Malaysia Lighthouse Project

The beacon of Malaysia future industry

Lighthouse Project:

Understanding the Lighthouse model

Understanding the Lighthouse Model

- **A WEF initiative launched in 2018 together with McKinsey to identify and showcase those manufacturers at the forefront of implementing technologies enabling the Fourth Industrial Revolution/Industry4.0/Smart Manufacturing.**

- **In general, the Lighthouse Project consist of industry players that have taken 4IR/Ind4.0/Smart Manufacturing technology from pilot to integration at scale, thus achieving significant financial and operational benefits.**

- **The term "lighthouse" denotes that these factories can act as beacons to guide the many thousands of others around the world that are still looking to apply technologies like artificial intelligence, additive manufacturing and advanced analytics as well as overcome challenges in upgrading existing production systems.**

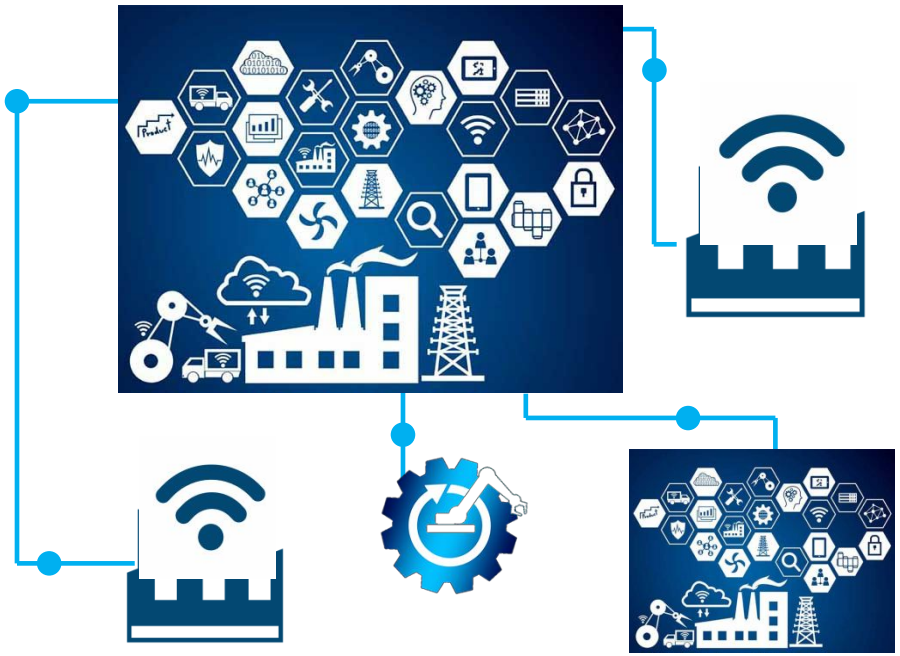
Step 1: Pilot Phase

Step 2: Integration at Scale

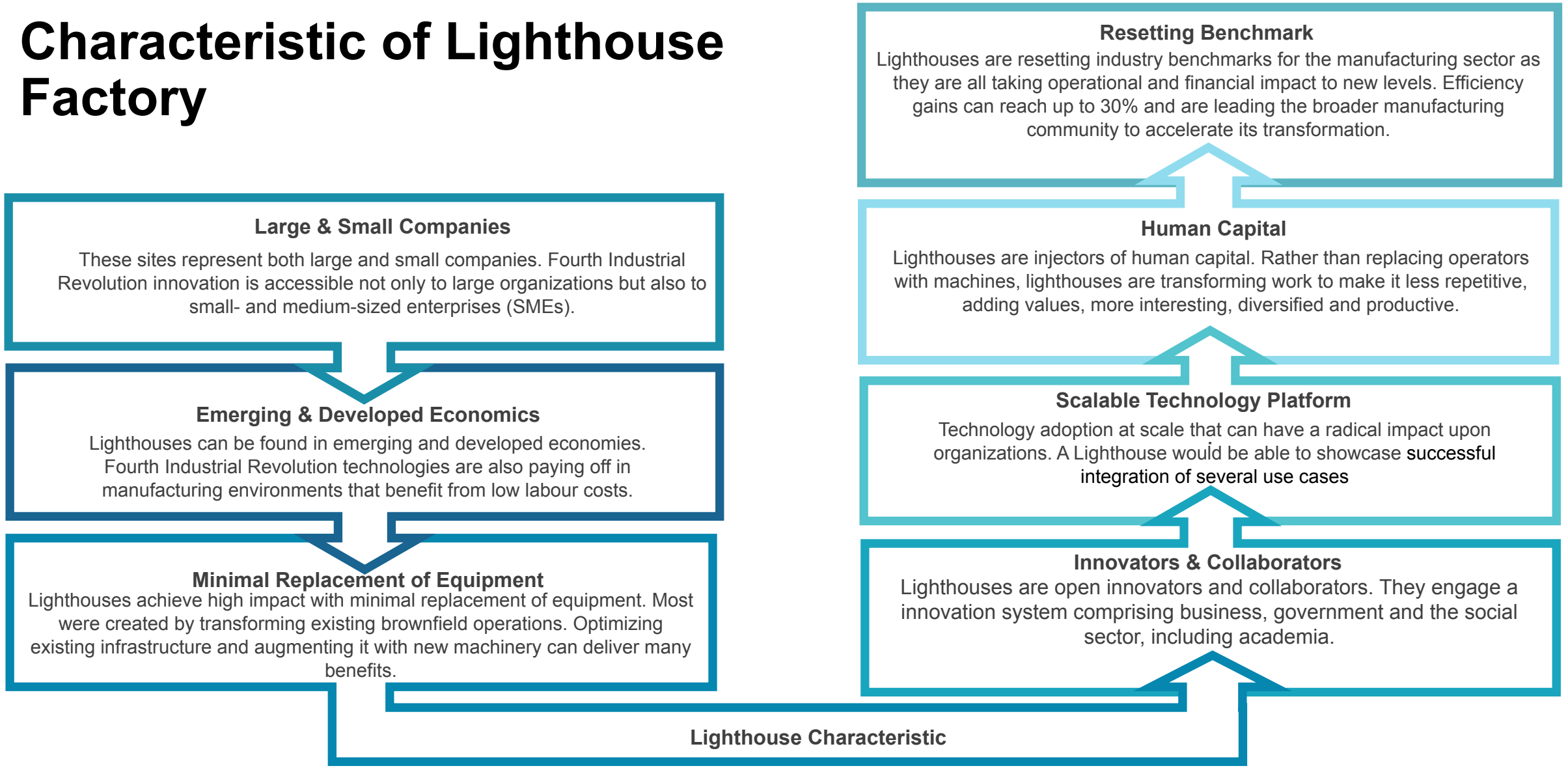
- **4 Walls Lighthouse Model**

Step 3: Influence Ecosystem Growth, Connectivity with Supply Chain

- **End-to-end Lighthouse Model**



Characteristic of Lighthouse Factory



Key performance indicator of a Lighthouse factory

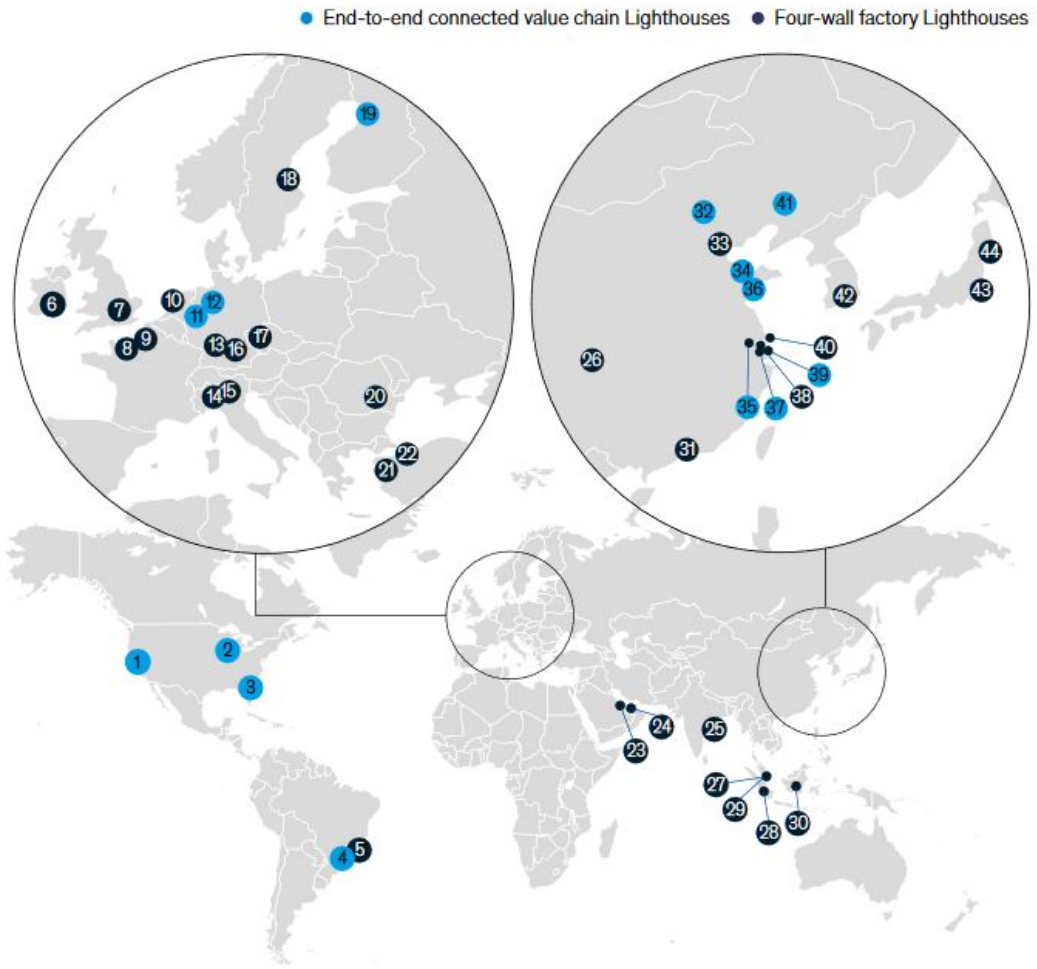
Productivity	Factory output increase
	Productivity increase
	OEE increase
