



# *Accelerating Technology Adoption and Innovation*

Domestic Investment Seminar  
Series I (Central Region)  
26 July 2022 (Tuesday)  
Berjaya Times Square Hotel, KL

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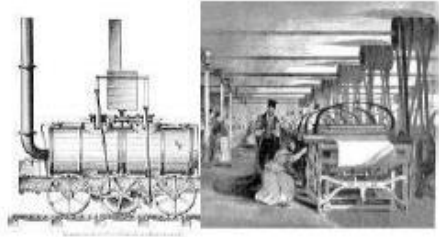
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# Industrial Revolution Through The Ages

Key advancements that have triggered profound change in each revolution...



Timeline (year)

1760



1760-1840  
Industry 1.0

Age of Mechanical  
Production

- Mechanisation of activities in textile making and printing – spinning Jenny
- Introduction of **steam power** for goods transportation

Impact: Emergence of factory Working Class, Clock and Time, Pollutions

1840



1830-1915  
Industry 2.0

Age of Science  
& Mass Production

- Emergence of factory for mass market production
- Widespread **electrification**

Impact: Longer factory operations, Improvement of living conditions through job opportunities

1969



1969-2010s  
Industry 3.0

Age of Digital  
Revolution

- Widespread electronics application, **computing power** and global comms (**internet**)
- Automation in manufacturing

Impact: More high tech & sophisticated products, rapid exchange of information

2010



2010s onward  
Industry 4.0

Digital Transformation  
in Manufacturing in 4IR

- **Convergence** of smart technologies in manufacturing, e.g. smart factory, advanced robotics, IOT

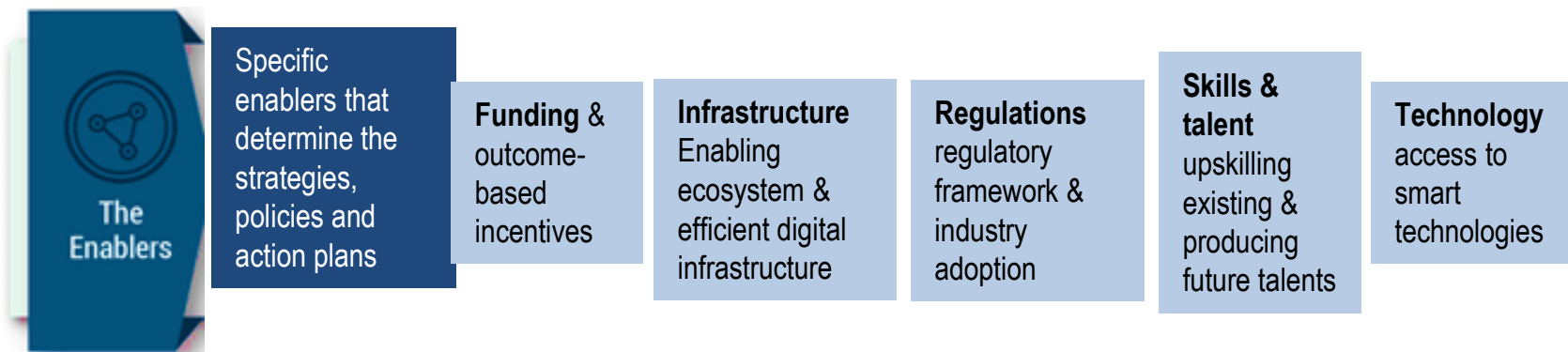
Impact: Smart factory, emerging tech across all services sector, ESG- Less pollution, gig economy

The first three industrial revolutions transformed manufacturing and production through specific advancements

National Policy on Industry 4.0

Industry4WRD

# Industry4WRD: The Vision + Shift Factors + Enablers



## National Goals & Target for 2025

- Level of productivity per person from **RM106,647** by **30%**
- Elevate contribution of the manufacturing to the economy from **RM254 billion** to **RM392 billion**
- Improvement in Global Innovation Index** ranking from **35** to **top 30**
- Increase the number of high-skilled workers** in the manufacturing sector **from 18% to 35%**



# What are the Priority Sectors?

## Manufacturing Sector



**Aerospace**



**Medical  
Devices**



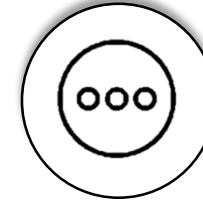
**Pharmaceuticals**



**Advanced  
Electronics**



**Machinery &  
Equipment**



**Other industries  
(case-to-case  
basis)**

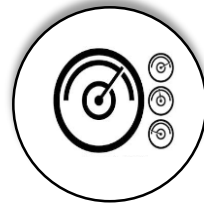
## Services Sector



**Design &  
Development**



**Research &  
Development**



**Testing /  
Calibration**



**Quality /  
Standard  
Certification**



**Architectural  
/ Engineering  
Services**



**Technical  
/ Skills  
Training**



**Logistic  
Service  
Provider (3PL)**



**ICT Solution  
Provider  
(related to  
Automation/  
Industry 4.0)**



**Integrated  
Green  
Technology**

# Issues and challenges in implementing Industry4.0



## Impact & Benefit Upon Transformation

Productivity	Factory output increase
	Productivity increase
	OEE increase
	Product cost reduction
	Operating cost reduction
	Quality cost reduction
Sustainability	Waste reduction
	Water consumption reduction
	Energy efficiency
Agility	Inventory reduction
	Lead time reduction
	Change-over shortening
Speed to market	Speed to market reduction
	Design iteration time reduction
Customization	Configuration accuracy increased
	Lot size reduction

