

AI PRODUCTIVITY ROADMAP

**NAVIGATING PRODUCTIVITY OF THE INDUSTRY
IN THE DIGITAL AND AI ERA**

FOR ENGINEERING SERVICES

FOREWORD

- Industry Overview
- Challenges in Digitalisation
- Trend Impacting Engineering Professional Services in Malaysia
- Accelerating Technology Adoption to Enhance National Competitiveness
- Accelerating Productivity Through Digitalisation MPC's Digital Platform Network+
- Building a strong digitalization ecosystem for enterprise transformation
- Digital Adoption In Professional Engineering Service Industry
- Digital Transformation Journey
- Digital Transformation Success Story
- How to Start?

FOREWORD



Datuk Zahid Ismail
Director General,
Malaysia Productivity Corporation

“To boost national productivity, we must harness the power of AI”

To boost national productivity, we must harness the power of AI and digital technologies—every sector, every individual has a role to play by equipping themselves with the right knowledge, skills, and competencies to stay ahead

“The Digital Productivity Roadmap helps engineering services in Malaysia use technology to work better and faster.

With AI, data, and automation, we can cut costs, improve service, and stay competitive.

As technology grows and the population ages, going digital is now a must. Tools like AI, cloud systems, and remote monitoring make services smarter and more accessible.

Success needs teamwork between companies, tech experts, and the government. This is a call to act — let’s go digital, stay ahead, and make Malaysia a leader in engineering services.”



Ir. Ts. Choo Kok Beng
Champion
Professional Services Productivity
Nexus

AI PRODUCTIVITY ROADMAP
Navigating Productivity of The Industry in
The Digital and AI Era

INDUSTRY OVERVIEW

The Professional Engineering Services, with numerous establishments and a strong workforce, drives GDP through professional services to public and private utilities, building, machines, equipment, processes or any work which requires engineering principles and data. Its stakeholders includes property developers, utility service providers, manufacturers, machineries supplier, R&D centers, data centers and technology providers. Engineering services includes Engineering design for machines, materials, instrument, structures, processes and system as well as consulting activities for machineries, industrial processes and plant, project involving **civil engineering, hydraulic engineering, traffic engineering, water engineering project, electrical and electronics, mining, chemical engineering, Mechanical engineering, industrial, system and safety engineering** or elaboration of projects using air-conditioning, refrigeration, sanitary and pollution control, acoustical engineering and other field as approved by the Board of Engineer Malaysia (BEM)