	Product cost reduction
	Operating cost reduction
	Quality cost reduction
Sustainability	Waste reduction
	Water consumption reduction
	Energy efficiency
Agility	Inventory reduction
	Lead time reduction
	Change-over shortening
Speed 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

Benefits of Lighthouse Model

- Manufacturing has experienced a decade of productivity stagnation and demand fragmentation; thus innovation is long overdue.
- Technology can create a better, cleaner world through new levels of efficiency in manufacturing.
- It provides not just incremental but rather, a step change in resetting benchmarks for operational and financial key performance indicators (KPIs).
- Address rapid emergence of ecological constraints, balancing global resource consumption against availability, avoiding challenging impacts on ecosystems, human health and well-being associated with global climate change.

44 Global Lighthouse Network sites as of January 2020



- **1** Zymergen
  Biotechnology, US
- **2** Fast Radius with UPS
  Additive manufacturing, US
- **3** Johnson & Johnson Vision
  Care Medical devices, US
- **4** Groupe Renault
  Automotive, BR
- **5** MODEC
  Oil and gas, BR
- **6** Johnson & Johnson DePuy
  Synthes Medical devices, IR
- **7** GSK
  Pharmaceuticals, UK
- **8** Schneider Electric
  Electrical components, FR
- **9** Groupe Renault
  Automotive, FR
- **10** Tata Steel
  Steel products, NL
- **11** Henkel
