

Fact Sheet

DIGITALISATION INITIATIVES IN SUPORT OF THE LOGISTICS INDUSTRY TRANSFORMATION MAP (ITM)

A) BACKGROUND

The Logistics industry is a critical enabler of Singapore's economy and our everyday-lives. It connects suppliers to manufacturers, and merchants to consumers, both domestically and overseas. In 2015, the Transportation and Storage sector, which includes logistics, contributed 7.4% to Singapore's GDP and employed over 8% of the total workforce¹.

The Logistics Industry Transformation Map (ITM) has identified strategies to catalyse enterprise level efforts to transform and grow the industry through productivity and innovation. It also focuses on developing strong local talent and enterprises.

In leveraging Infocomm and Media (ICM) technologies, the Infocomm Media Development Authority (IMDA) has launched the Logistics Industry Digital Plan (IDP) for SMEs², and new Innovative Initiatives to capitalise on digital technologies to support the Logistics Industry Transformation Map (ITM), driving innovation and improving productivity in the local logistics industry.

¹ Source: DOS

² A local SME is defined as: At least 30% local shareholding, and not more than S\$100 million group annual sales turnover, OR not more than 200 employees under the group.

B) THE LOGISTICS INDUSTRY DIGITAL PLAN FOR SMES

The Logistics Industry Digital Plan (IDP) for SMEs was developed by the Infocomm Media Development Authority (IMDA) with support from the Singapore Economic Development Board (EDB) and SPRING Singapore. It aims to provide the broad community of SME logistics companies in Singapore a guide to digital solutions that are specific to enhancing logistics operations and businesses. It will provide step-by-step advice to help SMEs assess their digital readiness and identify digitalisation opportunities relevant for their businesses, as well as identify skill gaps in their workforce to support their digitalisation.

The Logistics IDP shall also guide SME logistics companies towards participating in impactful national innovation initiatives such as In-Mall Distribution, Federated Lockers, the HIVE (Highly Interconnected and Vibrant E-trade) portal and the National Trade Platform (NTP).

The Logistics IDP is a living document to be updated over time as digitalisation of the industry progresses and new technologies are introduced and made relevant for the sector. It is meant for local SME logistics companies operating in the areas of freight forwarding, warehousing and storage and/or land transportation in Singapore.

Key components of the Logistics Industry Digital Plan for SMEs

The Logistics IDP for SMEs comprises:

- An industry digital guide, including a self-assessment checklist
- A list of pre-approved digital solutions and various assistance channels
- Projects co-created by IMDA and industry leaders to uplift whole sector
- A skills framework

The industry digital guide provides a reference on solutions relevant for SME logistics companies across 3 stages:

Stage 1: *Getting Digital Economy Ready* – Ready-to-go digital solutions are identified to enable SME logistics companies to streamline business processes within the company and operate more efficiently. Ideally, these solutions should be integrated where applicable for seamless data flow and smooth operations.

Stage 2: *Growing in the Digital Economy* – More advanced digital solutions to enable SME logistics companies to digitally connect with their business partners within the ecosystem or in the same value chain. This facilitates tighter business collaborations and more comprehensive service offerings with service partners through resource and demand aggregation.

Stage 3: *Leaping Ahead* - Digital solutions to help SME logistics companies maximise resource-value through advanced automation technologies. This includes the harnessing of aggregated data drawn from various systems to make informed business decisions involving themselves and their business partners in the ecosystem.

A Self-Assessment Checklist will be made available online where SME logistics companies can assess and identify their digital readiness and the digitalisation opportunities based on a broad understanding of their business operations, current level of digitalisation, and business expansion plans. For a more comprehensive review of their business, SME logistics companies can approach SME Centre business advisors for free business diagnosis and advice on relevant digital solutions. SME Centre business advisors will also refer SMEs that require specialist advice on more advanced digital solutions, such as data analytics and cybersecurity, to **the SME Digital Tech Hub**.

Pre-approved Digital Solutions

SMEs requiring productivity tools such as RFID-enabled solutions will continue to receive support through access to pre-approved digital technology solutions. SMEs can visit the Tech Depot³ (www.smeportal.sg/techdepot) for more information on these solutions.

Projects to Uplift Whole Sectors

Through the IDP, IMDA will also identify projects that aim to uplift the whole sector and help SMEs to grow in that sector. IMDA will work with large companies or industry leaders to co-create the solutions in such projects in the best interest of SMEs and at the same time align with national initiatives such as the National Trade Platform.

