# Trade digitisation's bumpy road to interoperability









# **PRODUCED AND ORGANIZED BY:**

## **Carter Hoffman**

Trade and Technology Editor *Trade Treasury Payments* 

Global Advisory Panel Member, Trade Treasury Payments

## **Oswald Kuyler**

Head of Digital Standards Initaitive *Asian Development Bank* 

#### Editorial Board Member, Trade Treasury Payments

### **Pamela Mar**

Managing Director ICC Digital Standard Initiative

## **Deepesh Patel**

Managing Director and Editor-in-Chief *Trade Treasury Payments* 



# CONTENTS

The push for interoperability and data standards	5
Technology as a bridge and its limitations	6
Getting to interoperability: Perspectives	8
Trade platforms vs. ERP integration: Finding the right strategy	10
Conclusion: Towards a collaborative digital trade ecosystem	11
Useful Resources	14





# Trade digitisation's bumpy road to interoperability



International Chamber of Commerce (ICC) Digital Standards Initiative (DSI) and Trade Treasury Payments (TTP) hosted a closed-door roundtable of industry leaders (including representatives of banks, fintech firms, large corporates, and government agencies) to discuss, under Chatham House rules, the state of trade digitalisation and prospects for interoperability in the foreseeable future.







# The push for interoperability and data standards

A central theme in the roundtable was the universal support for interoperability to ensure that all digital trade systems can seamlessly communicate. Participants acknowledged that current initiatives too often operate as siloed "digital islands", where closed networks of banks or supply chain actors digitise trade documents among themselves.

To break down these silos, common data standards and taxonomies are needed so that documents and data from one system are recognised across others. Beyond this, achieving true interoperability requires agreement not only on technical connection protocols but also on semantic standards (a shared understanding of data fields and definitions) and even procedural alignment across institutions. In other words, systems must not just exchange data, but interpret it consistently and follow compatible workflows.

Encouragingly, the industry has made progress on the standards front. Last year, the ICC DSI released its Key Trade Documents and Data Elements (KTDDE), analysing 36 key trade documents and their data fields.

By incorporating inputs from major standards bodies worldwide, this KTDDE framework lays the foundations for digital trust at scale through secure, verified data sharing. Technical solutions will fall short unless the meaning of data is standardised across platforms.



Notably, the discussion also acknowledged that achieving interoperability is as much a collaborative exercise as a technical one. Several participants stressed that banks, corporates, fintech providers, and regulators all need to cooperate on adopting common standards rather than each promoting proprietary ones. The group cited examples of successful multi-organisation cooperation, such as industry coalitions and standards alliances, which give hope that the era of fragmentation can be overcome. As one attendee put it, "interoperability is a team sport". No single platform or company can achieve it in isolation.

The overall consensus was that data standardisation efforts must continue and translate into real-world adoption, so that a trade document digitised by one party can be universally understood and accepted by all other parties' systems. With robust standards and interoperability, digital data could flow as freely as paper documents do, only far more efficiently.



# Technology as a bridge and its limitations

In discussing how to transition from today's paper-reliant reality to a digitally native future, participants explored the role of technology, particularly stop-gap solutions that can bridge the paper-to-digital divide.

Artificial intelligence (AI) and optical character recognition (OCR) technologies received special attention. Banks and fintech providers at the roundtable described how they are deploying AI-powered OCR to automate the ingestion of trade documents that still arrive as paper or PDF scans.

For example, one major bank recently implemented an AI platform to extract data from a range of trade documents using machine learning and NLP (natural language processing), combined with OCR to turn scanned images into machine-readable text. This allows for automated data capture and even preliminary compliance checks (such as screening for sanctions or trade-based money laundering risks) that were previously done manually.

Such technologies are proving useful in streamlining workflows. In fact, the bank reported completing some trade finance processes entirely digitally by leveraging electronic documents and AI tools for the first time in its market. Yet, despite these advances, the consensus was that OCR and AI are essentially interim solutions rather than the endgame.



By definition, OCR is a workaround. It digitises information after it has been printed or formatted for humans, which is inherently less efficient than having structured digital data from the start. Current OCR accuracy rates tend to be in the range of 70–80% at best, meaning a significant error rate that necessitates human review and correction. For unstructured documents or those without a standard format, accuracy can drop further. In other words, OCR is not foolproof, and companies cannot fully eliminate manual oversight when using these tools.





