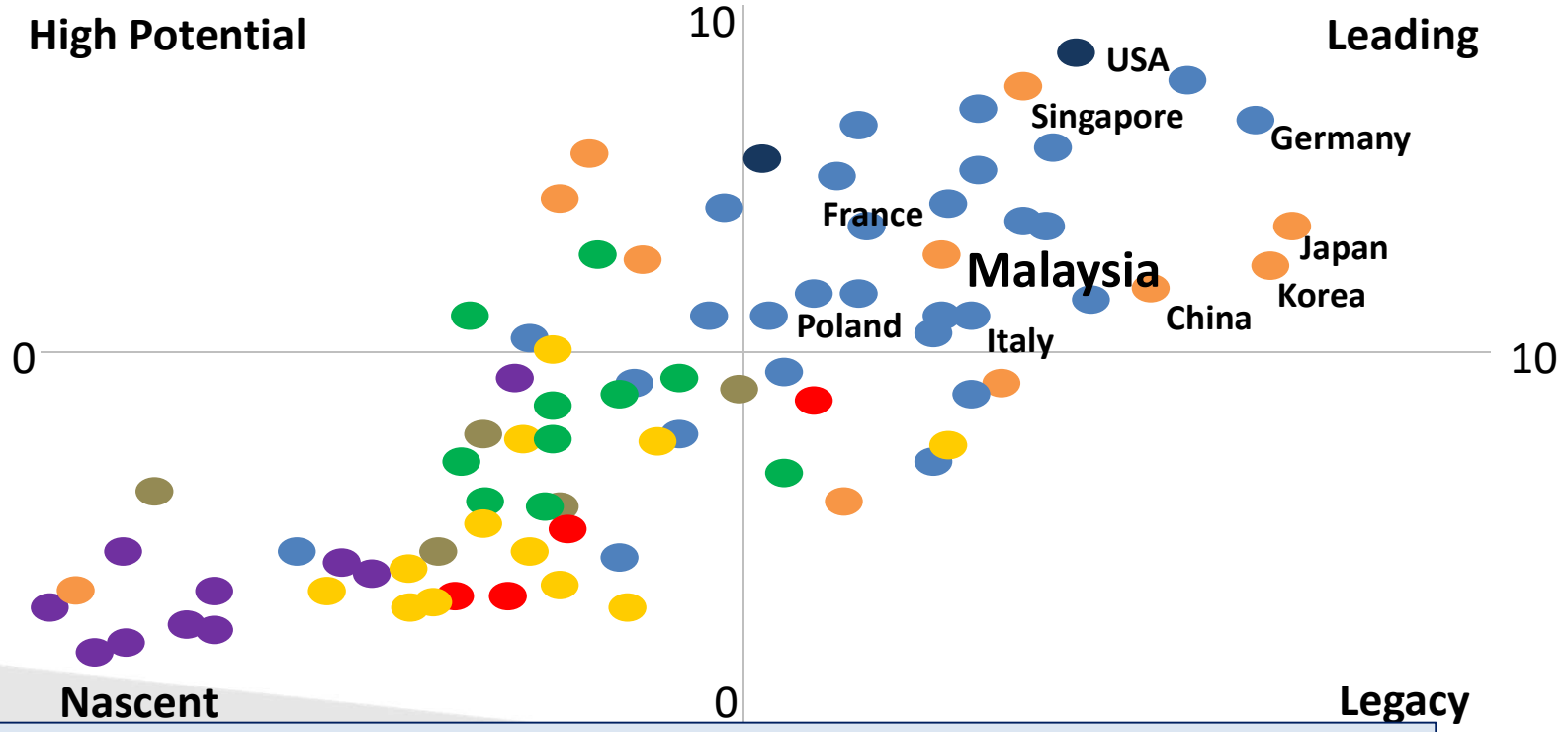
per person

4.2%

growth

Source: DOSM, Malaysia Economy Q417

Malaysia's Readiness for Industry 4.0



Malaysia has a strong current production base and is well-positioned for the future.