Source: World Economic Forum in collaboration with McKinsey & Company



# Industry4WRD *Readiness Assessment*



# Industry4WRD Readiness Assessment Programme

A comprehensive programme to help firm **assess their capabilities and readiness** to adopt Industry 4.0 technologies and processes, using a pre-determined set of indicators to understand their present capabilities and gaps

## SME Definition:

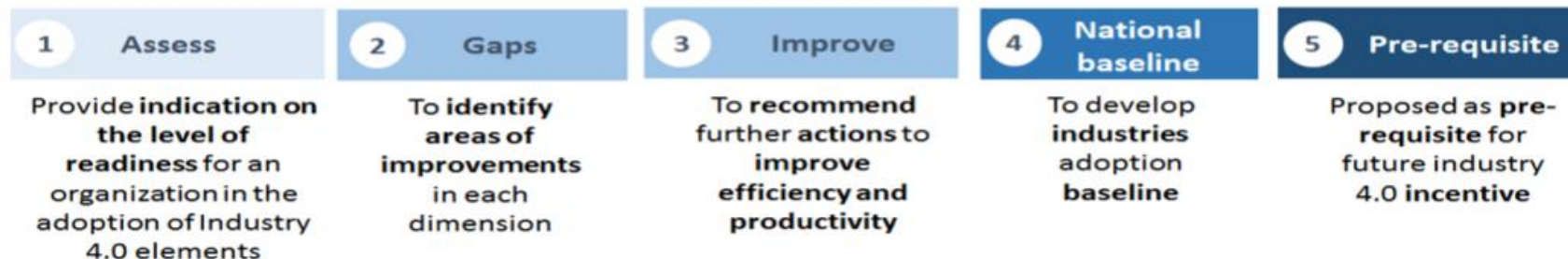
### Manufacturing

Sales turnover not exceeding RM50 million OR full time employees not exceeding 200

### Manufacturing Related Services

Sales turnover not exceeding RM20 million OR full time employees not exceeding 75

Industry4WRD is aimed to...



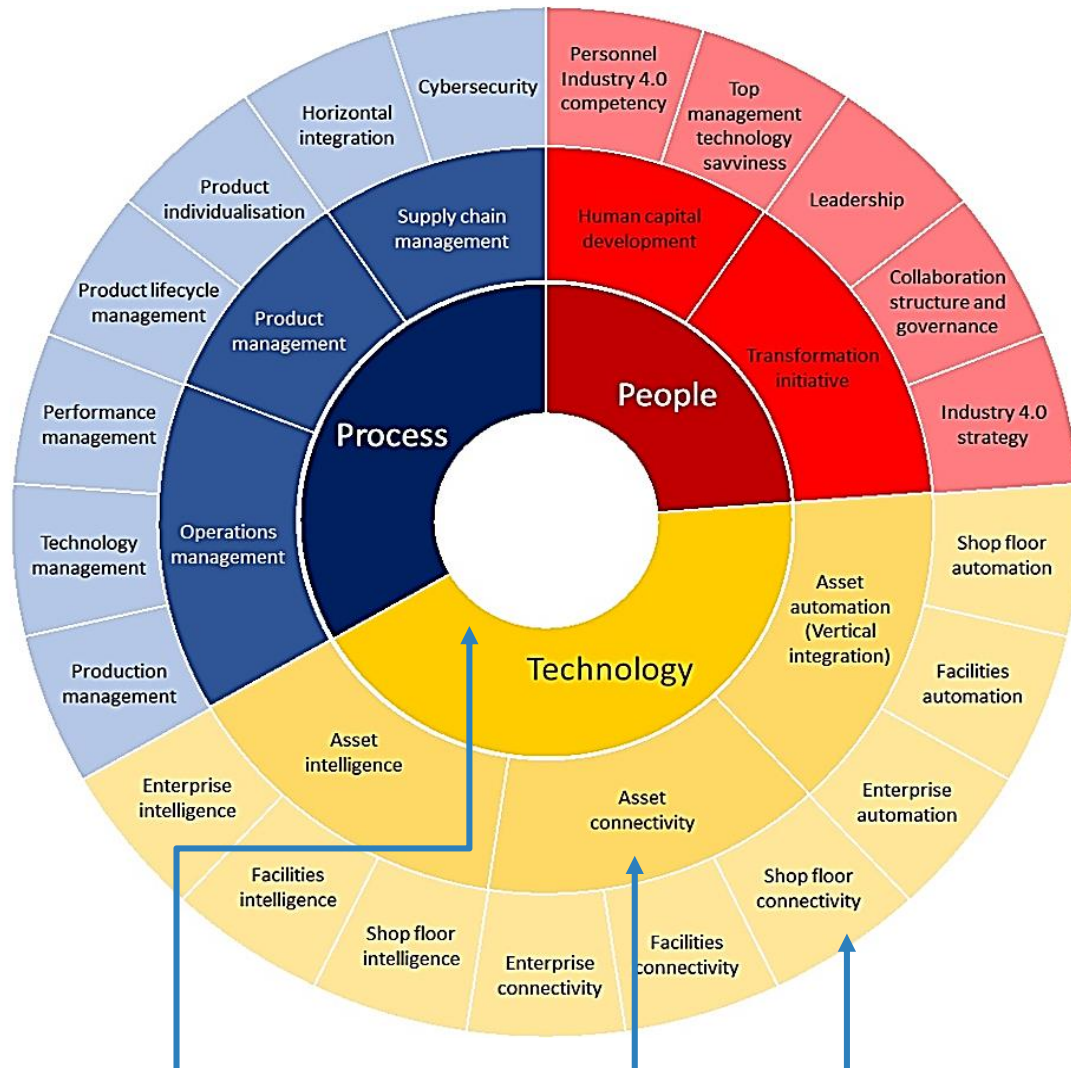
## Incentives for Industry4WRD Readiness Assessment (RA)