As one document digitalisation expert said, "OCR is automating our ability to fix the problems created by paper, rather than eliminating the paper itself." The roundtable agreed that as trade documentation becomes more standardised and natively digital, the reliance on OCR will diminish. In fact, industry research bluntly notes that as the shift away from physical documents accelerates, OCR will eventually render itself obsolete. It remains extremely useful in the interim as a transitional technology, but ultimately, the goal is to phase it out.

The role of more advanced AI also sparked discussion. Beyond OCR, emerging AI techniques (including machine learning models and even generative AI) could help with tasks like document discrepancy checking, data validation across documents, and providing decision support in trade finance.

Some attendees described pilots where AI tools cross-verify data (for example, ensuring an invoice amount matches the linked purchase order and transport documents) to flag inconsistencies in real time. This kind of AI-driven automation can further reduce the need for tedious manual reviews, freeing up trade operations staff for higher-level problem-solving.

However, participants also cautioned that AI is no panacea. Its effectiveness depends heavily on having quality data, and uncertainty about fulfilling compliance with AI. There was consensus that technology will continue to augment human capabilities in the near term rather than replace them.

In summary, AI and OCR are playing an important supporting role in trade digitisation's current phase, helping to bridge gaps and boost efficiency while paper-based processes persist. But the collective aspiration - voiced repeatedly during the roundtable - is to reach a point where trade data is born digital, shared instantly, and securely between parties without the need for workarounds.

Achieving that vision circles back to solving the foundational issues of standards and legal acceptance discussed earlier.



Getting to interoperability: Perspectives

The roundtable featured a diverse mix of stakeholders, and not surprisingly, different perspectives emerged on how best to digitalise trade and where the main challenges lie.



### Bank outlook

Bank representatives noted that they operate within strict regulatory and compliance frameworks, which means any digital solution must be robust, legally sound across jurisdictions, and secure. From the banks' perspective, one of the biggest hurdles has been the legal uncertainty around electronic documents (hence their strong interest in MLETR adoption).

Several bankers noted that they have been investing in digitisation initiatives, but they

oftenencounter a patchwork of systems. A recurring comment was that no bank wants to force its corporate clients to use a dozen different portals for various trade services. Banks, therefore, see value in a more unified approach, and many are increasingly open to collaboration with fintechs and even with other banks to achieve industrywide solutions.



One bank participant cited the example of an open-account trade finance platform that their consortium abandoned after a few years, saying, "The lesson was that one bank or one platform alone can't cover everything; we need interoperability and networks of platforms."

There is now a recognition that co-creating solutions may yield faster and broader results, something that differs from views held in the past. Indeed, the banking group welcomed the push for common standards and expressed willingness to align on data formats and connectivity if it means lowering barriers for clients.



# 3.2 Fintech outlook

Fintech companies and trade tech innovators, on the other hand, brought an optimistic and ambitious outlook. Fintech representatives at the table argued that the technology to digitalise trade is largely already available and that the bigger issue is industry inertia and legacy mindset. One fintech CEO opined that banks and corporates often "overestimate the risks of going digital and underestimate the risks of sticking with paper."

There are many success stories where new platforms have digitised specific processes (for example, electronic bills of lading or digital trade finance marketplaces), demonstrating efficiency gains and fraud reduction. They acknowledged, however, that scaling these innovations requires buy-in from established institutions.

Fintech participants advocated for open APIs and partnerships as the way forward, rather than positioning their solutions as standalone disruptors. Many fintechs now focus on integrating with banks' systems or with large corporates' procurement platforms, seeing themselves as enablers that can plug gaps.

The technologists at the table pushed the group to be bolder and move faster in abandoning paper, not least because their own timeframe for commercial sustainability is limited. They don't have the luxury of waiting "3 to 5" years that industry observers estimate as needed to achieve interoperability. If it is indeed this long, many trade technology service providers might not survive.

## 3.3 Corporate outlook

A top concern of supply chain participants is how to integrate the digitalisation of trade processes into their existing workflows and systems. Corporates deal with numerous banks, logistics providers, and vendors, each with their own platforms, which many find inefficient. Several corporate participants lamented the current "app overload," where a logistics portal might handle shipping documents, a bank's platform handles letters of credit, and separate systems manage certificates or customs filings. They urged for a streamlined user experience, ideally accessible through the tools they already use, such as their ERP systems or supply chain management software.