One of the first projects is the tripartite partnership between IMDA and VCargo Cloud, together with Bollore Logistics (Singapore) Pte Ltd, Dimerco Express Singapore Pte Ltd, and L.C.H. Lockton Pte Ltd. Through MOIs, these major logistics players will lead their SME clients through the digitalisation process using VCargo Cloud's eCargo Consolidation Platform which will help SME freight forwarders or shippers to lower freight rates and develop internal capabilities and efficiencies.

At the same time, large freight forwarders or insurance providers can enjoy an additional source of revenue by serving SME freight forwarders or shippers. As a result, data is available for contribution to the National Trade Platform.

Skills Framework

The Skills Framework for Logistics, which was launched on 22 September 2017, identifies a spectrum of skillsets, career pathways and job roles to cater to the new digital workforce. With the identification of the new skills sets, companies can also tap

³ The Tech Depot is a one-stop, centralised platform under the SME Portal aimed at improving SMEs' access to technology and digital solutions

on WSG's Adapt and Grow initiatives such as the Professional Conversion Programmes.

Concurrently, the TechSkills Accelerator (TeSA) programme will support the Logistics IDP by offering various programmes to develop ICT manpower needs to help businesses in their digitalisation journey.

C) LEVERAGING ICM TECHNOLOGIES TO PUSH INNOVATIONS IN THE SECTOR

The Logistics sector can also leverage on the capabilities of ICM technologies to develop innovative business models to address issues at a systemic level, helping the sector to continually embrace digital disruption and stay globally competitive. IMDA will work with other agencies and industry partners to implement innovative and sustainable solutions to resolve on-the-ground issues, uplift the industry to leverage on the opportunities created by business and manufacturing innovations highlighted in the ITM.

A digitally-enabled distribution eco-system will help to address current challenges and achieve a systemic improvement that can be exportable to other urban cities

