Reimagining Trade Finance with Blockchain

Finacle Trade Connect
Trade Finance
Business Today

Trade operates in an increasingly complex world

Trade remains a key engine of economic and social progress globally. Yet there is a huge unmet demand for trade finance, estimated at over USD 1.6 Trillion annually.

The Need for Digitization

Trade finance transactions are plagued by limited digitization, complex (mostly paper) documentation, lack of standardization and functional silos. According to the Organization for Economic Co-operation and Development (OECD), hidden costs arising from excessive documentation and manual processes constitute up to 15% of the value of traded goods. Delays, high costs, and fraud risk cost the industry billions of dollars in revenue annually. Another problem is that small business customers have difficulty securing credit. Hence there is a clear case for stakeholders – trading parties, financial institutions and logistics providers – to embrace digitization to bring agility, efficiency, consistency, security and transparency to trade finance processes.

Ecosystem-Driven Trade Finance Business Models

The traditional trade finance model characterized by bank and corporate silos, one-on-one relationships and central intermediation is quickly breaking down. Progressive corporate banks realize that the future is about building a blockchain-based platform business by engaging with diverse partner networks within a larger ecosystem that is independent of any central intermediaries.

The role of a bank is visibly shifting from manufacturer and distributor of proprietary products to aggregator of third-party financial and non-financial offerings. Its focus has changed from pushing messages and transferring funds to providing relevant, customized offerings and contextual experiences to corporate and business banking customers.

Growing Role of Blockchain in Accelerating Trade Finance Digitization

A distributed, yet trusted, shared network built on blockchain enables automation, increases visibility and manages risks efficiently in trade and supply chain finance operations.

Blockchain creates exponential value through various network effects and the expansion strategies adopted by banks and other network participants. The utility value of the network increases as more and more partners, customers and stakeholders come together to resolve pain points, create new business opportunities and enhance customer value.

A completely digital blockchain-based trade process is the answer to today’s trade and supply chain process dynamics. It not only enables even unknown parties to trade with confidence but also helps banks to tap a variety of funding opportunities. Recognizing this, Infosys Finacle has developed Finacle Trade Connect, a blockchain-based solution for all trade finance needs.
Blockchain - Enabling New Frontiers in Trade Finance

Enhanced proposition for banks, customers and their trade partners

Typical Trade Finance Process
- Point to point siloed connections
- Highly fragmented and increased risk
- Trade data stored locally by each party
- Transactions take days to confirm and validate
- Regulatory reporting is tedious and suffers from human error

Trade Finance Process on Blockchain
- Unified by one, interoperable ledger
- Reduced systemic, counterparty and security risk
- Simplified reconciliation and near real time validation
- Improved regulatory reporting = less regulatory capital
- Transform transaction processing between regulated financial institutions through drastic cost reduction and massive improvements in capital allocation

Current State of the Financial Services
- Point to point siloed connections
- Highly fragmented and increased risk
- Trade data stored locally by each party
- Transactions take days to confirm and validate
- Regulatory reporting is tedious and suffers from human error

Envisioned Future State Powered by Blockchain
- Unified by one, interoperable ledger
- Reduced systemic, counterparty and security risk
- Simplified reconciliation and near real time validation
- Improved regulatory reporting = less regulatory capital
- Transform transaction processing between regulated financial institutions through drastic cost reduction and massive improvements in capital allocation

Benefits of Blockchain enabled Trade Finance
- Meet customer expectations and attract new clients
- Avoid disintermediation by third parties
- Reduce risk of duplicate invoice financing
- Enables new products for corporate clients
- Modernise IT systems
- Full transparency of entire value chain in real time
- Lower costs and error rates
- Free up resources to focus on core business
- Reduced risk of non payment
- Upgraded reconciliation process
- Additional financing opportunities for SMEs
- Improved liquidity and working capital
Finacle Trade Connect

Accelerate your journey towards truly digital trade business with blockchain

Finacle Trade Connect is a blockchain-based solution developed specifically to address and simplify the trade finance process requirements of banks. The solution connects banks, corporates, and various trade partners, such as shipping companies, insurers, and customs agencies, on a unified distributed network enabling inter-organization automation of trade finance processes. It digitizes trade finance business processes, from ownership validation to document certification to payments execution, using a distributed, trusted and shared network. With this solution, banks can curate trade networks with their frequent trade partners, customers and other stakeholders to drive unprecedented efficiencies and customer value.