  Consumer goods, DE
- **12** Phoenix Contact
  Industrial automation, DE
- **13** AGCO
  Agricultural equipment, DE
- **14** Rold
  Electrical components, IT
- **15** Bayer
  Division pharmaceuticals, IT
- **16** BMW Group
  Automotive, DE
- **17** Procter & Gamble
  Consumer goods, CZ
- **18** Sandvik Coromant
  Industrial tools, SE
- **19** Nokia
  Electronics, FI
- **20** Arçelik A.Ş.
  Home appliances, RO
- **21** Petkim
  Chemicals, TR
- **22** Ford Otosan
  Automotive, TR
- **23** Saudi Aramco
  Gas treatment, SA
- **24** Unilever
  Consumer goods, UAE
- **25** Tata Steel
  Steel products, IN
- **26** Siemens Industrial
  automation products, CN
- **27** Infineon
  Semiconductors, SG
- **28** Schneider Electric
  Electrical components, ID
- **29** Micron
  Semiconductors, SG
- **30** Petrosea
  Mining, ID
- **31** Foxconn Industrial
  Internet Electronics, CN
- **32** FOTON Cummins
  Automotive, CN
- **33** Danfoss
  Industrial equipment, CN
- **34** Weichai
  Industrial machinery, CN
- **35** SAIC Maxus
  Automotive, CN
- **36** Haier
  Home appliances, CN
- **37** Johnson & Johnson DePuy
  Synthes Medical devices, CN
- **38** Bosch
  Automotive, CN
- **39** Procter & Gamble
  Consumer goods, CN
- **40** Baoshan Iron & Steel
  Steel products, CN
- **41** Haier
  Appliances, CN
- **42** POSCO
  Steel products, KOR
- **43** GE Healthcare
  Healthcare, JP
- **44** Hitachi
  Industrial equipment, JP