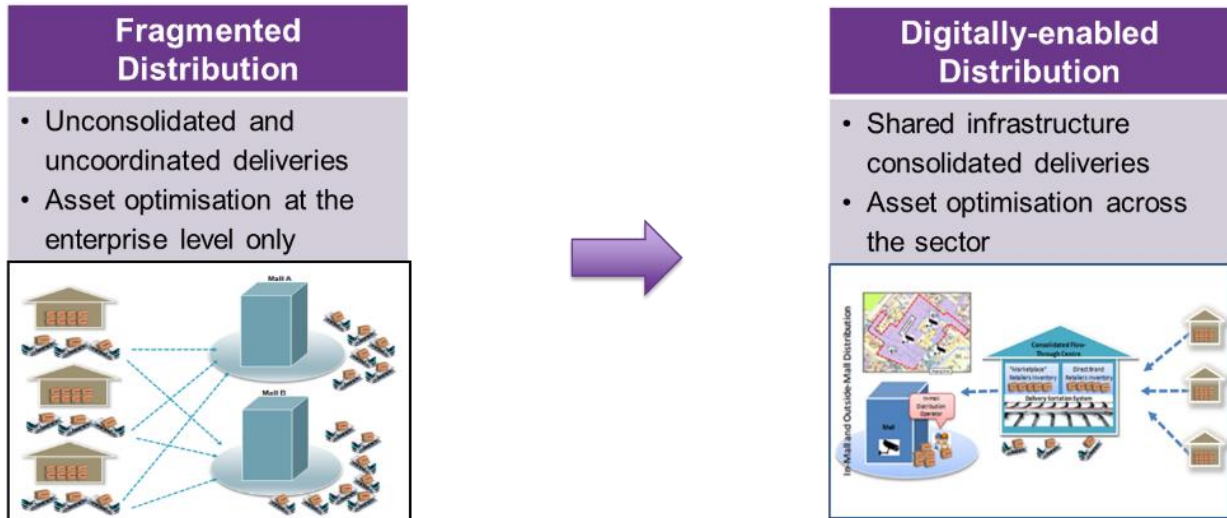


Figure 1: Digitally-enabled distribution model

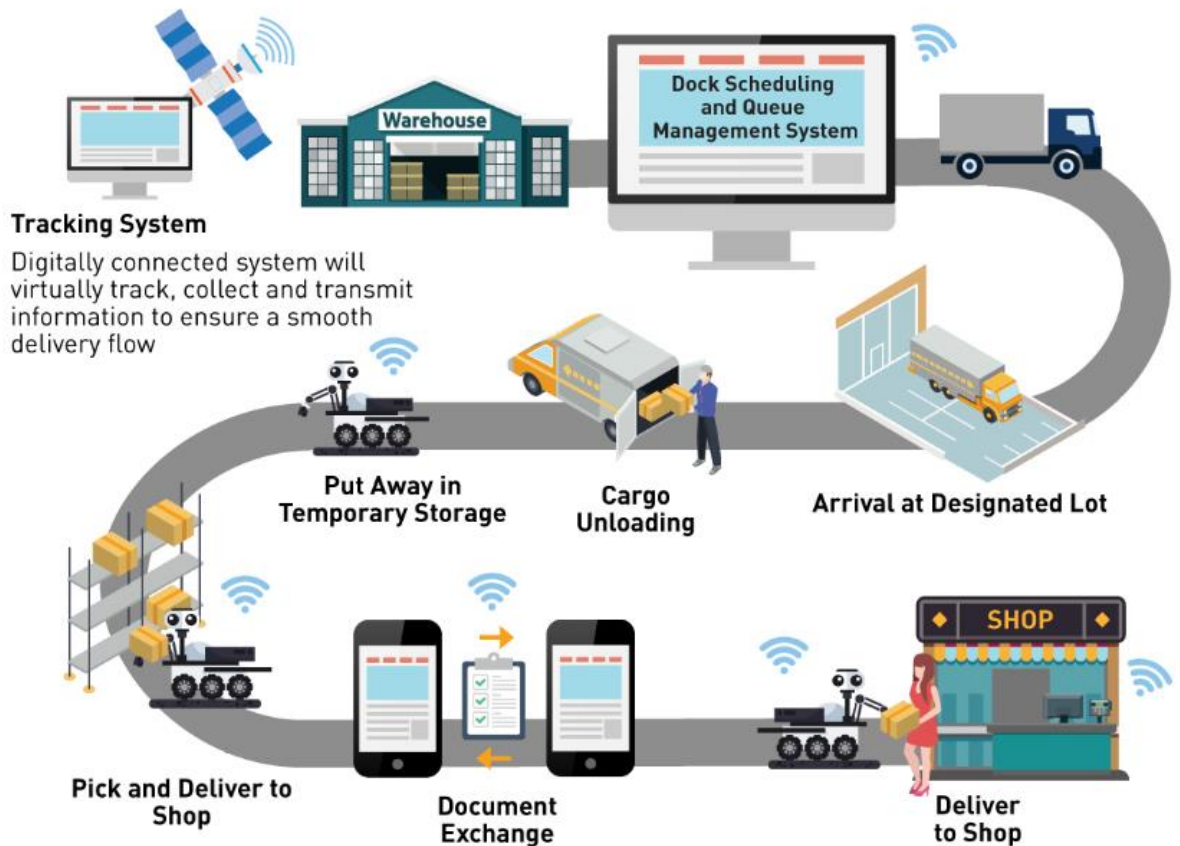
In-mall Distribution

The In-mall Distribution (IMD) concept is enabled by various technologies including a dock scheduler and queue management system where logistics service providers are able to book time slots to make deliveries. This solution will significantly reduce vehicle delivery queues into a mall.

The IMD process also involves an In-Mall Logistics Operator (IMO) stationed within the mall unloading bay to receive and consolidate deliveries from suppliers before making the last-mile delivery to retailers within the mall. The IMO can also offer other value-added services such as unloading bay facility management, security pass management, concierge services (e.g. bag/luggage deposit, cold storage facility), home delivery, meal delivery for F&B establishments, e-commerce pickup service and Just-In-Time replenishment or goods transfer for retailers.

Dock Scheduler and Queue Management (DSQ) System

The DSQ was deployed for the IMD at Tampines Mall in June 2016. This solution can also be used at the Offsite Consolidation Centre.