- Government-funded Industry4WRD RA for 500 SMEs
- Tax deduction on expenditure of Industry4WRD RA fees of up to RM27,000 for companies who do not enjoy the government-funded Industry4WRD

Register for online application :

<http://www.miti.gov.my/industry4wrld>

# Industry4WRD Readiness Assessment Criteria



3 Shifts Factors 8 Thrusts 21 Dimensions



Focuses on the **application** of intelligent, connected and automated technologies at **3 different layers**

50%



Focuses on the **management system** involved in running business **operations, supply chain & product lifecycle**

30%



Focuses on the **people** and the entire organisation by emphasising on strategies towards having a **suitable set of workforce**

20%

# Industry4WRD Readiness Assessment Summary

SCOPE	READINESS PROFILE	GENERAL DESCRIPTION
0% - 20%	<b>Conventional</b>	Operation remains “as is” with no intention or initiative into Industry 4.0 adoption.
21% - 40%	<b>Newcomer</b>	Has interest to pursue Industry 4.0 but with none or very minimal efforts or initiatives.
41% - 60%	<b>Learner</b>	Has interest to pursue pilot line Industry 4.0 adoption in operation, with existence of planning and strategies, efforts or simple and patches of initiatives being implemented. Ready for some system adoption.
61% - 90%	<b>Experienced</b>	Has pursued small to medium scale Industry 4.0 adoption initiatives in operation, horizontal integration and ready for large scale system adoption.
91% - 100%	<b>Leader</b>	Has implemented large scale Industry 4.0 adoption initiatives (company-wide) and system integration.



# Industry4WRD Centres of Excellence



- Centre For Research In Industry 4.0 (CRI14.0)



- Centre of Artificial Intelligence and Robotics (CAIRO)
- Media and Game Innovation Centre of Excellence (MaGICX)



- UiTM Cybersecurity and Digital Forensic Center
- Advanced Analytics Engineering Centre
- Cisco-UiTM IoT Centre



- Centre for Unmanned Technologies (CUTe)



- Smart Manufacturing Competence Centre@SERCUSM



- Competence Centre for Smart Systems Integration in Process Industries (CC-SSIPi)



- Cybersecurity Competence Centre (UTeM-CysCC)



- UPM-Bentley BIM Digital Advancement Academy Hub



- INTEGRA Competence Center For System Integration (INTEGRASI)



