

Building trust in digital trade: technology principles from a business perspective

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6 capabilities needed to accelerate digital transformation

What is digital transformation?

Digital transformation is the rewiring of an organization, with the goal of creating value by continuously deploying tech at scale.

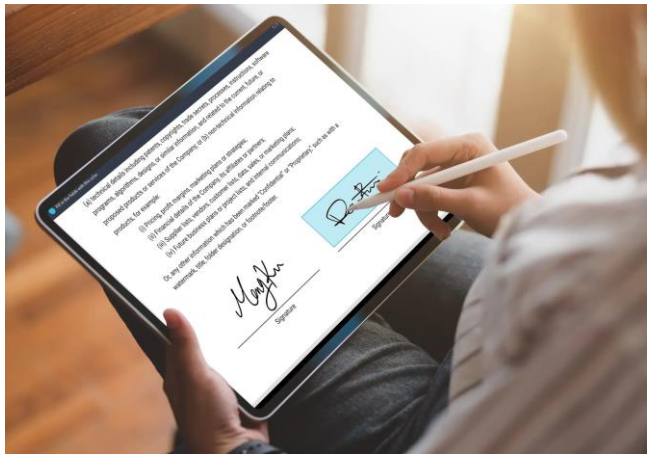
What capabilities are needed to move the needle on digital transformation?

1. Clear strategy focused on business value.
2. Strong talent bench working with the business units
3. Scalable operating model
4. Distributed technology that allows teams to innovate independently
5. **Access to reliable & current data that teams can use as needed**
6. Strong adoption and change management

Source: McKinsey & Company, "What is Digital Transformation?" [Online].
Available: [https://www.mckinsey.com/featured-insights/mckinsey-explainers/what-is-digital-transformation].

Challenges in data access and reliability in supply chains





- Trade transactions involve dozens of participants and roles along international supply chains.
- Each undertakes many interactions in separate and security - encapsulated systems, resulting in digital islands.
- Data transition between these ‘islands’ mostly come with conventional trust mechanisms, like ink signed paper or electronic paper substitutes, such as pdf.
- Authenticity at document level is not enough. Need to trace back single data items to their originators.
- Lack of secure access to reliable information in real-time has commercial, regulatory, and legal implications.
- Problems compound with increased trade relations, quantity of goods and enhanced information density in pursuit of ESG goals.

About Digital Standards Initiative (DSI)

Mission

The ICC Digital Standards Initiative (DSI) aims to accelerate the development of **a globally harmonized, digitalized trade environment,** as a key enabler of dynamic, sustainable, inclusive growth.

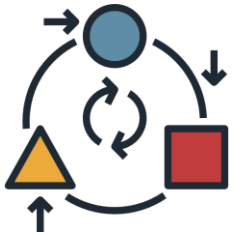
We engage the **public sector** to progress regulatory and institutional reform, and mobilize the **private sector** to align on standards and to adopt and scale digital trade and supply chain processes.

Governance

Our Governance Board sets the strategic direction, objectives, and engagement structure of the initiative annually and comprises the following organizations:

ICC, ADB, Enterprise Singapore, World Trade Organization, World Customs Organization, Organisation mondiale des douanes

