Future chemical logistics will supported by new digital technologies

Drivers behind digitalisation

The European Chemical Transport Association (ECTA) discusses the digital transformation in chemical logistics and tank cleaning

Despite all the digital promises, transport and logistics services are, and remain, important services offered and created by people, products, assets and processes. The better these services fulfill the requirements of the customer, the higher the value and profitability.

Obviously, the time where a logistics service was driven by assets and products only is behind us. Future chemical logistics services will evolve to become a combination of physical company assets enabled and supported by new digital technologies and driven by data streams.

Digital collaboration and timely sharing of reliable, accurate and smart data among logistics service providers and its shippers and customers form a future cornerstone where each actor can take the right decisions across the digitally connected chemical logistics chain.

While the concept of digital collaboration sounds straightforward and simple, some very important requirements must be fulfilled before we can speak about digital transformation at an industry level.

In other words, what are these different drivers towards a more uniform digital transformation?

Here, ECTA and the European Chemical Logistics Information Council (ECLIC), supported by its founding associations including EFTCO and the European Chemical Federation-essenscia (Cefic), outline some industry best practices on how to contribute to this digital transformation journey. These are geared towards tank cleaning operations using the EFTCO Cleaning Document (ECD) or eECD.

Need for more industry data standards to drive interoperability

Today, chemical logistics supply chains are far from harmonised.

Currently, a lot of the required transport order data is exchanged digitally in an unstructured data format and the share

of non-electronical order exchange is still as high, which leads to inefficiencies in logistics processes across partners in the supply chain partners. Hence, the opportunity lies in defining a more uniform order data exchange standard for the chemical bulk transport sector, a need that the ECTA digital working group started to embrace in 2020.

By standardising the terminology used across all parties and documenting the related data fields with sample messages, the ECTA workgroup succeeded in creating several best practice guidelines and created an industry foundation that can be re-used for any future digital collaboration initiative or use case.

One ECTA guideline has been focusing on the typical transport order data and message standards, which are exchanged between transport companies and carriers.

Even though the industry developed the typical bilateral electronic data interchange (EDI) standards in the early 2000s, these 'point to point' standards no longer comply with the future more open, real-time connected supply chain ecosystems.

Another ECTA best practice guideline is focused around creating a common set of equipment master data fields in bulk and packed chemical logistics. For this new guideline, the ECLIC eECD Tank Cleaning Use Case and Data Standards have been used as a basis to reach a more broadly applicable chemical logistics industry standard.

This year, the ECTA workgroup will continue with its standardisation efforts and mission to make the data used in the underlying business processes more 'interoperable' across all chemical logistics actors.

Data governance and the creation of a neutral interoperable industry dataspace

While the need to establish common data definitions and standards forms the basis, it is not sufficient to create an interoperable digital collaboration ecosystem. Digitalisation and data sharing across LSPs and shippers also requires the creation of clear data governance framework.

Such data governance framework defines the data management strategies, which are agreed and adhered to by all stakeholders within that collaborating community. This includes the establishment of data sharing rules, policies about data ownership, data security, re-use of company data, data quality, mapping out categories, properties and relations between the data concepts and determining which data types can be shared with who, when and for what purpose.

These data governance rules are applied within an industry dataspace of connected IT vendors and are overviewed by a neutrally-governed orchestrator.

"In the coming years, the physical product movements will be further supported by digital data streams keeping digitalisation high on the chemical industry agenda"

In that respect, Cefic, at the end of last year, published its new digital collaboration position paper where it describes Europe's ambition to create digital interoperability and data exchange in a shared, secured and trusted transport and logistics dataspace.

The chemical industry needs a governance framework that supports trusted and secure collaboration between all supply chain stakeholders, including national and European authorities.

ECLIC, founded in 2018 by EFTCO, ECTA and essenscia, is a good example of such emerging neutral dataspace orchestrators and facilitators. Under the umbrella of ECLIC, the European electronic EFTCO Cleaning Document and new digital eECD standard is being prepared.

The digital eECD industry standard

ECTA aims to continue with its standardisation efforts

has been built next to the ECD paper standard. Meanwhile, the eECD project is further growing, and more than 50 companies including cleaning stations, transport companies and chemical companies have started using the eECD standard.

At the same time, the eECD Use Case is being enlarged in terms of geographical scope and in terms of other uses cases.

The ambition for this year is to exceed the sharing of its logistics documents among all its ECLIC members. ECLIC's new plans to roll out an enhanced eECD 2.0 digital standard have been approved and can be used more widely across the European shipping community.

Move from paper to digital – EU regulations and change management

Despite all the hype and great ambitions about digitalisation, paper documents are still the norm among LSPs and shippers within chemicals logistics. Proof is the millions of paper copies still floating around across Europe, with drivers being requested to check in with papers and data being typed over and over again.

This means that the establishment of common data standards managed under a neutrally-governed industry dataspace is not enough to make the full digital transformation from paper to digital.

While everybody understands that in the coming three to five years, digital documents will become the new normal, such a digital project journey takes years to develop. It does not just require skilled IT resources and capital investments.

Here, the ECTA digital workgroup also published its insights into an ECTA best practice guideline related to the implementation of digital documents and focused on the electronic convention relative (eCMR) and eECD. This guideline is backed by carriers preparing to use eCMRs from 5 April.

Despite the immediate value and benefits, the transition and adoption from paper to digital logistics documents is slow and complex at industry level.

One of the main problems with the digitalisation of e-freight documents is that firms need to tackle different problems with different people at the same time and you can only do that when you bring all stakeholders together.

Companies might think that commercial digital platforms do that for the industry, but the past decade has proven just the opposite and digitalisation has resulted in more fragmented, complex and local IT issues.

Therefore, ECTA, EFTCO, and Cefic welcome the new EU regulations to improve administrative efficiency and drive for more harmonisation and open collaborations with respect to company data ownership.

Conclusion

The digital transformation at industry level is just starting within bulk chemical logistics and tank cleaning. In the coming years, the physical product movements will be further supported by digital data streams, keeping digitalisation high on the chemical industry agenda. Defining common digital standards, establishing a neutrally-governed industry dataspace and working together on collaborative digital Use Cases with respect of data ownership, will remain a key priority to improve efficiency, safety, transparency and sustainability within chemical logistics.

However, before the chemical industry can reap all these benefits and avoid any pitfalls in such a digital ecosystem, it will require another view on project investments, different skilled resources, change management, adapted EU regulations and enhanced data governance levels.

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