- Centre for Advanced Big Data and Cloud Computing



- Competence Centre for IoT



- 4.0 Industry Revolution Competence Centre For Maritime Industry



- East Coast Competence Centre



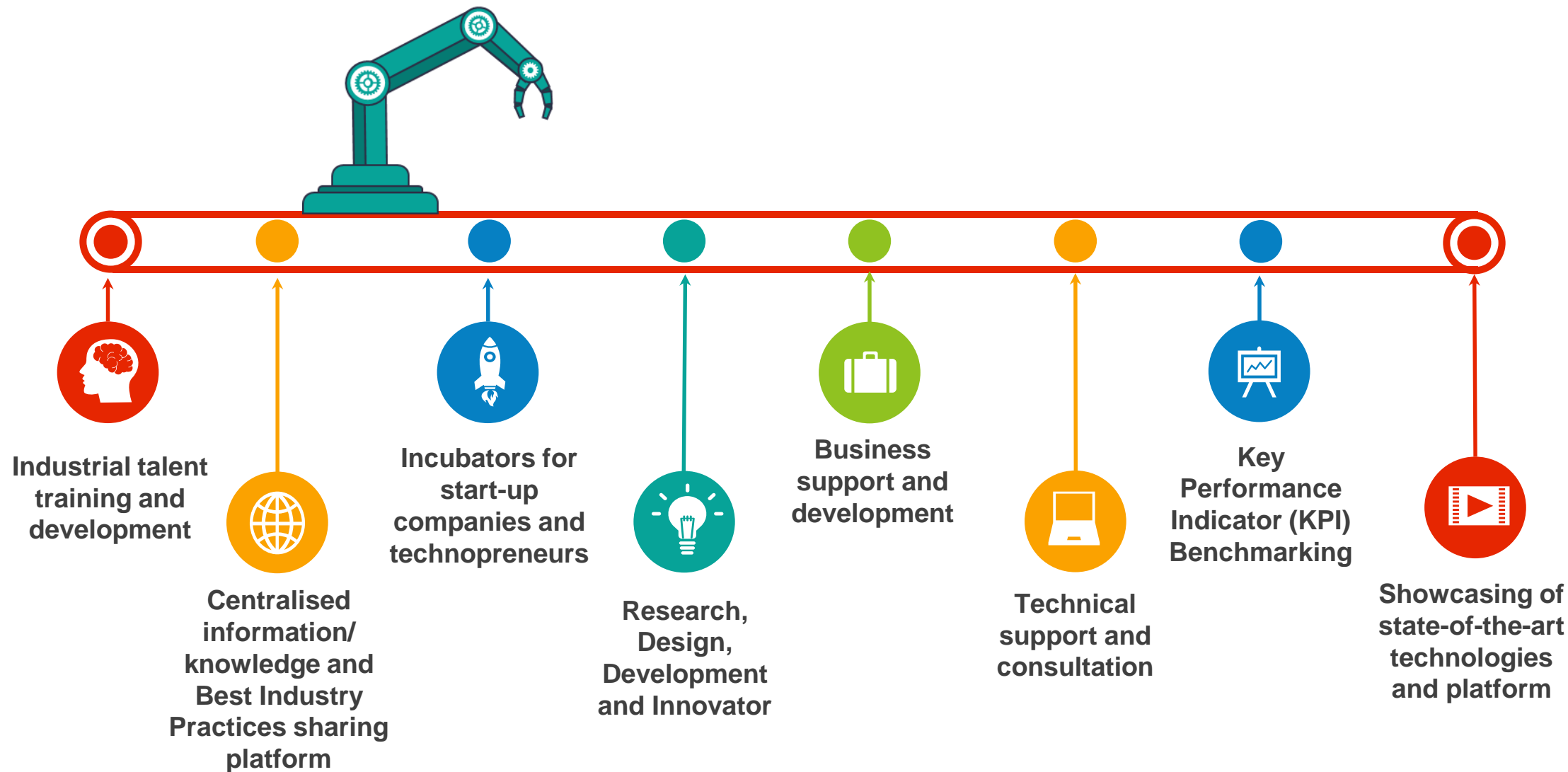
- Cyber Security Centre



- Institute for Artificial Intelligence & Big Data (AIBIG)

**Collaborations  
with  
Research &  
Development  
(R&D)  
Enablers**

# Industry 4.0 Service Provider/ System Integrator





# National Fourth Industrial Revolution (4IR) Policy



# Going Beyond with Digital Economy and 4IR

Digital Economy and 4IR are **interdependent**



Charts the trajectory of the digital economy contribution to the Malaysian economy and builds the foundation to drive digitalisation across the nation, including bridging the digital gap.

Launched on 19 Feb 2021

Digitalisation



Data entry into softwares



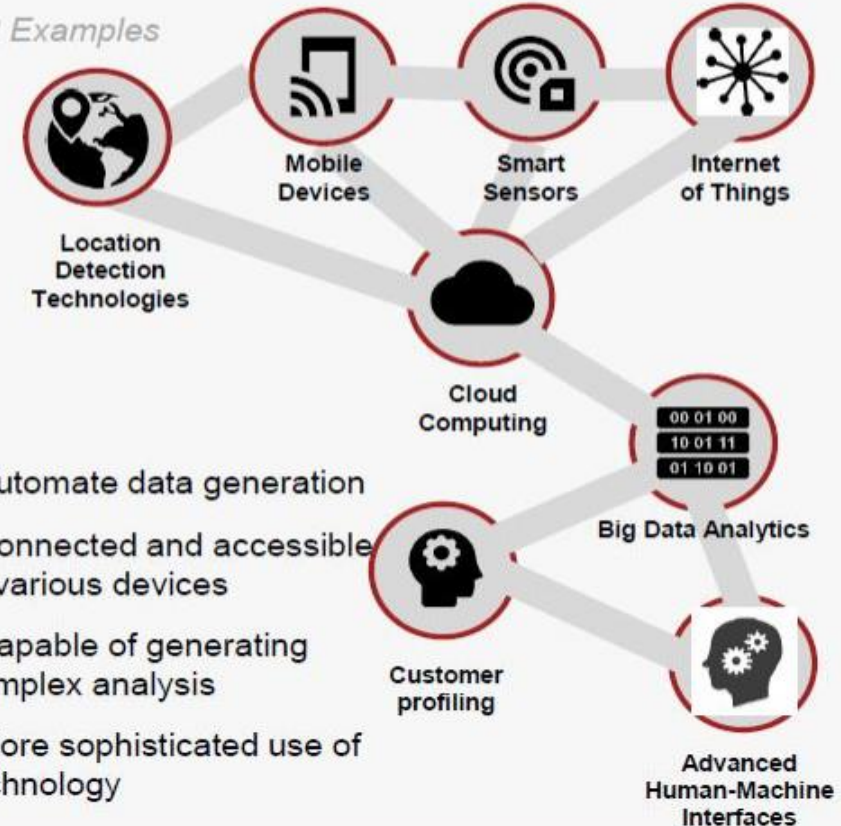
Traditional log-book/  
hand-written records