Source: World Economic Forum in collaboration with McKinsey & Company

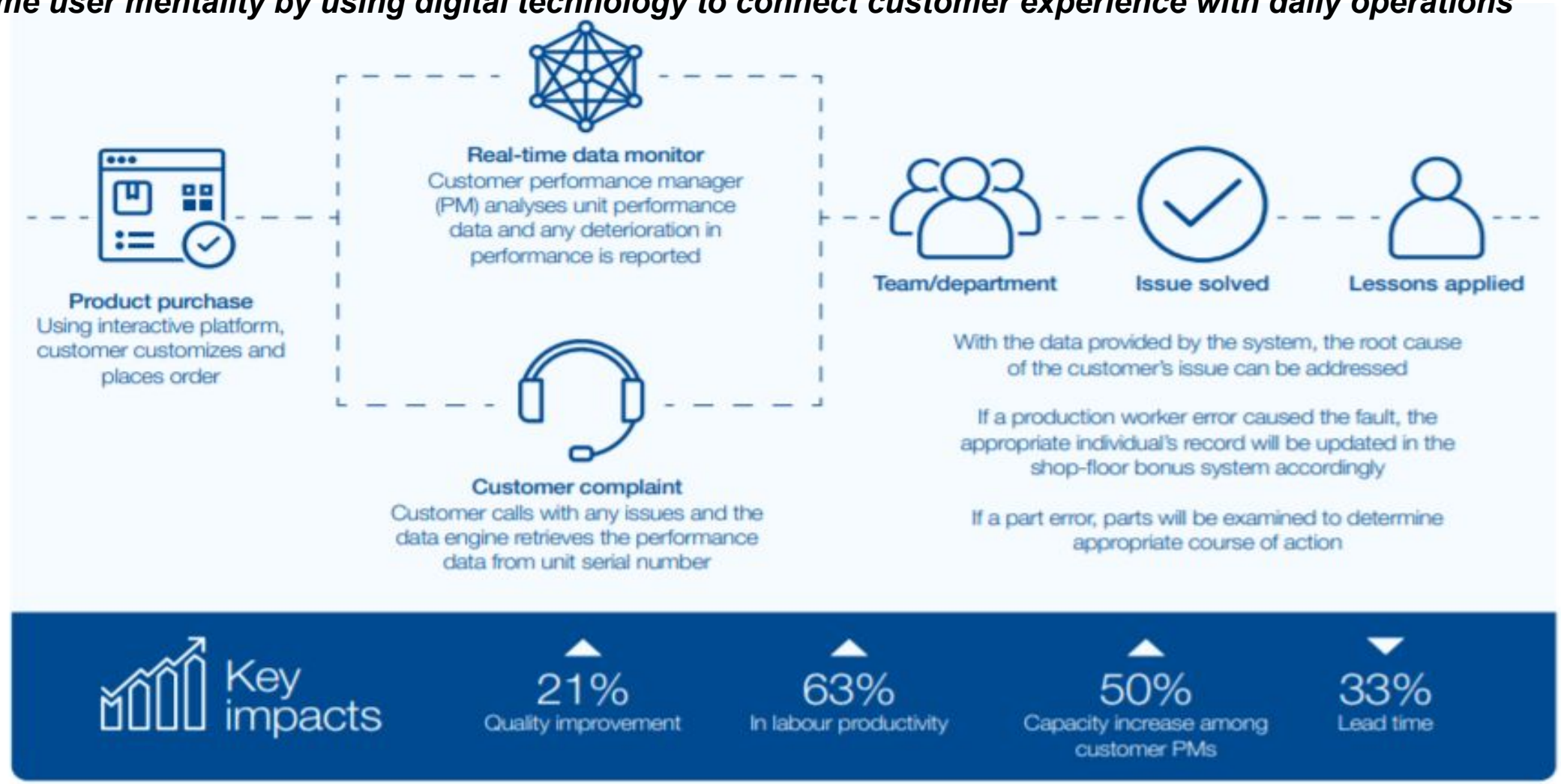
Some of the Lighthouse factory business cases and the impact upon adoption of Ind4.0

