

LAUNCH OF THE REFRESHED ENVIRONMENTAL SERVICES INDUSTRY DIGITAL PLAN

Environmental Services Industry Digital Plan

1. Aligned to the Environmental Services Industry Transformation Map (ITM), the Environmental Services Industry Digital Plan (IDP) is part of the SMEs Go Digital programme that aims to make going digital simple for SMEs.

IMDA INFOCOMM MEDIA DEVELOPMENT AUTHORITY | **SMEs GO DIGITAL**

3 STEPS TO GO DIGITAL

1 | **Is your business digital-ready?**
Find out using the Industry Digital Plan (IDP) for your sector.

2 | **How do you get started?**
Take up pre-approved solutions with grant support.

3 | **Where can you get help?**
Contact your nearest SME Centre for support.

For more information
Scan the QR code or visit www.imda.gov.sg/SMEsGoDigital

Support available

- Pre-Approved Solutions
- Start Digital Pack
- Grow Digital
- Consultancy Services (SME Digital Tech Hub)
- Government Grants (e.g. Productivity Solutions Grant (PSG); SkillsFuture Enterprise Credit (SFEC))
- Digital Resilience Bonus
- Advanced Digital Solutions

2. The Infocomm Media Development Authority ('IMDA'), in partnership with the National Environment Agency ('NEA') and the industry, jointly developed the Environmental Services IDP to guide SMEs in their digital transformation efforts. It provides SMEs in the Environmental Services industry with a step-by-step guide on the digital solutions that the SMEs can adopt, as well as suitable training for employees, at each stage of their growth.
3. This refreshed Environmental Services IDP builds on the one launched in 2018, taking into account the current and anticipated future needs of enterprises in the Environmental Services industry.
4. As newer and more advanced technologies like robotics, augmented and virtual reality as well as blockchain are now more mature, commercial applications of these technologies in the Environmental Services industry have become more readily accessible. Digital solutions incorporating these technologies have therefore been included in the refreshed Environmental Services IDP. Key updates to the IDP include:
 - Inclusion of the pest management sub-sector
 - An update to the digital solution categories in the IDP's Digital Roadmap

5. The IDP will continue to be updated over time as the industry progresses and newer, more relevant technologies are introduced.
6. The three-stage Digital Roadmap of the IDP charts out the digital solutions that Environmental Services SMEs can adopt at each stage of their growth. Larger enterprises in the Environmental Services industry can also use the Digital Roadmap to guide their digital journey.

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DIGITAL ROADMAP

This Digital Roadmap serves as a guide for your company as you embark on your digital journey.

STAGE 01	STAGE 02	STAGE 03
Getting Ready for the Digital Economy Digital Systems, Optimised Resources	Growing in the Digital Economy Integrated Systems, Autonomous Operations	Leaping Ahead Data Sense-Making, Intelligent Business
<div style="display: flex; align-items: center; margin-bottom: 10px;"> Asset/Inventory Management </div> <div style="display: flex; align-items: center; margin-bottom: 10px;"> Bin Fill Monitoring </div> <div style="display: flex; align-items: center; margin-bottom: 10px;"> Fleet Management </div> <div style="display: flex; align-items: center; margin-bottom: 10px;"> Pest Inspection/Monitoring </div> <div style="display: flex; align-items: center; margin-bottom: 10px;"> Service Quality Audit </div> <div style="display: flex; align-items: center; margin-bottom: 10px;"> Smart Toilet </div> <div style="display: flex; align-items: center; margin-bottom: 10px;"> Waste Tonnage Monitoring </div> <div style="display: flex; align-items: center;"> Workforce Management </div>	<div style="display: flex; align-items: center; margin-bottom: 10px;"> Augmented Reality (AR)/ Virtual Reality (VR) Training </div> <div style="display: flex; align-items: center; margin-bottom: 10px;"> Automated Recyclables Picking </div> <div style="display: flex; align-items: center; margin-bottom: 10px;"> Bin Collection Robotics </div> <div style="display: flex; align-items: center; margin-bottom: 10px;"> Cleaning Robotics (e.g. Autonomous Scrubbers) </div> <div style="display: flex; align-items: center; margin-bottom: 10px;"> Integrated Management (e.g. SCADA, Transport Management) </div> <div style="display: flex; align-items: center;"> Surveillance and Inspection Robots </div>	<div style="display: flex; align-items: center; margin-bottom: 10px;"> Blockchain for Waste Management </div> <div style="display: flex; align-items: center;"> Centralised Platform with Data Analytics </div>

*The digital roadmap is developed primarily for SMEs in the Environmental Services industry. However, larger enterprises in the industry may also use it to guide their digitalisation plans.

Business Capabilities

Human Resource Management and Accounting Management

Note: Companies can adopt digital solutions from any stage in the roadmap. This Roadmap will be updated over time as digitalisation of the industry progresses and new technologies are introduced to the industry.