Outlines the key focus areas which impact the *rakyat*, businesses and government, in order to seize growth opportunities and to address potential risks arising from 4IR

Launched on 1 July 2021

4IR Examples













- Automate data generation
- Connected and accessible to various devices
- Capable of generating complex analysis
- More sophisticated use of technology

# 10 Science & Technology Drivers on 10 Malaysia Socioeconomic Drivers

Building the Horizontal & Enabling the Verticals in the Ecosystem

## MALAYSIA SOCIOECONOMIC DRIVERS

### SCIENCE & TECHNOLOGY DRIVERS

		Energy	Business Financial Services	Culture Arts & Tourism	Medical & Healthcare	Smart Technology & Systems (Next-Generation Engineering & Manufacturing)	Smart Cities & Transportation	Water & Food	Agriculture & Forestry	Education	Environment & Biodiversity
5G / 6G		●	●	●	●	●	●	●	●	●	●
Sensor Technology		●	●	●	●	●	●	●	●	●	●
4D / 5D-Printing		●	●	●	●	●	●	●	●	●	●
Advanced Materials		●	●	●	●	●	●	●	●	●	●
Advanced Intelligence Systems		●	●	●	●	●	●	●	●	●	●
Cyber-Security & Encryption		●	●	●	●	●	●	●	●	●	●
Augmented Analytics & Data Discovery		●	●	●	●	●	●	●	●	●	●
Blockchain		●	●	●	●	●	●	●	●	●	●
Neuro Technology		●	●	●	●	●	●	●	●	●	●
Bioscience Technology		●	●	●	●	●	●	●	●	●	●

Each **Science & Technology Driver** should be exploring core technology & possible applications for the **10 Malaysia Socioeconomic Drivers** (Driving Fundamental & Translational R&D)

Each **Malaysia Socioeconomic Driver** should be exploring how the **10 Science & Technology Drivers** will value-add and enhance their global competitiveness





# *Government Support for Industry 4.0*





# ***Industry4WRD Intervention Fund***

# How to start applying for Industry 4WRD Intervention Fund (IF)?

Register online at <https://biz4 wrd.miti.gov.my/public/> for Solution Provider/ System Integrator

Apply online at [www.miti.gov.my/industry4WRD](http://www.miti.gov.my/industry4WRD) for RA Application

Apply online at [www.miti.gov.my/industry4 wrd](http://www.miti.gov.my/industry4 wrd)

Supported by Biz4WRD

Apply online at <https://biz4 wrd.mimos.my/>

Develop Technical Proposal

Pitch Proposal to Intervention Fund Approval Committee

Implement Project (12 months)

1

2

3

4

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7

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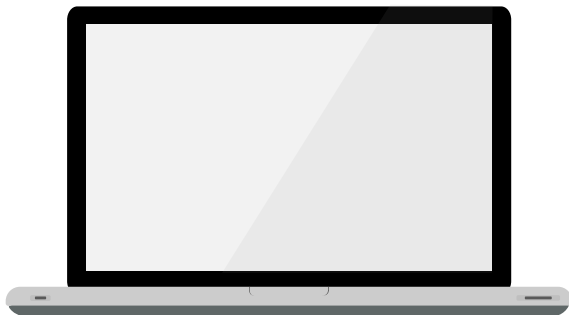
Evaluation by Committee

Receive RA Report

Submit Application to MIDA

Approval and Disbursement of Advance Grant

Grant Disbursement (Reimbursement)



