

AI-enhanced Digital Maritime Logistics Platform

DETAILS

SECTOR | Transport

STAGE | Operations and Maintenance

TECHNOLOGIES | Global supply chain digital platform to enhance maritime logistics

SUMMARY

In today's complex global supply chain, a number of inefficiencies constrains the physical flow of goods due to asymmetrical or erroneous information flow, compliance and regulatory issues, lack of data standardisation as well as financial risks. Port operators stand in the middle of a highly fragmented maritime supply chain including factories, warehouses, logistics service providers, freight forwarders and customs.

Digital platforms are developed to facilitate trade and help shippers to better manage the physical movement of goods, trade financing and compliance. Taking advantage of advanced digital technologies, these platforms aim at reducing inefficiencies for the global supply chain by interacting with systems and applications (existing and new) of various stakeholders. They help streamline processes, documents and data in the flow of goods within and across countries and regions. Stakeholders benefit from the reduction of data duplication, automated handshakes across nodes, improved authenticity of data flow and access to accurate and up-to-date status visibility.

These digital platforms can also be powered by Artificial Intelligence, hence adding a number of services in terms of supply chain orchestration including providing users with insights on route options, free trade agreements, import, export formalities and other value-added services. By collating and analysing real-time data to devise the ideal trading strategy, these features broaden the platform's benefits for the clients, as well as for the terminal operator. They provide to the clients optimised freight options based on budget, preferred timeline and modalities, while also providing updates of cargo status and movement. They provide to the terminal operator increased fluidity in the management of its complex yard operations.

VALUE CREATED

Improving efficiency and reducing costs:

- Optimize use of ports' and associated logistics stakeholders' assets by optimizing cargo routes
- Boost supply chain efficiencies by better matching supply and demand, improve tracking and streamline transactions
- Provide operational data, valuable analytics for business and operational insights
- Increase speed and reliability of delivery of goods (current average schedule reliability of ocean carriers below 75%)
- Customer satisfaction (82% feel the level of connectedness and visibility needs to be improved)

This use case is a contribution from the D20-LTIC (Long Term Investors Club) together with the LTIIA (Long Term Infrastructure Investors Association) , with some adaptations from the Global Infrastructure Hub.

Enhancing economic, social and environmental value:

- Optimization of utilization of heavy and energy-intensive assets
- Enhancement of multimodal supply chain, reducing trucks usage
- Environmental criteria included in AI engine for optimal supply chain strategy, reducing human bias
- Decrease of logistics and inventory buffers
- Limit loss or waste of food (USD 460Bn worth of food value lost through logistics inefficiencies per year globally)

POLICY TOOLS AND LEVERS

Legislation and regulation

Ports are pivotal parts of multi-modal supply chains which cannot be designed in isolation, and not without factoring in a country's overall supply chain and logistics system and the links with its trading partners. This requires governments to develop and implement national digital vision within the global digital trade context and help their ports to get equipped to implement them. It requires ports to enhance the "traditional" thinking and prepare to attract digital talent

Singapore is a leading example of such government support to build a digital roadmap for the maritime sector:

- In April 2018, the Maritime and Port Authority of Singapore (MPA) announced a strategy to set the port on a digital path.
- Dr Lam Pin Min, Senior Minister of State, Ministry of Transport & Ministry of Health announced in April 2019 that the Singapore Maritime Institute (SMI) will prepare "the Singapore Maritime R&D Roadmap 2030 to optimize R&D efforts and resources for greater value co-creation within the maritime industry".

Effective institutions

Such digital platforms require the alignment of a number of stakeholders around on technical solution to ensure end-to-end efficiency and reliability. This includes private stakeholders such as freight carriers, terminal operators, market places and financial institutions, as well as public stakeholders such as governments and regional agencies, including customs agencies.

A future-enabled workforce

In many countries, the logistics industry, including the ports struggle to attract digital professionals and talent. Public support should include the development of a strong pool of digital talents specifically for the logistics industry (systems implementation and integration; maintenance and continuous development of the systems and tools).

EXAMPLE

Calista: PSA International Pte Ltd ("PSA") is partnering Global eTrade Services ("GeTS") Asia Pte Ltd, a fully-owned subsidiary of CrimsonLogic Pte Ltd ("CrimsonLogic"), in the development of a global common trade and supply chain platform called "CALISTA™" – an initialism for CArgo Logistics, Inventory Streamlining & Trade Aggregation – to facilitate trade and help shippers to better manage the physical movement of goods, trade financing and compliance. The system is operational in PSA's flagship terminals of Singapore and Antwerp.

<https://calista.globaletrade.services>

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