Principles & Practices



Adapt & Apply

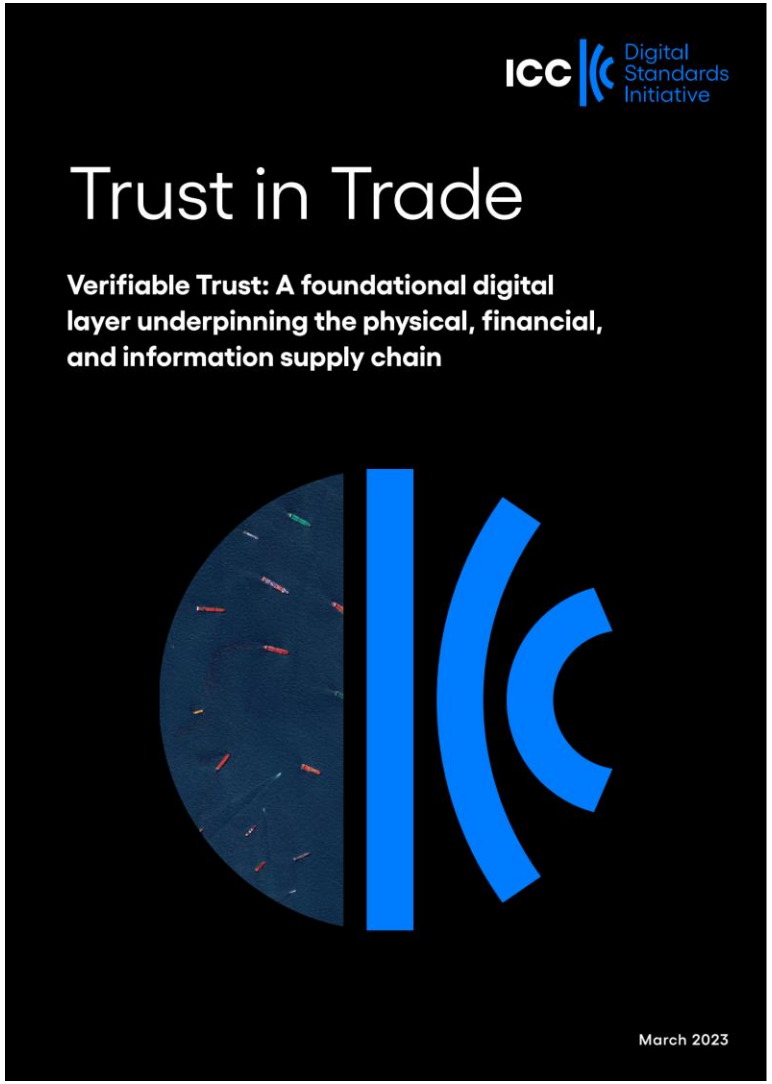


Convene & Collaborate



Transparency & Accessibility

A vision for ecosystem based on verifiable, transitive trust



Verifiable trust: trust is not simply assumed or granted based on reputation or past interactions. Instead, it is based on verifiable evidence and authentication with the use of reliable methods and mechanisms to validate the trustworthiness of each party involved.

Transitive trust: extending trust beyond direct relationships i.e. not limited to direct interactions but also endorsements from trusted entities. If A trusts B and B trusts C, then A can also trust C based on the transitive trust relationship.

A new, verifiable digital layer beneath the information supply chain - the "trust supply chain" - is required by aligning to the following recommended technology principles:

- Zero Trust Architecture
- Digital ID for all parties transacting
- Interoperability for all data, implying alignment with global standards where they exist

Zero Trust Architecture

Concept	'Never Trust, Always Verify’. No one can be trusted by default. Rather than relying solely on a one-time trust established through traditional methods, such as email or document signatures, every interaction is verified based on real-time factors .
Example	• Secure Transmission: The supplier encrypts the invoice and sends it securely to the buyer and the buyer's bank through a protected channel. • Controlled Access: Only authorized individuals with specific roles can access and view the invoice data. Each entity has limited permissions based on responsibilities. • Data Segmentation: All systems are divided into separate networks to contain any security breaches and prevent unauthorized access to the invoice data. • Continuous Monitoring: Real-time monitoring detects any suspicious activities or breaches, triggering immediate alerts and proactive security measures. • Data Encryption: The invoice data remains encrypted at all times, making it unreadable to unauthorized parties.
Benefits	Enhance the security, privacy, and trustworthiness of the transaction while minimizing the risk of unauthorized access or data compromise.

Digital identity for all supply chain actors

Concept	Digital identity ensures secure, signed, and authenticated data sets across multiple borders and organizational boundaries. Actors include exporters, importers, customs authorities, logistics providers, and financial institutions, etc.
Example	vLEI (Verified Legal Entity Identifier) can be used in international trade to ensure transparency and trust between Company A (exporter) and Company B (importer). • vLEI includes verified information about the legal entity, e.g. company ownership, registration documents, and authorized representatives. • Company A accesses the vLEI database to validate Company B's information before entering into a contract. • At border, exporter's digital identity can be securely stored and linked to verified business credentials. Customs authority digitally authenticates exporter's identity to verify supporting docs for customs clearance process.
Benefits	• Increases confidence and mitigates the risk of fraud or unreliable entities. • Streamlines due diligence and improves transparency. • Facilitates secure B2B and B2G interactions in international trade.