In fact, one takeaway was that ERP integration is strategically important to corporates. If digital trade solutions are embedded into ERPs, companies can conduct trade transactions within a familiar environment without constantly switching interfaces. Banks in the discussion acknowledged this, with one banker noting that they aim to let clients access digital trade services via the clients' own systems whenever possible.

In practice, this might mean the bank exposes APIs so that, for example, a company's SAP or Oracle ERP can directly transmit a digitised letter of credit application or receive an electronic bill of lading, eliminating the need for email or portals.

In short, corporates want simplicity, integration, and reliability, and they are likely to fully embrace digital trade only when those conditions are met.



# Trade platforms vs. ERP integration: Finding the right strategy

A key question related to interoperability is how to ensure that the multiple digital islands and separate networks end up interconnecting rather than producing fragmentation. Centralisation isn't the answer; this approach seeks to "bring together the digital ecosystem via integration".

In practical terms, it means using APIs, cloud connectivity, and data standards to link the various digital trade platforms (finance, shipping, insurance, etc.) so that data can flow between them. For example, a digitised purchase order from a corporate procurement system could feed into a trade finance platform to initiate a financing request, which in turn could communicate with a shipping eBL platform to match transport documents. All this would happen behind the scenes. The user would experience a mostly seamless process.

ERP integration is a big part of this strategy. Letting companies and banks interface through existing systems ensures that digital trade services are accessible without extra logins or manual data re-entry. In general, industry efforts now are less about creating new standalone platforms and more about connecting the dots between existing ones. Even fintech entrepreneurs, who once might have aimed to be the single platform of choice, recognised the value of interoperability over exclusivity. Many participants agreed that systems should be technology-agnostic and capable of working with any partner's system as needed.

This aligns with the ICC's advocacy for open, interoperable systems that do not lock participants into one technology, but instead allow data to flow across jurisdictions and between public and private platforms.

None of this is to say platforms are unimportant.

On the contrary, robust platforms for e-documents, financing, etc., are the building blocks of digital trade. The key insight is that those blocks must be linked via common standards and integration to form a cohesive digital trade infrastructure. The consensus view favoured a "network of platforms" model, a connected network enabling end-to-end digital trade, as opposed to any monolithic one-platform solution.



# Conclusion: Towards a collaborative digital trade ecosystem



The roundtable discussion painted a comprehensive picture of an industry in transition. On the one hand, substantial progress has been made in the past few years. Critical laws have been enacted, standards frameworks developed, and pilot transactions executed that prove the feasibility of end-to-end digital trade. The building blocks of legal validity, technical standards, and modern technology tools are steadily falling into place, and the benefits of digital trade (from cost savings to faster financing) have been clearly demonstrated in early use cases.

On the other hand, significant challenges remain before digital trade becomes the norm rather than the exception. Issues of interoperability, fragmentation, and uneven adoption must be resolved, but no single stakeholder can accomplish this transformation alone. Collaboration is essential. Banks, fintechs, corporates, and governments each bring vital pieces of the puzzle.

The discussion highlighted that when these parties work in concert, progress accelerates. For example, banks and fintechs partnering to combine domain expertise with technology, or public authorities consulting the industry when crafting digital trade regulations. Conversely, a lack of coordination leads to duplication and digital dead ends (the "islands" problem).





There was an implicit call for an industry-wide mindset. Thinking beyond individual platforms or firms to consider the connectivity and common good of the entire network. Encouraging signs include the rise of interoperability initiatives and the willingness of competitors to align on standards for the greater benefit.

The pieces of the digitalisation jigsaw are coming together. The task now is aligning them correctly and filling in the remaining gaps. In an analytical sense, the views from the roundtable confirm that trade digitisation is as much about policy and governance as it is about technology. The technology is largely available and continually improving, but it must operate within an enabling legal and collaborative framework.

Discussions about AI, blockchain, or any other tech always looped back to questions of adoption: Will users trust it? Will other parties accept it? Is it easier and safer than the status quo? These are questions of governance, standards, and design, which require a broad consensus to answer.









The differing viewpoints shared by bankers, technologists, corporates, and officials all reinforce the idea that alignment is the guiding principle: aligning data, aligning legal frameworks, and aligning stakeholder efforts. By doing so, the trade community can move from today's mix of digital and paper toward a future where commerce is conducted with electronic information flowing as freely as goods themselves, in a way that is to the advantage of all.

