SG:D | SMEs GO DIGITAL

SEA TRANSPORT HARBOUR CRAFT | INDUSTRY DIGITAL PLAN

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

An initiative by: INFOCOMM MEDIA DEVELOPMENT AUTHORITY

Sector lead: MPA SINGAPORE

Supported by: SKILLSFuture SG, SSA SINGAPORE SHIPPING ASSOCIATION, SINGAPORE POLYTECHNIC SP, Enterprise Singapore, Workforce Singapore

CONTENTS

01 OUR SEA TRANSPORT INDUSTRY

02 TRENDS IMPACTING SEA TRANSPORT

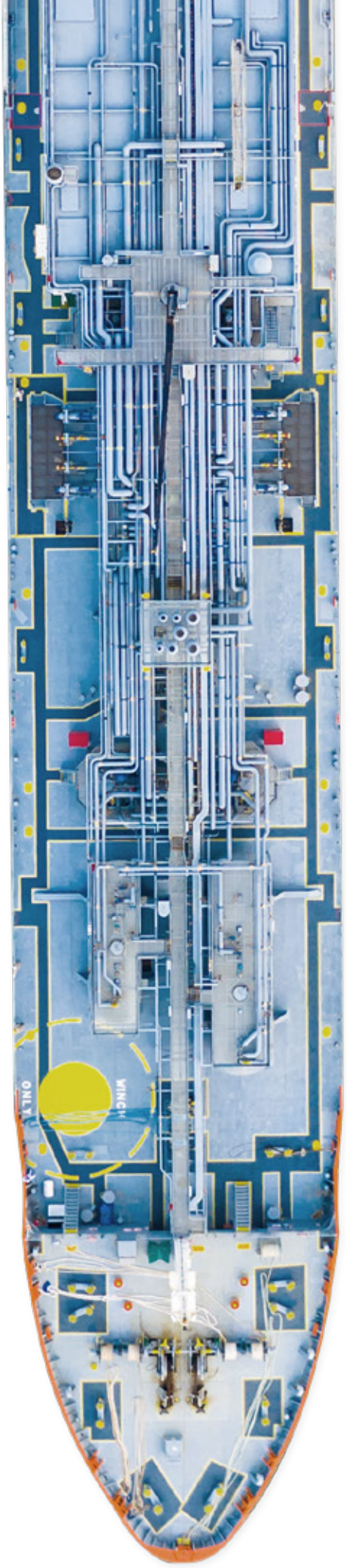
03 SMEs GO DIGITAL

04 DIGITAL ROADMAP

05 DIGITAL SKILLS NEEDED

06 GET STARTED TODAY

07 ADDITIONAL INFORMATION



01

OUR SEA TRANSPORT INDUSTRY

Sea Transport Industry which comprises the port, port services, shipping and maritime services sub-sectors, is a key pillar of Singapore's economy.

[1]GDP refers to Gross Domestic Product
[2]TEUs refers to Twenty-foot Equivalent Units

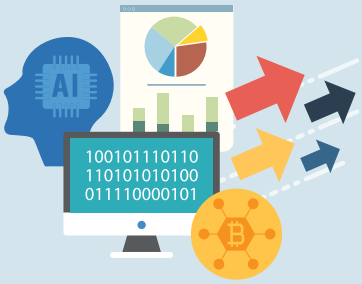
Source: Maritime & Port Authority of Singapore (MPA)

02

TRENDS IMPACTING SEA TRANSPORT INDUSTRY

Intensifying competition from key ports and maritime centres

Drives the need for our sea transport sub-sectors to improve operational efficiency amid expansion plans by regional ports (e.g. Klang, Tanjung Priok) and increased efforts from aspiring maritime centres (e.g. Dubai, Shanghai).



Accelerating pace of technological advancements

Disrupts existing business models and brings opportunities for greater productivity through the use of technology e.g. Data analytics, Internet-of-Things, artificial intelligence, blockchain, smart sensors, robotics process automation.

