Disruption and the case for digital standards
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Ongoing disruption underscores the need for digital standards

Paper-based and manual processes slow down the supply chain

Many industry analysts predict double-digit growth in demand and uncertainty around the timely arrival of goods will continue to plague the global supply chain well into 2022 and beyond. Orders are being placed earlier and in greater volumes, creating bottlenecks at depots and warehouses. Containers remain unemptied for longer and are not sent back into circulation. The availability of chassis is unpredictable.

While there are a number of issues at play, the current state of supply chain logistics is exacerbated by the current state of container shipping, which still relies heavily on manual and paper-based processes. This lack of digital maturity decreases container visibility, which creates costly inefficiencies and causes unnecessary delays across the end-to-end container journey.

Take for example, the bill of lading (B/L). At the end of 2021, only 1.2% of the 45 million B/Ls issued by ocean carriers was electronic. Paper B/Ls are still being passed from hand to hand as the container passes from vehicle to vehicle, from land to sea, and from country to country. At the start of the COVID-19 pandemic, cargo was stuck in ports waiting for paperwork to be delivered by flights that had been delayed. Having the electronic bill of lading (eBL) as the dominant format for bills of lading would reduce or eliminate such delays.

Consider also that every year, the mishandling of reefer containers results in huge losses for companies that rely on cold-chain logistics. Currently, it is difficult for cargo owners to track the whereabouts of containers and manage the status of their contents from end to end. IoT (Internet of Things) solutions for “smart containers” are needed to enable an uninterrupted flow of container data throughout the journey. This will ultimately allow continuous remote monitoring and control over the quality of perishable items.

These are just two of many examples of how digitalisation will transform the container shipping industry, providing unprecedented levels of efficiency, innovation and customer service. Digitalisation is also a key contributor to increasing sustainability, from reducing paper and waste, to lowering fuel consumption and greenhouse gas (GHG) emissions. While shipping is responsible for only 2% of the GHG emissions attributed to transportation, the lack of operational transparency causes the sector to burn more fuel than necessary.

But to digitalise the supply chain from end to end, IT solutions must be interoperable at every link in the chain. This requires widespread adoption of digital standards such as those DCSA and its members and collaborators are working to develop.
Interoperability enables digital transformation

Without a common approach to technology, container shipping provides an inferior digital experience

Container shipping lags behind more digitally advanced industries

Interoperability is the ability of computer systems to exchange and make use of information. Currently, container shipping lacks end-to-end interoperability because it lacks a common approach to technology. This makes information exchange between parties unnecessarily difficult and aggregation of data challenging. As a result, many container shipping processes provide a digital experience that is far inferior to that of retail, telco, banking and other more digitally advanced industries.

Take booking. Critical information such as arrival times and available space is often unreliable. And during the container journey, tracking and tracing a shipment is difficult because transport chains often appear as “black boxes” to cargo owners. Containers are lost from view until they arrive at certain points. Not only does this build high costs, inefficiencies and waste into the supply chain, it creates a lack of trust between shippers, carriers and other participants.

DCSA standards will enable end-to-end interoperability, allowing supply chain participants to digitise data and send and receive it (from machine to machine) in a way that is understandable and usable for everyone. This will not only simplify and clarify the booking process, it will provide visibility into container whereabouts and status throughout the container journey. In the short term, greater visibility will help increase the efficiency, reliability and sustainability of container shipping while fostering innovation and a better customer experience.

Over the long term, universal access to accurate, real-time data will help the entire industry become more agile, resilient to change and responsive to customer demand and market forces. This will enable not only container shipping, but the global economy to better withstand the effects of disruption.
Digital standards drive real-world benefits

DCSA standards initiatives address the industry’s most impactful and urgent needs

With 9 of the top 10 ocean carriers (representing over 70% of containerised trade) as members, DCSA aims to be the de facto technology standards body for the container shipping industry. Working in close conjunction with our carrier members and inviting input from all stakeholders, including customers and partners of shipping lines, solutions providers, regulators and other standards bodies, DCSA standards initiatives address some of the most impactful and urgent needs in the industry, including:

**DCSA Standard for Track and Trace (T&T)** establishes process, data and interface (API) standards to enable customers to digitally track and trace shipments across multiple carriers. 

**Benefits**

This will simplify shipment visibility across multiple carriers, enabling shippers to better plan and optimise shipment handling activities.