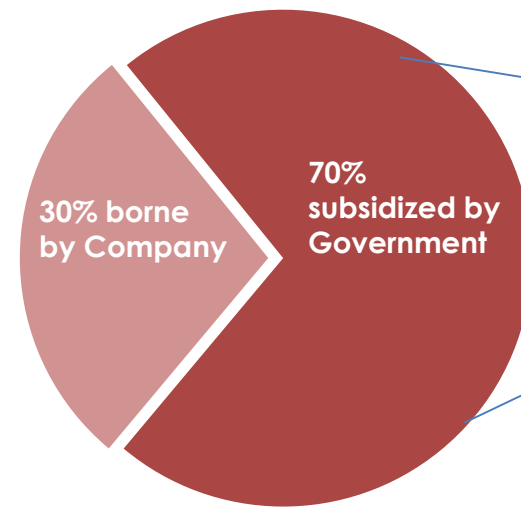
# Industry4WRD Intervention Fund

- The Industry4WRD Intervention Fund is a **financial support facility for Malaysian Small and Medium Enterprises (SMEs) in the manufacturing and related services sectors to embrace Industry 4.0.**
  - Manufacturing companies which have obtained Manufacturing License or a Confirmation Letter for Exemption from Manufacturing License from MIDA.
  - Manufacturing related services (MRS) activities include pre-manufacturing, during manufacturing and post-manufacturing activities.
- The Fund is provided to support companies in implementing intervention projects based on the recommendation of Industry4WRD Readiness Assessment (RA) Report on the shift factors of people, process and technology.
- The applications of this fund will be **evaluated by MIDA.**



It is a **matching grant (70:30) on reimbursable basis** based on eligible expenditures, up to a maximum grant of Ringgit Malaysia Five Hundred Thousand (RM500,000.00)

## Total Expenditures



Maximum of 30% will be provided in advanced (upfront)



Start

Received upfront grant (maximum 30%) from MIDA

The initial expenditures to be utilised by the upfront grant

The following expenditures to be borne by company

Claim the remaining grant from MIDA

End



# What documents are needed?

- ✓ Application Form
- ✓ Industry4WRD Readiness Assessment (RA) Report (with MPC's cover letter)
- ✓ Technical Proposal
- ✓ Financial Statements (audited) for the past three (3) years
- ✓ Manufacturing Licence from MITI or a Confirmation Letter for Exempted from Manufacturing Licence from MIDA



Submit applications (hardcopies) to:

Chief Executive Officer  
Malaysian Investment Development Authority (MIDA)  
MIDA Sentral,  
No. 5, Jalan Stesen Sentral 5,  
Kuala Lumpur Sentral, 50470 Kuala Lumpur.

## What to put in the Technical Proposal?

1. Project Description
2. Scope of Project
3. Duration of Project
4. Method of execution (solution providers)
5. Source of Technology
6. Expected Deliverables
7. Breakdown of Expenditures



# Biz4WRD is an initiative under Industry4WRD to support your transformation journey



- ✓ Gateway to a wide range of industry 4.0 technology products and services
- ✓ Centralized industry 4.0 technologies sourcing platform
- ✓ Facilitate business matching



To explore more about the portal, please visit:

<https://biz4wrd.miti.gov.my/>



Manufacturers  
(Industry4.0 technology adopters)




- Industry 4.0 technology service/product/solution/system providers
- System integrators
- Training providers
- Technology/ Business consultant

# Success Story of Industry 4.0 Adoption

## *Adoption Approach:*

Implemented RFID track and trace system and IoT systems connected to local server which feed information on their production and process tracking through local and remote dashboard.

## *Outcomes*




15-20%

Increase in Production  
Capacity



35%

Improvement in  
OEE\* performance



1-2 days

Reduction in Lead  
Time to Market



30%

Inspection Accuracy  
Improvement



35%

Reduction in Defect  
Product Rate

\*Overall equipment effectiveness (OEE) is a measure of how well a manufacturing operation is utilized (facilities, time and material) compared to its full potential



# Role of MIDA in Industry4WRD



## FINANCING

**Secretariat** to the **Technical Committee** and custodian of the **Industry4WRD Intervention Fund**, **Industry4WRD DISF** and **Industry4WRD HIF**



## INFRASTRUCTURE

Work closely with **TM & Maxis** to **deploy the Industry4WRD High Speed Broadband (HSBB)** accessibility services to **37 industrial areas** in Malaysia as the custodian of the **Industry4WRD Development Fund**



## REGULATORY FRAMEWORK

Work closely with **MITI** and **MPC** on the promotion and implementation of the **Readiness Assessment (RA)** programme as a **Technical Committee** member. A **prerequisite** for the **Industry4WRD Intervention Fund** and **DISF**, the **RA programme** helps firms to **assess their capabilities** and **readiness to adopt Industry 4.0 technologies and processes**.



## SKILL

Initiated the **Apprenticeship Programme** for technical and vocational education/training to prepare skilled workers, and introduced the **Overseas Internship and Management Programme** for Malaysian students abroad to intern/train in foreign companies.



## TECHNOLOGY

Promote the **Biz4WRD portal**, a **business matching platform** that **connects companies to Industry 4.0 technology and service providers**.