Source: Readiness for the Future of Production Report 2018, WEF

Addressing Malaysia's Issues & Challenges

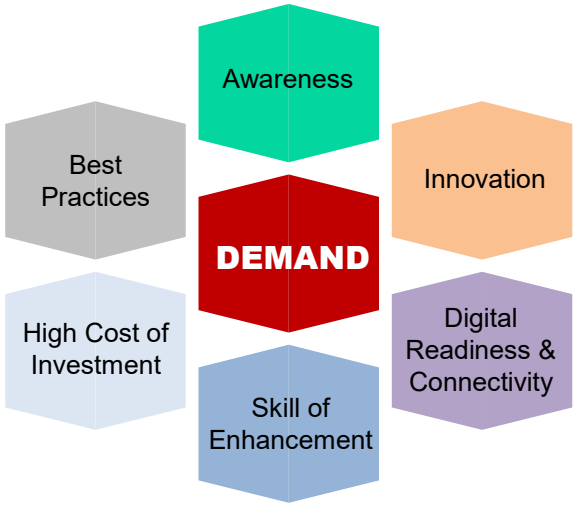
Lack of centralised and easily accessible information platform to understand best practices and relevant use cases

Few visible success stories of applying Industry 4.0 technologies and processes by local companies

Higher cost of adoption and longer payback period for Industry 4.0 technologies and processes

Inadequate understanding of costs vs benefits and ability to conduct Industry 4.0 business case analysis

Lack of awareness on the impact of, and need for, Industry 4.0 technologies, both in terms of opportunities and business model disruption, especially among SMEs



Significant shortage of required talents, skills and knowledge for Industry 4.0, particularly in the areas of IoT, robotics and AI

Limited understanding of manufacturing firms of required future skills and expertise, and own readiness to embark on Industry 4.0 transformation

Evolving customer expectations and demand for custamisation of products and faster delivery

Ownership of Intellectual Properties due to inter-connectivity and information sharing along the supply chain

Low digital adoption especially among SMEs (~20%) and limited use of automation by manufacturing firms (majority of firms uses less than 50% of automation)

Lack of integrated and digital approach to data gathering along manufacturing and supply chains

Exposure to cyberthreats with increased connectivity and new technologies, especially IoT

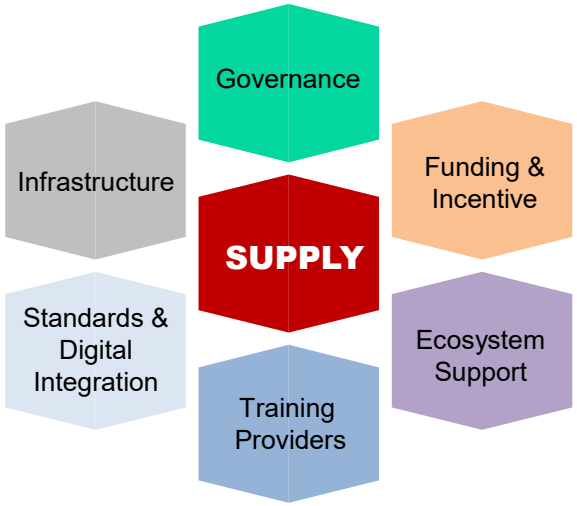
Addressing Malaysia's Issues & Challenges

Gaps in deployment of high speed broadband infrastructure in key industrial and training locations and not always able to support Industry 4.0 technology needs

Multiple, but isolated efforts and limited coordination among all stakeholders in moving towards a common vision for Industry 4.0

No national platform and mechanism to coordinate programmes and structure collaborative and aligned approaches for Industry 4.0 requirements

Existing, but underutilised funds for training and development, and need for higher allocation for STEM education (e.g. scholarships)



No specific financial support and incentives for Industry 4.0 technology development, ranging from R&D, prototyping, testing, scaling up to upgrading facilities

Limited digitilisation and digital integration of key Government agencies and processes into manufacturing and supply chain (e.g. some certifications, licensing, custom clearances, approvals, etc.)