Site	Change story	Top 5 use cases	Impact	Highlight
Johnson & Johnson DePuy Synthes in Cork, Ireland	Global innovation center focused on material science and technology innovation, with in-house technical capability and knowledge development	• OEE real-time monitoring of critical assets • Additive manufacturing (3D printing) • Autonomous process optimization • VR training and design tool • Collaborative Robotics	• ↑ 5% Asset utilization • ↓ 25% Cost of goods sold • ↓ 10% Scrap • ↑ 5x Safety information retention • ↑ 25% Labor efficiency	Dedicated Fourth Industrial Revolution space serves as in-house testing ground for the agile testing and deployment of new use cases
Haier in Qingdao, China	Developed digital manufacturing transformation to meet consumer demand and innovate a new business model	• Mass customization & B2C³ online ordering • Real-time operator performance ranking • Digital quality management system • Digital manufacturing performance • Digital product after sales	• ↓ 33% Lead time • ↑ 64% Labor productivity • ↓ 21% Defects per million • ↑ NA OEE increased • ↓ 50% Customer, maintenance staff	Innovated new business model with web-based B2C sales channel for configuration and ordering of air conditioners
Schneider Electric in Le Vaudreuil, France	50 year old plant that recognized the need to stay price competitive for the next 50 years through deployment of digital tools	• Predictive maintenance through IoT • Mixed reality for maintenance work • Energy management through IoT • Lean digitization • Smart supply chain- Automated Guided Vehicles	• ↑ 7% OEE • ↓ 20% Time to diagnosis/repair • ↓ 10% Energy costs • ↓ NA Time for lean analysis • ↓ 80% Time for milk runs	Workforce involved in the digital transformation from the beginning, leveraging digital technologies such as virtual reality to communicate vision
BMW in Regensburg, Germany	Highly advanced factory with lean processes leverages digital manufacturing to reach the next performance level	• Data analytics and predictive maintenance • Smart autonomous logistics transports • Smart maintenance and assistance • Collaborative robotics and automation	• ↓ 25% Unplanned downtime of press • ↓ 35% Logistics cost • ↓ 5% Rework • ↑ 5% Efficiency in assembly	Strategy focused on effectiveness, the right mindset and easy access to improve quality, cost and productivity