# *Automation Capital Allowance (ACA)*

# What is the background of ACA?



## 01 Introduced under the National Budget 2015

- Adopted based on the recommendations by the 'Study on Transformation Strategy for Labour Intensive Manufacturing Industries in Malaysia' in 2014.
- Among the objectives are:
  - ✓ To encourage manufacturing companies to engage in innovative and productive activities
  - ✓ To encourage quick adoption of automation specifically for labour - intensive industries
  - ✓ To further spur automation initiatives
  - ✓ To enhance productivity in manufacturing sector

## 02 Collaboration with SIRIM

- Applications for the Automation CA are jointly evaluated by MIDA (non-technical) and SIRIM (technical).
- SIRIM undertakes technical verification based on the following productivity measures:
  - i. Reduction in number of workers / operators
  - ii. Reduction in number of man hours
  - iii. Increase of production volume
  - iv. Quality improvement
  - v. Other factors (i.e: energy efficiency, worker safety, smart manufacturing)



# What are the incentives?

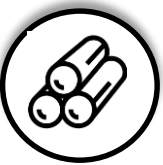
## CATEGORY 1 – Labour-intensive industries



Rubber Products



Plastic Products



Wood Products

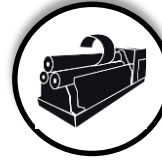


Furniture Products



Textile Products

## CATEGORY 2 – Other industries



Fabricated Metal Products



E&E Products



Chemical Products



Transport Equipment



Food Products



Others

Automation Capital Allowance of **200%** on the **first RM4 million** expenditure incurred\* within **8 years** of assessment from 2015 to 2023.

Automation Capital Allowance of **200%** on the **first RM2 million** expenditure incurred\* within **8 years** of assessment from 2015 to 2023.



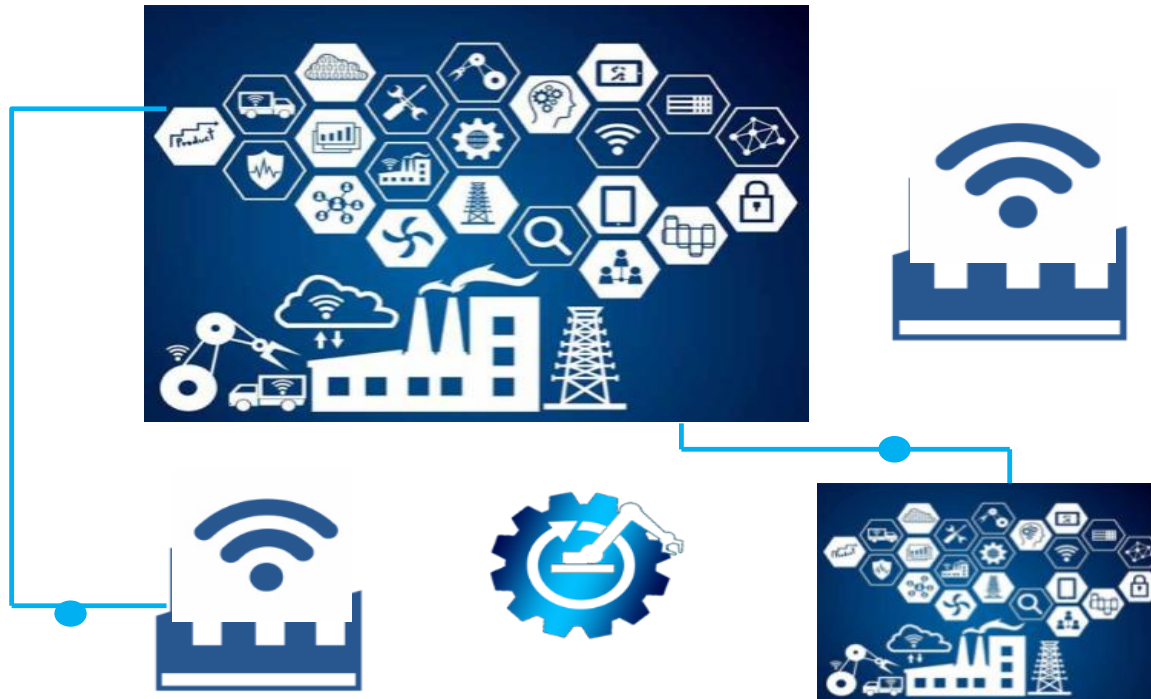
***Automation Capital Allowance has been expanded to Services Sectors as announced by the Government in National Budget 2020 on 11 October 2019***

\* 'Incurred' refers to plant and machinery purchased and used for the purpose of the business in the approved Year of Assessment