Shrinking local workforce with rising costs and more educated workforce with higher aspirations

Increases the need for better-skilled and trained manpower to leverage technology to achieve more by optimising limited resources, streamlining and simplifying business processes.

Source: Maritime & Port Authority of Singapore (MPA)

INDUSTRY TRANSFORMATION MAP (ITM)

The Sea Transport Industry Transformation Map (ITM) was launched in January 2018. Developed by the Maritime and Port Authority of Singapore (MPA) in partnership with the industry, unions and other government agencies, the Sea Transport ITM builds on MPA's strategic long term plans to develop Singapore's next-generation port and strengthen our International Maritime Centre (IMC). Specific initiatives have been laid out under the Sea Transport ITM to catalyse innovation, drive productivity improvements and enhance the skills of the maritime workforce.

Source: Sea Transport Industry Transformation Map

SMEs GO DIGITAL

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.

SG:D | SMEs GO DIGITAL

3 STEPS TO GO DIGITAL

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

Support available

- Consultancy Services (SME Digital Tech Hub)
- Government Grants (e.g. Productivity Solutions Grant - PSG)
- Project Management Services
- Pre-Approved Solutions
- Start Digital Pack

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 the nearest SME Centre for support.

SMEs Go Digital comprises the following:

Industry Digital Plan (IDP)
Guide on digital solutions and training required for each stage of your business growth.

Consultancy Services (SME Digital Tech Hub)
Expert advice you can tap on, to transform your business using digital technologies.

Project Management Services
Project managers with expertise to support you in implementing the digital solutions.

Pre-Approved Solutions
Proven SME-friendly digital solutions pre-approved by IMDA to meet your business needs. Government grants such as Productivity Solutions Grant (PSG) are available for the adoption of these solutions.

Start Digital Pack
Foundational digital solutions for new SMEs, to help you get a head start in going digital.

04

DIGITAL ROADMAP FOR HARBOUR CRAFT

This digital roadmap serves as a guide for you to follow on your digital journey.

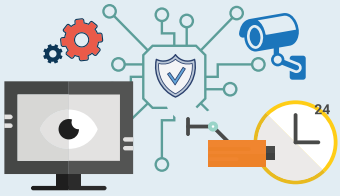
STAGE 01

GETTING DIGITAL ECONOMY READY

Streamlined Operations
Optimised Resources

Vessel Management

Order Booking and Deployment Management



Video Surveillance and Monitoring

STAGE 02

GROWING IN THE DIGITAL ECONOMY

Integrated Insights
Collaborative Ecosystem

e-Procurement

Advanced Vessel Management

STAGE 03

LEAPING AHEAD

Autonomous Operations
Intelligent Business

Drones for Maritime Operations

Autonomous Piloting

BUSINESS CAPABILITIES

Human Resource, Payroll, Accounting, Resource Management, Training Management

Note: This roadmap will be updated over time as digitalisation of the industry progresses and new technologies are introduced to the industry.

STAGE 01

GETTING DIGITAL ECONOMY READY

Streamlined Operations, Optimised Resources

Streamline and integrate business processes to enhance productivity and efficiency

DIGITAL SOLUTION	SOLUTION DESCRIPTION	BENEFITS
Vessel Management	Manage vessel fleet with an integrated system. Key features include: • Real-time vessel tracking and monitoring with historical records • Vessel deployment scheduling/crew assignment • Document management • Inventory management on-board vessel/storage • Communication platform between vessels and main office • Integrate with other systems e.g. order booking and deployment management, accounting	• Improved access to real-time monitoring of vessel fleets • Optimised vessel utilisation through effective planning and deployment • Easier access to records and information
Order Booking and Deployment Management	Manage customer's booking and deployment of vessel/crew electronically. Key features include: • Integration with real-time vessel location tracking • Real-time update of estimated time of arrival (ETA)/location of customer's vessel • Customer sign-off upon completion of order and billing to customers • Integrate with other systems e.g. accounting, payroll	• Removed data entry error of physical booking forms • Easier scheduling and deployment of vessel/crew • Improved operation efficiency
Video Surveillance and Monitoring	Manage external/internal surveillance of vessels with tamper-proof cameras provisioned with night vision capability. Key features include real-time off-site/on-demand monitoring.	• Improved access to real-time monitoring of vessel fleet • Minimised disputes in event of incident and insurance claims • Reduced pilferage of cargo/fuel