Limited number of local players providing Industry 4.0 solutions across key technologies and not cost competitive vis-à-vis international players

Lack of clear standards for equipment or systems that support local and global interoperability of Industry 4.0 technologies and processes

Limited collaboration and industry take-up of Industry 4.0 outputs from universities and research institutes

Shortage of experts in the industry, universities and research institutes across most Industry 4.0 technologies

Education syllabus and pedagogy for STEM-related subjects are not attractive and do not match with industry needs

Limited attractiveness of manufacturing as career destination for top talent

Existing training programmes are not sufficiently geared towards Industry 4.0 and current pool of trainers are unable to keep up with the advancement of technology

Insufficient capabilities and capacities in providing cybersecurity solutions that protect Industry 4.0 applications

National Policy on Industry 4.0 Process

The Process

High Level Task Force on Industry 4.0 (MITI) – *May 2017*

MOF | KKMM | MOHE MOHR | MOSTI | SME Corp.

KEMENTERIAN KEWANGAN MALAYSIA | KEMENTERIAN KOMUNIKASI DAN MULTIMEDIA MALAYSIA | KEMENTERIAN PENDIDIKAN TINGGI | KEMENTERIAN SUMBER MANUSIA | KEMENTERIAN SAINS, TEKNOLOGI DAN INOVASI

Workshop with Technical Working Groups (TWG) *(Nov 2017)*

Draft Policy by MITI, MIGHT, ASM with inputs from MPN

Syndication with AT Kearney *(Jan 2018)*

Online Public Consultation *(Feb-Mar 2018)*

Benchmarking Visit to Germany *(Feb 2018)*

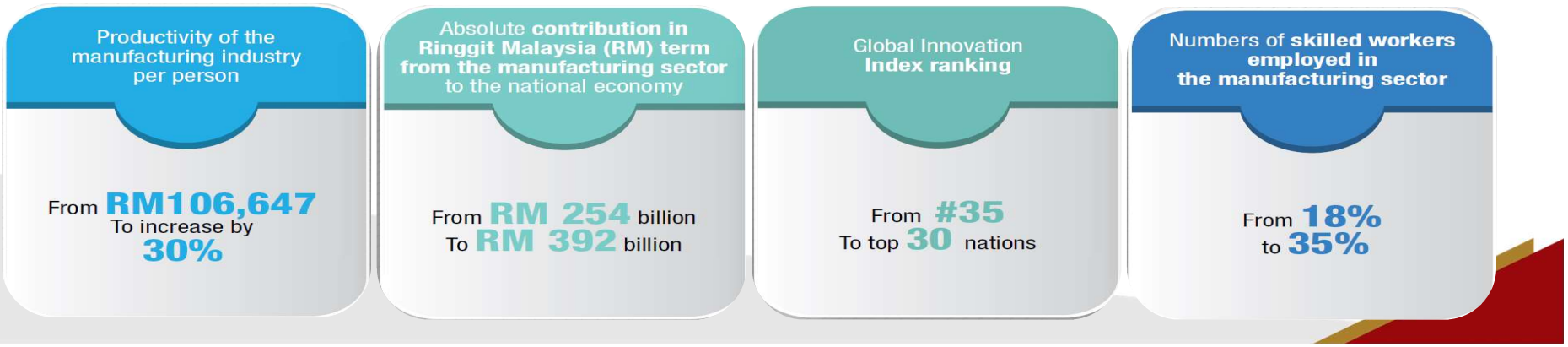
Cabinet endorsement

Launch of the National Policy on Industry 4.0

Industry4WRD National Goals

- To increase the level of productivity in the manufacturing sector
- To elevate the contribution of the manufacturing sector to the economy
- To strengthen our innovation capacity and capability, reflected in global innovation rankings
- To increase the number of high-skilled workers in the manufacturing industry

