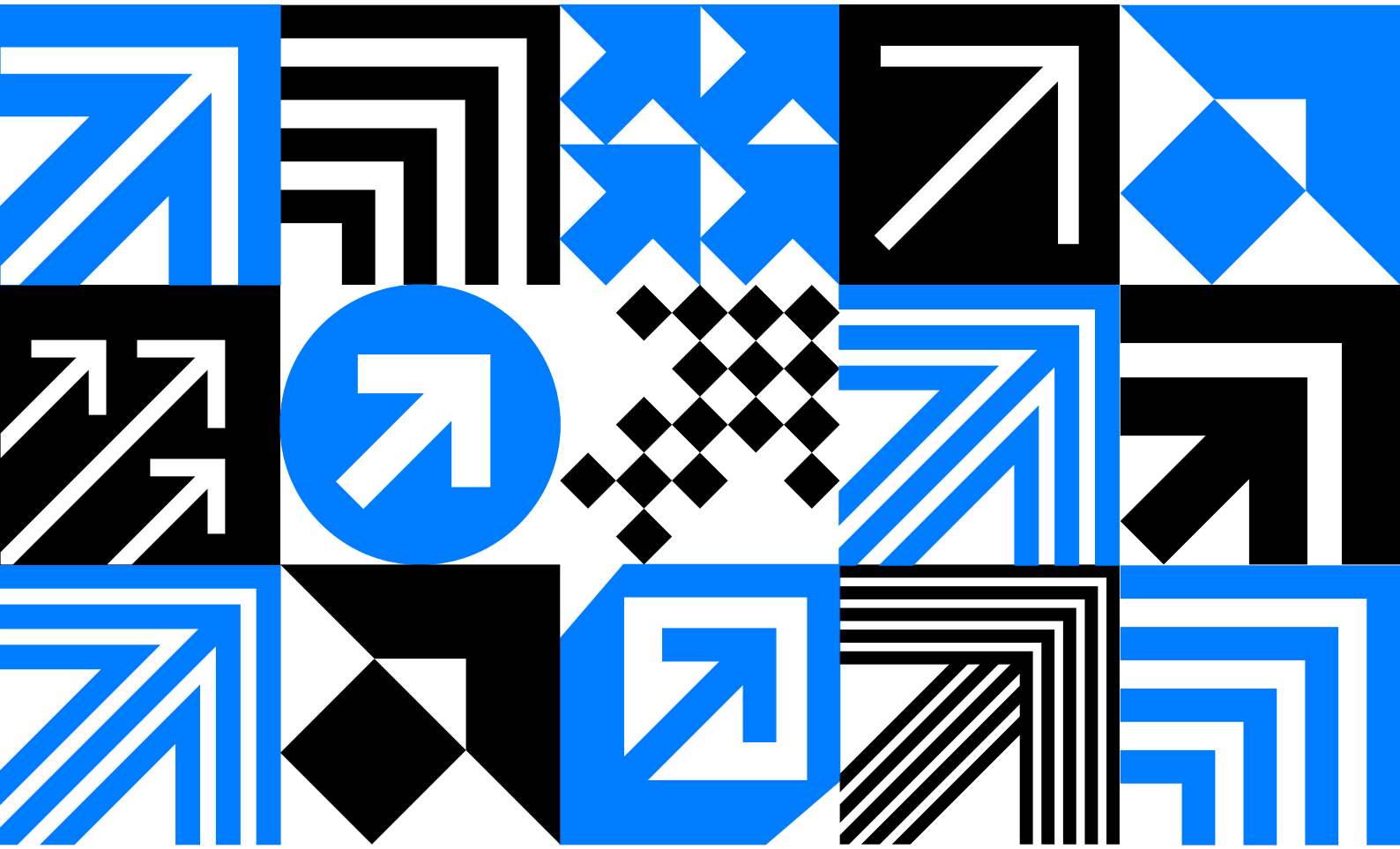
ICC United Kingdom

Next-generation trade corridors

Building digital trade superhighways



MAKING TRADE CHEAPER, FASTER
SIMPLER, SUSTAINABLE

Contents

Abbreviations used in this report

ABS	Association of Banks in Singapore
AI	Artificial Intelligence
AML	Anti-Money Laundering
API	Application Programming Interface
AWS	Amazon Web Services
BIC	Bank Identifier Code
BL	Bill of Lading
BOC	Bank of China
CMOC	China Molybdenum Co.
CO_2	Carbon dioxide
COFCO	COFCO Industrial Food
CTR	Control Tracking Registry
D/P	Documents against Payment
DBS	DBS Bank
DCSA	Digital Container Shipping Association
DLT	Distributed Ledger Technology
DRC	Democratic Republic of Congo
DvP	Delivery versus Payment
eBL	Electronic Bill of Lading
ERP	Enterprise Resource Planning
ERG	Eurasian Resources Group
ESG	Environmental, Social, and Governance
EU	European Union
FX	Foreign Exchange
HMM	Hyundai Merchant Marine
ICBC	Industrial and Commercial Bank of China
ICC	International Chamber of Commerce
IMDA	Infocomm Media Development Authority of Singapore
ISBP 745	International Standard Banking Practice for the Examination of Documents under Documentary Credits
ISIN	International Securities Identification Number
ITFA	International Trade and Forfaiting Association
KTDDE	Key Trade Document and Data Elements
LC	Letter of Credit
LEI	Legal Entity Identifier
LME	London Metal Exchange
MCP	Model Context Protocol
MLETR	UNCITRAL Model Law on Electronic Transferable Records
MSME	Micro, Small, and Medium Enterprises
NGO	Non-Governmental Organisation
PIL	Pacific International Lines
PINT	Platform Interoperability API
RFID	Radio Frequency Identification
SGTraDex	Singapore Trade Data Exchange
SME	Small and Medium-sized Enterprise
SWIFT	Society for Worldwide Interbank Financial Telecommunication
TBML	Trade-Based Money Laundering
TFR	Trade Finance Registry
UCP 600	Uniform Customs and Practice for Documentary Credits
UNCITRAL	United Nations Commission on International Trade Law
UN/CEFACT	United Nations Centre for Trade Facilitation and Electronic Business
UOB	United Overseas Bank
vLEI	Verifiable Legal Entity Identifier

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Section 1

Executive summary

In this report, we set out a vision for how to digitalise global trade corridors at pace and scale and ensure the trading system is fit for the 21st century.

In this report, we outline a vision for digitalising global trade corridors at pace and scale, ensuring the trading system is fit for the 21st century.

Today's trade corridors resemble an outdated road network: slow, fragmented, and unfit for the demands of modern global commerce. Twenty-first century trade requires digital trade corridors (superhighways) that enable cheaper, faster, simpler trade underpinned by technology, interoperable data, and connected digital infrastructure. This shift will unlock $10 trillion plus[1] in efficiency gains and economic growth, enhance supply chain resilience, and foster more inclusive and sustainable trade. Achieving this ambition requires a clear vision for transforming the global network of trade corridors consistently, while prioritising resources at the same time.

The **ICC Digitalising Global Trade: Roadmap to interoperability and trust at scale** outlines the steps needed to create an open, interoperable digital trade environment. This report complements the roadmap with a practical vision for where to start and focus resources, supported by real-world case studies to illustrate how key trade processes function when digitalised.

In practical terms, modernising a national road network would not involve upgrading every road at once, which would be costly, inefficient, and time-consuming. Priority would be given to main trunk roads carrying the largest volumes of traffic. The same principle should inform trade corridor modernisation.

The two main arteries of international trade are the Maritime Silk Route and the Transatlantic Trade Route. Together, they carry over $4 trillion in global trade and facilitate the largest flows of trade finance. The first step is to connect the strategic trade finance and logistics hubs: China, India, the Netherlands, Singapore, the UAE, the UK and the US.

Each hub represents a global financial centre, major international port or transhipment point and benefits from advanced infrastructure (policy, legal, regulatory, digital) and a foundation of trust. Research and development resources, such as the UK-based Digital Trade Test Bed, and public and private sector investment should now be focused on connecting the hubs to meet the goals of the ICC roadmap. This will create a digital trade superhighway along the main artery of global trade and accelerate the transformation of the global trade corridor network, with other corridors connecting as they become digitalised.

Chris Southworth
Secretary General, ICC United Kingdom

1 See References section for sources

NEXT STEPS

Prioritise key trade corridors for digitalisation

Focus initial investments on the main arteries carrying the highest volumes of trade—namely, the Maritime Silk Route and the Transatlantic Trade Route.

Use a phased approach rather than attempting to digitalise all corridors simultaneously, ensuring resources are efficiently allocated to maximise impact.

Policy implication: Governments and regulators should identify strategic hubs and main corridors as priority areas for digital infrastructure upgrades.

Connect strategic trade logistics and finance hubs

Focus on connecting major logistics and financial hubs — China, India, the Netherlands, Singapore, the UAE, the UK and the US — through harmonised digital systems.

Enable smaller or regional corridors to integrate into the digital superhighway gradually.

Policy implication: Provide incentives for cross-border collaboration between ports, trade finance institutions, and customs authorities.

Establish open, interoperable digital trade environments

Implement the **ICC Digitalising Global Trade: roadmap to interoperability and trust at scale**.

Develop common standards, protocols, and APIs that enable the seamless exchange of trade, logistics, and financial data across jurisdictions and platforms.

Encourage collaboration between public and private stakeholders to avoid fragmented digital solutions.

Policy implication: Promote international agreements or frameworks on data interoperability and digital trust in trade.

Leverage advanced technology to simplify and accelerate trade processes

Encourage the adoption of technologies such as eCustoms, eShipping, ePayments, blockchain, and AI for predictive logistics and risk management.

Target simplification and automation of key trade processes to reduce time, costs, and human error.

Policy implication: Implement regulatory sandboxes to test and scale innovative digital trade solutions securely.

Fill 'last-mile' gaps...

- Identify cross-border interoperability gaps across the major trade finance and logistics hubs.
- Strengthen cross-jurisdictional dialogue.
- Prioritise foundational trade architecture to enable solutions to scale — data standardisation, systems interoperability, legal and regulatory alignment, interoperable digital identity infrastructure.

Policy implication: Establish 'Task and Finish' Groups to catalyse and accelerate tasks and foster cross-jurisdictional dialogue.

Prioritise investment to accelerate the benefits of trade digitalisation

- Allocate public and private sector investment to accelerate the interoperability of major trade finance and logistics hubs.
- Learn from the past — invest in scalable, open, interoperable solutions.
- Apply a simple test criteria to all investment — make trade cheaper, faster, simpler for SMEs: ensure all investment delivers an open, interoperable trade system.