STAGE 02

GROWING IN THE DIGITAL ECONOMY

Integrated Insights, Collaborative Ecosystem

Integrate insights and collaborative ecosystem to improve your profit

DIGITAL SOLUTION	SOLUTION DESCRIPTION	BENEFITS
e-Procurement (For harbour craft operators as a customer)	Allow harbour craft operators to source and buy components, spares, tools and supplies through e-Commerce platforms.	• Reduced cost with availability of more supply options • Easier sourcing of supplies
Advanced Vessel Management	Advanced features to Vessel Management. Key features include: • Monitoring of fuel consumption, speed, travel distance, engine performance, engine vibration, sound, temperature • Maintenance record management	• Optimised vessel performance and maintenance to reduce operating cost

STAGE 03

LEAPING AHEAD

Autonomous Operations, Intelligent Business

Use autonomous robotics and advanced technology to make your business smart

DIGITAL SOLUTION	SOLUTION DESCRIPTION	BENEFITS
Drone for Maritime Operations	Deploy unmanned drones to assist in maritime operations such as the delivery of small packages and conduct surveillance.	• Improved manpower productivity with job redesign to perform higher value-added tasks • Developed capabilities for new business opportunities
Autonomous Piloting	Use machine learning and artificial intelligence to enable autonomous vessel piloting.	• Improved safety and reduced number of incidents • Increased productivity with job redesign to perform higher value-added tasks

05

DIGITAL SKILLS NEEDED

Digital skills are required for all harbour craft job roles, to varying levels of proficiency. All job roles may require upskilling to support your digitalisation journey.

ALL USERS
Require broad-based digital literacy and awareness

ADVANCED USERS
Require higher proficiency digital skills

"TECH BASICS" COURSES

Broad-based innovation mindset and digital literacy/awareness

SSG funded broad-based courses
e.g. Skills Future for Digital Workplace

Solution-specific user level digital skills

Vendor solution-specific training

"TECH ADVANCED" COURSES

Higher proficiency level digital skills

Training mapped to the Skills Framework for Sea Transport and Information and Communication Technology (ICT)

05

DIGITAL SKILLS NEEDED

DIGITAL ROADMAP ON TRAINING – HARBOUR CRAFT

	STAGE 01 GETTING DIGITAL ECONOMY READY	STAGE 02 GROWING IN THE DIGITAL ECONOMY	STAGE 03 LEAPING AHEAD
"TECH BASICS" COURSES Require broad-based digital literacy and awareness	 Introduction to Harbour craft Operations with Digital Operations (I) Benefits of Using Analytics for Start-ups and SMEs	 Leveraging Digital Platforms for Passenger / Load (Supply) and Inventory Management	 Application of Drones and Autonomous Piloting for Maritime Operations (I)
	Vendor Solution Specific Training	Vendor Solution Specific Training	Vendor Solution Specific Training
"TECH ADVANCED" COURSES Require higher proficiency digital skills	 Introduction to Harbour craft Operations with Digital Operations (II) Hands-On Data Protection Officer Training Introduction to Data Analytics	 Leveraging Digital Platforms for Procurement and Advanced Vessel Management	 Application of Drones and Autonomous Piloting for Maritime Operations (II)

Training programmes aligned to **Skills Framework** and emerging areas under **SkillsFuture Series**

LEGEND

CLASSROOM

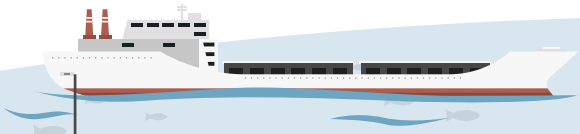
+ BLENDED LEARNING

Course Directory: https://www.sp.edu.sg/pace/sea-transport-industry-digital-plan

06

GET STARTED TODAY

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



1 Is your business digital-ready?

Find out if you are digital-ready by using the IDP resources here or scan the QR code.

