

# LAND TRANSPORT | INDUSTRY DIGITAL PLAN CHARTERED BUS SERVICES

A Guide for Small and Medium Enterprises (SMEs) to Assess Their Digital Readiness and Opportunities to Go Digital



Sector lead:



Co-lead:



In collaboration with:



In support of:



Other associations:



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# Land Transport Industry Overview

**Land Transport industry plays a significant role in Singapore's economy.**

Land Transport is a key enabler for Singapore's economy, with more than 100,000 workers<sup>1</sup> in the rail, public bus and point-to-point transport segments. In 2019, Singapore Land Transport industry comprised approximately 4,000 firms<sup>2</sup> and contributed about 0.9% of Singapore's GDP<sup>2</sup>.

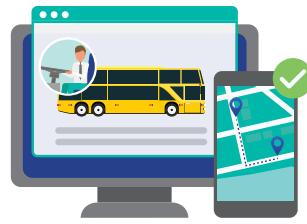


# Trends Impacting Land Transport Industry



## Cities worldwide are moving towards integrated multi-modal transportation for increased connectivity

- With increasing urbanisation around the world, the demand for public transport is growing.
- Commuters are exploring alternative transport modes (e.g. chartered buses, shared & point-to-point (P2P) services and active mobility options) to locations that are inaccessible via public transport.



## New technologies are continuing to shape and disrupt land transport systems worldwide

- Global digitalisation has equipped businesses with the ability to collect dynamic transport data to develop innovative solutions such as shared and on-demand transport services.
- Use of technology has become the norm to enhance jobs, commuter experience and service reliability.
- Electric vehicles (EVs) and autonomous vehicles (AVs) will likely transform the land transport system by enabling more efficient on-demand forms of shared transport and new business models.



## Environmental and public health concerns push for eco-friendly car-lite cities

- Reducing private-car ownership and increasing the use of public transport continue to be major goals for urban cities.
- Singapore is advancing towards a green and sustainable transport by 2040.

## Land Transport Industry Transformation Map

The Land Transport Industry Transformation Map (ITM), launched in February 2018, was developed in consultation with the National Transport Workers' Union and industry partners, to ensure that the industry and its workers remain relevant despite long-term challenges such as an ageing population, land and fiscal constraints, as well as the advent of disruptive technologies such as autonomous vehicles, big data and artificial intelligence.

As we plan towards 2030, the land transport industry continues its ITM journey, and strives towards a vision of achieving a sustainable and cost-effective public transport service, ensuring smooth workforce transition when disruption occurs, and building a strong, diverse and vibrant land transport ecosystem. To achieve this vision, several strategies have been laid out, including the Industry Digital Plan.



## Overview

- 10,600 buses<sup>3</sup> owned by 3,500 unique bus owners<sup>3</sup> (i.e. both individuals and companies).
- Sector is largely served by small fleet owners (less than 5 vehicles) and one-man operators, who multi-task in different roles such as drivers, assistants, operations managers, administration and finance officers.

## Challenges Faced



### Operational Inefficiency

- Laborious processes
- Error prone and time consuming practices



### Manpower Shortage

- Limited inflow of manpower
- Ageing workforce



### Lack of Tech Adoption

- Cumbersome manual payment process
- Legacy systems and processes



### Operational Disruption

- Lack of efficient communication channels
- Poor asset management practices



Aligned to the ITM, the Industry Digital Plan (IDP) is part of the SMEs Go Digital programme that helps to make going digital simple for SMEs.



### SMEs Go Digital comprises the following:

#### CTO-as-a-Service

Assess your digital readiness, explore digital solutions and request for digital advisory and project management services.

#### INDUSTRY DIGITAL PLANS (IDP)

Step by step guide on digital solutions and training required at each stage of your business growth.

#### PRE-APPROVED SOLUTIONS

Proven off-the-shelf digital solutions pre-approved by IMDA to meet your business needs. Government grants, e.g. Productivity solutions Grant (PSG), are available for the adoption of these solutions.

#### START DIGITAL

Foundational digital solutions for new SMEs to get a head start in going digital.