The targets by 2025, developed from 2016 baseline figures



National Policy on Industry 4.0

Attract

Attract stakeholders to Industry 4.0 technologies & processes

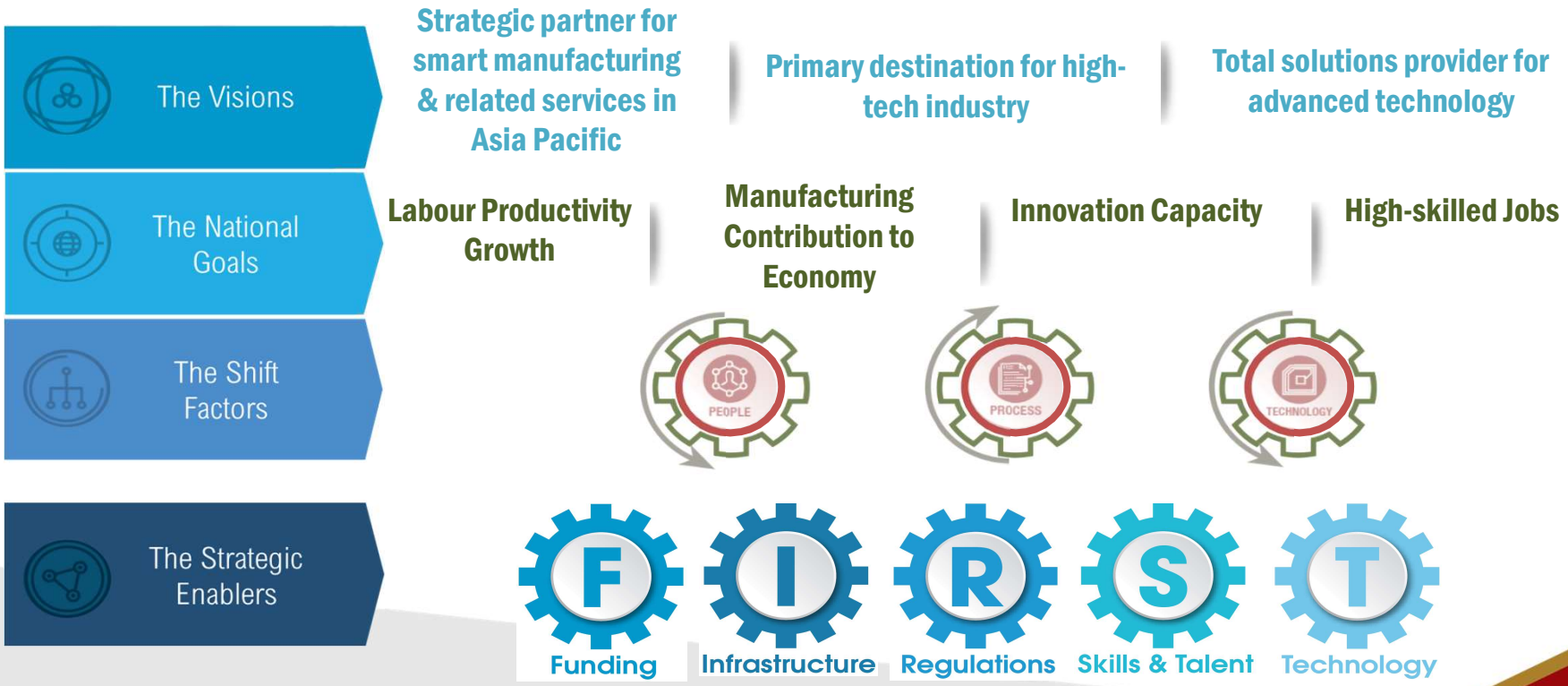
Create

Create the right ecosystem for Industry 4.0 technologies to be adopted and to nurture innovations