Policy implication: Build impartial expertise into all procurement frameworks, focus investment on proven, scalable solutions that benefit everyone.

Promote inclusive and knowledge sharing

- Ensure digital trade infrastructure benefits all participants, including SMEs and emerging economies.
- Design solutions that keep pace with the merging of physical and financial supply chains as trade digitalises.
- Develop and publish case studies and reusable toolkits, playbooks and guides to promote best practice and accelerate learning.

Policy implication: Ensure working groups are inclusive and represent all trade stakeholders.

Incentivise the phase-out of paper

- Follow the lead of Bimco and the Digital Container Shipping Association and set targets to phase out acceptance of paper documents by 2030.
- Align phase-out targets with other jurisdictions and peer institutions to promote consistency of adoption of electronic trade documents.
- Regulatory bodies, insurance and financial institutions should add use of paper documents to risk registers.

Policy implication: Send a clear signal to the market that trade is digitalising, with clear timeframes for the non-acceptance of paper-based documents and processes.

Who the report is for

There is a responsibility on every stakeholder to promote trade systems that are fit for purpose for the 21st century. However, there is a particular duty on the trade finance and logistics hubs across the major trade corridors to lead by example.

These are the major trade finance and logistics hubs across the Maritime Silk Route (Europe–Gulf–Asia) and transatlantic trade route (Europe–US). The report is also aimed at specific roles for which this is important for investment and resource prioritisation, which include:

- Chief executive officers, chief financial officers, non-executive directors and boards
- Investors
- Treasurers, accountants, finance and legal teams
- Compliance, procurement and supply chain management teams
- Customs, carriers, ports
- Policymakers, regulators, lawmakers
- International institutions

FACTSHEET

These facts illustrate some of the real-world benefits of digital superhighways as evidenced in the case studies referenced in this report. This evidence builds on the mounting number of case studies[2] demonstrating the benefits of digitalised trade.

100% courier cost eliminated

Digital transfer of acceptance and Bill of Lading surrender

75% settlement time saved

Shipment-to-payment settlement

100% traceability

Cobalt shipments from mine to battery manufacturer

70% reduction in false positives

Compliance screening errors resolved automatically by AI-powered platform

2 See References section for sources

70% verification cost saved

Automated cross-border document verification

80% processing time saved

Electronic customs declaration processing time

99% faster processing

Electronic bill of lading handling

95% accuracy

AI-driven document classification and extraction for trade compliance

200% increase in SME access to finance

Access to working capital enabled through real-time trade verification

100% interoperability for electronic bills of lading

Seamless exchange of electronic bills of lading across different platforms

Section 2

Introduction

The trade ecosystem

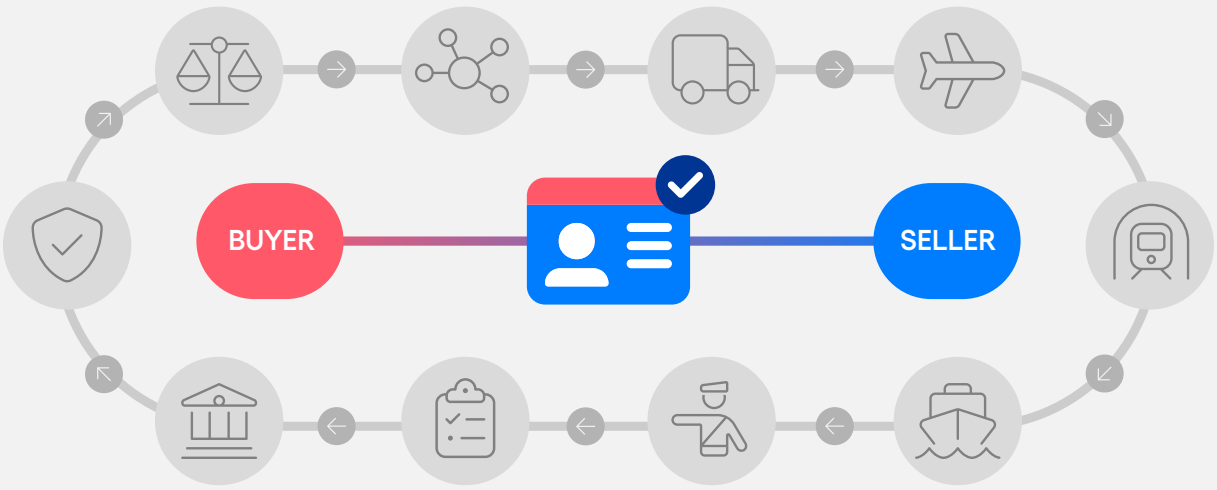
By ecosystem, we mean all actors and processes associated with trade transactions — including buyers, sellers and all relevant services (customs, insurance, finance, regulators, solution providers, legal, transport, logistics etc.).

Digitalisation in this context means standardising and automating all processes across the entire trade ecosystem — eContracts, eCustoms, ePayments, eSignatures and eTransactions — with the entire ecosystem underpinned by interoperable laws, data standards and cross-border digital identities.

A digital superhighway is where the entire ecosystem is fully digitalised, interoperable and automated end-to-end across a trade corridor. Where all processes are cheaper, faster and simpler.

Aspects of digital trade superhighways are in operation but no trade corridor is fully digital and interoperable across the whole trade ecosystem in today's world. The priority now is to ensure the major trade finance and logistics hubs are connected to enable trade digitalisation to happen at pace and scale across the main arteries of global trade.

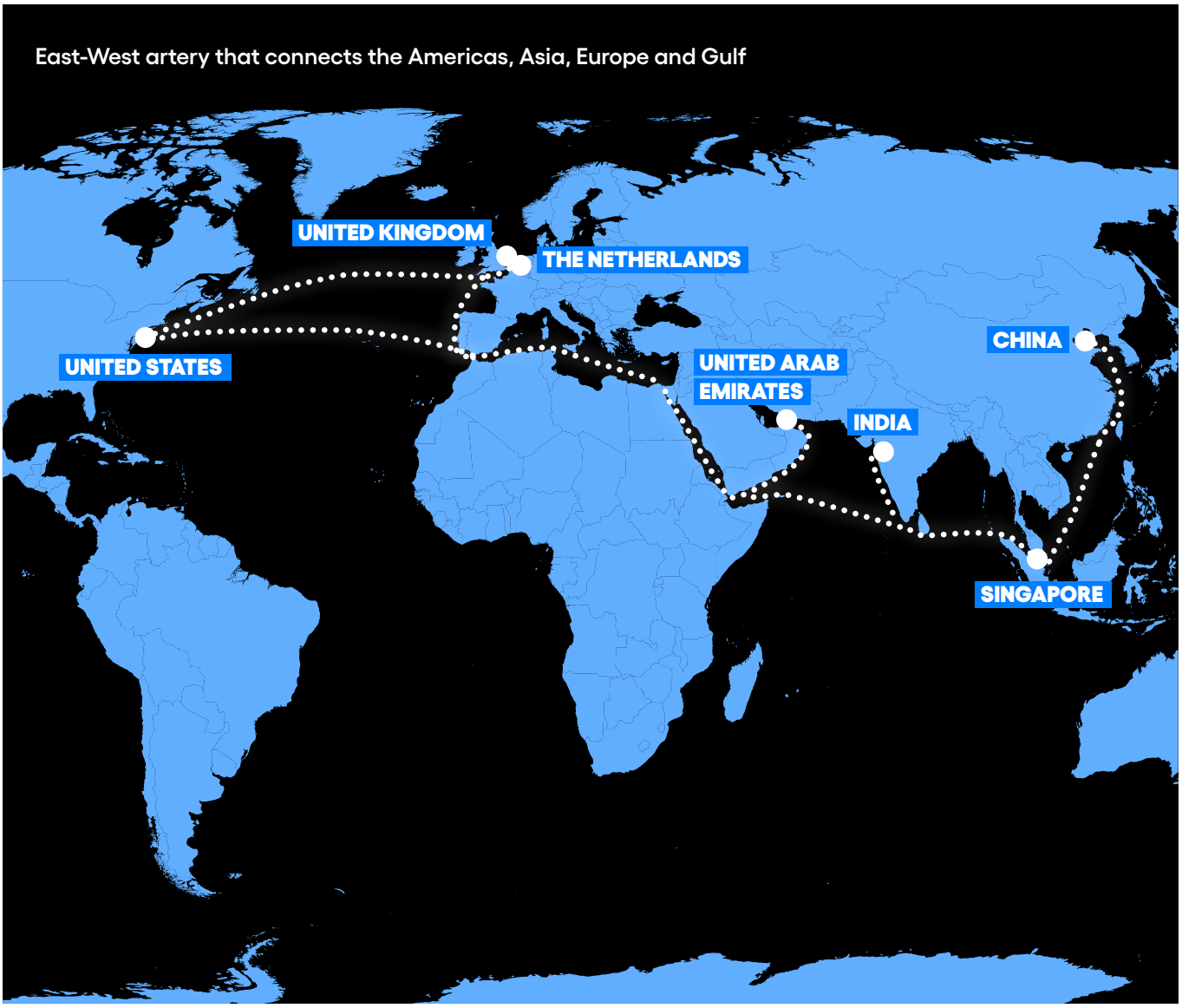
By trade ecosystem, we mean all actors and processes associated with trade transactions and automating all processes across the whole trade ecosystem — eContracts, eCustoms, ePayments, eSignatures, eTransactions and cross-border digital identities. In time, every process will be digitalised and all data standardised and able to flow between actors, platforms, systems and jurisdictions in a way that is not possible today.