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- **Stage 1: Getting Ready for the Digital Economy.** The initial stage aims to help SMEs build core digital capabilities, improve the efficiency of their processes and make better use of their resources. The objective is to digitalise systems and optimise resources, enabling SMEs to automate repetitive, manual tasks with easy-to-implement solutions.
 - **Stage 2: Growing in the Digital Economy.** The second stage emphasises the importance of integrating and streamlining key processes along the value chain, with digital solutions such as Integrated Management which includes Supervisory Control and Data Acquisition ('SCADA') and Transport Management. This stage also highlights the need to automate operations in order to stay competitive in the digital economy, by adopting advanced autonomous robotics solutions. The objective is to integrate systems and achieve autonomous operations.
 - **Stage 3: Leaping Ahead.** The third stage enables enterprises to implement advanced digital technologies that strengthen their competitive edge, as well as leverage data analytics and artificial intelligence to optimise resources and improve overall service quality. The objective is to improve data sense-making and create intelligent businesses.
7. The Environmental Services IDP also includes a Digital Roadmap on Training to ensure that the industry's workforce is adequately equipped with the necessary skills and knowledge to adopt digital solutions, so that they are ready for changes that come with digital transformation.

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DIGITAL ROADMAP ON TRAINING

This training roadmap serves as a guide to prepare companies' workforce to adopt digital solutions at each of the three stages of growth.

	STAGE 01	STAGE 02	STAGE 03
"TECH BASICS" All employees in the industry	GETTING READY FOR THE DIGITAL ECONOMY Environmental Services Tech Basic 1.1: Introduction to Digital Technologies in Environmental Services <ul style="list-style-type: none"> Digitisation, Internet of Things (IoT) and Smart Systems Robotics and Automation Cleaning Management Software Digitalising Environmental Services 1 <ul style="list-style-type: none"> Workforce Scheduling and Management Quality Audit and Report Asset Tracking SkillsFuture for Digital Workplace <ul style="list-style-type: none"> Usage of Mobile Digital Devices Accessing Government Portals with SingPass Basic Cybersecurity Modes of Digital Payment 	GROWING IN THE DIGITAL ECONOMY Environmental Services Tech Basic 2.1: <ul style="list-style-type: none"> Automated Recyclables Picking Bin Collection Robotics Surveillance and Inspection Robots AR/VR Training 	LEAPING AHEAD Course details will be available soon
Vendor Solution-Specific Training			
"TECH ADVANCED" Employees who use or are exploring advanced tech in their work/organisation	Environmental Services Tech Advanced 1.2: <ul style="list-style-type: none"> Hands-On Data Protection Officer Training Programme Introduction to Data Analytics and Data Exploration Understanding of IoT Data Analytics for Workplace Improving Work Processes with Technology 	Environmental Services Tech Advanced 2.2: <ul style="list-style-type: none"> Core Foundations for Data Science Data Analytics and IoT Usage Statistical Analysis and Data Visualisation AR/VR Technology 	Environmental Services Tech Advanced 3.2: <ul style="list-style-type: none"> Robotic Process Automation Introduction to Python Programming and other Data Manipulation Programmes Data Science I and II Blockchain Networks
These training programmes are aligned to the Skills Framework and emerging areas under the SkillsFuture Series			

- SMEs can also use the online self-assessment checklist to assess their digital readiness and identify opportunities to go digital based on their current business operations, level of digitalisation and business expansion plans. For more information on the Environmental Services IDP, visit: <https://www.imda.gov.sg/environmental-services-idp>.

SMEs Go Digital

9. The sector-specific IDPs are central to the SMEs Go Digital programme³, which also includes the following:

- **Pre-Approved Solutions**

To make it easy for SMEs to adopt digital solutions recommended in the Environmental Services IDP, IMDA provides a list of pre-approved solutions assessed to be market-proven, cost-effective and supported by reliable vendors. SMEs can visit GoBusiness Gov Assist⁴ for the contact information of the pre-approved solution providers.

If funding support is required, SMEs can apply for the Productivity Solutions Grant (PSG) via the Business Grants portal, before purchasing and implementing digital solutions.

SMEs can also participate in digital sector projects that are initiated jointly by IMDA and industry leaders. Such projects pilot new digital solutions or platforms that have the potential to uplift the whole sector.

- **Start Digital**

For SMEs that are just starting their business or are new to digital technology, they can take up a **Start Digital Pack**⁵ to start their business right with foundational and competitively priced digital solutions. These solutions cover: Accounting, Human Resources Management & Payroll, Digital Marketing, Digital Transactions, Cybersecurity and Digital Collaboration. SMEs can take up any two solutions and receive cost waivers for at least six months when they sign up for a minimum 18-month contract. The solutions are pre-approved by IMDA and offered by Start Digital Partners like DBS, M1, Maybank, OCBC, Singtel and UOB.

- **Consultancy Services**

For a more comprehensive review of their businesses, SMEs can approach Business Advisors at their nearest **SME Centre**⁶ for business diagnosis and advisory on digital solutions relevant to their operations. SMEs that require specialist consultancy on sophisticated technologies, such as data analytics and cybersecurity, will be referred to the Principal Consultants at the **SME Digital Tech Hub**⁷. These digital consultancy services are provided at no cost to SMEs.

³ For more information, visit: www.imda.gov.sg/SMEsGoDigital

⁴ For more information, visit: <https://govassist.gobusiness.gov.sg/productivity-solutions-grant/>

⁵ For more information, visit: www.imda.gov.sg/StartDigital

⁶ List of SME Centres can be found at www.enterprisesg.gov.sg/smecentre

⁷ For more information, visit: www.digitaltechhub.sg