Finacle Trade Connect is available for a range of functions, including Letter of Credit, Open Account for Trade, Bill Collection, Bill Exchange, C2C Transactions for Trade, B2C Transactions for Trade, PO Financing, Invoice Financing, Bank Guarantee and Factoring.

End-to-end support for trade and supply chain finance

Factoring and reverse factoring
Letter of Credit
Bank Guarantee
Open Account for Trade
PO and Invoice Financing
Bill Collection
Bill Discounting
Bill of Exchange
C2C and B2C Transactions
Other functionalities*

*Bid/Auction Marketplace, Internet dailymode, Branch and RM login
## Benefits with Finacle Trade Connect

<table>
<thead>
<tr>
<th></th>
<th>Online Trade</th>
<th>Blockchain enabled Trade</th>
<th>Outcome</th>
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<tbody>
<tr>
<td><strong>Transaction Channel</strong></td>
<td>Unidimensional with only direct customers</td>
<td>Unpacked to create multidimensional view of not only direct customers, but all transaction participants</td>
<td>Better operational efficiency and customer service</td>
</tr>
<tr>
<td><strong>Transparency and Visibility</strong></td>
<td>Very low transparency to both clients and internal users</td>
<td>Complete, 360-degree transparency with single source of truth at “process”, “data” and “instrument” levels</td>
<td>Better operational efficiency and customer service</td>
</tr>
<tr>
<td><strong>Digitization</strong></td>
<td>Partial digitization – only at end points</td>
<td>End-to-end digitization, from data capture to back-end processing</td>
<td>Better operational efficiency and customer service</td>
</tr>
<tr>
<td><strong>Reconciliation</strong></td>
<td>High recon because even as front-end captures digital data, back-end continues to be fragmented and messaging-oriented</td>
<td>Much lower recon as digitization is end-to-end and single source of truth is available at process, data and instrument level</td>
<td>Lower operational cost overall</td>
</tr>
<tr>
<td><strong>Operational Efficiency</strong></td>
<td>Low operational efficiency due to mostly manual processing</td>
<td>High digitization, automation and straight through processing increases efficiency</td>
<td>Less manual processing, more straight through processing</td>
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<td><strong>Automation</strong></td>
<td>Low automation in back-end</td>
<td>Smart contract can enable automation in back-end</td>
<td>Possibility of new revenue lines through automation</td>
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<td><strong>Versatility</strong></td>
<td>Different channels required for different kinds of inter-bank transactions</td>
<td>Single channel for all kinds of inter-bank transactions, such as trade finance, KYC, remittance and document exchange, among others</td>
<td>Lower maintenance cost</td>
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<td><strong>Risk</strong></td>
<td>Risk of duplicate financing and fraud</td>
<td>Risk of duplicate financing and fraud is reduced substantially. Duplicate instruments are identified, and documents are shared in the business context. Physical documents can potentially be completely eliminated</td>
<td>Better risk and fraud management</td>
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**Real value can be derived**

- New business lines
- Cost savings
- Better operational efficiency
- Risk Management & Fraud Prevention
Built on Advanced Architecture
Empowering you to do more

**Ledger-agnostic**: Finacle is designed to provide flexibility and choice to banks in selecting distributed ledger platforms. The solution is ledger-agnostic and runs on a number of technology platforms, such as R3 Corda, Hyperledger and Ethereum and also offers a complete stack of open source technologies. This enables banks to future proof their technology investments.

**Open APIs**: Finacle Trade Connect solution is designed with API first strategy. The solution offers an extensive suite of Open APIs to empower banks to integrate with any backend host system (Finacle or non-Finacle) and co-innovate within their internal and external trade partner ecosystem.

**Cloud-ready**: Finacle’s cloud-native applications support deployments and operation in cloud of your choice. Banks can go cloud-first with the Finacle Blockchain deployments on leading cloud platforms.

**Permissioned**: Finacle Trade Connect is built on the principle of permissioned blockchain in recognition of the needs of enterprises in a business network. Participants are explicitly admitted to the network and assigned specific roles and permissions. This ensures that an identified participant performs only those actions allowed by its assigned role.

**Need-to-know privacy model**: The solution is built on a need-to-know data privacy model where transaction data is shared with participants only on need basis.

**Extensive security capabilities**: Finacle Trade Connect has robust security features built at multiple levels, including network, DLT, application and hosting. For example, there is client-authenticated-SSL for internode communication at the network level and role-based access control at the application level.

**Document support**: The solution allows sharing of documents, including images and PDF files, along with business transactions in a secure and tamper-proof manner.