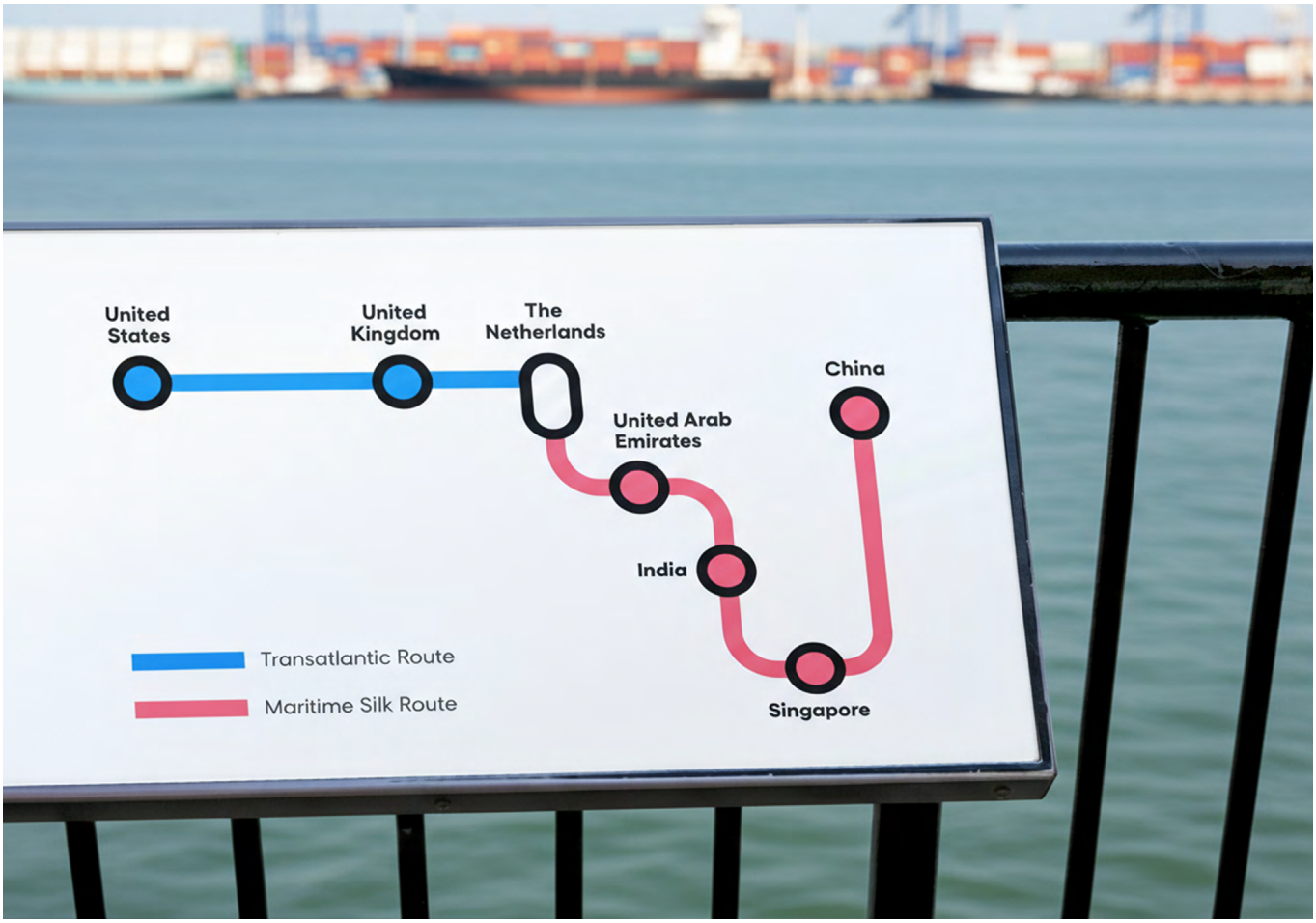
The arteries of global trade

The global trading system is a complex web of approximately 150 major maritime trade corridors supported by over 3,000 trade agreements between countries and regions.

Within this network, there is an East-West artery that connects the Americas, Asia, Europe and Gulf. Today, this artery is as relevant as it was 200 years ago in handling the bulk of global trade and trade finance encompassing the Maritime Silk Route (Europe–Gulf–Asia) and the transatlantic trade corridor (Europe–US).



Connecting trade finance and logistics hubs



Across the main artery of international trade sit seven trade finance and logistics hubs: China, India, Singapore, the Netherlands, UAE, UK and the US. These hubs are global finance, trade, transhipment, innovation, legal, technology and finance centres within the global trading ecosystem.

Aligning and connecting these seven major trade finance and logistic hubs is a step forward to accelerating the pace and scale of trade digitalisation worldwide. All hubs have most of the necessary legal, policy, regulatory and digital infrastructure in place and have the capability to help drive innovation and best practice for all other trade corridors.

Establishing an open, interoperable trade environment across these seven trade finance and logistics hubs is a logical starting point for modernising the global trade corridor network.

Three key challenges

1

Coordination and strategic thinking

The Maritime Silk Route is a shared global asset, developed by traders over millennia for the public good. No single country owns or controls the trade route and there is no obvious coordination or incentive mechanism to bring these countries together to digitalise this vital artery of trade. There is a complex web of bilateral and multilateral agreements but these do not focus on the multi-nodal arteries of trade, such as the Maritime Silk Route.

2

Interoperability and connectivity

Whilst there is momentum to digitalise trade infrastructure at a national, jurisdictional level and a growing number of bilateral digital trade agreements, there is not the same focus on cross-border interoperability and systems connectivity between jurisdictions across multi-node trade corridors.

3

Siloed dialogue

In the paper-based trade environment, physical (shipment) and financial supply chains are separate and disconnected. In the digital economy, both supply chains merge, facilitated by modern technology. Unlocking the economic benefits of trade digitalisation at pace and scale, requires a systems approach where all stakeholders are engaged and working together on scalable solutions.

Benefits of trade digitalisation

Trade digitalisation offers a multitude of proven benefits. The opportunity is to catalyse connectivity across the major trade finance and logistics hubs to scale these benefits to all companies across all jurisdictions in the shortest timeframe possible. Benefits include:

FINANCE

- Improved cash control and management
- Improved audit and reporting
- Reduced risk
- Access to short-term working capital
- Security of payment
- Speed of execution
- Improved liquidity
- Better access to finance

COMPLIANCE

- Reduced fraud, regulatory risk
- Reduced risk of loss, theft, or forgery associated with paper documents
- Speedier company authentication and verification times
- Greater transparency and improved supply chain relationships
- Reduced cost of meeting regulatory requirements
- Real-time monitoring and decision-making

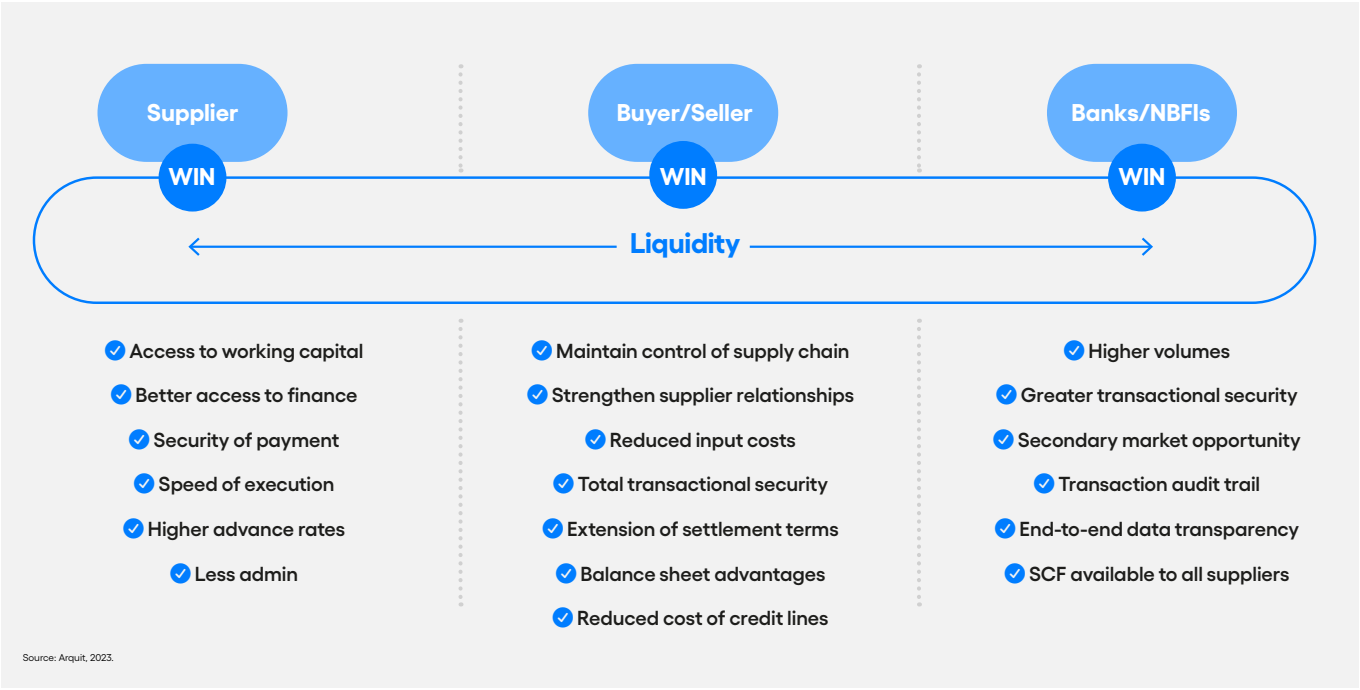
EFFICIENCY

- Reduced administrative cost
- Reduced waiting times, border checks and faster crossover the border processes
- Eliminating courier-related delays and printing processes
- Reduced delays and exposure to disruption
- Reduced intermediary costs — insurance, brokerage, demurrage fees
- Addressing bottlenecks
- Smarter resource allocation
- Increased security, enhanced trust and reliability

SUSTAINABILITY

- Greater supply chain transparency
- Improved consumer confidence and supply chain relationships
- Standardised data sharing and integration opportunities
- More accurate and cheaper supply chain reporting
- Reduced ESG risk
- Enhanced operational resilience, mitigating vulnerabilities to external disruption
- Less waste and reduced use of paper

Finance benefits



Source: Arquit, 2023.

Section 3

Insights into 21st century trade

The following three articles illustrate the direction of travel for 21st century global commerce.

The future is fully automated trade and finance

PROFESSOR SARAH GREEN
Head of Digital Assets and Trade Finance, D2 Legal Technology

Atomic settlement looks set to revolutionise trade finance. The term refers to a form of settlement that is conditional upon both delivery and payment both occurring at the same time. Whilst delivery versus payment (or DvP) arrangements are hardly new, distributed ledger technology (DLT) systems allow for the DvP method to extend across multiple linked transactions; essentially by making the settlement of each transaction leg conditional upon the settlement of all the others i.e. the whole chain is automated. DLT also allows for instant settlement and, whilst this might not be regarded as an advantage in all contexts, its possibility expands the functionality of future payment systems. This can only be a good thing.