No. of Establishment
8113 Companies



Gross output value: RM13.9 Billion
CAGR (2022/2017) : 7.7%



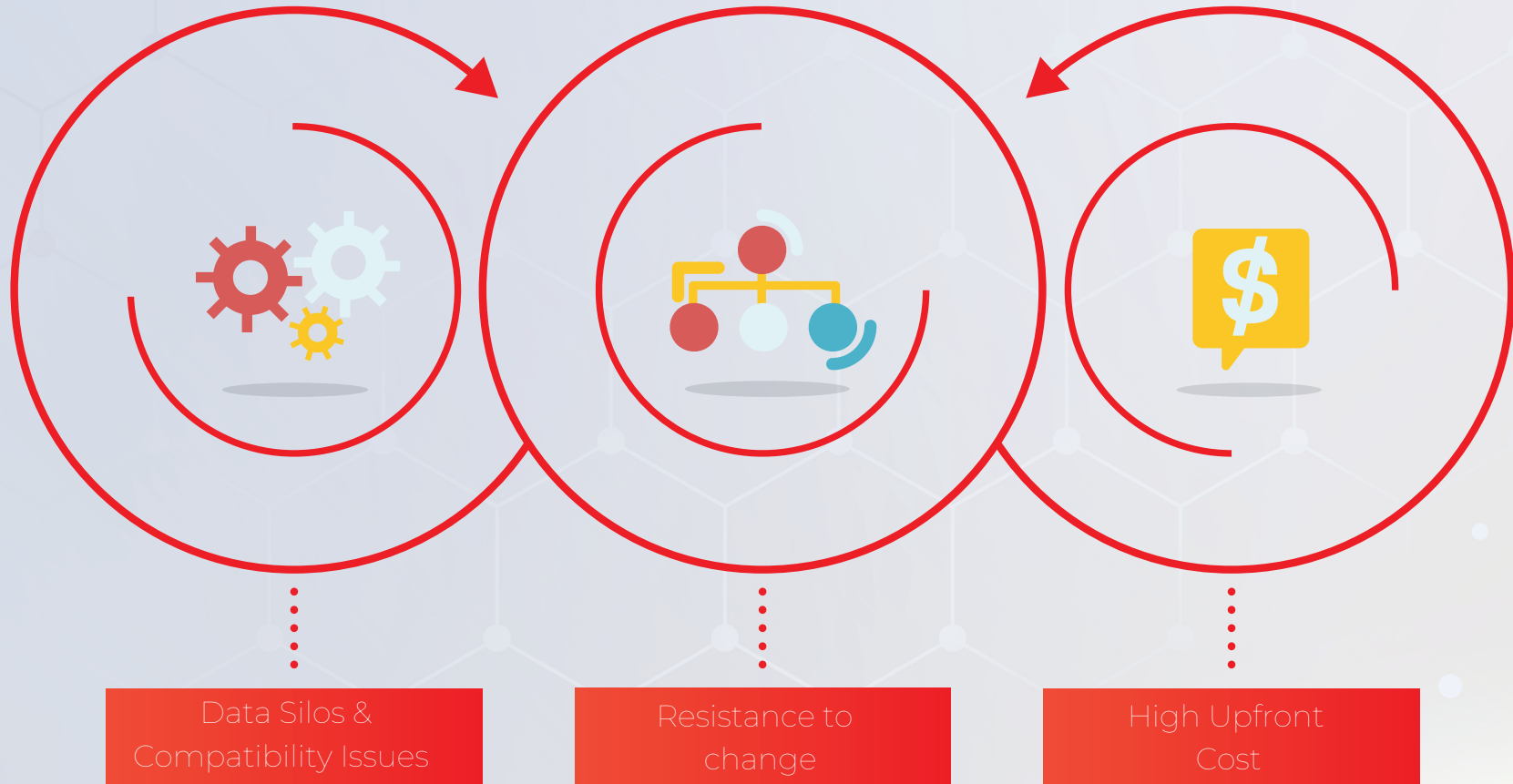
No. of Workforce
64,689 workers



Value added: RM8.2 Billion
CAGR (2022/2017): 7.8%

AI PRODUCTIVITY ROADMAP
Navigating Productivity of The Industry in
The Digital and AI Era

CHALLENGES IN DIGITALISATION



AI PRODUCTIVITY ROADMAP
Navigating Productivity of The Industry in
The Digital and AI Era

TREND IMPACTING ENGINEERING PROFESSIONAL SERVICES IN MALAYSIA

Digital Transformation, Industry 4.0 Integration and transition into Industry 5.0

The adoption of digital technologies such as **Building Information Modeling (BIM), Artificial Intelligence (AI), Internet of Things (IoT), cloud computing, and big data analytics** is revolutionizing how engineering projects are planned, designed, executed, and managed

This trend demands engineers with **skills in digital design, data analysis, simulation, and the management of digital platforms**

The adoption on IR 4.0 element is the preparation towards future IR 5.0

Focus on Sustainability and Green Engineering

Growing environmental awareness and the push for sustainable development are increasing the demand for engineers who can **incorporate green building practices, renewable energy solutions, waste reduction strategies, and environmental impact assessments** into their projects.

Expertise in sustainable materials, energy-efficient design, and the principles of a circular economy are becoming increasingly important.