Source: World Economic Forum in collaboration with McKinsey & Company

Success Story of Haier in Shenyang, China

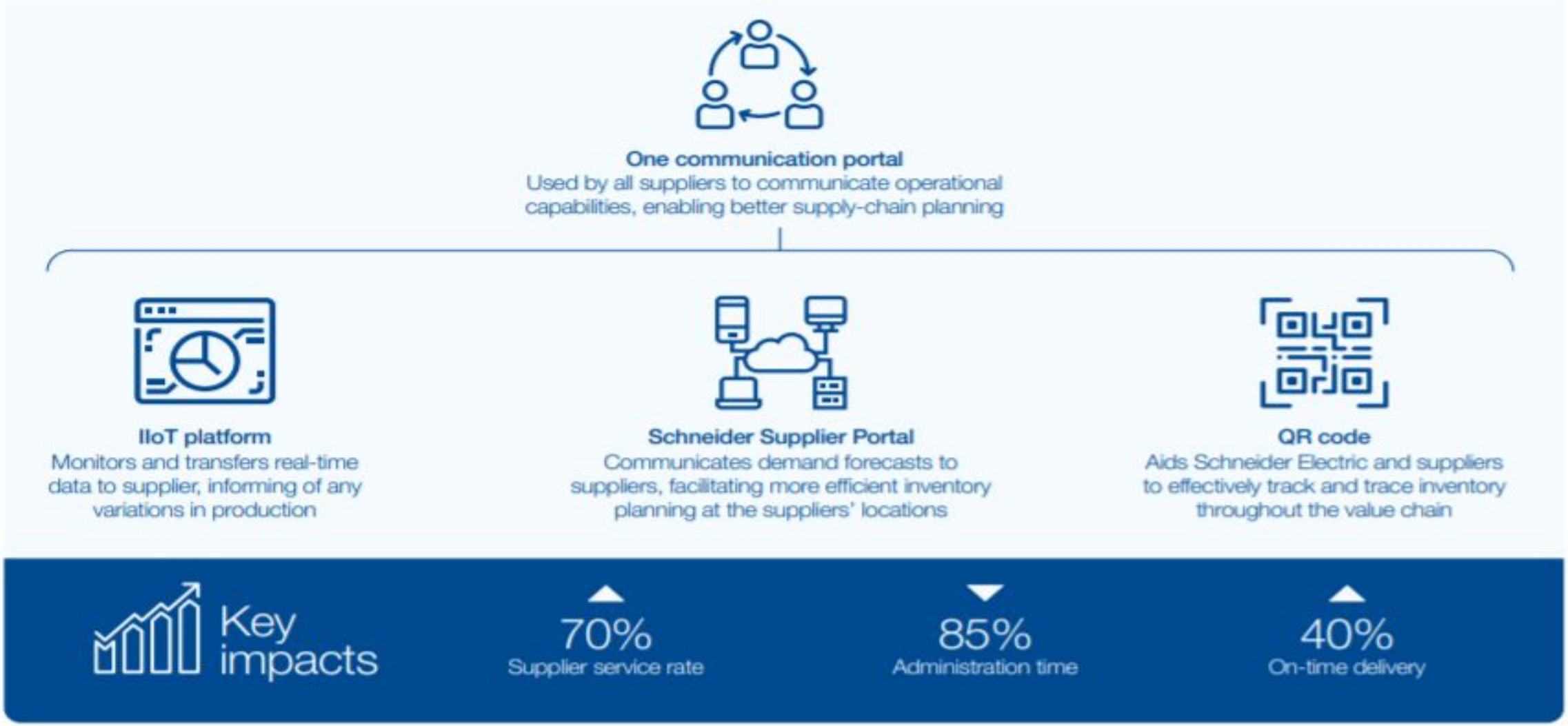
Haier's air-conditioning unit uses digital technology to connect customers with operations. Haier's air-conditioning unit is achieving its transformational goal of moving from a one-time customer mindset to a lifetime user mentality by using digital technology to connect customer experience with daily operations



Source: World Economic Forum in collaboration with McKinsey & Company

Success Story of Schneider Electric in Batam, Indonesia

Schneider Electric's platform monitors and adjusts for anomalies. Schneider Electric in Batam has created a platform for stakeholders to monitor and adjust for anomalies within its manufacturing processes



Source: World Economic Forum in collaboration with McKinsey & Company


MIDA
Perspective on Malaysia
Lighthouse Project

MIDA Lighthouse Project

01

MIDA LP definition

A project that offers an unrivalled opportunity not only to highlight the transformational efforts of advanced manufacturers but also, more importantly, to create a shared learning journey that will help manufacturers around the region/ world, across value chains and of all sizes to access and capitalize on the positive potential of the 4IR/Industry4WRD.