Atomic settlement on a blockchain is achieved through a combination of blockchain technology and smart contracts:

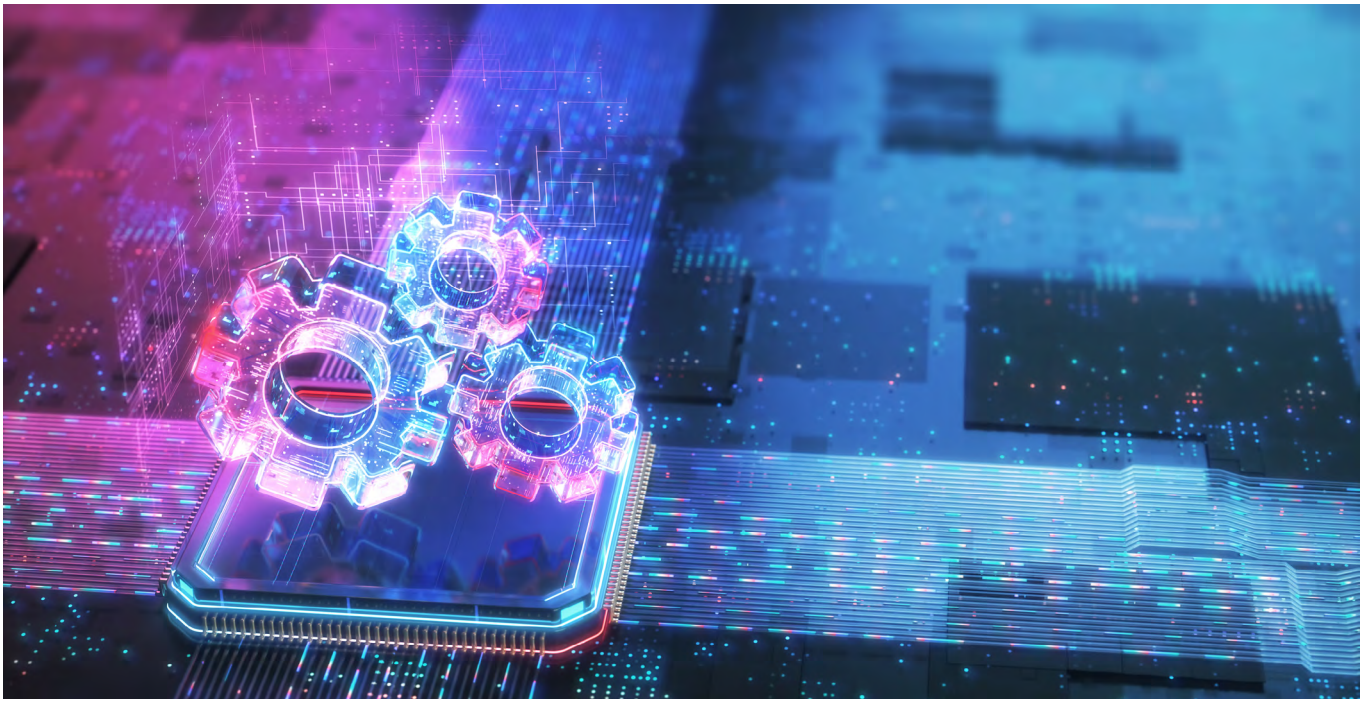
Blockchain technology: Blockchain provides a decentralised and immutable ledger where all transactions are recorded. This ensures that once a transaction is added to the blockchain, it cannot be altered or deleted, providing a secure and transparent record of all transactions. This, along with decentralisation, is the main reason why intermediaries are not needed. There is no need for a centralised administrator or record-keeper because everybody has access to the same information and control.

Decentralised consensus: Blockchain relies on a decentralised consensus mechanism, such as proof of work or proof of stake, to validate and confirm transactions. This ensures that all participants in the network agree on the validity of the transactions, further enhancing security and trust.

Smart contracts: Smart contracts are self-executing contracts with the terms of the agreement directly written into code. They automatically enforce the terms of the transaction, ensuring that both parties fulfil their obligations simultaneously. This simultaneous execution is the essence of atomic settlement, as it eliminates the need for intermediaries and reduces the risk of default.

Transaction finality: In atomic settlement, the transfer of assets and the corresponding payment occur simultaneously. This means that either both the asset and the payment are exchanged, or neither is. This all-or-nothing approach ensures that there is no risk of one party defaulting after the other has fulfilled their obligations under the transaction.

Transparency and auditability: All transactions on the blockchain are visible to all participants, creating a transparent and auditable record. This transparency is what has led to such ledgers as being “trustless” or, in other words, systems that can be trusted so that parties do not have to be.



This new means of settlement is a significant advancement for international trade for several reasons:

Efficiency: Atomic settlement ensures that transactions can be completed instantaneously, reducing the time lag between trade execution and settlement. This efficiency minimises the risk of default and enhances liquidity in the market. Instant settlement is not always desirable, particularly for FX trades, where it would lead to significantly increased liquidity requirements and potentially compromised Payment v Payment processes. It remains, however, highly advantageous as a facility in other contexts.

Security: By using blockchain technology, atomic settlement provides a secure and transparent method for completing transactions. This reduces the risk of fraud and error, as every transaction is recorded and immutable.

Cost reduction: Traditional settlement processes often involve multiple intermediaries, each adding their own fees. Atomic settlement streamlines the process, reducing the need for intermediaries and thus lowering transaction costs.

Global reach: Atomic settlement can facilitate cross-border transactions seamlessly, making it easier for businesses to engage in international trade without the complexities and delays associated with traditional methods.

Trust and transparency: The use of smart contracts in atomic settlement ensures that all parties adhere to the agreed terms, fostering trust and transparency in international trade.

Atomic settlement, therefore, has the potential to enhance the efficiency, security, and cost-effectiveness of trade finance, making it a valuable tool for businesses operating in the global market. As a process, it offers several advantages over traditional settlement methods that often involve multiple intermediaries, such as banks and clearing houses. Whilst, in the traditional context, these intermediaries are necessary to ensure that both parties fulfil their obligations, they also bring with them an increased risk of fraud and error. Essentially, the greater the number of parties involved in the transaction chain, the greater the risk of delays and increased costs. Additionally, traditional settlements can take several days to complete, which can tie up funds and create liquidity issues for businesses. The instantaneous nature of atomic settlement on the other hand means that funds are not tied up for extended periods, thereby improving liquidity for businesses. In short, atomic settlement constitutes a new generation of payment capability.

The electronic invoice as a negotiable instrument

NICK DAVIES
Director, International Centre for Digital Trade and Innovation

As Professor Green has set out in her article, a combination of digital technology (blockchain, smart contracts, digital assets) and forward thinking legislative change on electronic trade documents, digital assets and data means we now have the ingredients we need to make the whole process of contracting, domestically and internationally, cheaper, faster and simpler.

At the same time, governments globally are looking to enhance growth, promote financial inclusion, leverage new technologies such as AI and deliver more sustainable global supply chains. All of this hinges on digitalising international trade.

The digital contract

Although an invoice is not itself an element of a contract under English law, to give one example, it is the basis upon which contracts are instigated and is evidence of the intentions of the parties to supply and be paid for goods and services. An invoice provides a wealth of practical, known information: what is being bought and sold, who is buying and selling and what jurisdictions the buyer and seller are in. If properly leveraged, this information can reduce risk and cost as well as generate new sources of finance.

That contract of which the eInvoice is evidence can and indeed is now being executed digitally with the full sanction of the law. Data relevant to the contract is being captured in reliable systems which enable all parties with an interest in the contract (including banks, carriers and governments) effectively to be witnesses to the contract as it is instigated, as it progresses and as it is completed. Their 3rd party interests in the execution and outcomes of that contract can be assured and indeed with the right checks and balances those interests could be represented by AI-based agents.

Designed correctly, the electronic invoice becomes much more than an informal and multi- format start of a contract, but the instigation of an assured digital transaction in which all the conditions of the contract and obligations of the parties are coded in from the start.

In such circumstances the risks — credit, settlement, misrepresentation associated with traditional paper-based contracts are reduced and managed much more effectively up front. The eInvoice — a document with which all traders are familiar and which their existing ERP systems are set up to create forms conclusive evidence of a properly formed contract to which supplier and payer are committed and in which the means of managing valuable consideration on each side is assured. All trade thus can become cheaper, faster and simpler.

eInvoice marketplace: Improving access to SME finance

As far back as 2020, central banks, such as the Bank of England, were suggesting the creation of an "open finance hub" as a logical extension of the introduction of open banking and as a means of closing the trade finance gap in the SME sector in the UK which was then estimated by the Bank to be some £22 billion.

The Bank's proposal was to create a hub to link direct digital evidence of a trading entity's behaviour, cashflow and resilience with lenders whose decisions about financing would be better informed but without huge cost to or effort by either them or their customers.

Project Aperta is a welcome step forward as a pilot initiative that fosters greater dialogue between central banks, regulators and finance communities in Brazil, Hong Kong, India, Mexico, the UK. However, this initiative is a good example of a well-intended but silo'd dialogue that is not sufficiently connected to wider dialogue on the digitalisation of trade and trade finance. There is also no public commitment or plan to scale the outcomes of this initiative.

The likes of India and Singapore also have sophisticated invoice registry infrastructure to reduce fraud and tax evasion and promote financial inclusion. This infrastructure is missing in other trade finance hubs, like the UK.

The new UK legislative framework and technology that underpins it, are good examples of modern infrastructure but not yet fit for 21st century cross-border, interoperable trade. There is every reason why the likes of the UK should help take a lead and follow countries like India and Singapore in setting up a market for eInvoice liquidity, based on a national registry for standardised digital invoices wherein working capital can be made available and competed for in ways that are well understood by the UK's world leading capital markets.

Making this happen

We don't need to look far to see the solutions. Most of the capabilities needed for the creation of this market already exist and in many cases are being used in some areas of the international trade market such as India and Singapore. As governments are the facilitators of growth, there is a model within reach which would not only enable the likes of the UK and others to develop native SME industry but would provide interoperability with similar markets elsewhere so that benefits would soon be realisable in all the major markets. This can then be a model for an interoperable and global infrastructure with good cashflow management outcomes at both ends of international transactions. With support from governments and regulators to make this happen, there is every prospect of this generating significant benefits to all areas of global trade in a medium term timeframe.

Establishing a cross-border global Digital Identity Framework

Based on a roundtable on Digital Identities for Cross-Border Trade organised by ICC United Kingdom, International Centre for Digital Trade and Innovation (iC4DTI) and Global Legal Entity Identifier Foundation (GLEIF), June 2025

Digital business identity is increasingly recognised as a foundational element for transparency, security, efficiency, and trust across international trade and supply chains. It enables secure identification of parties involved in customs, payments, logistics, and trade finance, thus unlocking significant economic and operational benefits.