# Other Facilitations Related to Industry 4.0

# Supply Chain Development

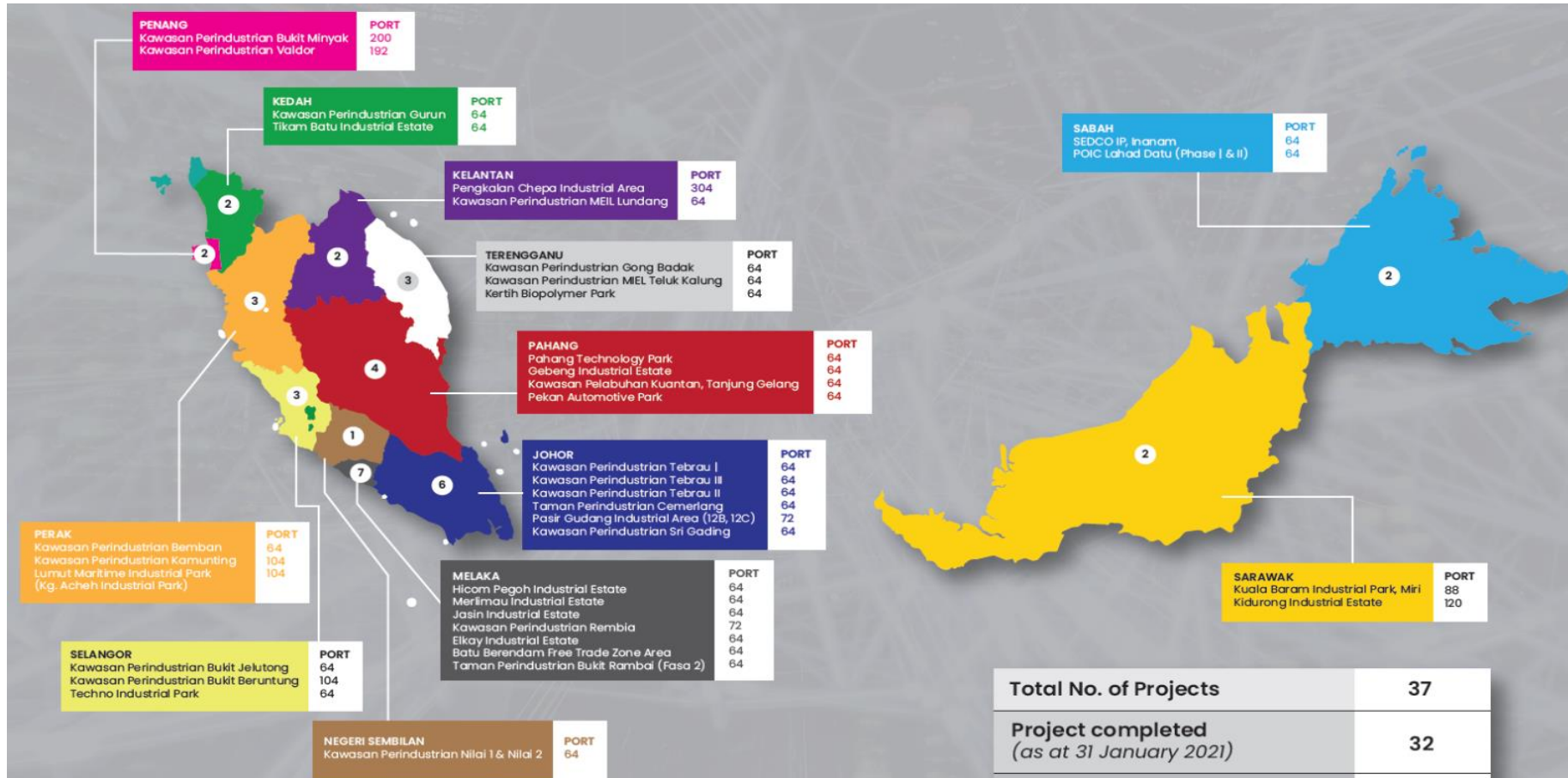


Collaboration with anchor companies to develop local suppliers/potential vendors for adoption of Industry 4.0 technologies at scale across the supply chain

*Influence Ecosystem Growth and Connectivity within Supply Chain*



# Industry4WRD High Speed Broad Band (HSBB)



**37**  
Industrial Areas

**1Gbps**  
Internet  
Connectivity

# Artificial Intelligence for SMEs(AI4S)

- The AI4S Programme is an structured initiative to introduce 'AI-based machine vision' whereby around 90 **SMEs across various manufacturing sectors** have received an Intel **Artificial Intelligence Starter Kit**.
- Participants underwent 6 'half-day' **experiential training program** where they are taught images capturing techniques, images detection and labeling systems, machine learning and model algorithms.
- Upon completion of the AI4S training curriculum, participants are expected to complete a **Proof-of-Concepts (PoCs) project at their workplace.**

In Collaboration :



To view compilation of the AI4S Proof-of-Concept projects:

[https://wayup.my/wp-content/uploads/2021/07/MPC\\_AI4S\\_Booklet-21June2022-final-under-embargo.pdf](https://wayup.my/wp-content/uploads/2021/07/MPC_AI4S_Booklet-21June2022-final-under-embargo.pdf)





# *Thank You*

*Make Malaysia Your Profit Centre in Asia*

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