At Tampines Mall, the DSQ functions and features:

- Allow both internal and external users to access the application anytime
- Facilitate access via multi platforms so that multiple parties can log on to make bookings and IMO personnel can verify approved vendors for their delivery timeslots
- React to deliveries coming too early and remove original booking slots for others as necessary

- Provide last mile delivery visibility to the Mall tenants
- Identify vehicles that overstay in the mall loading bay lots
- Analyse data and develop reports and send alerts to process administrators, allowing planners to gain insights and make data-driven decisions on the process to benefit IMO, drivers and retailers

Offsite Consolidation Centre

The In-Mall Distribution can work with another Urban Logistics model - the Offsite Consolidation Centre (OCC). Before delivering to malls, trucks with less-than-full loads can consolidate and sort their goods in the OCC. Goods can be re-loaded and then delivered to their intended destinations on a single truck within the same day. This reduces the number of trucks going to the same destination and improves truck load utilisation.

Technologies such as cloud-based dock scheduling solutions and queue management systems, can be similarly deployed to enable efficient goods delivery. Advanced robotics can also be deployed to help sort goods, while fleet optimisation solutions can enable smooth, tracked and optimised delivery from the source to the destination

1. Goods from various suppliers are sent to an offsite consolidation centre

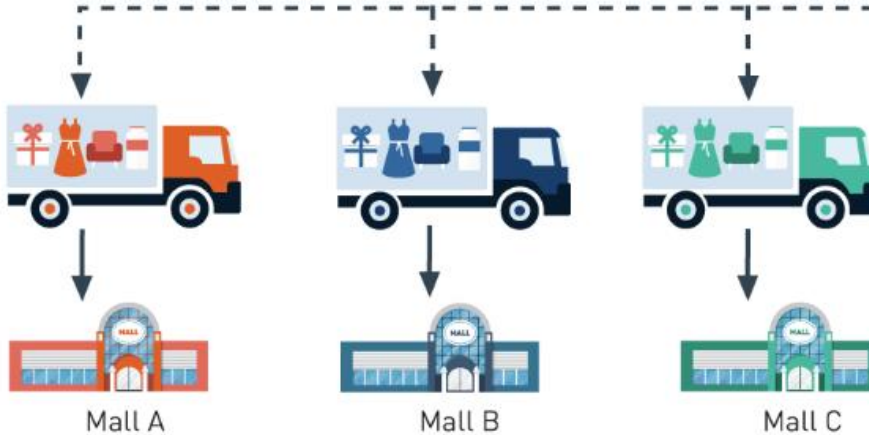


2. Goods received from supplier goes through a sortation system to consolidate for common destination



4. Goods intended for same destination would be loaded into a truck for a single trip

3. Goods stored in consolidation centre can be directly distributed via the same sortation system



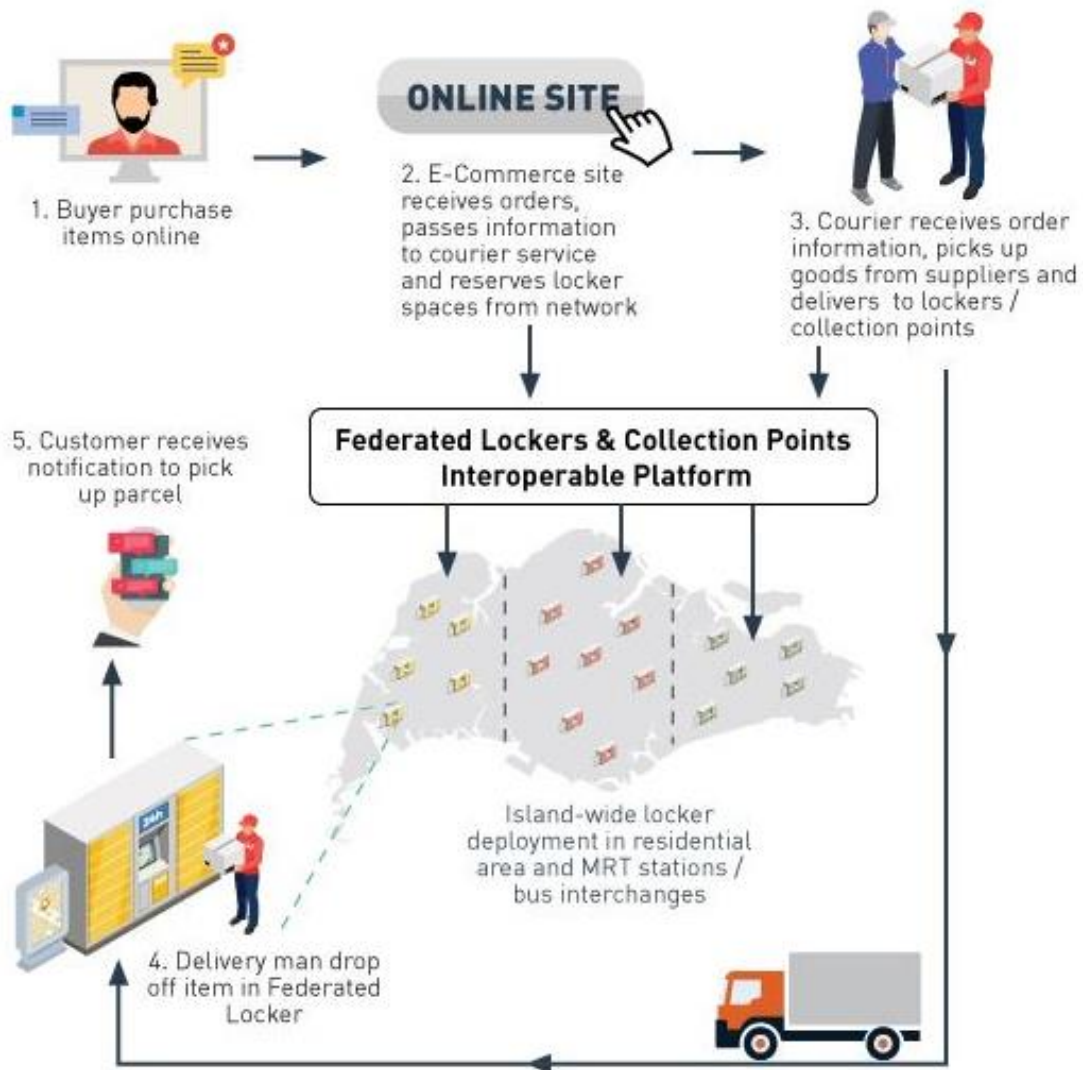
Community-Based Track & Trace System

Complementarily IIMDA is also conducting a community-based track and trace system trial for the Offsite Consolidation Center (OCC) users and operators to better track their cargoes across the supply chain. This solution will provides actionable visibility to both consignor and consignee across multiple stakeholders managing different parts of the supply chain, giving them better certainty of the fulfilment service and the ability to intervene in a timely manner to manage potential service lapses or contingencies.

Federated Lockers