Rather than replacing existing national and regional digital identity systems, a practical way forward would be to interconnect them via interoperability bridges e.g. Legal Entity Identifier (LEI), national/ regional digital identities, Bank Identifier Code (BIC) and International Securities Identification Number (ISIN). International best practice schemes include the ASEAN Unique Business Identity Number (UBIN), India and Singapore's alignment of digital identity schemes for trade. This approach avoids further fragmentation and leverages established public digital infrastructure such as national business registries, allowing global cross-referencing while respecting data sovereignty and privacy.

A key requirement is a neutral, decentralised, and interoperable identity layer governed collectively by governments and regulators, not controlled by commercial interests. Public-good frameworks like the Legal Entity Identifier (LEI) and its verifiable extension (vLEI) or national company number serve as practical examples of trusted identity systems that, if connected, provide a scalable trust and security environment on which commercial solutions can add value.

Challenges include an overly complex identity landscape, the lack of agreement on common identity infrastructure and low adoption rate of Legal Entity Identifiers. Building cross-border consensus, prioritising digital identities for business, trialling interoperability bridges, incorporating public digital identity infrastructure into commercial solutions and publishing practical use cases are all helpful solutions.

Trusted, interoperable digital identity infrastructure is essential to the future of cross-border trade. Whilst there is growing momentum to reform laws and remove legal barriers to digitalise trade and harmonise trade data, progress on interoperable digital identity infrastructure is more limited and hampering the ability to scale economic benefits.

Section 4

Case studies

The case studies set out in this report are not intended to be extensive but to build on existing evidence and help illustrate what a digital 'superhighway' will look like at scale using real-world examples of the use of technology across the trade ecosystem.

>>> EXPLAINER

eCUSTOMS

eCustoms refers to customs and border procedures are digitalised and automated, replacing manual paperwork with cheaper, faster, simpler digital processes. This speeds up clearance, over the border processing times, reduces errors and fraud, and ensures better regulatory compliance. Real-time data exchange between customs, traders, and stakeholders makes cross-border trade more efficient, transparent, and secure, streamlining global supply chains.

CASE STUDY 1

AI technology cuts customs declaration processing time 80%

Casper Customs operates at the intersection of global trade and regulatory compliance, providing customs clearance services, processing 6,000 declarations per month for major brands such as Boots, No7 and large food importers. Prior to adopting Sedna's automation solution, all documentation was managed manually via email, creating bottlenecks and compliance risks. Today, Sedna's Customs Declaration Automation extracts data directly from commercial documents, generates declarations within customs software, and enables staff to perform quick due diligence before submitting with a single click. This case demonstrates the tangible benefits of adopting automated, interoperable customs tools, delivering faster, simpler, and more sustainable trade operations.

BENEFITS

CHEAPER

Metric	Before	After	Benefit
Manual data entry	100% of entries re-typed from emails	Automated extraction from documents	Eliminated most labour-intensive entry

FASTER

Metric	Before	After	Benefit
Declaration processing time	45 minutes per declaration	Under 10 minutes per declaration	Over 80% time reduction
Daily hours spent re-typing data	Multiple hours daily	Minimal manual input required	Staff time reallocated to higher-value tasks

SIMPLER

- All documents are processed automatically from emails without requiring clients to change their workflows.
- Declarations can be generated and submitted with a single click.
- High-volume, standardised shipments can proceed without manual review, reducing operational complexity.

Enabling sustainability

By becoming fully paperless, Casper Customs has eliminated the need for physical documentation, reducing both waste and reliance on office-based processes. Employees can now work seamlessly from any location, allowing the company to operate with a minimal workforce and significantly improve efficiency. These changes have delivered a major sustainability impact across the business while also benefiting customers: pre-arrival customs processes are now completed well in advance through Sedna's AI Workflows, leading to reduced border delays and faster clearance times.

Next steps...

As Sedna builds on its strong presence across the UK, Europe, and the US, the company is now expanding its offering to additional customs systems, with a particular focus on Asia and Australia. Beyond customs, Sedna is enabling deeper data sharing through its APIs and MCP technology, creating stronger connectivity with government platforms and complementary SaaS solutions. The company is also extending the use of its document parsing technology beyond customs applications, with early use cases already underway in Noon Reports, Bills of Lading, and Statements of Fact analysis.

With the requirements around Brexit and food imports handling 4,000 different products per truck, manual processing was never going to be viable—it was time-consuming and prone to errors. We needed a solution that would eliminate this bottleneck."

NIKKI SAYER, MANAGING DIRECTOR, CASPER CUSTOMS

CASE STUDY 2

Digital transformation delivers 25% workforce productivity improvement

The Trade Transformation Challenge, held during the ICC Global Banking Commission Meeting in February 2025, showcased how digital innovation can transform trade operations in emerging markets. Among three finalists, China Systems won the competition for its solution enabling City Bank Bangladesh to become the first bank in the country to fully digitalize trade finance operations. Through its platform, City Impex, powered by Eximbills Enterprise (EE) and Customer Enterprise (CE), City Bank streamlined end-to-end trade finance processes, cutting costs, increasing efficiency and facilitating customer growth. This case demonstrates how reliable digital trade platforms can drive systemic transformation in developing economies.

BENEFITS

CHEAPER

Metric	Before	After	Benefit
LC document management	Manual, paper-based submissions, courier dispatches	Generated and stored digitally, accessible in real time	Eliminated printing and courier costs
Staffing	Dedicated staff for LC paperwork	Existing finance staff manage online	Lower operational expenses for corporates
Bank overheads	Limited throughput per team	25% more processing capacity with same staff	The same team can handle a much larger trade volume

FASTER

Metric	Before	After	Benefit
LC application processing	Several days of manual back-and-forth	Same-day digital processing	Accelerated trade deal execution
Draft LC preparation	Bank-driven, customer waits for turnaround	Customers prepare drafts themselves	Reduced delays
Document retrieval	Manual release, days of waiting	Customers access SWIFT messages, LC copies, and vouchers in seconds	Improved transparency and speed
Impact	Slow trade flows, bottlenecks and rejections	Real-time visibility of LC	Higher customer satisfaction, faster deal closure, smoother trade flows

SIMPLER

- Workflows are now end-to-end digital, replacing paper- and branch-dependent manual processes.
- The complexity of operations has been reduced, lowering error rates and inefficiencies.
- Customers benefit from real-time visibility of LC usage and limits, instead of relying on manual follow-ups.
- Greater transparency supports faster and better-informed business decision-making.

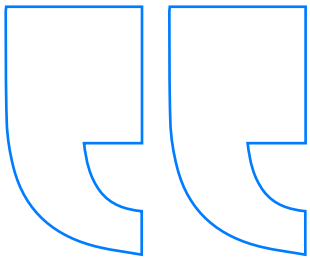
Enabling sustainability

The move to digital trade finance has eliminated thousands of pages of paper-based documents. By offering a live, secure digital repository, City Bank improves transparency, compliance, and audit readiness while lowering environmental impact.

For customers, removing courier dispatches, printing, and manual processes directly reduces their carbon footprint and administrative burden. The initiative supports Bangladesh's gradual alignment with global digital trade standards and ESG commitments. The City Bank was ranked the #1 sustainable bank in Bangladesh for 2024 by the Central Bank.

Next steps...

The digital transformation of the trade finance industry has been a long time coming but the City Bank digital journey has created a momentum which will pioneer the complete digital transformation of the trade finance industry in Bangladesh.



In the past issuing an LC with all the paperwork, the branch authorisations and processing would typically take some days. Since, CITY IMPEX, we have had cases where from sitting at their PC a remote customer can have an LC issued with a digital copy in the hand of the beneficiary on the other side of the World within 45 minutes of initiation — transformative!

FARUK AHMED, DEPUTY MANAGING DIRECTOR, HEAD OF TRADE SERVICES DIVISION, CITY BANK BANGLADESH

>>> EXPLAINER

eTRANSACTIONS

eTransactions refers to the secure digital exchange of goods between buyers and sellers. This includes technologies that facilitate electronic invoices, contracts, bills of lading and bills of exchange. eTransactions are processed seamlessly across jurisdictions, enabling trusted, end-to-end digital trade across digital trade corridors.

CASE STUDY 3

Electronic bills of lading cut processing times 75%

Matalan Retail Ltd successfully completed a fully digital, end-to-end documentary collection from India to the UK using an electronic bill of lading (eBL), working with WaveBL, and a electronic promissory note, working with Enigio, all facilitated by Lloyds. By replacing paper with secure digital instruments, the company significantly reduced transaction time, cost, complexity, and carbon impact. The transaction reduced touch points from 14 paper-based processes to nine, streamlining workflows while maintaining full traceability and security. This case demonstrates the tangible benefits of adopting interoperable digital trade tools, particularly for documentary collections, delivering faster, simpler, and more sustainable trade.

BENEFITS

CHEAPER

Metric	Before	After	Benefit
Processing time per eBL	Labour intensive, high administration workload	Real-time document visibility reducing administration	75% time reduction
Printing costs	Required for every shipment	Fully eliminated	100% cost saving
Courier costs	£75 per transaction	Eliminated thanks to digital transfer of acceptance and BL surrender	£75 saved per transaction

FASTER

Metric	Before	After	Benefit
Time from acceptance of documentary collection to eBL surrender (India to UK)	30 days	Average: 24 hours / Fastest: 2 hours	Up to 29 days faster
Time to surrender documents at port	Manual handling with potential delays	Instant digital surrender	Eliminates delays and avoids detention/demurrage fees (potentially up to £200k/year for Matalan)

SIMPLER

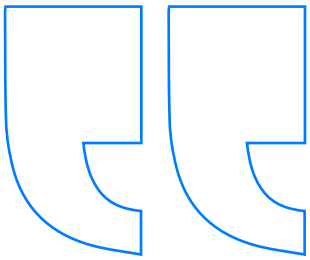
- The process as a whole is simpler.
- Removes the need to courier documents, previously done up to nine times for the same flows conducted using paper.
- eBLs are easily surrendered within minutes.
- Collections are accepted via a digital signature.
- Provides greater flexibility with trade documents accessible from any location.
- Removes the requirement to be office-based.
- Three processes have been removed while completing digital documents.
- Enabling sustainability

Enabling sustainability

By adopting digital documents, Matalan gains the ability to easily retrieve and analyse trade data for auditing and reporting purposes. All documents are fully traceable and securely stored, enhancing transparency and compliance. This shift also contributes to the company's ESG objectives by significantly reducing paper consumption and eliminating the carbon footprint associated with couriering physical documents. Once fully digital, Matalan is expected to save over 500,000 sheets of paper annually within its trade finance operations.

Next steps...