#### GROW DIGITAL

Leverage Business-to-Business (B2B) and Business-to-Consumer (B2C) e-commerce platforms to go international, without a physical presence overseas.

#### ADVANCED DIGITAL SOLUTIONS

Advanced and integrated digital solutions to help you strengthen business continuity and build longer term resilience.



# Digital Roadmap

This digital roadmap, developed by LTA, ESG and IMDA, in collaboration with Singapore School & Private Hire Bus Owners' Association (SSPHBOA), serves as a guide for you on your digitalisation journey.

Stage  
**01**

## Getting Ready for the Digital Economy

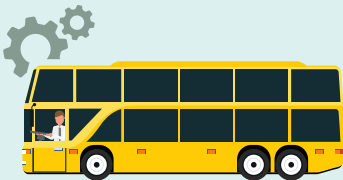
Digitalised Operations  
Optimised Resources



Route Optimisation



Customer Management Platform



Driver Management Platform

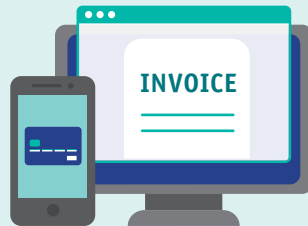


Parent Mobile App

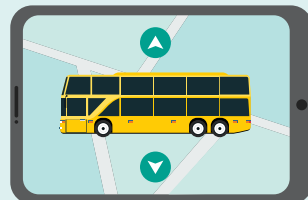
Stage  
**02**

## Growing in the Digital Economy

Integrated Insights  
Connected Businesses



Digital Payment  
(Digital Wallet)



Integrated Fleet Management

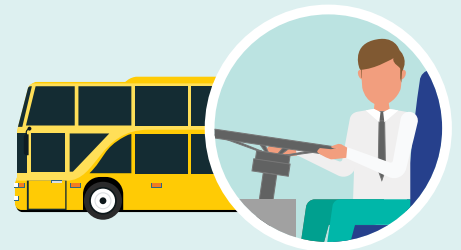


Crowdsourcing of Resources/ Jobs

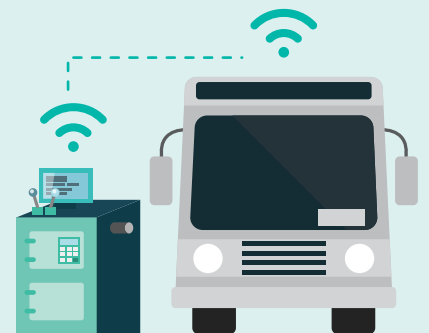
Stage  
**03**

## Leaping Ahead

Automation  
Data-Driven Businesses



Driver Behaviour Management



Remote Vehicle Diagnostic

## BUSINESS CAPABILITIES

Accounting Management, Human Resource Management and Payroll, Sales Management and Cybersecurity


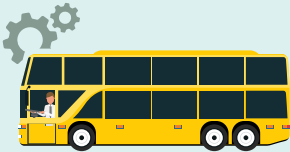

Note: The roadmap will be progressively updated to reflect the advent of new digital tools and technologies for the industry.



# GETTING READY FOR THE DIGITAL ECONOMY

## Digitalised Operations, Optimised Resources

**Objective:** To streamline operations and optimise resources to improve productivity and customer satisfaction

SOLUTION	DESCRIPTION	KEY BENEFITS
 <p><b>Route Optimisation</b></p>	<p>Maps out best-available routes based on demand and ad-hoc orders.</p>	<ul style="list-style-type: none"> <li>• Ease of adding and changing bus routes as needed</li> <li>• Increased transferability of tasks</li> <li>• Quick responses to ad-hoc job assignments</li> </ul>
 <p><b>Customer Management Platform</b></p>	<p>Stores customers’ records such as addresses, contact details and payment status in cloud platform.</p>	<ul style="list-style-type: none"> <li>• Higher operational efficiency by reducing manual and error-prone processes</li> <li>• Ease of payment monitoring</li> </ul>
 <p><b>Driver Management Platform</b></p>	<p>Assigns jobs and manages drivers’ schedule.</p> <p>Assists drivers with onboard ridership management.</p> <p>Provides an overview of buses – vehicles’ capacity, parking location &amp; account holder/assigned driver.</p>	<ul style="list-style-type: none"> <li>• Ease of matching jobs with drivers’ schedules</li> <li>• Drivers can track boarding and alighting passengers through their EZ Link card (e.g. students, senior citizens)</li> <li>• Manage route and shift changes between drivers</li> </ul>
 <p><b>Parent Mobile App</b></p>	<p>Provides real-time tracking of school buses and students.</p>	<ul style="list-style-type: none"> <li>• Real-time en-route updates (e.g. bus breakdown, change in bus/driver) for parents, allowing driver and attendant to focus on the safety of students</li> <li>• Location tracking of children (i.e. picked up, dropped off, on the way)</li> </ul>

