

Industry4WRD Readiness Assessment

Ir. Rohaizat Omar
SIRIM Berhad

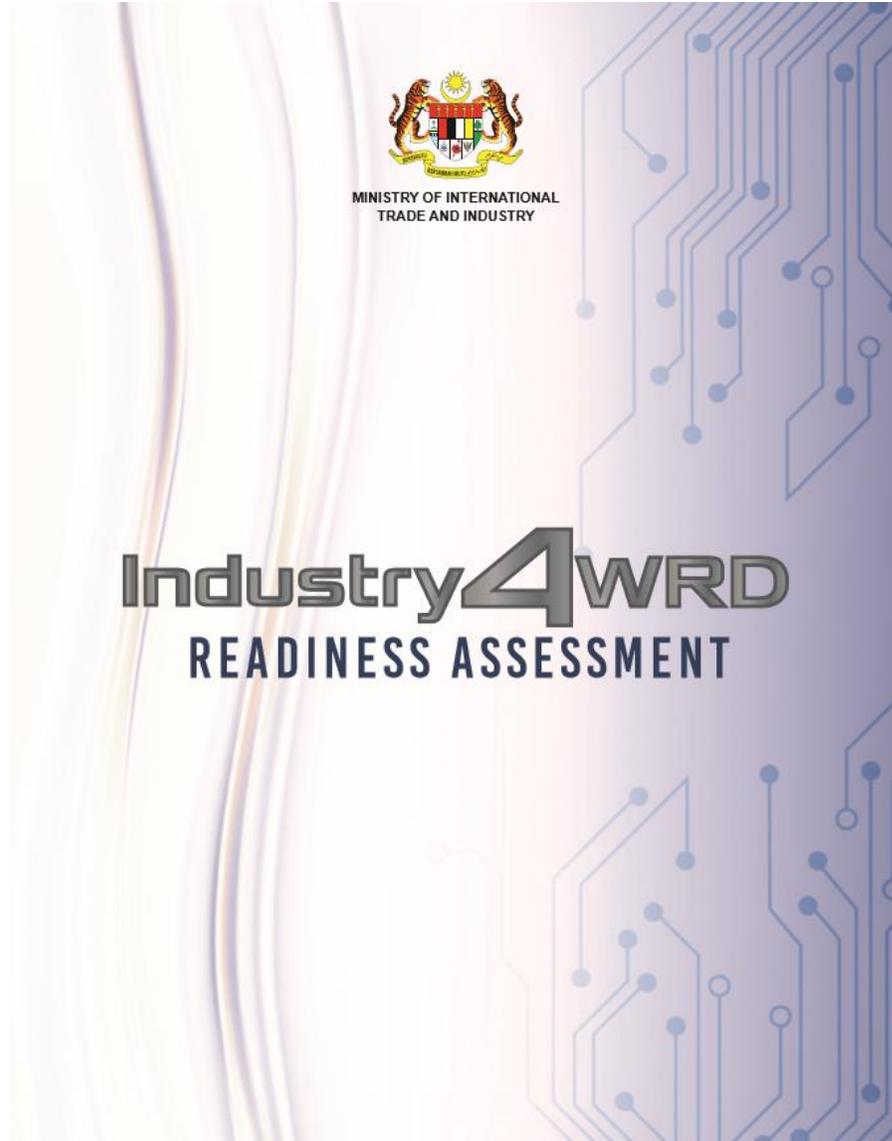
28 JANUARY 2019



MINISTRY OF INTERNATIONAL TRADE AND INDUSTRY



Background



Objective:

Comprehensive programme to help firms assess their capabilities and readiness to adopt Industry 4.0 technologies and processes.

Outcomes:

- Determine their state of readiness in the adoption of Industry 4.0 technologies;
- Identify the gaps and areas of improvement for Industry 4.0 adoption as well as opportunities for productivity improvement and growth; and
- Develop feasible strategies and plans to perform outcome-based intervention projects.

Background

A programme identified under Strategy R2 to **assess company's I4.0 readiness** and to develop action plan to accelerate adoption



Industry4WRD is aimed to...