The insights from this roundtable make it clear that while challenges persist, the collective will to overcome them is stronger than ever.

Years from now, we may look back on today as being at the cusp of an era in which digital trade is the new normal.





# **Useful Resources**



#### KTDDE: full standards guidance report

https://www.dsi.iccwbo.org/ files/ugd/8e49a6 9f8444133fc64fc9b59fc2eaaca2888e.pdf

#### Conformity Assessment <sup>9</sup> Scheme: Digital Trade Documentation

#### Quick Links: Link to this repo | DGC | ICC |

The Digital Standards Initiative (DSI) of the International Chamber of Commerce (ICC) and the Digital Governance Council (DGC) of Canada have collaborated to develop a Technical Assessment Framework for evaluating the reliability of digital services or networks that enable the transfer of Electronic Transferable Records (ETRs) within supply chains.

#### Overview

4

This new framework provides a standardized method for assessing the reliability of platforms that support the use of ETRs in place of traditional paper-based trade documentation. The assessment aligns with the Model Law on Electronic Transferable Records (MLETR), offering a clear benchmark for service providers to demonstrate their platform's capability to execute reliable ETR transfers in compliance with global standards.

As more countries adopt the MLETR, this framework establishes a common market standard for evaluating the reliability of platforms handling ETRs. Service providers can use the framework to showcase their adherence to these standards, which are increasingly recognized worldwide.

Reliability Assessment and register of Statements of Verification

https://github.com/dgc-cgn/CAS-Digital-Trade-Documentation

#### Cross-Border Paperless Trade Database

#### Key Trade Documents and Data Elements (KTDDE)

Trade documents are the building blocks of global supply chains today: they articulate key terms of transactions or events occurring between two or more parties along the supply chain. The KTODE Working Group within the Industry Advisory Board of the Digital Standards Initiative (OSI) of the International Chamber of Commerce (ICC) was established to treat all key trade documents to simplify standards and align and converge Industry practices on trade digitalisation at any given point along the supply chain.

=

#### How to use these pages

The Trade Documents are those identified within the Cross Border Paperless Trade Toolkit. Select a Document to see its analysis and core data.

Each document is a collection of Data Elements, which are defined in the Key Trade Data Glossary below. Select a data element within the glossary to see its usage within trade documents.

Understanding data sharing within the supply chain is the first step towards validating and securing key data with the aim of visibility and traceability.

Trade Documents Data Elements Glossary

#### KTDDE online data standards repository:

https://www.digitalizetrade.org/ktdde



KTDDE: full standards guidance report https://www.dsi.iccwbo.org/ files/ugd/8e49a6 9f8444133fc64fc9b59fc2eaaca2888e.pdf







## **ABOUT TTP**

Trade Treasury Payments (TTP) is the leading independent media, research, and education platform in trade, treasury, and payments.

Based in London, UK, we connect the global community of industry professionals in transaction banking, banks, and corporates, providing timely insights, expert analysis, and high-impact multimedia. With 42 years of editorial experience, TTP delivers independent, honest, and meaningful conversations that cut through the noise.

Through free education, community, and networks, we break down barriers in transaction banking, and give a platform to the voices that matter—from SME business owners to emerging and developing markets.



#### tradetreasurypayments.com



## **ABOUT ICC DSI**

The Digital Standards Initiative (DSI) is a global initiative based in Singapore, backed by an international Governance Board comprising leaders from the International Chamber of Commerce (ICC), Enterprise Singapore, the Asian Development Bank, the World Trade Organisation and the World Customs Organisation.

The ICC Digital Standards Initiative aims to accelerate the development of a globally harmonised, digitalised trade environment, as a key enabler of dynamic, sustainable, inclusive growth. We engage the public sector to progress regulatory and institutional reform, and mobilise the private sector on standards harmonisation, adoption, and capacity building.

## www.dsi.iccwbo.org

# **Companies attended**

CargoX C4DTI Complidata Enigio ETR Digital Finastra HSBC ICC DSI ITFA ICC DSI ITFA Lloyds Bank Matalan Prima Trade Secro SemFi

Trade Treasury Payments (TTP)



# Trade digitisation's bumpy road to interoperability