**DCSA Standard for the Bill of Lading** and **DCSA Standard for the Booking Process** are part of the DCSA eDocumentation initiative to enable end-to-end digitalisation of shipping documentation.

**Benefits**

Standards for end-to-end shipping documentation will bring the industry closer to a universally accepted electronic bill of lading, which will increase efficiency, enhance transparency, facilitate compliance and eliminate paper from international trade. It will also facilitate acceptance and adoption of eBL by regulators, banks and insurers, and unify communication between these organisations and customers, carriers and all other stakeholders involved in a transaction.

If the container shipping industry starts adopting eBL standards in earnest, we project that a 50% adoption rate is feasible by 2030. At 50% adoption, we estimate that the industry can potentially save more than USD 4 billion per year. At a global economic growth rate of 2.4% through 2030, as forecasted by the OECD.  

**DCSA Standard for the Just-in-Time Port Call** aligns operational processes and data communication between carriers, ports, terminals and other stakeholders to streamline and increase port call predictability for better operational planning.

**Benefits**

Widespread adoption of these standards is the first step towards achieving a digital, global, transparent, just-in-time port call ecosystem. By moving container shipping towards a JIT port call process, DCSA will enable container ships to optimise their steaming speed, thereby lowering fuel consumption and reducing greenhouse gas emissions.

**DCSA Standard for Operational Vessel Schedules** enables automatic sharing of vessel schedule information between carrier VSA partners and operational providers.

**Benefits**

Carriers can digitally publish their schedules, and their partners and operational service providers can subscribe to their feed to automatically receive or retrieve updates as needed. This will provide complete vessel schedule transparency, increasing efficiency and enabling better planning and optimisation of shipping activities.

For a complete list of DCSA standards, API documentation, developer resources and other relevant materials that facilitate standards adoption, please refer to the [dcsa.org](http://dcsa.org) website.

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1 Source: The Organisation for Economic Co-operation and Development (OECD) Economic Outlook database
Investment in DCSA standards is an investment in the future

DCSA digital standards create a safe environment for technology investment

Standards-compliant solutions are backed by major carriers

Vendor-neutral and platform-agnostic, DCSA standards ensure interoperability between all shipping stakeholders. Any relevant party that has implemented DCSA standards can be involved in a transaction. This allows intermodal transportation providers to invest with confidence in interoperable IT solutions that don’t force vendor lock-in.

DCSA also works with many standards and regulatory bodies to receive input and achieve alignment. These include UN/CEFACT, World Customs Organization, European Commission, the US White House and Department of Transportation (FLOW initiative), IATA and other industry associations through the Future International Trade (FIT) Alliance, among others. This ensures that stakeholders can implement DCSA standards while preserving their investments in existing systems and processes.

DCSA digital standards create a safe environment for technology investment
Standardisation success stories

Across industries, digital standards have been proven to increase efficiency and innovation.

Digital standards enable companies to provide a better customer experience

In banking, telco, entertainment, retail and media, digital standards have been creating value for some time. As a result, these industries have produced a better customer experience and a higher degree of efficiency and innovation. DCSA strongly believes that container shipping can have the same success with digitalisation.

Our long-term ambition is to bring the container shipping industry to the level of these more digitally advanced industries.

Compare the eBL to the e-Air Waybill for freight in the airline industry. In 2010, IATA introduced e-Air Waybills (e-AWB) for airfreight, and as of May 2021, adoption of the e-AWB is over 75%.

e-AWB is over 75% in terms of adoption in May 2021.
Digital transformation requires collaboration

DCSA aims for alignment and transparency in standards development and publishing

DCSA works in collaboration with a wide array of stakeholders to develop digital standards and promote adoption. The more contributors and adopters we have, the more useful the standards will become. Our carrier members are committed to implementing DCSA standards as part of their digitalisation strategy, and we actively seek input from all parties to gain insights into the needs of specific markets.

As a non-profit, independent organisation, we aim for full transparency and publish our standards open source, free for everyone to use. Using an agile development process, we focus on driving alignment among our 9 carrier members to rapidly publish standards, solicit industry feedback and quickly iterate, if necessary.

If you are a customer of ocean carriers or work closely with container shipping, your involvement in the standardisation process is crucial to transforming this industry. As highlighted by the pandemic, the need to replace antiquated shipping processes with efficient, digital processes is more urgent than ever. And a standardised, scalable approach is the only way to future-proof such a fragmented, complex and global industry.

We invite you to engage with us by subscribing to DCSA updates and making contact through our website, www.dcsa.org.