Interoperability of data using international standards

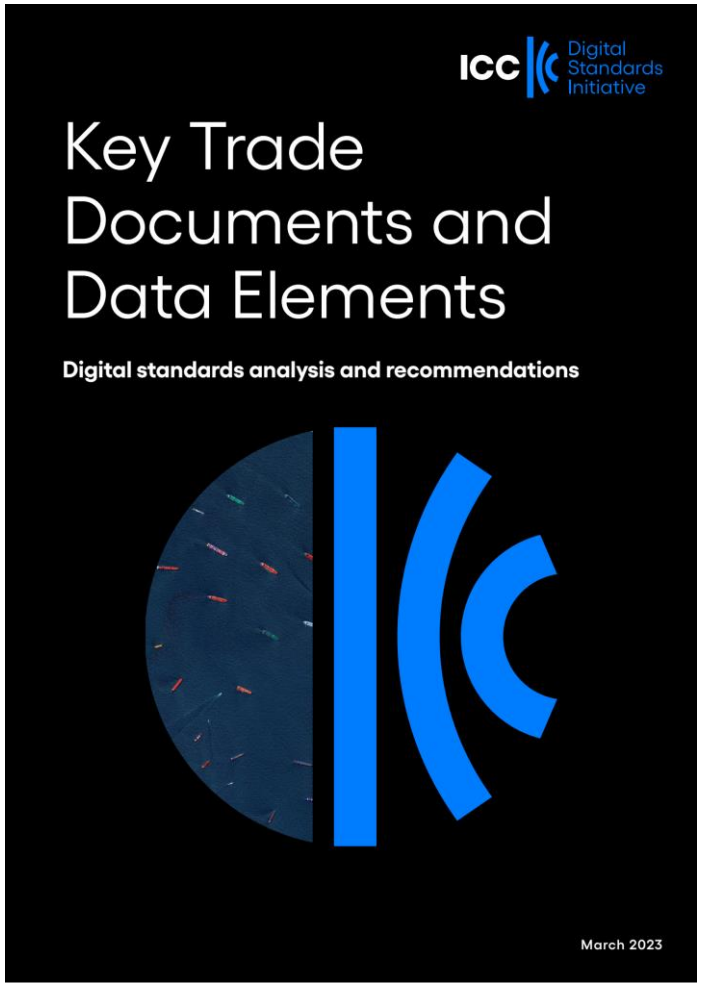
Concept

In a global trade landscape, different stakeholders utilize various digital systems and platforms, often resulting in data silos and inefficiencies.
Interoperability ensures that data can seamlessly flow across different systems, platforms, and jurisdictions, enabling smooth information exchange and collaboration.

Example

Shipper, shipping company and customs authority using different digital platforms.

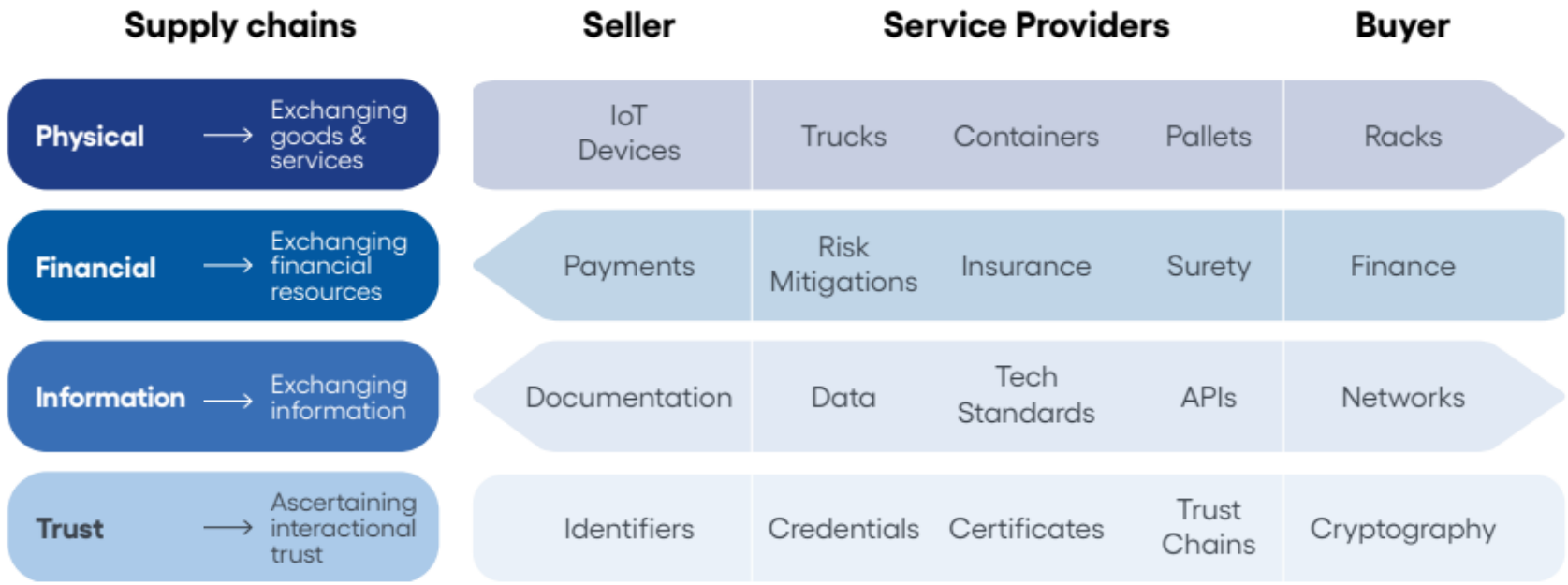
- Without interoperability: Challenging and time-consuming data exchange.
- With interoperability and international standards: Easy sharing of relevant data. Enhanced efficiency and reduced errors in the trade process.



See also DSI report on [Digital trade standards]

Key takeaways

Fig. 1: Supply chain layers, subjects and objects (examples)



A complete supply chain consists of 4 layers: physical, financial, information, and trust layers. Technological and cryptographic mechanisms can be used to establish and monitor trust on a digital level. The use of zero-trust architecture – backed by cryptographically produced verifiability – and digital identities for all transacting parties coupled with technology interoperability will allow trusted data elements to flow seamlessly from one party's system to another's.

ICC Digital Standards Initiative

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Roundtable Registration link: https://shorturl.asia/T1a3A