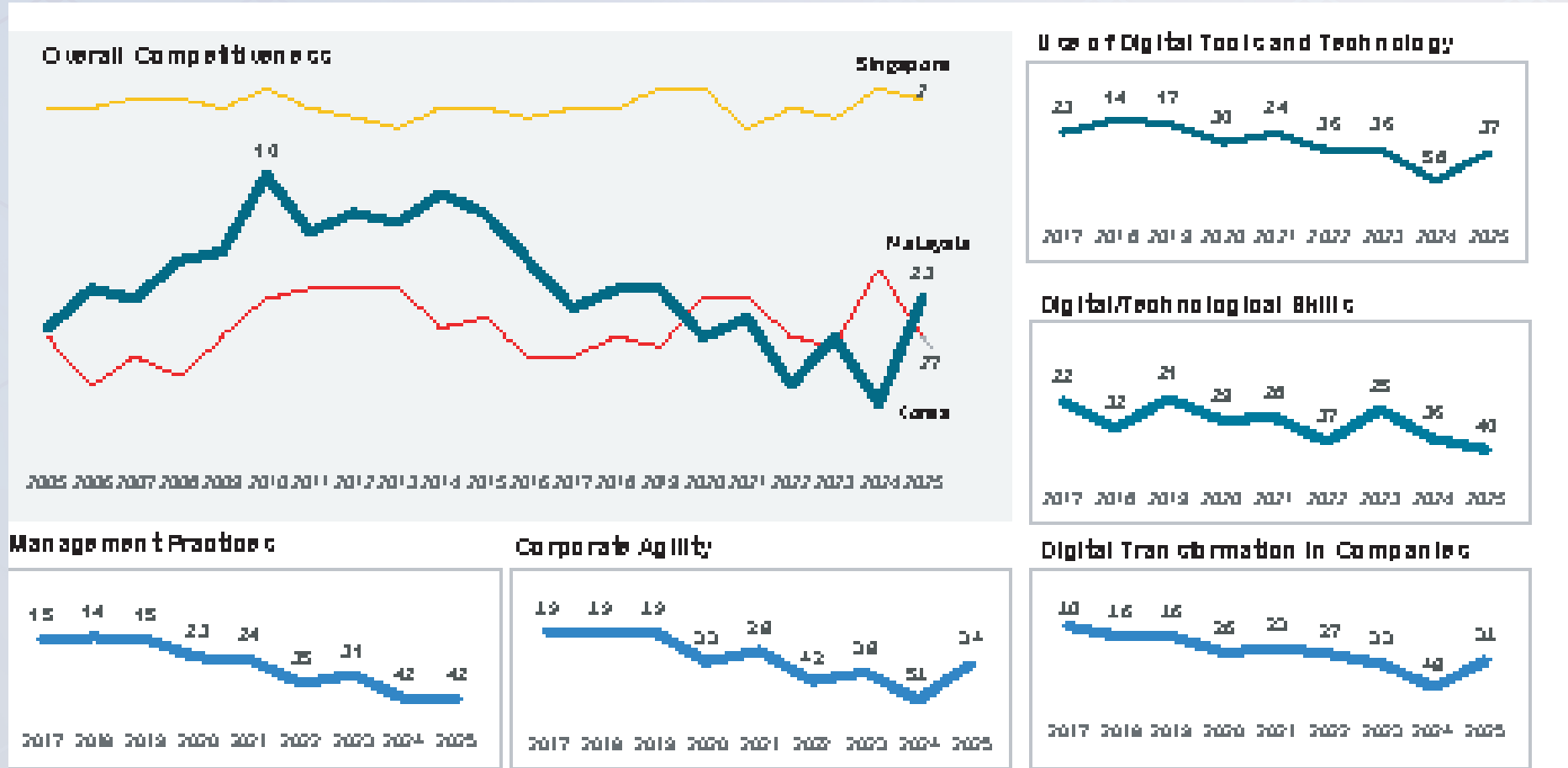
Smart Infrastructure and Urbanization

Malaysia's ongoing urbanization and infrastructure development projects necessitate engineers skilled in **creating smart cities with integrated systems for transportation, energy, water management, and public services, often leveraging IoT and data analytics.**

This includes the design and **implementation of intelligent transportation systems, smart grids, and resilient infrastructure.**

ACCELERATING TECHNOLOGY ADOPTION TO ENHANCE NATIONAL COMPETITIVENESS

Malaysia must urgently accelerate technology adoption to achieve its aspiration of becoming one of the top 12 most competitive nations by 2033



AI PRODUCTIVITY ROADMAP
 Navigating Productivity of The Industry in
 The Digital and AI Era

BUILDING A STRONG DIGITALIZATION ECOSYSTEM FOR ENTERPRISE TRANSFORMATION

Business leaders can enhance productivity and strengthen the ecosystem by leveraging MPC's Digital Platform Network+ (DPN+), which provides access to affordable digital solutions and promotes skills enhancement to drive digital transformation.

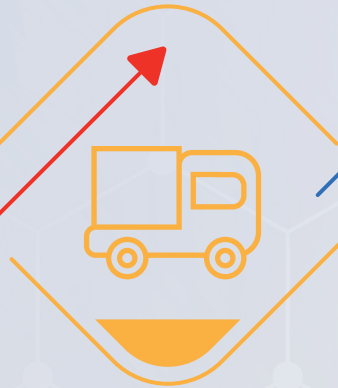
01



DIGITAL PLEDGE

(Business Leader/CEO): Commit to digital transformation and prioritize it in the business strategy

02



SUPPLY

(Digital Solution Providers): Ensure digital solutions are available, affordable, and scalable for businesses.