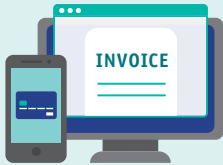
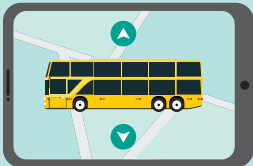





# GROWING IN THE DIGITAL ECONOMY

## Integrated Insights, Connected Businesses

**Objective:** Integrate insights and collaborative ecosystem to improve business profit

SOLUTION	DESCRIPTION	KEY BENEFITS
 <b>Digital Payment (Digital Wallet)</b>	Facilitates cashless payment to bus operators. Allows passengers to top-up through other payment modes (e.g. credit card).	<ul style="list-style-type: none"><li>• Convenience for passengers through digital payment options</li><li>• Collation of fares paid and quicker transfers to operator's bank account for better cash flow</li></ul>
 <b>Integrated Fleet Management</b>	Enables real-time tracking of the location of vehicles.	<ul style="list-style-type: none"><li>• Better planning and deployment of assets</li></ul>
 <b>Crowdsourcing of Resources/Jobs</b>	Enables resource and job matching by fostering collaboration between different bus service providers.	<ul style="list-style-type: none"><li>• More opportunities for smaller players to pool their resources to bid for projects via a resource sharing platform</li></ul>


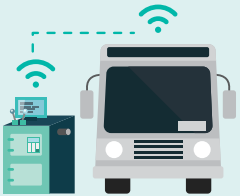




## LEAPING AHEAD

### Automation, Data-Driven Businesses

**Objective:** Use of advanced and data-driven technology to maximise business potential

SOLUTION	DESCRIPTION	KEY BENEFITS
 <b>Driver Behaviour Management</b>	Allows collection of data on driving patterns through sensors and video recordings.	<ul style="list-style-type: none"><li>• Enhanced road safety leading to fewer accidents and lower insurance premiums</li><li>• Use of data insights to reinforce positive driving behaviour</li></ul>
 <b>Remote Vehicle Diagnostic</b>	Monitor vehicle's health status with sophisticated vehicle diagnostics system.	<ul style="list-style-type: none"><li>• Easy monitoring of vehicle's health through interactive dashboard</li><li>• Reduce unanticipated vehicle breakdowns, due to poor vehicle condition</li><li>• Facilitate planning for timely maintenance of vehicles</li></ul>



# Digital Skills Needed

Land Transport job roles will evolve to meet the changing needs of customers and support the growth of companies. Upskilling of workers helps companies to harness the potential of digital technologies, and remain competitive and relevant.

## All Users

(Require broad-based digital literacy and awareness)

### “TECH BASICS” SKILLS

**Broad-based innovation mindset and digital literacy/awareness**

SkillsFuture Singapore (SSG) funded broad-based courses - e.g. Staying Relevant in Digital Economy

## Advanced Users

(Require higher proficiency digital skills)