Target Audience

MARKET SEGMENT

MANUFACTURING

MANUFACTURING-RELATED SERVICES

(FROM Q2 2019)

ELIGIBILITY



Incorporated under the Companies Act 1965/ Registration of Business Act (1956)

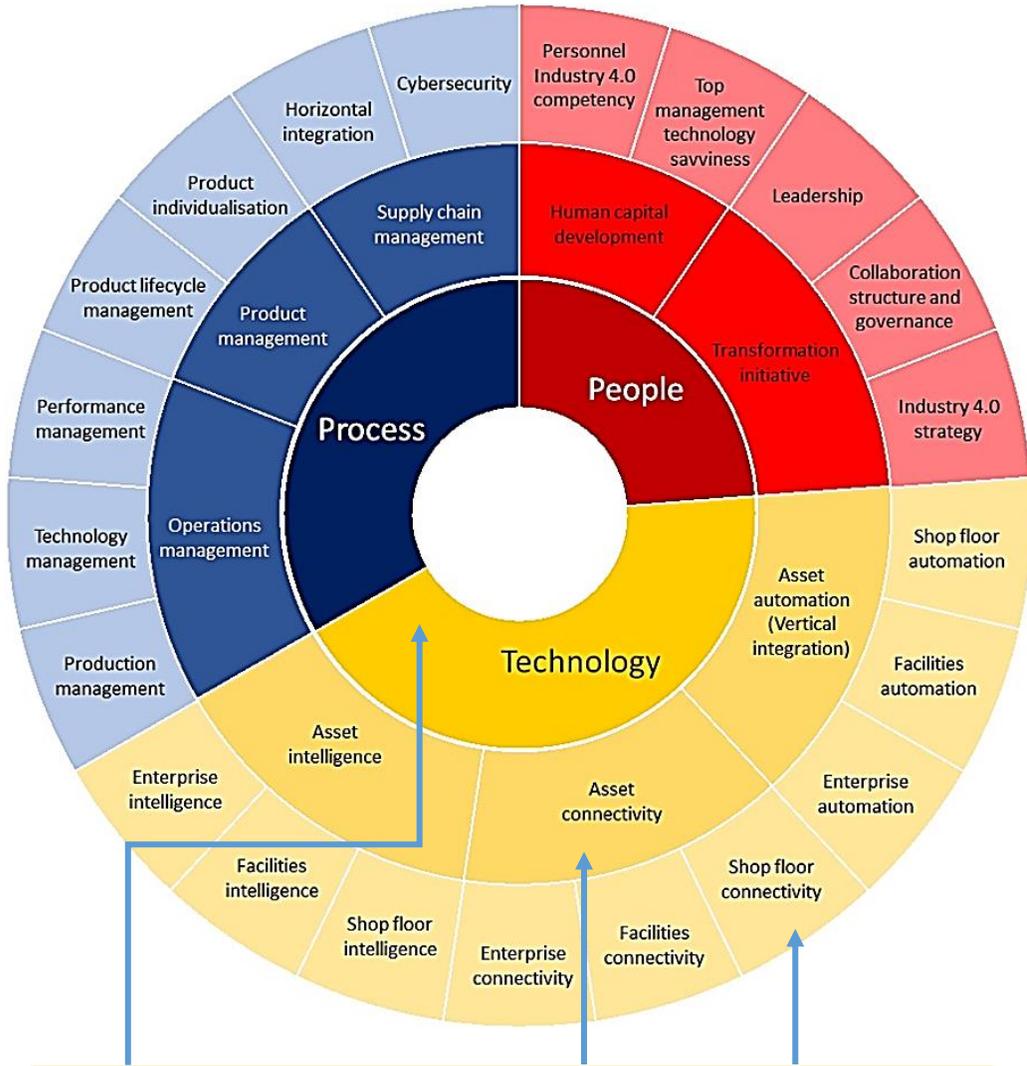


Hold a valid Manufacturing License (ML) and/or business licenses



In operation for more than three (3) years in the current business line

Industry4WRD Readiness Criteria Model



3 Shifts Factors **8** Thrusts **21** Dimensions

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

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

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

Example of Dimension Assessment Band

*Assessment bands and description for **Shop floor Intelligence** towards Industry 4.0 implementation readiness*