An open delivery network comprises parcel lockers and collection points to work alongside existing door-to-door delivery, by providing an alternative delivery option to consumers at their convenience to collect their purchases. The nation-wide parcel locker network is intended to be pervasive enough for consumers to reach the nearest locker from their home within the walking distance of 250 meters, or along the consumer commute path to work or returning home in part of the public transport network

To provide a seamless experience for user in a network made up of different locker hardware and interfaces, an inter-operable platform will be deployed to allow users such as merchants, market places, logistics service providers and end consumers to have a consistent and uniform interaction with the federated lockers network.



Memoranda of Intent (MOIs) to Digitalise the Logistics Sector

To deepen efforts made to create sector-wide innovations, an MOI has been signed between IMDA, SMU, Fujitsu Limited and A*Star to develop a solution to optimise deliveries into malls, Offsite consolidation centres and any participating industrial facilities or drop-off points. This research project will address the large-scale computational requirements and optimisation for the growing number of trucks and delivery trips across Singapore. This will form a basis to extend the adoption of artificial

Intelligence, to be incorporated into this solution for sector wide optimisation in a steady state.

To help SMEs digitalise, large logistics enterprises have established MOIs with IMDA to facilitate the digitalisation of small freight forwarders and shippers through platform solutions that will aggregate demand for cargo space and insurance. This will make SME freight forwarders and the entire freight forwarding community become more competitive.

About Infocomm Media Development Authority (IMDA)

The Infocomm Media Development Authority (IMDA) leads Singapore's digital transformation with infocomm media. To do this, IMDA will develop a dynamic digital economy and a cohesive digital society, driven by an exceptional infocomm media (ICM) ecosystem – by developing talent, strengthening business capabilities, and enhancing Singapore's ICM infrastructure. IMDA also regulates the telecommunications and media sectors to safeguard consumer interests while fostering a pro-business environment, and enhances Singapore's data protection regime through the Personal Data Protection Commission.

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