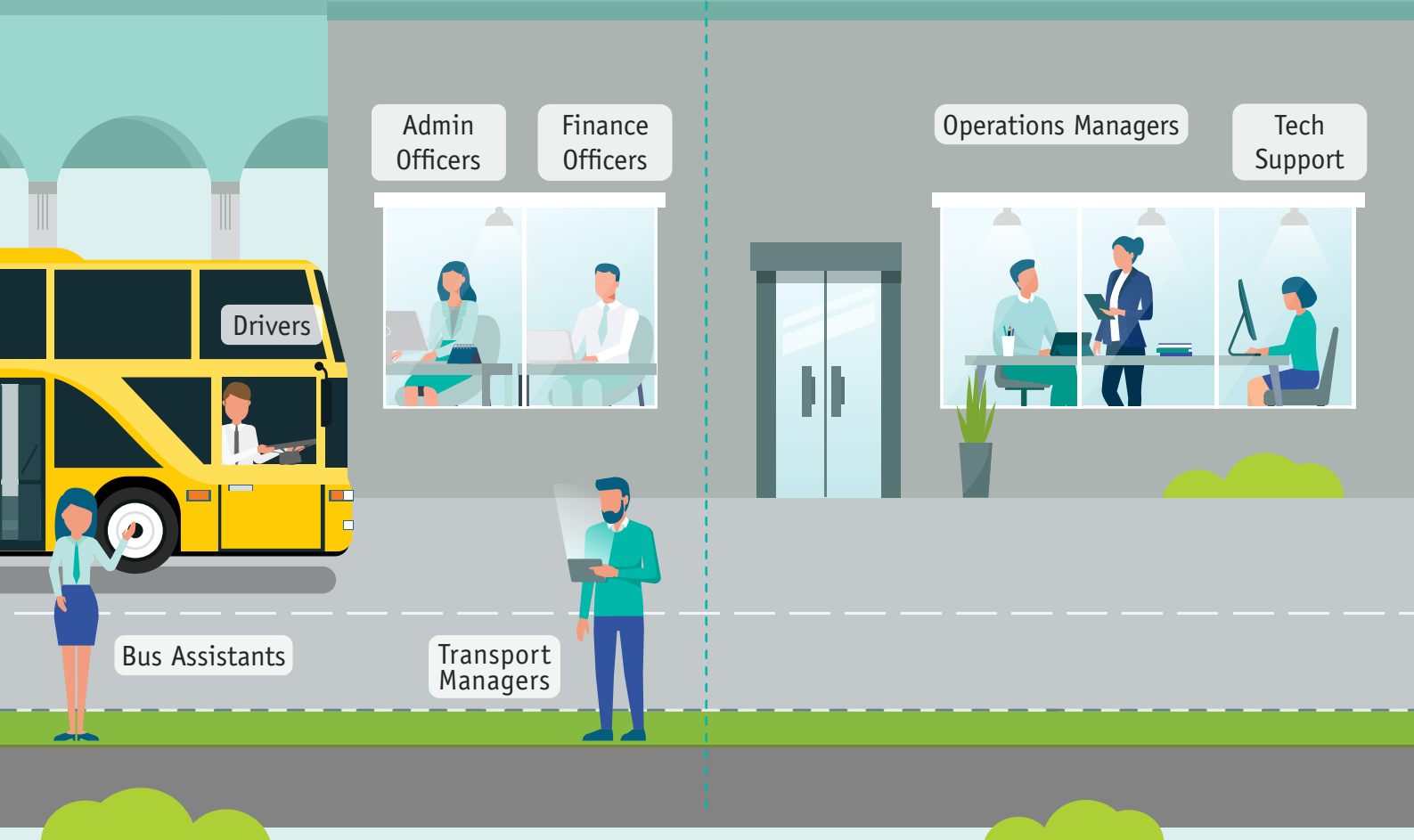
### “TECH ADVANCED” SKILLS

**Higher proficiency level digital skills**

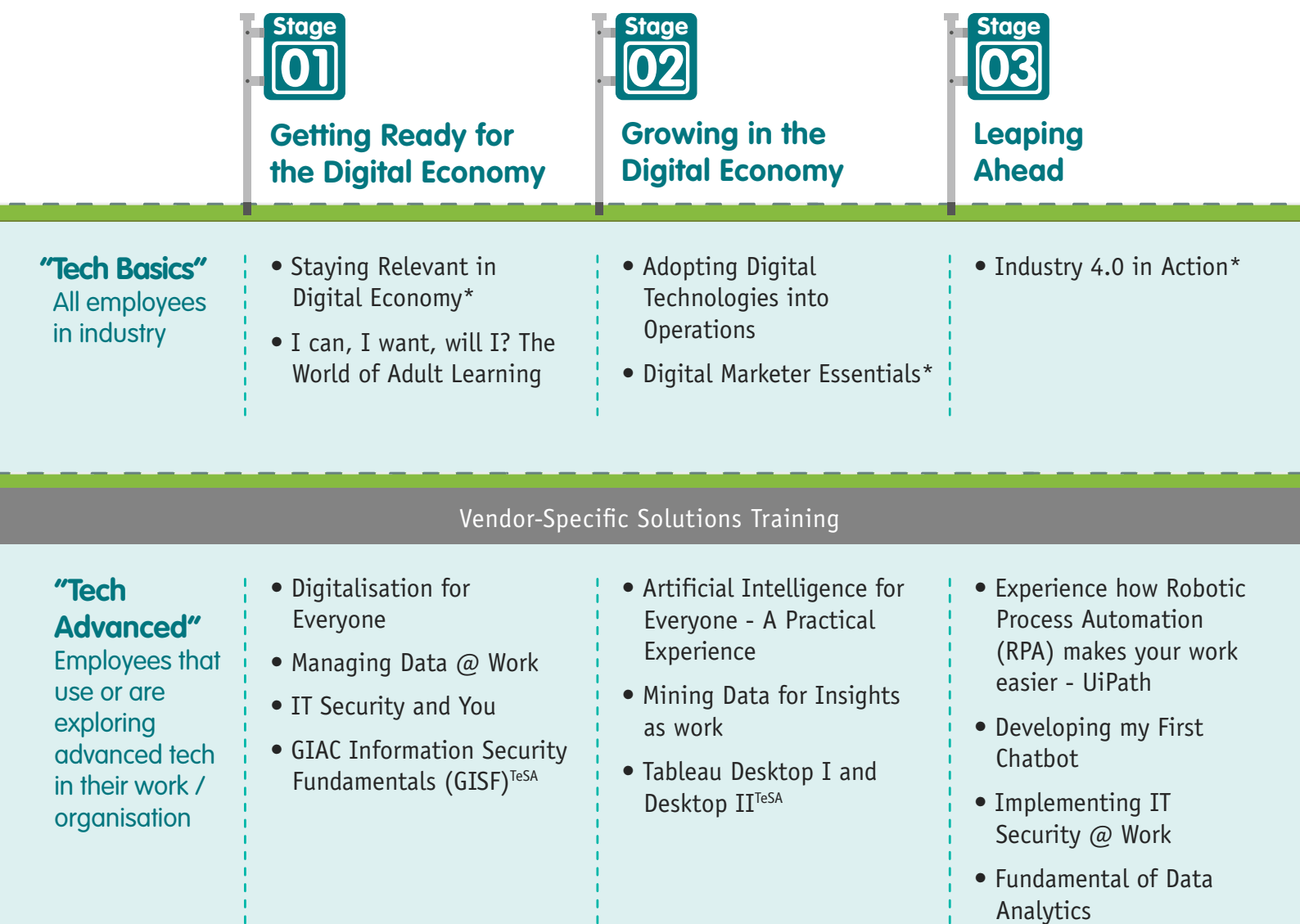
Training mapped to the Skills Framework for Public Transport and Infocomm Communication Technology (ICT)

## Job Roles (examples)

## Job Roles (examples)



# Digital Roadmap on Training



Training programmes aligned to Skills Frameworks and/or emerging areas under SkillsFuture Series.



\*Supported under Enhanced Training Support Package (ETSP). For more details on ETSP, please refer to SSG's website:  
[https://www.ssg.gov.sg/ETSP\\_EnhancedAP.html](https://www.ssg.gov.sg/ETSP_EnhancedAP.html)

"Tech Basics" and "Tech Advanced" Courses Directory: [https://www.rp.edu.sg/ace/news-and-events/Detail/land-transport-industry-digital-plan-\(idp\)](https://www.rp.edu.sg/ace/news-and-events/Detail/land-transport-industry-digital-plan-(idp))

TeSA Courses Directory: <https://www.imda.gov.sg/imtalent/training-and-courses>



# Get Started Today

You will be supported at every stage of your digital journey, through three simple steps:

## 1 | Is your business digital-ready?



Land Transport IDP

Find out if you are digital-ready by using the IDP resources [here](#) or scan the QR code.