BAND

0

None

Shop floor assets are not on any electronic or digital system



1

Computerised

Shop floor assets apply pre-programmed logic to perform tasks on its equipment, machinery and computer-based system



2

Diagnostics

Shop floor assets are connected with network sensors and devices which allows the integrated system to identify and notify critical problem and inform possible causes



3

Predictive

Shop floor assets can predict and notify critical problem and inform possible causes



4

Adaptive

Shop floor assets can predict, notify critical problem, and independently execute decision to optimise performance and resource efficiency. Assets are able to undertake corrective measures



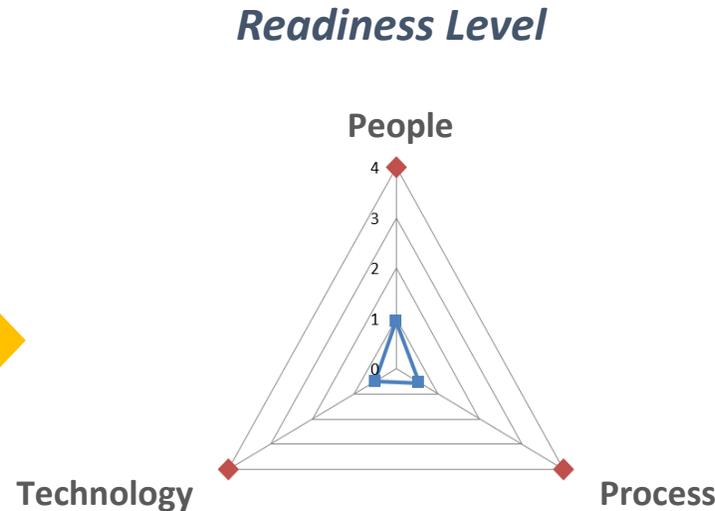
Scoring and Readiness Profile

SCORE	READINESS PROFILE	GENERAL DESCRIPTION
0% - 20%	 — Conventional	Operation remains “as is” with no intention or initiative into Industry 4.0 adoption
21 % - 40 %	 — Newcomer	Has interest to pursue Industry 4.0 but with none or very minimal efforts or initiatives
41 % - 60 %	 — Learner	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 %	 — Experienced	Has pursued small to medium scale Industry 4.0 adoption initiatives in operation, horizontal integration and ready for large scale system adoption
91 % - 100 %	 — Leader	Has implemented large scale Industry 4.0 adoption initiatives (company-wide) and system integration

Example of Assessment Report #1

Findings

- The company is currently mainly focusing on mass-production of standardized products and manual assembly of parts and products.
- All the systems in the company are currently operated manually. In some areas, assistance of IT systems is available, but these require continuous manual input to work.



Opportunities for improvement

- Implement a digital system for monitoring the production status. Most relevant information to be monitored is the stock status.
- It would be a good starting point to digitise information flows. Therefore, it would be necessary to introduce and establish a system that is capable of managing the inventory, procurement, demand planning, finances, customer relations and human resources.



Readiness Profile	Points
Conventional	0 %-20 %
Newcomers	21 %-40 %
Learners	41 %-60 %
Experienced	61 %-90 %
Leaders	91 %-100 %



Improvement Planning

- Setup a basic IT infrastructure (local network) to connect all the relevant systems in the company.
- Establish an integrated IT system infrastructure consisting of CAD-CAM-PLM-ERP-MES systems.
- Implementation of warehouse, inventory and stock management systems.
- Optimization of the planning processes based on real time information and according IT systems.