03



MATCHING SOLUTION

(MPC/Business Leader): Identify and match the right digital solutions to business needs.

04



AI PRODUCTIVITY ROADMAP

(Business Leader/CEO): Create a clear, actionable plan for integrating digital technologies

05



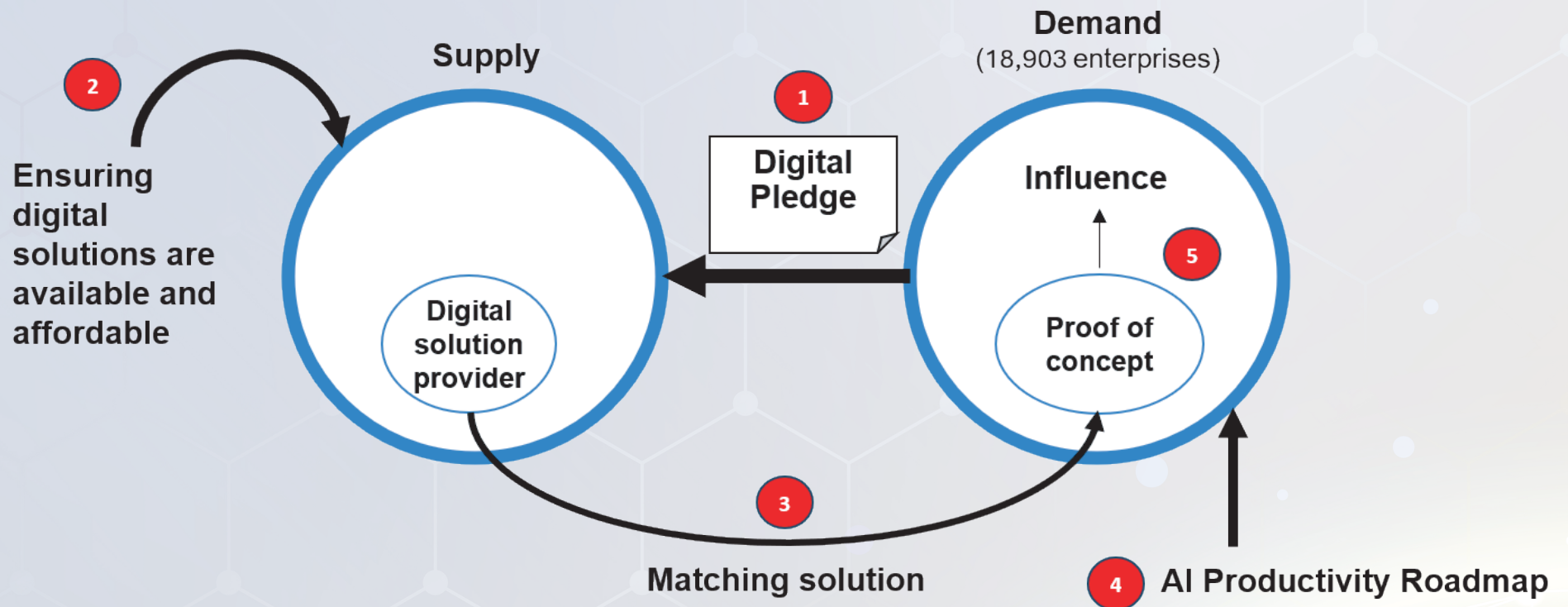
INFLUENCE

(Business Leader/CEO): Use proof of concept to drive adoption and build internal capacity for digital transformation.

AI PRODUCTIVITY ROADMAP
Navigating Productivity of The Industry in
The Digital and AI Era


ACCELERATING PRODUCTIVITY THROUGH DIGITALISATION VIA MPC'S DIGITAL PLATFORM NETWORK+

Action: Improving the ecosystem to encourage adoption, transformation and skill enhancement for technology utilization



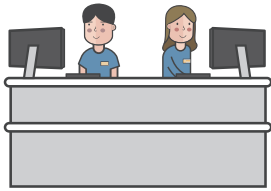
AI PRODUCTIVITY ROADMAP
Navigating Productivity of The Industry in
The Digital and AI Era