## 2 | How do you get started?

- Tap on the [CTO-as-a-Service](#) to complete your Digital Readiness Self Check in the web app and select from the recommended digital solutions that best meet your business needs.
- Visit [Singaporeore School and Private Hire Bus Owners' Association \(SSPHBOA\)](#) or call [6741 0788](#) to find out more about the digital solutions available and to enrol in the pilot that is supported by Enterprise Singapore. Participants will be entitled to grant subsidies to implement the digital solutions which include hardware and software training.
- Visit [GoBusiness Gov Assist](#) for pre-approved solutions supported under the [Productivity Solutions Grant \(PSG\)](#).
- Apply for training subsidies under the [SkillsFuture Enterprise Credit \(SFEC\)](#).

## 3 | Where can you get help?

- Tap on the [CTO-as-a-Service](#) for digital consultancy and project management services.
- Visit [SME Centre](#) if you require business advisory.





## For SMEs

### Digital Consultancy and Solutions

#### CTO-as-a-Service

[go.gov.sg/CTOaaS](https://go.gov.sg/CTOaaS)

#### LTA Website for LTIDP-CBS

<https://go.gov.sg/land-transport-idp-cbs>

#### ESG Website for LTIDP-CBS

<https://www.enterprisesg.gov.sg/industries/type/land-transport/boost-capabilities>

#### SSPHBOA Website

<https://ssphboa.com/>

#### SMEs Go Digital

<https://imda.gov.sg/SMEsGoDigital>

#### GoBusiness Gov Assist

<https://govassist.gobusiness.gov.sg/>

#### Be Safe

[https://www.csa.gov.sg/~media/csa/documents/publications/be\\_safe\\_online/be\\_safe\\_online\\_handbook.pdf](https://www.csa.gov.sg/~media/csa/documents/publications/be_safe_online/be_safe_online_handbook.pdf)

### Business Advisory

#### SME Centres managed by Trade Associations:

- SME Centre@ASME
- SME Centre@SCCCI
- SME Centre@SICCI
- SME Centre@SMCCI
- SME Centre@SMF

<https://www.enterprisesg.gov.sg/smecentre>  
Enterprise Infoline: +65 6898 1800

## For Individuals

### Capability Upgrading and Career Facilitation

#### Institute of Higher Learning (IHL)

[https://www.rp.edu.sg/ace/news-and-events/Detail/land-transport-industry-digital-plan-\(idp\)](https://www.rp.edu.sg/ace/news-and-events/Detail/land-transport-industry-digital-plan-(idp))

#### SkillsFuture for Digital Workplace

<https://www.skillsfuture.gov.sg/digitalworkplace>

#### Skills Framework

<https://www.skillsfuture.gov.sg/skills-framework>

#### Course Directory

<https://www.myskillsfuture.gov.sg/content/portal/en/training-exchange/course-landing.html>

#### TechSkills Accelerator (TeSA)

<https://www.go.gov.sg/TeSA>

#### WSG's Careers Connect

<https://www.wsg.gov.sg/career-services.html>

#### e2i Centres

<https://e2i.com.sg/app>

## For ICM Vendors

### SMEs Go Digital

<https://imda.gov.sg/icmvendors>



This Industry Digital Plan is part of the SMEs Go Digital programme

For programme information and feedback:  
<https://www.imda.gov.sg/SMEsGoDigital>

# #SGDIGITAL

Singapore Digital (SG:D) is a nation-wide movement to unify Singapore's digitalisation efforts. Whether it is help for different industries to start their digitalisation journeys, or creating new ecosystems, opportunities and capabilities for the future, SG:D is set to take us ahead as a leading digital global node. The :D smiley face icon in the logo signifies the optimism of Singaporeans advancing together with digital innovation. As we progress into the digital economy, it is all about the people – the heart of all we do.



[imda.gov.sg/sgdigital](https://imda.gov.sg/sgdigital)  
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The content of this guide is provided for informational purposes only and is correct as of February 2022.