2 How do you get started?

Visit the MPA website to contact solution providers to purchase and implement digital solutions. If funding support is required, apply for Sea Transport IDP Grant.

3 Where can you get help?

- Make an appointment with a Business Advisor at your nearest SME Centre for digital advice, or be referred to the Principal Consultants at the SME Digital Tech Hub for more advanced digital needs
- Contact Singapore Manufacturing Federation (SMF) for digital project managers who can help you implement your digital solutions.

07

ADDITIONAL INFORMATION

FOR SME

DIGITAL SOLUTIONS

SMEs Go Digital
https://imda.gov.sg/SMEsGoDigital

Tech Depot
https://www.smeportal.sg/content/tech-depot/en/tech-solutions.html

MPA Website
https://www.mpa.gov.sg/web/portal/home/maritime-companies/research-development/industry-digital-plan

Be Safe Online
https://www.csa.gov.sg/~/media/csa/documents/publications/be_safe_online/be_safe_online_handbook.pdf

DIGITAL PROJECT MANAGEMENT

Singapore Manufacturing Federation (SMF)
http://www.smfederation.org.sg/capability-capacity-development/project-management-services

BUSINESS ADVISORY & DIGITAL CONSULTANCY

SME Centres managed by trade associations:

- Association of Small and Medium Enterprises (ASME)
- Singapore Chinese Chamber of Commerce & Industry (SCCCI)
- Singapore Indian Chamber of Commerce & Industry (SICCI)
- Singapore Malay Chamber of Commerce & Industry (SMCCI)
- Singapore Manufacturing Federation (SMF)

www.enterprisesg.gov.sg/contact

Enterprise Infoline: +65 6898 1800

SME Digital Tech Hub
http://www.digitaltechhub.sg

FOR INDIVIDUALS

CAPABILITY UPGRADING AND CAREER FACILITATION

Institute of Higher Learning
https://www.sp.edu.sg/pace/sea-transport-industry-digital-plan

Course Directory
http://www.skillsfuture.sg/credit

Fundamentals for Future Economy
http://www.skillsfuture.sg/digitalworkplace

Skills Framework
http://www.skillsfuture.sg/skills-framework

TechSkills Accelerator (TeSA)
http://IMTalent.sg/TeSA

WSG's Careers Connect
http://www.wsg.gov.sg/career-services.html

WSG PCP
http://www.wsg.gov.sg/WST_PCP

e2i Centres
http://e2i.com.sg/app

FOR ICM VENDORS

SMEs Go Digital
https://www.imda.gov.sg/SMEsGoDigital

Vendor Self-Assessment Checklist
https://www.imda.gov.sg/industry-development/programmes-and-grants/small-and-medium-enterprises/smes-go-digital/icm-vendors

This Industry Digital Plan is part of the SMEs Go Digital Programme
For programme information and feedback: https://www.imda.gov.sg/SMEsGoDigital

sgdigital.sg

twitter.com/IMDAsg

facebook.com/IMDAsg

youtube.com/IMDAsg

MPA.SG

MPA_SINGAPORE

MARITIME_SG

MPA_SINGAPORE

MARITIME AND PORT AUTHORITY SINGAPORE

The content of this guide is provided for informational purposes only and is correct as of April 2019.

MPA
SINGAPORE

INFOCOMM MEDIA DEVELOPMENT AUTHORITY