

OUR FRAGMENTED SUPPLY CHAINS NEED A LANGUAGE TO LINK LOCAL TRUSTED NETWORKS





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THE ROAD TO A DIGITAL INFRASTRUCTURE FOR SUPPLY CHAIN RESILIENCE

Predictability of goods delivery asks for planning data to flow, the COVID-19 pandemic taught us. Two years and a lot of talk later, it has become clear that achieving data collaboration in a fragmented supply chain is anything but straightforward. As centralised platform solutions have met their limitations, complementary decentralised methods of data collaboration are promising but still under development.

The supply chains Beneficial Cargo Owners (BCOs) experience the current system does not fulfil their needs for supply chain control. A fragmented and competition-driven supply chain hinders the data collaboration for integrated planning of containerised transport.

Integrated logistics is not just about visibility and being informed about any changes. "It is about the ability to make supply chain management decisions in any part of the chain, for any logistics functions and at any location", as Maersk points out in its vision for integrated logistics. This requires a digital infrastructure in the supply chain to facilitate data collaboration.



Supply chain visibility is seen as the holy grail and will most certainly address some first priority challenges. Especially when shipping lines add transparency in disturbances of sailing schedules. However, the major step forward will be brought by data collaboration in the supply chain, once operational planning data can be shared among stakeholders to enable actionable insights. This requires:

- 1) trusted digital infrastructure,
- 2) a network of networks, and
- 3) adoption in supply chain ecosystems.

FEDERATED DIGITAL INFRASTRUCTURE SUPPORTS DATA COLLABORATION IN A COMPETITIVE ENVIRONMENT

Under the surface, initiatives to arrange interoperability are moving on steadily. After multiple initiatives to utilise central platforms and blockchain, in addition more flexible and scalable concepts emerge. A concept should address the current situation of multiple logistics standards and technologies which are in use for global operations nowadays already.

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“A BROAD IMPLEMENTATION IN INTERNATIONAL LOGISTICS CAN ONLY BE ACHIEVED IF IT SUPPORTS A FEASIBLE GROWTH PATH TOWARDS GLOBAL STANDARDS.”

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Undoubtedly, the EU Data Act is the most developed towards a federated way of data collaboration. In essence, the data is not stored centrally but stays with the data owners (from terminal, modality, authority, etc.) in a decentralised manner and is gathered based on specific logistics events once needed (for shipper, service provider, terminal, operator, etc.). Access is given based on a trusted identity, authentication and authorisation for the data. Besides being more secure, this concept has advantages in the data being 100 per cent up-to-date and the data owner having more control.

The concept includes a commonly defined 'logistics data space' consisting of semantics, a trusted framework and data space connectors. In other words,

it consists of logistics definitions, a way to identify companies and individuals for access to the data, and a protocol to exchange the data.

Although the vision and common assumptions for this concept are set, a broad implementation in international logistics can only be achieved if it supports a feasible growth path towards global standards. Just like years ago IBM and HP started building gateways for a bilateral internet communication 'network to network' first. Nowadays users don't know TCP/IP, however we benefit when we cross a border and our mobile still works.

FRAGMENTATION IS SOLVED BY A GROWING NETWORK OF LOCAL NETWORKS

A valuable multiplier appears when local networks converge in the same direction, as directed by the EU data act. Please note also in Asia, especially among authorities, a similar vision gets a foothold.

Due to the magnitude of global trade, this decentral concept is likely to obtain a dominant role, besides the central or closed platform concepts. All the same, it is still a question how we will get there: you cannot drive 120 km/hour at once when you are in a traffic jam. In logistics, it is all about local networks and communities. Supply communities per product segments like plants, meat or building materials, communities in ports, etc. How are we able to increase data collaboration in these communities and then link those to trusted networks?

Various initiatives could assist the harmonisation of the digital infrastructure for semantics, identities and protocols. In the Dutch ports, a first version of this concept is being implemented by the government as Basic Data Infrastructure for logistics processes. In North Western Europe, ports collaborate to find common identities for truck drivers who visit industry hubs in multiple regions. In Europe the eFTi regulation for a paperless government utilises federated principles. Globally, representing organisations like IMO, DCSA, TIC4.0, IAPH and IPCSA are guiding standardisation for semantics. The latter already has a strategy to work towards a network of networks.

The approach taken in the Netherlands is to use the Port Community Systems as a 'node' for air- and sea freight, since many businesses are already connected in this trusted environment. Once semantics and technicalities for secure data collaboration are in place, the concept can be distributed nationally and linked to common networks internationally.

It becomes even more interesting when shipping lines with affiliate landside operations and large global visibility platforms use the same standards and utilise the new data which will be made available from federated data collaboration. This would speed up adoption.

BENEFICIAL CARGO OWNER TO TAKE A ROLE IN ADOPTION OF NEW DATA COLLABORATION

If we look at the lack of ability to change the current Edifact and EDI interfaces and protocols for the interaction between shipping lines

and ports, we have a long way to go. In the end, the beneficial cargo owners are the ones paying for the lack of change. Could they unite and set the tone? Given the large amount of global shippers and the history of subcontracting logistics services, this won't happen overnight.

Some large front-running BCOs are approaching ports to open the 'black box' of ports' intransparency. They urge for measuring performance of arriving ships, terminals and port operations. This is the start of a change, and is likely to be followed by smaller shippers and commercial service providers. Once BCOs contractually demand data collaboration of their logistics subcontractors, developments will be sped up. Besides, the BCOs' predictions on their order volumes are valuable data for the supply chain as well. So it cuts both ways. The core of the change, however, will be made from specific value creation by better planning options for the key players in the supply chain. Preferably supported by some regulation, since it will be a long way to harmonise digital infrastructure from a for-profit perspective.

Ports have a relative neutral role in the supply chain, optimising all import and export volumes for the physical infrastructure available. Resilience is a must have, not only to support the ports customers: for most ports the local implications of congestion and new sustainability demands are drivers to take a lead for harmonised digital infrastructure. Let us walk the road, build a network of networks that prevails the fragmentation in the market and seamlessly links supply to demand - which is also the most sustainable way in the end.

ABOUT THE COMPANY:

The Port of Rotterdam Authority manages, operates, and support the continuous development of the largest port in Europe, as a logistics hub and a world-class industrial complex. Striving for impact, the Authority is focusing on accelerating sustainability in the port and on partnership for digitalisation of the port and logistics chains.

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