



CARGO FLOW OPTIMISATION: A MUST FOR MODERN, COMPETITIVE PORTS AND MARITIME LOGISTICS ACTORS



Full cargo flow optimisation is critical for ports and terminals to achieve efficiencies but achieving this demands collaboration across all stakeholders. Since the beginning of 2020, maritime digitalisation trends have accelerated. There has been an increase in the unexpected fluctuation of import and export flows; it is now more critical than ever to achieve port call optimisation.

“Partial supply chain optimisation is not enough in today’s world where changes and disruptions are a new normal due to climate change, changing trade routes due to COVID-19 and trade wars, and changes in manufacturing and food production locations and technologies,” said Simo Salminen, VP of Product and Co-founder, Awake.AI.

What is cargo flow optimisation? Awake.AI’s definition of cargo flow optimisation is exceptional transparency of ongoing cargo

operations and data flow visibility to ensure the most effective use of resources and generate actionable insights for planned events.

Awake.AI suggests that a collaborative and holistic approach is imperative to attain intelligent cargo flow optimisation. “This kind of wider optimisation cannot be done alone if you are a shipping line, terminal operator/port authority or hinterland logistics operator but requires higher level, global, trusted and open data platforms like Awake.AI,” said Salminen.

“Port call optimisation and wider port-bound cargo flow optimisation will be a must in modern competitive ports in just a few years,” he said.

The key message from Awake.AI is that optimisation does not happen if you simply optimise one link within the supply chain. Awake.AI says its platform can assist in this wider-reaching optimisation as it enhances

collaboration, data sharing, predictions, resource planning and offers real-time cargo visibility at all times.

At the moment, Salminen said he is not aware of a true optimisation platform approach in the industry which would include sea, port and hinterland scopes.

“There are multimodal optimisation platforms for land-side logistics that connect different delivery options and paths for door-to-door logistics, mostly within a single country,” he said.

TradeLens from IBM and GTD Solutions comes closest and is the current juggernaut for containerised cargo flow tracking.

In 2019, industry thought leader Kris Kosmala said, “Today, even the best-known platforms don’t include all the data necessary to make better supply chain decisions or don’t reflect all processes that make the cargo move efficiently.”

“Another drawback of the existing platforms is that they don’t provide insights for each organisation engaged in moving cargo along its journey to improve itself. This is important because ‘track-and-trace’ pitched by today’s platforms doesn’t make for easier analysis of why the cargo moves at such and such speed through the series of handlers,” Kosmala explained.

FULL TRANSPARENCY BENEFITS

Awake.AI explicitly says that its value proposition for cargo owners is to get full transparency of cargo flow at sea, in ports and on land.

Awake.AI delivers smart data to ensure efficient and reliable cargo operations and insight to plan future operations well in advance.

With the Awake Platform, cargo owner clients can track, trace, and optimise their cargo flow through ports. This provides an excellent overview to better prepare for deliveries and pick-ups at the right time.

Awake.AI outlines the key benefits for cargo owners as the following:

- Full transparency to sea-port-land cargo flow
- Manage the risks in cargo supply chains
- Better planning and prediction capability for days and even weeks forward
- Real-time information sharing, ensuring efficient and reliable logistic operations
- Saving of time and cost
- Reduce emissions in the logistics chain

The reduction of emissions is one of the top four effects of port call optimisation, Salminen explained. In addition to reducing sea, port and hinterland operational costs, optimisation can reduce the waiting time along the entire cargo flow and allows corrective action to be taken quickly in case of disruption of cargo through real-time and longer-term analysis.

“Ships wait with no operations activity at berths and anchorage up to 30-40% of the port call visit, and unfortunately still by far need to produce their needed electricity by auxiliary engines polluting the port and surrounding areas in significant amounts,” Salminen said.

“Optimising truck and train traffic can also greatly reduce idling time at gates and inside ports, thus reducing environmental impact (noise and pollution),” he added.

However, while the benefits seem clear, there are still challenges surrounding greater supply chain optimisation.

First, there is a lack of willingness for partners to share data and see the value of this for themselves. There is still some progress and momentum required to change the industry’s mindset to accept this type of business openness and see its mutual benefits.

In addition, Salminen noted that a large amount of systems integration is needed which slows progress today.

Proof of concepts and trials for wider port-bound logistics chains to show the value of a holistic approach require both time and some level of investment, which is not quite there yet. Business models and contract needs also must be taken into consideration.

Finally, there is a high demand for data analytics, optimisation and machine learning skills.

STANDARDS

But with all of this data comes the need for data standards. Yes, these standards are coming and are a major factor in cargo flow optimisation.

Notably, in October 2020, the Digital Container Shipping Association (DCSA) published standard data definitions for the port call process. This was the first publication of the DCSA Just-in-Time (JIT) Port Call programme.

By moving container shipping towards a JIT port call process, DCSA port call standards will enable container ships to optimise their steaming speed, thereby lowering fuel consumption and reducing CO2 emissions, the DCSA said.

Awake.AI argues it is essential to take a holistic approach to JIT arrivals. The company’s Smart Port as a Service (SPaaS) application provides situational awareness, accurate data and identifies potential communication problems.

SPaaS offers all port actors tools to share real-time information securely, communicate any changes in advance, and make informed decisions toward optimised port operations.

Synchronisation between berth availability and JIT vessel arrival is crucial to ensure the completeness of the JIT concept. First, it is essential to ensure that the berth and terminal operators are ready to discharge and load the ship.

Therefore, Awake.AI also provides insight on the estimated time of departure (ETD) of the vessel at berth and provides berth visibility for the upcoming arrivals, inspections, mooring, pilots and towing.

This all requires information exchange with the port operator. This type of information exchange and operational activities require a trusted collaboration platform, Awake.AI noted.

WHAT IS NEXT?

Awake.AI says while they are more active on the sea and port side of cargo, they have also had discussions in North America, Central Europe and Oceania with local and regional intermodal terminal players.

“They are interested and have quite modern systems already in place and have

the technical capability to connect and share data with the platform like we have. However, our main challenge seems to be at this time our company history (2 years) and making them see enough value for them to start in a few ports and grow from there,” Salminen explained.

Salminen has said several things still need to happen to achieve optimised cargo flows for ports and terminals, many of which directly respond to the aforementioned challenges.

Sharing some of the cargo flow data within the port community and customers outside ports, preferably using open data platform(s), is a must.

Salminen also recommends that ports and terminals start investing money and especially skills into digitalisation in addition to their usual infrastructure investment.

When it comes to digitalisation, ports should also install or upgrade their IoT type device installations for more automated cargo tracking, identification, counting and congestion detection.

Finally, Salminen said, “We need to recognise that cargo flow optimisation is happening not only at the sea, but also at the hinterland. Maritime industry is very traditional and far behind to implement the holistic supply chain model connecting sea, port and land”. Salminen encourages industry thought leaders to realise the urgency and take actions towards sustainable maritime logistics.

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In Partnership with Awake.AI*

ABOUT THE ORGANISATION

Awake.AI is a software platform company building an ecosystem for smart ports and autonomous shipping. Awake.AI’s mission is to lead the transition to sustainable and intelligent maritime logistics and reduce global shipping emissions with our ecosystem partners. The platform is the first of its kind, built from the ground up to accommodate seamless collaboration within the entire maritime logistics chain by sharing situational awareness and providing AI-supported predictions for future planning. The API’s and applications built on top of the Awake platform are available for customers and third parties using the subscription business model. For more information visit www.awake.ai