As Matalan continues to scale up digital collections and open accounts, the company is streamlining business operations, reducing transaction time, complexity, carbon footprint impact, and cost for both itself and its suppliers. Current digital trade flows include India, China, and the UK, with plans to expand across the wider supplier base in Asia. A particular focus is on Bangladesh, a major source of Matalan's imports, where MLETR adoption would significantly simplify document flows through the local banking system. Matalan is aiming for fully digital trade in line with the DCSA target of 2030.



Once more trade routes open under MLETR ruling, the increase in benefits will be significant for Matalan, faster, simpler and secure trade with no delays or documents being lost. We are looking forward to scaling up our digital trade"

SU ASHWORTH, SENIOR TRADE FINANCE SPECIALIST

CASE STUDY 4

Electronic transactions cut transaction times from one week to one day

Global Tea, in collaboration with Lloyds Bank and Enigio, successfully executed a series of fully digital transactions using Enigio's *trace:original* digital envelope solution. This platform enables the creation and management of secure digital original documents with all the useful properties of paper, but without its limitations.

In practice, Maersk issued an electronic seaway bill via *trace:original*, which was transferred to Global Tea in Kenya (the exporter). Global Tea placed all necessary trade documents, including original shipping documentation and collection schedules, into a documentary collection basis, as agents for their bankers. Lloyds then arranged for a digital promissory note to be issued by Global Tea UK (the importer), enabling the release of documents in accordance with the terms of the collection.

By eliminating paper and courier delays, the process significantly reduced transaction costs, increased speed, and enhanced visibility and oversight. This case demonstrates how digital documentation can deliver faster, cheaper, simpler, and more sustainable trade.

BENEFITS

CHEAPER

Metric	Before	After	Benefit
Document transfer	Physical transport of documents by courier	Instant digital transfer	Courier costs eliminated: timely delivery of goods

FASTER

Metric	Before	After	Benefit
Transaction time (documentary collection)	Around 1 week	24 hours	Up to 6 days saved
Document transfer	Several days via courier	Few minutes	Near real-time movement of documents

SIMPLER

The removal of paper simplifies operations by:

- Reducing the risk of lost or delayed documents.
- Improving oversight and visibility of transactions.
- Ensuring more predictable and secure document flows.

Enabling sustainability

By eliminating paper and courier shipments, Global Tea has drastically reduced its carbon footprint on its Kenyan trade flows, evidencing the environmental benefits of digital documentation.

Next steps...

Digital trade adoption is gaining momentum, with industry targets aiming for 100% of container and bulk carriers to use electronic bills of lading by 2030. Global Tea is leading the way, demonstrating that digital trade can enable more seamless and efficient supply chain operations. Currently, around 10% of their trade volumes are digitalised, and the company plans to work with its banking partners to expand digitalisation across additional flows in the coming months. For digital trade to become widespread, broader engagement from carriers, banks, and corporates will be essential, with platforms such as Enigio's *trace:original* being used to issue electronic bills of lading.

Before we switched to trace:original, it could take up to a week to manage the documents required to complete international shipments. Now we do it in just a few minutes once a week, allowing us to meet deadlines with ease and improve our service to suppliers and logistics partners."

RHODRICK KALUMPHA, GROUP FINANCE CONTROLLER, GLOBAL TEA

>>> EXPLAINER

eSHIPPING, FREIGHT AND PORTS

eShipping refers to shipment, freight and port documentary procedures being digitalised and automated with real-time data sharing. By replacing paper-based processes such as bills of lading, cargo manifests, and customs declarations with interoperable digital equivalents, stakeholders across the supply chain can coordinate more efficiently. This reduces delays at ports, lowers operational costs, and enhances visibility from departure to delivery, making global shipping faster, greener, and more resilient.

CASE STUDY 5

Electronic documents make trade 30% cheaper and 75% faster

On 9 April 2025, Singapore's Infocomm Media Development Authority (IMDA) and the Beijing Two-Zone Office successfully executed the world's first fully paperless, interoperable documents against payment (D/P) cross-border trade transaction. This landmark trade financing operation involved the export of canned food by COFCO Industrial Food from Xiamen Port (China) to Singapore Port, with Yit Hong Pte Ltd as importer and Pacific International Lines (PIL) as the shipping carrier. Key banks involved are the Bank of China (BOC) and the Industrial and Commercial Bank of China (ICBC) as remitting banks, with Singapore's DBS Bank (DBS) and United Overseas Bank (UOB) serving as collecting banks, supporting the D/P transaction through the use of electronic Bills of Lading (eBLs).

The project aimed to tackle longstanding inefficiencies in paper-based trade by digitising and legally enabling the entire D/P transaction chain, including document circulation and payment. TradeTrust-enabled eBLs, which are compliant with the UNCITRAL Model Law on Electronic Transferable Records, were used, functioning equivalently to their paper version and enabling legal title endorsement.

The eBLs were seamlessly transferred across TradeTrust-ready platforms, supported by Astron's crypto-less public blockchain, ensuring regulatory compliance with no business-on-chain data or cryptocurrency. The end-to-end international trade processes, covering contract signing, document circulation, and payment settlement, were digitalised, with fully online electronic document flows between carrier, exporter, importer, as well as collecting banks.

> **"We have developed an open, neutral, inclusive and globally interconnected trade digitalisation network. This project validates the potential of distributed technology in streamlining trade procedures, enhancing compliance and security, and reducing transaction costs in digitalising the entire trade chain."**
>
> YANG ZETAO, CEO, AEOTRADE

BENEFITS

CHEAPER

Metric	Before	After	Benefit
Document circulation costs	Traditional cross-border paper document mailing	Digital transmission	30% cost reduction

FASTER

Metric	Before	After	Benefit
Shipment to payment settlement (COFCO Industrial Food)	20 days	5 days	75% time saved with improved capital turnover efficiency
Documentation handling time (Yit Hong)	Manual & courier delays	Reduced by 60%	Faster goods claims without courier delays
BL processing time (PIL)	5–10 days (paper BL)	8 minutes (eBL)	99 % reduction in processing time and elimination of transit loss risk

SIMPLER

- System flexibility: each trading party can integrate TradeTrust into their existing IT system or choose to use their preferred TradeTrust-Ready platform (e.g. AEOTrade or SGTraDex), avoiding the need for all stakeholders to join a single system.
- No need for central rulebooks or intermediaries: Each party operates autonomously while maintaining legal integrity.
- Streamlined workflows: paperless, interoperable, and automated across jurisdictions.
- Enhanced trade security and credibility, mitigating risks such as document fraud, loss or tampering.

Enabling sustainability

The solution supports transparent and environmentally sustainable supply chains by eliminating the need for paper and courier transport, significantly reducing the carbon footprint. It enables greater visibility across trade operations and aligns with the UN Sustainable Development Goals by promoting more efficient, responsible, and climate-conscious global trade practices.

Next steps...

This pioneering cross-border D/P transaction slashed settlement times by 75%, cut document handling costs by 30%, and reduced bill of lading processing from 10 days to just 8 minutes. It proves that legally compliant, interoperable trade is not only possible, it's faster, cheaper, and more sustainable.

Moving forward, IMDA and the Beijing Two-Zone Office will explore broader end-to-end interoperable digital trade scenarios. These efforts will engage more countries, regions, industries, and business types, inviting participation from cargo owners, financial institutions, logistics providers, and other stakeholders to jointly advance the digital transformation of global trade and financial services, injecting new momentum into the sector.

CASE STUDY 6

Interoperable electronic bills of lading mark step change for trade

Despite years of available technology, adoption of electronic bills of lading (eBLs) remained slow due to platforms operating in silos, requiring all participants in a transaction to use the same provider. This fragmentation prevented scale, blocking an estimated USD 6.5 billion in annual cost savings and USD 40 billion[3] in additional trade potential.

To address this, the Digital Container Shipping Association (DCSA), together with carriers, shippers and leading eBL providers, developed an interoperability framework built on three pillars: a Platform Interoperability (PINT) API enabling cross-platform transfers: a Multilateral Legal Framework providing standardised agreements: and a Control Tracking Registry ensuring secure visibility of eBL ownership.

In May 2025, HMM and its shipper Suzano completed the first live, standards-based interoperable eBL transaction, successfully sending an eBL between two different platforms in real time. This pilot demonstrated that digital title-data transfer between platforms is both technically and legally viable, laying the foundation for scalable adoption.

BENEFITS

CHEAPER

Metric	Before	After	Benefit
Industry-wide cost of paper-based BLs	High direct costs for printing, handling and couriering	Digital eBL exchange between platforms	Unlocks potential annual savings of USD 6.5 billion
Global trade potential	Fragmented, friction-heavy processes	Seamless interoperability between providers	Could contribute up to USD 40 billion in additional trade (Source: McKinsey & Company)

FASTER

Metric	Before	After	Benefit
Time to transfer BLs	Days, with courier delays between providers	Real-time, minutes	Eliminates courier delays and accelerates title transfer
Title data exchange	Restricted within a single platform	Immediate transfer across providers	Demonstrated instant data transfer in pilot

SIMPLER

- Removes the requirement for all parties to use the same eBL platform.
- Reduces duplication of processes and manual re-entry of data.
- Cuts multiple handoffs across the bill of lading lifecycle.

3 Digitizing trade documentation and the bill of lading | McKinsey

The foundation for digital shipping documentation is in place. Seamless eBL exchange is no longer a myth, it's here. The time to act is now."

NIELS NUYENS, CPO, DCSA

Enabling sustainability

The shift from paper to digital bills of lading reduces reliance on courier shipments, cutting associated CO_2 emissions. At the same time, the control tracking registry enhances transparency by providing a secure, time-stamped record of document ownership and custody.

Next steps...

The interoperability framework is aligned with DCSA standards and global trade digitisation goals, including the ICC's digital standards and the UN/CEFACT standards framework. Following the successful pilot with HMM, Suzano, and eBL providers CargoX and edoxOnline, other IGP&I-approved providers are onboarding. Planned transactions include Enigio and CargoX with HMM and a Fortune 500 shipper in Q2, and WaveBL and TradeGo with ONE and a large freight forwarder. The target is 100% eBL adoption by 2030 across container shipping, with interoperability as the foundation for global scale.

>>> EXPLAINER

PUBLIC DIGITAL INFRASTRUCTURE

Public digital infrastructure, in this context, refers to digital platforms and systems that support financial and trade transactions. By enabling secure, fast, and transparent exchanges of data and payments, these systems reduce friction, lower costs, prevent fraud and tax evasion, improve access to finance and enhance trust among participants. They play a crucial role in connecting banks, regulators, and businesses within global trade ecosystems.