DIGITAL ADOPTION IN PROFESSIONAL ENGINEERING SERVICES

CATEGORY	FUNCTION IN SERVICE	BASIC	INTERMEDIATE	ADVANCE
 Front Office (Customer-Facing)	Sales & Business Development	Minimal use of digital tools Limited online presence Basic email & manual transactions	Digital CRM & customer service tools Online booking & support- Digital marketing & advertising	AI-powered customer engagement Omnichannel integration Predictive analytics for customer behavior
	Customer Service Marketing & Promotions	Gmail, Social media (TikTok, Facebook, Instagram, etc) Google Drive, Microsoft Outlook, OneDrive- Trello, Slack	Google Workspace, Google Ads, HubSpot CRM Microsoft Dynamics 365, Mailchimp, Calendly AppSheet	Google Looker, Google Analytics, Microsoft Power BI ChatGPT, Drift, Pipedrive CRM AppSheet Gemini, Deepseek


AI PRODUCTIVITY ROADMAP
 Navigating Productivity of The Industry in
 The Digital and AI Era

DIGITAL ADOPTION IN PROFESSIONAL ENGINEERING SERVICES

CATEGORY	FUNCTION IN SERVICE	BASIC	INTERMEDIATE	ADVANCE
 <p>Middle Office (Business administration Operational Support)</p>	HR & Talent Management Finance & Accounting Service Innovation	Manual record-keeping & payroll Siloed operations Limited regulatory compliance automation Mainstream media	Cloud-based HRM & payroll automation Data analytics for performance management Basic AI in financial forecasting Social media	AI-driven HR & recruitment automation Automated compliance monitoring Predictive analytics for business insights
	Regulatory Compliance Patient Records & Billing Management	Microsoft Excel Google Sheets QuickBooks, Wave Accounting Trello, Notion LinkedIn	Cloud-Based HR & Payroll: BambooHR, Zoho People, Deel Data Analytics: Google Data Studio, Microsoft Power BI Financial AI Xero, FreshBooks LinkedIn	AI in HR & Compliance Workday, SAP SuccessFactors Predictive Analytics Google Looker, Tableau, IBM Watson AI Automation Gemini, ChatGPT, AppSheet

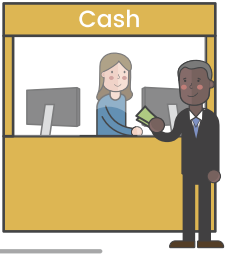
AI PRODUCTIVITY ROADMAP
 Navigating Productivity of The Industry in
 The Digital and AI Era

DIGITAL ADOPTION IN PROFESSIONAL ENGINEERING SERVICES

CATEGORY	FUNCTION IN SERVICE	BASIC	INTERMEDIATE	ADVANCE
 <p>Middle Office (Engineering Operational Support)</p>	Design	Manual sketch and calculation	Cloud-based project management	AI-driven Design
	Simulation	Siloed operations	Computer Engineering	Collaborative design and simulation
	Project management	Limited regulatory compliance automation	Data analytics for project management, engineering analysis and design	(VR/AR) simulation
	Engineering Analysis	Traditional presentation slides	Basic AI in engineering analysis	Automated compliance monitoring
	Research	Manual site work		Predictive analytics for business insights
	Project / Business	Microsoft Excel, Google Sheets	Design and Simulation tool CAD/CAM softwares	AI in design compliance: Generative AI tool,
	Presentation	QuickBooks, Trello, Notion (for basic operations management),	Cloud-Based Project management: : Google workspace, Microsoft project / Teams	Predictive Analytics : Google Looker, Tableau, IBM Watson
		Canva,	Data Analytics Google Data Studio, Microsoft Power BI	AI Automation Gemini, ChatGPT
		Digital tools on site		Collaborative design and simulation

AI PRODUCTIVITY ROADMAP
 Navigating Productivity of The Industry in
 The Digital and AI Era

DIGITAL ADOPTION IN PROFESSIONAL ENGINEERING SERVICES

CATEGORY	FUNCTION IN SERVICE	BASIC	INTERMEDIATE	ADVANCE
 <p>Back Office (Administration, IT and other supporting department)</p>	IT & Cybersecurity	Basic IT support Minimal cybersecurity measures	Digital CRM & customer service tools Online booking & support- Digital marketing & advertising	AI-powered customer engagement Omnichannel integration Predictive analytics for customer behavior
	Procurement Infrastructure Management Business Continuity Sustainability	No automation in procurement	System Integration Microsoft Intune, Google Workspace Admin, ServiceNow Cybersecurity CrowdStrike, Palo Alto Networks, IBM Security Process Automation AppSheet, Power Automate UiPath (basic automation)	AI & Cybersecurity Darktrace, Microsoft Sentinel, Google Chronicle- Process Automation RPA with UiPath, Automation Anywhere Blockchain IBM Blockchain, Hyperledger for secure transactions