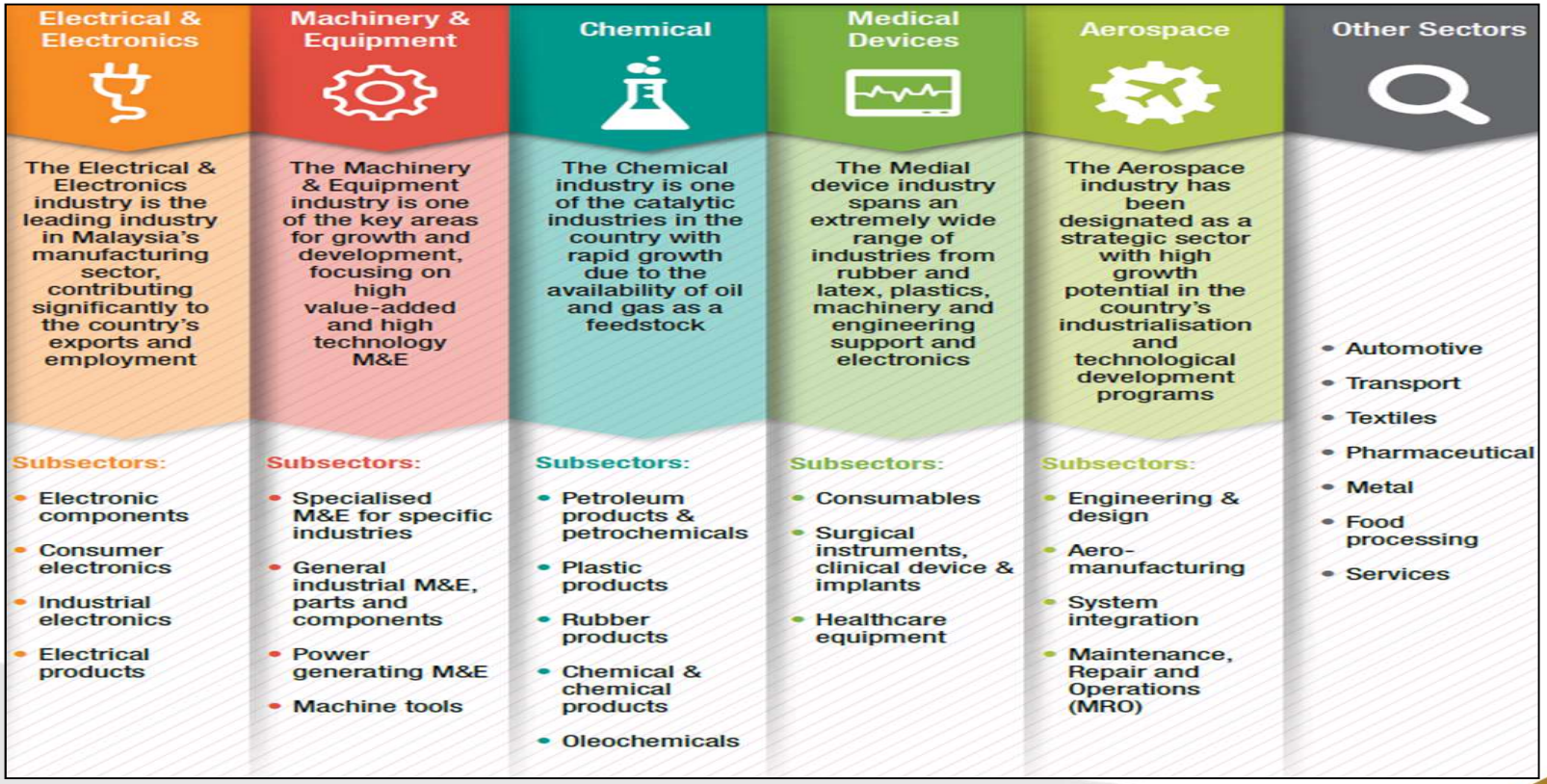
Transform

Transform capabilities of the manufacturing industry to be Industry 4.0-ready

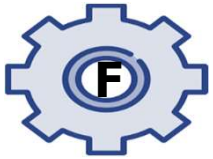
The Framework



Focus Sectors



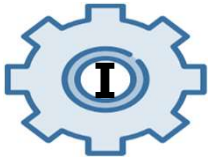
National Policy on Industry 4.0



Financing & Outcome-based Incentives

Strategy F1:
Provide outcome based incentives, including tax incentives to encourage investments in, and adoption of, industry 4.0 technologies & processes.