CASE STUDY 7

Digital identities cut costs 70% and processing times 90%

The STDFIX platform, developed by Herong Digitech with support from the Global Legal Entity Identifier Foundation (GLEIF), enables the integration of the Legal Entity Identifier (LEI) and its digital counterpart, the verifiable LEI (vLEI) into cross-border trade documentation. By replacing manual processes and paper-based verifications with secure, interoperable digital workflows, STDFIX automates the majority of verification steps and ensures full traceability across multiple document types, including certificates of origin, invoices, contracts, and customs documentation. This approach significantly reduces costs, accelerates processing, simplifies operations, and lowers carbon footprints, demonstrating the measurable benefits of LEI- and vLEI-enabled digital trade tools for regulated international exchanges.

BENEFITS

CHEAPER

Metric	Before	After	Benefit
Verification cost per document	Paper authentication, courier expenses, and manual verification tasks	Using the LEI & vLEI in cross-border trade documentation (certificates of origin, invoices, contracts…)	Up to 70% cost reduction

FASTER

Metric	Before	After	Benefit
Cross-border document verification time	2–5 days per document	Under 10 minutes via STDFIX	Up to 90% faster processing, accelerating payment cycles and shipment releases

SIMPLER

Integration of the LEI and vLEI as legal entity identifiers within STDFIX significantly reduces the need to reconcile conflicting data across multiple registries

Over 85% of process steps, including confirming sender identity and validating signatures, are automated

Automation minimises reliance on legal and compliance staff, streamlining operational workflows

Since integrating LEI and vLEI into our cross-border trade documentation via STDFIX, we've seen remarkable improvements. Verification costs per document dropped by nearly 70%—no more courier fees, stamps, or manual checks. What used to take days—like verifying certificates of origin—now happens in under 10 minutes. Our team no longer needs to reconcile conflicting registry data, and over 85% of identity and signature verification steps are now fully automated. Not only is the process faster and simpler, but we've also cut paper-based workflows by more than 80%, supporting our ESG and carbon reduction targets. This is a real game-changer for international trade."

GUOHUA LIU, GENERAL MANAGER, FMW AUTOMATION TECHNOLOGIES, SHANGHAI

Enabling sustainability

The STDFIX enables fully paperless documentation, reducing CO2 emissions associated with printing, couriering, and storage. In pilot use, participating companies reported a 85% decrease in paper-based workflows for regulated cross-border exchanges. The LEI & vLEI traceability further supports ESG compliance in supply chains.

Next steps...

The STDFIX is launched and operational in the Chinese market, with the LEI established as the standard for corporate digital identity verification and the vLEI serving as a trusted authentication for electronic signatures on digital trade documents. The Herong Digitech team is developing an international mutual recognition of trust frameworks.

CASE STUDY 8

Invoice registry increases liquidity 220% and unlocks USD 100 billion in MSME working capital

The Reserve Bank of India's Trade Receivables electronic Discounting System (TReDS) — powered by MonetaGo's Secure Financing platform - has significantly de-risked the receivables discounting market, enabling the rapid growth of MSME financing. Since the beginning of 2023, the platform has recorded a 206% increase in MSMEs receiving financing and a 220% surge in MSME liquidity.

More recently, Singapore's Trade Finance Registry (TFR) was launched in March 2023 to restore trust in the commodity trade finance sector following a series of fraud scandals and corporate collapses. Developed by the Association of Banks in Singapore in collaboration with financial institutions and powered by MonetaGo's Secure Financing platform, the TFR forms part of a national strategy to digitally transform trade through secure, privacy-preserving infrastructure. In two years, the platform has onboarded over 50 banks and facilitated the verification of over USD 450 billion in trade transactions. Designed to address cross-border duplicate financing, global hashtag registry solutions are enabling real-time detection of duplicate documents and validation through trusted trade data sources to reduce fraud and tax evasion, without exposing sensitive information.

BENEFITS

BETTER ACCESS TO FINANCE: INDIA

- 206% increase in newly onboarded MSMEs
- 220% increase in MSME liquidity
- Unlocked over USD 100 billion annually in working capital

CHEAPER

- Reduced the cost of unnecessary legal, compliance, and operational resources

FASTER

- Reduced verification and authentication times from weeks to real time
- Enabled financiers to make faster credit decisions, reduce internal friction, and unlock liquidity sooner for their customers

SIMPLER

- Reduced complex manual processes to as little as five key data fields, enabling faster simpler decisions — eliminating 2–3 manual steps typically required in trade document validation

The ABS is committed to upholding the integrity of and confidence in Singapore's trade finance sector, and the TFR provides a very important layer of security to prevent multiple financing on the same trade transactions with multiple banks. This leads to greater trust among both financiers and borrowers. We are pleased to have selected MonetaGo to develop the TFR, taking advantage of their experience in this niche area and the use of their global hash registry to detect fraud across national borders. TFR will be handed over to ABS and its appointed operator after go-live."

MRS ONG AI BOON, DIRECTOR, ASSOCIATION OF BANKS IN SINGAPORE

Enabling sustainability

These outcomes demonstrate how secure trade data registries empower sustainable supply chains, particularly by enhancing access to finance for underserved MSMEs and enabling more equitable trade participation.

Next steps...

MonetaGo is transforming global trade finance fraud prevention through a standards-first approach, harnessing encryption, hashing, and confidential computing to deliver a secure and interoperable infrastructure. Built for scalability and regulatory alignment, the platform ensures interoperability and compliance while preserving data privacy and is now expanding globally through partnerships with organisations such as SWIFT and regional deployments across ASEAN, the Middle East, and Africa.

>>> EXPLAINER

TRANSPARENCY AND COMPLIANCE

eTransparency and compliance refers to digitalised and automated tracking, verification, and audit processes. By digitising documentation and embedding automated compliance checks, businesses can reduce errors, detect risks earlier, and meet regulatory requirements more efficiently. Secure, traceable data flows enhance accountability, while reducing reliance on manual processes and physical paperwork, paving the way for faster, fairer, and more reliable global trade.

CASE STUDY 9

AI cuts trade document processing times by 80%

Tesselate has transformed trade finance operations using next-generation Agentic AI technology, tackling persistent inefficiencies in complex workflows such as Letters of Credit (LC), collections, and loan servicing. By replacing manual, fragmented processes with intelligent, end-to-end orchestration, Tesselate reduces processing time, cost, and complexity while enhancing transparency and compliance. This system ensures secure, traceable, and compliant automation across fragmented platforms, including Microsoft, AWS, Google Cloud, and private infrastructures. Combining AI "Process" Agents, ERP integration via Hive.t, and institutional knowledge tools like Kinetic Brain, Tesselate enables frictionless execution from user intent recognition to document handling and compliance screening.

BENEFITS

CHEAPER

Metric	Before	After	Benefit
Transaction processing costs	Manual entry, document handling, redundant compliance screening	Automated orchestration	30–40% reduction in costs

FASTER

Metric	Before	After	Benefit
End-to-end processing time for LC issuance	4.5–8 days	< 1 day	Up to 80% time reduction
Submitting the LC application (manually at branch or via portal), checked by branch/middle office	0.5–1 days	LC issuance agent completes initiation	< 2 hours
Risk assessment and decision making (AML, KYC, credit assessment)	1–3 days	Automated risk assessment and decision making	2–3 hours
LC draft review and agreement	2–3 days	Automated draft review and agreement	< 30 minutes
Final issuance of LC	1 day	Final issuance of LC	1 hour

SIMPLER

- Removal of manual steps (five to seven steps removed in LC initiation).
- Automation of document handling and system handoffs.
- Frictionless front-to-back transaction flow.
- Initiation of complex transactions directly from ERP via natural commands.

Enabling sustainability

Agentic orchestration creates fully digital audit trails with embedded compliance and provenance checks. This unlocks transparency across the trade lifecycle, facilitates ESG traceability, and reduces reporting risks over time.

Next steps...

The Agentic AI solution supports trade digitalisation, interoperability, and enterprise AI governance. At its core, the flexible Agentic Framework orchestrates workflows securely across Microsoft, AWS, Google Cloud, and private infrastructures via Tesselate's Model Context Protocol (MCP), enabling platform-agnostic adoption.

Pilot implementations are underway with leading banks, targeting high-impact workflows such as LC issuance, collections, and loan servicing. Expansion will follow a phased, modular approach, allowing institutions to progress from guided automation to full agentic orchestration while minimising disruption and maximising value.

CASE STUDY 10

AI reduces compliance errors 70% and improves accuracy 95%

TradeScreen is an AI-powered platform that automates trade document validation for compliance, operations and risk teams. It extracts and compares data across documents like bills of lading, invoices and letters of credit, checks for sanctions screening, maritime risks (vessel tracking), goods screening, trade-based money laundering (TBML), cross-documentary checks for alignment with UCP 600[4]/ISBP 821[5] rules all in one interface. Powered by Trademo's proprietary vision models and exclusive Global Trade Knowledge Graph, it helps reduce errors and assess transaction risks faster.

BENEFITS

CHEAPER

Metric	Before	After	Benefit
Compliance screening false positives	High manual workload	Automated resolution	70% false positives
Document compliance costs	Multiple tools, duplicate processes	Centralised platform	Operational savings across teams

FASTER

Metric	Before	After	Benefit
Trade document review time	Manual and slow	AI-powered automation	70% productivity gain
Compliance decision-making	Fragmented & delayed	Real-time risk scoring	Faster, policy-driven approvals
Compliance checks	Spread across platforms	1,000+ real-time checks	Dramatically reduced turnaround time

SIMPLER

- The process as a whole is simpler.
- AI-driven classification and extraction achieving 95%+ accuracy
- Centralised compliance checks across sanctions, AML, UCP 600, maritime, and TBML
- Automated discrepancy flagging to reduce manual intervention
- Straight-through processing and configurable workflows integrated with existing systems
- Improved collaboration across compliance, operations, and risk teams
- Live vessel tracking to assist in maritime checks and validate eBL

4 Uniform Rules for Documentary Credits (UCP 600) — eBook — ICC Academy

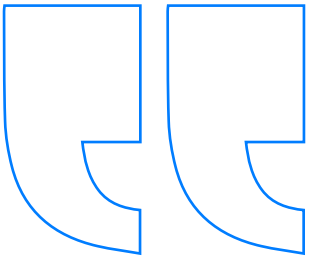
5 Set of Guidance Papers on Recommended Principles and Usages around UCP 600 Rules

Enabling sustainability

TradeScreen promotes sustainability by eliminating paper-heavy processes through full digitisation of trade documents. This reduces manual effort and waste while ensuring compliance with global trade regulations.

Next steps...