AI PRODUCTIVITY ROADMAP
 Navigating Productivity of The Industry in
 The Digital and AI Era

DIGITAL TRANSFORMATION JOURNEY



1

BASIC

Paper-based forms,
manual processes,
into standalone systems



2

INTERMEDIATE

Digital Data base,
Digital Collaborative work,
Modern Simulation



3

ADVANCE

AI-powered chatbot registration,
biometric authentication,
BIM, Digital twin

AI PRODUCTIVITY ROADMAP

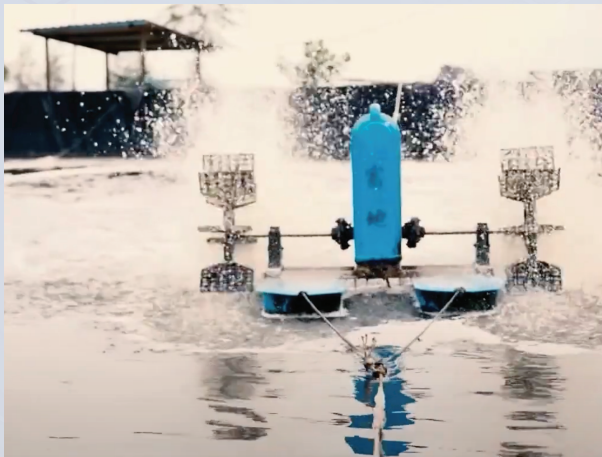
Navigating Productivity of The Industry in
The Digital and AI Era

DIGITAL TRANSFORMATION SUCCESS STORY: IOT ADOPTION IN BUSINESS OPERATION



SZ SHAFAZAFIRA Enterprise Successfully improving business productivity through application of IOT to monitor workers, product temperature, humidity and output.

DIGITAL TRANSFORMATION SUCCESS STORY: IOT ADOPTION IN BUSINESS OPERATION



SERANDU AQUAPONICS SYSTEMS Sdn Bhd Successfully improving business productivity through application of IOT to monitor water quality (temperature, PH, Salinity and Oxygen level) in the water

HOW TO START?

Start by scanning the QR code and signing the pledge
DIGITAL PLEDGE

MPC
MALAYSIA PRODUCTIVITY CORPORATION

Pledge
GO B.I.G WITH DIGITAL
BREAKTHROUGH. INTEGRITY. GOOD

I commit to Go B.I.G with Digital—to lead with integrity, embrace technology, and boost productivity. Digital is for everyone, and it starts with me.

Saya komited untuk Go B.I.G with Digital—memimpin dengan integriti, menerima teknologi, dan meningkatkan produktiviti. Digital untuk semua, dan ia bermula dengan saya.

Go B.I.G with Digital



Business Leader
(Organisation Leader)

Dato' Wei Chuan Beng
Champion
Digital Productivity Nexus



For more information:
<https://www.mpc.gov.my/digitalplatformnetwork>

AI PRODUCTIVITY ROADMAP
Navigating Productivity of The Industry in
The Digital and AI Era

LIST OF CONTRIBUTOR

MALAYSIA PRODUCTIVITY CORPORATION

1. Datuk Zahid Ismail, Director General
2. Dr Mazrina Mohamed Ibramsah, Deputy Director General
3. Dr Mohamad Norjayadi Tamam, Deputy Director General
4. Pn. Saliza Saari, Director, Modern Management & Technology

PROFFESIONAL SERVICES PRODUCTIVITY NEXUS

1. Ir.Ts. Choo Kok Beng, Champion
2. Mohammad Danial Mohd Yusof , NGC Member
3. Muhammad Idham Mohd Zain, NGC Member

INDUSTRY PARTNERS

1. Malaysian Service Providers Confederation (MSPC)
2. The Institution of Engineers Malaysia (IEM)
3. Dr. Farid Aladdin (IIUM)



MALAYSIA PRODUCTIVITY CORPORATION