Strategy F2:
Introduce dynamic and innovative financial products to encourage adoption of Industry 4.0 technologies and processes.



Enabling Ecosystem & Efficient Digital **Infrastructure**

Strategy I1:
Strengthen the digital connectivity in and between industrial, education and training hubs to remove connectivity bottlenecks in adopting industry 4.0 technologies.

Strategy I2:
Enhance the digitalisation and integration of government processes and infrastructure along supply and manufacturing value chains.

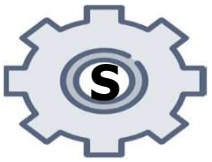
Strategy I3:
Involve services providers for industry 4.0 and link them to manufacturing firms to help implement technologies, processes and skill development.

Regulatory Framework & Industry Adoption

Strategy R1:
Increase awareness of the need, benefits and opportunities of Industry 4.0 technologies and business processes among manufacturing firms

Strategy R2:
Create a platform and mechanism to help manufacturing firms, especially SMEs, assess and develop their Industry 4.0 capabilities

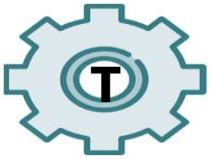
Strategy R3:
Improve data integrity, standards, sharing, and security to facilitate seamless integration of manufacturing value chains and to support intra-ministerial coordination for effective Industry 4.0 programs.



Up**skill**ing Existing & Producing Future Talents

Strategy S1:
Enhance the capabilities of the existing workforce through national development programmes specially designed for specific manufacturing sectors and support re-skilling and upskilling.

Strategy S2:
Ensure the availability of future talent by equipping students with the necessary skillsets to work in the Industry 4.0 environment



Access to Smart **Technologies** & Standards

Strategy T1:
Establish digital/technology labs and collaborative platforms, especially public-private partnerships (PPP), to create awareness and understanding, foster the adoption of new technologies, and facilitate the transfer of knowledge

Strategy T2:
Establish and implement standards for interoperability, quality and safety for smart manufacturing and Industry 4.0 technologies.

Strategy T3:
Intensify Research, Innovation, Commercialisation and Entrepreneurship (RICE) programmes and activities in specific Industry 4.0 technologies and processes that support and advance priority sectors.

Industry4WRD-Readiness Assessment (RA)

Focuses on people and the entire organisation.

Emphasis on strategies towards having a right set of workforce.

Focuses on management system in running business operations, supply chain and product lifecycle.

Emphasis on smart and strategic public private partnerships, security, sustainability and product co-creation

Focuses on the application of intelligent, connected and automated technologies.

Measured at three different layers of the business: Shop floor, Enterprise & Facility.

MINISTRY OF INTERNATIONAL TRADE AND INDUSTRY

Thank you

Industry 4.0 Unit

Sectoral Policy Division

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2019 Budget Announced for Industry4WRD

Industry*4WRD* Fund
- RM210million (2019-2021) to support the transition and migration to Industry 4.0

Industry Digitalisation Transformation Fund
- RM3 billion for Automation, Robotics and AI
- Subsidised 2% interest rate

Business Loan Guarantee Scheme (SJPP)
- RM2 billion for SMEs to invest in automation and modernisation
- Up to 70% guarantee

High Impact Fund - MIDA
- Matching grant for activities such as R&D, international certification & standards, facility and tools upgrading or purchase

KRSTE.my
- RM2million for Knowledge Resource for Science & Technology
- Access to 250 facilities & 1,200 scientific equipment & research data for private sector
- Kickstart Researcher Mapping Programme

Double Tax Deduction – MOHR & MIDA
- Sponsorship for TVET, diploma and degree in engineering & technology
- Expenses for National Dual Training Scheme (SLDN)
- Structured training programme for engineering & technology