TradeScreen will add more financial crime checks and case management. These enhancements, paired with a reporting dashboard, will give teams a single platform for end-to-end visibility, faster investigations, and stronger risk control.



Our collaboration with Trademo exemplifies how innovative technology can transform global trade. TradeScreen delivers seamless digitisation, advanced automation, and 1000+ robust compliance checks for trade transactions, empowering businesses to navigate complex trade environments with confidence and agility."

YANJKA REGAN, PRINCIPAL PRODUCT MANAGER, IBM CONNECTED TRADE PLATFORM

>>> EXPLAINER

eTRACEABILITY

eTraceability refers to the ability to track goods and their associated data across every stage of the supply chain, from origin to final destination. By using technologies such as Radio Frequency Identification tags, QR codes, and digital twins, trade actors can monitor shipments in real time, ensure data integrity, and verify the provenance of materials. Enhanced traceability helps meet regulatory requirements, supports sustainability reporting, and builds trust by enabling transparent, auditable, and tamper-resistant records across borders.

CASE STUDY 11

Traceability technology reduces costs 70% and improves transparency 100%

The Democratic Republic of Congo (DRC) supplies more than 70% of the world's cobalt, a critical mineral used in electric vehicle batteries, smartphones, and energy storage systems. While large-scale mining operations are highly mechanised, artisanal and small-scale mining remains widespread and often takes place under unsafe, unregulated conditions. To address compliance and transparency challenges in cobalt sourcing, Glencore, Eurasian Resources Group (ERG), and China Molybdenum Co. (CMOC) launched ReSource in 2019. The digital platform provides end-to-end traceability of cobalt shipments from the DRC to battery manufacturers, supporting both ESG objectives and regulatory compliance through tamper-resistant tracking and independent verification of material provenance.

BENEFITS

CHEAPER

Metric	Before	After	Benefit
Technology cost	High-cost GPS or active RFID	Passive RFID tags and QR codes	70% reduction
Verification & tagging	Manual processes	Streamlined tagging and digital verification	35% reduction in labour cost per shipment

FASTER

Metric	Before	After	Benefit
Time spent on documentation	Several hours	Automated RFID scanning at key chokepoints reduced documentation time to under 20 minutes	Significant time savings and a reduction of 4 days across the shipment tracking process

SIMPLER

- Introduced digital twins and automated recordkeeping
- Eliminated over five manual steps per shipment
- Simplified compliance and operational handovers

We strongly believe that higher transparency along the value chain will increase the sustainability of the metals supply chain, which is essential for the battery industry. Since 2023, 100% of the produced cobalt from Tenke Fungurume and Kisanfu copper-cobalt mines is traced using the ReSource platform."

LIANG WEI JULIE, VP OF ESG, CMOC GROUP LIMITED

Enabling sustainability

ReSource provides 100% material traceability from mine to battery manufacturer. By creating immutable records, enabling secure document uploads, and aligning with ESG reporting standards, it supports compliance with the EU Battery Regulation, the Battery Passport, and LME requirements. It also integrates trade and ESG data to help address Scope III risks and enhance lifecycle transparency.

Next steps...

ReSource is expanding beyond cobalt to other critical battery minerals, including nickel (already piloted), lithium, and graphite. Its modular architecture ensures interoperability with regulatory frameworks such as the EU Battery Regulation, the GBA Battery Passport, and Life Cycle Assessment tools. The next phase will enable broader supply chain adoption and integration of ESG metrics for a wider range of critical minerals.

CASE STUDY 12

Digital workflows make SME trade 60% faster, 15% cheaper

TradeOnChain is redefining how small and medium-sized enterprises (SMEs) conduct international trade. By digitising paper-heavy processes and embedding automation, transparency, and decentralisation at its core, the platform simplifies cross-border transactions that were once costly, slow, and complex.

Among its pilot partners is MPG Instruments, a company specialising in the aerospace and defence sectors. MPG recently completed a pilot with the TradeOnChain platform, which provided a clear and accurate view of what regular use would look like for their business operations.

Through such pilots, TradeOnChain demonstrates how open-source, interoperable tools can make trade more accessible for SMEs, while improving supply chain resilience and sustainability. This case study explores the tangible benefits delivered through digital workflows, from lower costs and faster approvals to simpler compliance and enhanced traceability, showing how TradeOnChain paves the way for more inclusive and scalable global trade.

BENEFITS

CHEAPER

Metric	Before	After	Benefit
Documentation costs per transaction (for MPG Instruments)	Printing and physical filing	Digital process	15% cost reduction (50 cents saved per document)
Licensing costs	Required for traditional platforms	Open-source platform	Fully eliminated ensuring accessibility for microenterprises and startups

FASTER

Metric	Before	After	Benefit
Order approval processing time(for MPG Instruments)	48 hours	33 hours	30% faster
Contract preparation time	Manual, paper-based	Automated digital preparation	Up to 40% faster
Overall approval cycle	Multiple manual steps, fragmented workflow	Smart contracts and verifiable digital identities	Up to 60% faster

SIMPLER

Eliminated three manual steps from document validation, reducing errors and complexity.

We've cut order approval times by 30% — what used to take us 48 hours now gets done in about 33 hours. This change has freed up our team to focus on higher-value work instead of just processing approvals"

MPG INSTRUMENT

Enabling sustainability

At MPG Instruments, the platform has improved supply chain transparency by providing 85% better traceability across all product batches. This enhanced visibility allows the company to quickly identify the origin of goods, track suppliers, and monitor shipping routes when needed. By strengthening its ability to ensure responsible sourcing and react to potential risks, MPG Instruments is building more sustainable and resilient trade practices.

Next steps...

To scale up, TradeOnChain is rolling out pilot programs with SMEs and industrial partners, while engaging banks, logistics providers, and insurers. Its open-source, modular design allows phased adoption depending on each company's digital readiness.

The platform already supports the UNCITRAL MLETR framework and has launched a hybrid crypto/fiat payment system, enabling entrepreneurs in underbanked regions to access global trade. This innovation not only increases flexibility and traceability but also bridges the gap between traditional finance and digital assets in international trade.

Through its partnership with FederItaly, SME onboarding is supported with training and guidance. Next developments include customs integration and AI-driven tools for compliance, contract validation, and risk management, positioning TradeOnChain as trusted infrastructure for inclusive and scalable digital trade.

Catalyst Programme

The Catalyst Programme is an ICC United Kingdom-led initiative to accelerate the digitalisation of trade corridors and global supply chains, focusing on connecting the major trade finance and logistics hubs across the Maritime Silk Route by 2030. The programme is designed to implement the vision set out in this report.

CATALYST

Work with us to accelerate digital trade

We invite companies, banks, customs and other relevant organisations to work with us to accelerate digitalisation and unlock the benefits identified in this report.

Craig Burchell
Catalyst Programme lead
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Aims

The programme aims to align and accelerate implementation by:

- Working together on one trade route connecting major trade finance and logistics hubs
- Testing and scaling open, interoperable solutions that work for all jurisdictions
- Aligning priorities, roadmaps and rollout for greater focus and impact
- Building bridges across the stakeholder matrix and levelling up global knowledge
- Identifying interoperability gaps and connecting ports, customs and finance processes to remove friction, cost and risk and increase profitability
- Avoiding duplication and streamlining approaches
- Showcasing and disseminating best practices and case studies to scale solutions across all trade routes

The programme is unique in its focus on interoperability across a major trade corridor, linking and connecting the major trade finance and logistics hubs. It is an opportunity to work with public and private sector experts in trade, law, business, tech and policy from across the ICC network as well as the International Centre for Digital Trade and Innovation (iC4DTI) and Digital Trade Test Bed (DTT) as a delivery partner.

Section 5

References

This report builds on the mounting evidence of the benefits of trade digitalisation. For more information on key frameworks, business cases and case studies, see the following reports:

KEY FRAMEWORKS

ICC Roadmap to Interoperability and Trust at Scale, International Chamber of Commerce, 2025

ICC Digital Standards Initiative

BUSINESS CASES

Creating a Modern Digital Trade Ecosystem, G7, ICC United Kingdom, 2021

Quantitative Analysis of the Move to Paperless Trade, The Commonwealth, 2022

Study on the ASEAN Digital Economy Framework Agreement, Boston Consulting Group, 2023

The multi-billion-dollar paper jam: Unlocking trade by digitalizing documentation, McKinsey & Company, 2022

CASE STUDIES

The following reports highlight 44 real-world case studies that set out the economic benefits of trade digitalisation with companies of all sizes across multiple sectors and jurisdictions.

Seizing the moment: Unleashing the potential of trade digitalisation, ICC United Kingdom, 2024

Key Trade Documents and Data Elements on the Frontlines, International Chamber of Commerce, 2024

The UK — Southeast Asia Trade Digitalisation Pilots, British Chambers of Commerce Singapore, 2024

ICC United Kingdom

ICC is the world's largest business organisation, representing 45 million companies with 1 billion employees in over 170 countries. The International Chamber of Commerce is the only business organisation with UN Observer Status and acts as a leading voice for business at the UN, G7, G20, World Trade Organization and other major international institutions. ICC United Kingdom is the representative voice for ICC in the UK and provides a mechanism for UK industry to engage effectively in shaping international policy, standards and rules. We are a leading voice on digital trade ecosystems, Co-Founder of the International Centre for Digital Trade and Innovation, supporter of the Digital Trade Test Bed and Co-Chair the B2B Cluster for the Commonwealth Connectivity Agenda.

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International Centre for Digital Trade and Innovation

The International Centre for Digital Trade and Innovation (iC4DTI) is an independent, not-for-profit Community Interest Company established to drive the digital transformation of trade on a global scale. It is a partnership that brings together government, industry, academia to accelerate the pace and scale of trade digitalisation, supporting the ICC Digital Standards Initiative. iC4DTI is co-founded by ICC United Kingdom, HM Revenue and Customs, Tees Valley Combined Authority and Teesside University.

ic4dti.org

Digital Trade Test Bed

The Digital Trade Test Bed is a world-class, £3.5 million research and development facility based at Teesside International Airport in the north east of England. Established in 2025, the facility is part of the largest port regeneration site in Europe and fifth largest port in the UK. It is a public-private partnership led by Teesside University and supported by Tees Valley Combined Authority, ICC United Kingdom and the iC4DTI. DTT promotes open, interoperable data ecosystems that make MSME trade cheaper, faster, simpler and more sustainable. It offers a real-world test environment for innovation, validation and scaling solutions across road, rail, air, sea using IoT, robotics, automation, 5G, AI and immersive technology. The facility is capable of simulating trade corridors, supply chains, ports worldwide.

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