

Technology in Trade: Applying DLT to Trade Finance

What is Trade Finance?

Whilst most of us broadly understand the general nature of international trade, it is easy to ignore how many parts must move to get something as simple as the coffee you drink to your local store. Trade finance is a key component of most supply chains and underpins global commerce by enabling companies to buy and sell goods across borders while managing payment, credit, and performance risk.

In the world of international trade, buyers and sellers exchange goods, services and capital across borders, enabling countries to access products they cannot efficiently produce themselves while expanding markets for their own industries. Since these cross-border transactions involve longer distances, varied regulations, and greater risks, specialised trade finance solutions play a critical role in ensuring that buyers and sellers can trade with confidence, security and reliable access to capital.

Trade finance is a practice that has been around in one form or another for hundreds of years. In short, the term “trade finance” broadly refers and covers the financial instruments, processes, and institutions that enable global trade. Its core purpose is to reduce the operational risks that arise when buyers and sellers operate across borders, time zones, and legal systems.

At its core, trade finance tackles three fundamental challenges:

1. Risk of non-payment: When selling goods cross-border, sellers may risk not receiving payment after goods are shipped.
2. Risk of non-delivery: Buyer concerns that payment may be made but goods may not be delivered as agreed.
3. Liquidity management: Both sides require capital to manufacture, ship, process or receive goods.

How Trade Finance solves these challenges:

To address key issues faced, a wide range of instruments and structures have been developed over decades, including:

- Letters of credit and documentary credits, which provide payment assurances backed by financial institutions.
- Documentary collections that facilitate the exchange of shipping documents against payment.
- Guarantees and standby letters of credit providing comfort on performance or financial obligations.
- Bills of exchange and promissory notes.
- Supply chain finance, receivables finance, forfaiting, and asset-backed lending.
- Trade credit insurance, mitigating counterparty and political risk.

- Logistics and documentation systems, including bills of lading, warehouse receipts, and certificates of origin.

These often involve multiple intermediaries, repeated checks, paper-based documentation, and fragmented communication channels. As global supply chains become more intricate and real time visibility more important, the trade finance ecosystem is exploring digital transformation to reduce delays, errors, and operational costs.

Distributed Ledger Technology (DLT) represents one of the most promising innovations which could support this evolution.

Applying DLT to Trade Finance

Traditional trade finance processes rely heavily on physical documents and manual administrative input. Bills of lading, invoices, inspection certificates, and insurance policies must be exchanged, verified, and reconciled by multiple parties across different jurisdictions. This handling leads to significant delays, high operational costs, limited transparency, and increased risk of fraud or clerical errors. A single letter of credit transaction, for example, may involve dozens of documents passing through numerous intermediaries, with each party maintaining its own records and conducting its own verification checks.

Distributed Ledger Technology introduces a decentralised, tamper-proof, and synchronised data environment for participants in a trade transaction. Rather than each party maintaining separate records that must be periodically reconciled, DLT enables a shared, immutable record of transactions that all authorised participants can access in real time. This fundamentally changes how trade documentation is created, validated, and stored.

One of the most impactful applications of DLT in trade finance is document digitisation and validation. Trade documents can be issued, presented, and verified in digital form on a distributed ledger, eliminating the need for physical document handling and reducing the risk of document fraud. Digital bills of lading, for instance, can be transferred instantaneously between parties, compared to the days or weeks required for physical document transit.

Smart contracts further enhance efficiency by automating key steps in trade finance transactions. In a letter of credit transaction, a smart contract can automatically trigger payment once predefined conditions are met, such as confirmation of shipment and successful document checks. This reduces the need for manual intervention, accelerates settlement times, and minimises the scope for disputes arising from subjective interpretation of documentary requirements.

Transparency and risk management are also improved through DLT. All participants can track the status of a transaction in real time, from the issuance of a letter of credit through to final payment. This visibility reduces information asymmetry between parties and enables more accurate risk assessment by financiers. For banks, this enhanced transparency can support

more informed credit decisions and reduce exposure to duplicate financing fraud, where the same receivable or cargo is pledged to multiple lenders.

Industry Examples: we.trade and Contour

Several industry collaborations have emerged to develop and deploy DLT solutions for trade finance, demonstrating the practical application of this technology.

we.trade was established as a joint venture among major European banks, including Deutsche Bank, HSBC, and Société Générale, among others. Built on IBM's Hyperledger Fabric blockchain, the platform was designed to facilitate open account trade finance for small and medium-sized enterprises. we.trade enabled automated payment guarantees and financing, with smart contracts triggering payments upon fulfilment of agreed conditions such as delivery confirmation. The platform aimed to make trade finance more accessible to smaller businesses that traditionally struggled to obtain letters of credit due to cost and complexity. Although we.trade faced commercial challenges and ultimately ceased operations, it provided valuable lessons about the technical feasibility of blockchain-based trade finance and the importance of achieving critical mass in network adoption.

Contour, formerly known as Voltron, represents another significant DLT initiative focused specifically on letters of credit. Backed by major global banks including HSBC, Standard Chartered, Citi, and BNP Paribas, Contour digitises the letter of credit process from issuance through to presentation and settlement. The platform enables banks and corporates to issue and manage letters of credit on a shared blockchain network, reducing processing times from days to hours. By creating a single, shared source of truth for all parties to a transaction, Contour eliminates the need for multiple document checks and reconciliations, significantly reducing operational costs and the potential for errors.

Challenges and Outlook

Despite its promise, the adoption of DLT in trade finance is not without challenges. Regulatory frameworks across jurisdictions have yet to fully accommodate digitised trade documents, and questions remain around legal recognition, enforceability, and cross-border validity. Interoperability between different DLT platforms and legacy systems presents a further obstacle, as the benefits of distributed ledger technology are significantly diminished if participants cannot seamlessly exchange data across networks. Industry-wide standardisation is essential to realise the full potential of DLT; without common protocols and data formats, fragmentation risks replicating the inefficiencies of the paper-based system in digital form. The cost of implementation, the need for technical expertise, and the cultural shift required within traditional financial institutions should not be underestimated. Nevertheless, as pilot programmes mature and regulatory clarity improves, the trade finance sector appears well positioned to benefit from greater transparency, reduced processing times, and enhanced fraud prevention. The transition will be gradual rather than immediate, but the direction of travel suggests that DLT will play an increasingly significant role in the future of global trade.