02

The Elements

- Potential element of Center of Excellence (CoE) that focuses on the development and adoption of digital manufacturing/ factory of the future.
- Lighthouse project could be a pioneer/frontier project one of its type in the country
- Mentoring and Vendor Development Programme – between anchor companies and their vendors
- Universities involvement – talent readiness

03

Focus Points

- Attracting potential foreign/local companies with the Industry 4.0 capabilities
- Rejuvenate existing manufacturing sector
- Encouraging SMEs involvement and co-development
- Collaboration with other agencies e.g. SIRIM, MIMOS, MIDF, Bank Pembangunan
- Potential offset programmes
- Setting up a benchmark for the Industry 4.0 adoption in Malaysia

04

Creating a Viable Growth

- Resetting benchmarks for the manufacturing sector on operational and financial impact to new levels
- Talent readiness/ academia collaboration
- Creative innovation
- Cross-industry collaboration (i.e. supply chain)
- More companies to adopt Industry 4.0

Issues and challenges in implementing Lighthouse Project

MIDA as your business partner

1

Industry4.0 Support

2

Talent & Human Capital Support

3

Business & Post Investment Support

4

Incentives

Possible incentives for Lighthouse project

Industry4WRD DISF/HIF

- Adoption of Industry 4.0 technology
- DISF - **Matching grant (60:40) on reimbursable basis** for the eligible expenditures in relation to Industry 4.0.
- High Impact Fund - **Matching grant (50:50) on reimbursable basis** for the eligible expenditures for R&D, training and modernization in relation to Industry 4.0.

*Vendor Development Programme

- To create a supply chain ecosystem in relation to Industry 4.0
- To undertake product development, upgrading capabilities & skill training of vendors in relation to Industry 4.0.
- **Double deduction** on the qualifying operating expenditure incurred by anchor companies up to RM1 million per year for 3 consecutive years of assessment

Industry4WRD Intervention Fund

- A financial support facility for Malaysian Small and Medium Enterprises (SMEs) -manufacturing and related services sectors to embrace Industry 4.0
- **Matching grant (70:30)** on reimbursable basis for eligible expenditures, up to a maximum of **RM500,000.00**

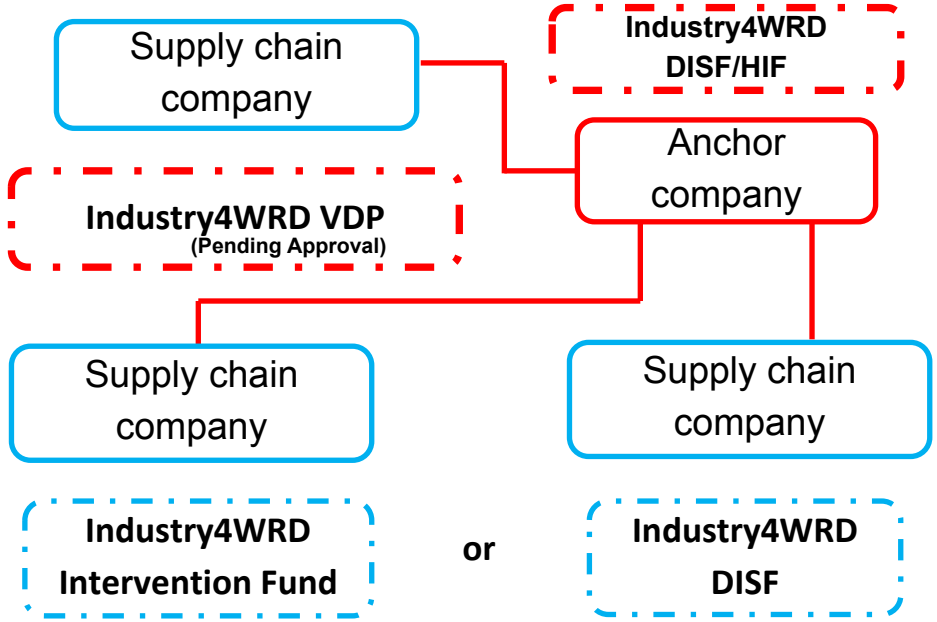
Automation Capital Allowance (ACA)

ACA of 200% on the first **RM2 / 4 million** expenditure incurred* within 8 years of assessment from 2015 to 2023.

- 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

Principal Hub 2.0

Effective 2019, companies approved with the enhanced Principal Hub incentive, also known as PH 2.0, will be able to enjoy a concessionary **10% tax rate** for their operations in Malaysia



*Note: Pending Approval from MOF

For further details, please refer to https://www.mida.gov.my/home/forms-&-guidelines/posts/


THANK YOU
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