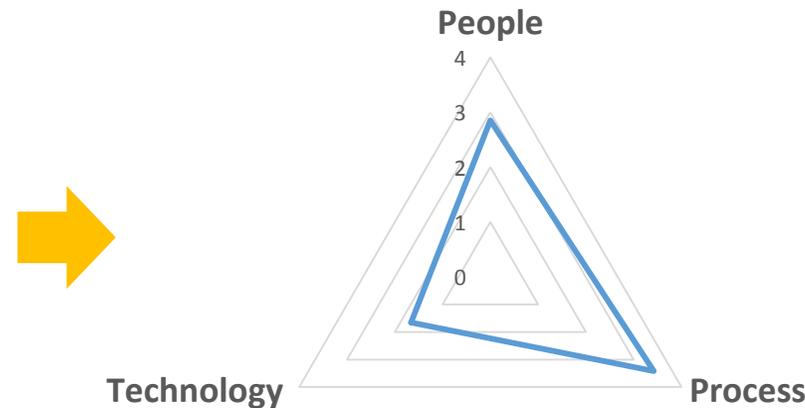


Example of Assessment Report #2

Findings

- Company is observed to be in good position to embark on Machine to Machine, Man to Machine integrations in its production shop floor
- Digitalisation of operation particularly production processes may be a challenge in view of the limited digital culture exposure and savviness of most staff

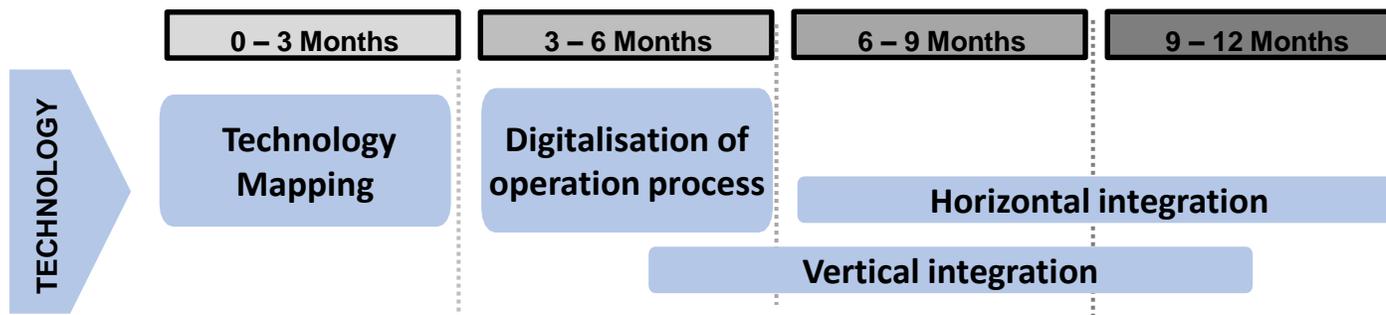
Readiness Level



Opportunities for improvement

- To exploit functionality of the existing automated machineries and robotics systems for the shift towards cyber-physical system.
- To embark on vertical integration and horizontal integration (production, management of operation and business activities, purchasing, logistics, sales, services, etc.)

Improvement Planning



Readiness Profile	Points
Conventional	0 %-20 %
Newcomers	21 %-40 %
Learners	41 %-60 %
Experienced	61 %-90 %
Leaders	91 %-100 %

Example of Assessment Report #3

Snapshot of findings

PEOPLE

- Tech savvy top management able to drive the company to adopt Industry 4.0 technology in the future.
- The company has the necessary talent pool to carry out Industry 4.0 activities. However, top management adopts wait-and-see attitude and does not wish to affect changes now.

PROCESS

- Tracking of Industry 4.0 trends is done by top management but information not systematically retained. Technology Management Plan is aligned to Industry 4.0 but not fully optimised.
- Most of the production machines have electronic-based control system and machines maintenance currently done on the need basis.

TECHNOLOGY

- Has a good combination of advanced and medium level automation technology. Most of the production machines are physically connected and able to communicate with each other. Some machines are able to respond and provide feedback autonomously in real time according to changes in the production conditions.



Process



Online Registration



*Industry4WRD-RA Technical/
Steering Committee Review*



On-site Assessment



*Inform assessment
outcome to company*



*Table RA report to
Technical/ Steering Committee*



RA report

Thank You



MINISTRY OF INTERNATIONAL TRADE AND INDUSTRY



SIRIM