**Smart contracts-ready**: Smart contracts allow the performance of credible transactions without third-party intermediation. The solution leverages smart contracts to automate business processes across banks and trade processes to save time and minimize conflict.

**Back-end host-agnostic**: Finacle Trade Connect can work seamlessly with any back-end host system, Finacle or Non-Finacle. It comes with infrastructure and connectors that allow the distributed business application to interface with banks’ existing infrastructure, including core banking and other allied systems.
An industry leading architectural framework supporting comprehensive trade finance business functions

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<tr>
<th>Open Source Components</th>
<th>Business Functions (Indicative list)</th>
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<tr>
<td>API First Principles</td>
<td>Letter of Credit</td>
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<td>Cloud Native</td>
<td>Open Account</td>
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<td>Backend Host Agnostic</td>
<td>Bill Collection</td>
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<td></td>
<td>Invoice &amp; PO Financing</td>
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<td>More...</td>
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<th>Technical Services (Indicative list)</th>
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<td>Identify Service</td>
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<tr>
<td>Secure Document Service</td>
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<tr>
<td>Membership Services</td>
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<tr>
<td>Transaction / Smart Contract Services</td>
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<td>Notification Services</td>
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**Finacle Blockchain DLT Framework**

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<tr>
<th>Ledger Connector</th>
<th>Allied Systems Connector</th>
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<tr>
<td>Corda</td>
<td>Hyperledger</td>
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<td>Hyperledger</td>
<td>Ethereum</td>
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<tr>
<th>External Document © 2020 EdgeVerve Systems Limited</th>
<th>E-Signature</th>
<th>OCR</th>
<th>CIF</th>
<th>3rd Party systems</th>
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Helping Banks Strategize Blockchain Journeys

Enabling agility in trade finance

Banks can leverage blockchain technology by adopting one of the following key strategies:

- **Build an intra-banking group network**: A lot of banks operating in multiple countries are using this option for communicating and transacting with their international subsidiaries, entities and corporate clients to benefit by way of lower SWIFT costs, greater speed and shorter cycle times across business processes.

- **Curate an inter-banking network**: Banks may also curate an inter-bank network by getting other banks in the global market to participate. This network may also include the banks’ partners, customers and stakeholders. This model drives unprecedented efficiencies and customer value through synergies among network participants.

- **Offer trade-as-a-service**: Banks can use Finacle Trade Connect to create a white-labeled trade network in strategic corridors and unlock new growth opportunities.

Helping banks across all strategy levers

1. **Intra banking group network**
   - Network between your international subsidiaries / entities and corporate clients

2. **Inter banking partners network**
   - Network between your banking partners, customers and stakeholders

3. **As-a-service network**
   - Network for Trade or Payment service offerings with banking partners, clients and other stakeholders
Infosys Finacle, along with leading banks in India, saw an opportunity to transform the trade finance business by leveraging blockchain technology. The goal of India Trade Connect was to digitize domestic trade finance workflows within a distributed, trusted and shared network. The scope of the workflows included trade instruments such as purchase order, invoice, bill lodgment and acceptance, letter of credit and open accounts, and services such as ownership validation, document certification and payments. The result was a transformed digital process, which reduced the letter of credit cycle time from 8-9 days to 2-3 days.

- Digitization reduced the cost of moving documents and eliminated the per transaction cost associated with intermediary messaging systems.
- Invoices and orders could be uniquely identified and stored on the network, thereby lowering the risk of duplicate financing.
- Real-time dashboards provided visibility and tracking of trade instruments across life-stages and actors.
- Supply chain visibility empowered banks to offer new business products such as PO and invoice financing and innovative products such as open accounts for trade.

India Trade Connect Case Story

Pilot started with 7 banks. Today at 11 banks +.

Letter of credit cycle time reduced by 75% (2-3 days)
**Anil Agarwal**, EVP & Head – Transaction Banking, Axis Bank

“Axis Bank believes in enhancing its customer experience by continuously innovating and leveraging new technologies. While there have been significant innovations in payments, Trade Finance is starting to pick up now. We are excited about the potential of the India Trade Connect initiative to digitize end-to-end trade finance operations and bring about a speedy, transparent and secure experience for our corporate clients.”

**V.G. Mathew**, Managing Director & CEO, South Indian Bank

“We are glad to be an active member of the India Trade Connect comprising select banks and Infosys Finacle. It is indeed a pleasure to note that we have been jointly awarded the Celent Model Bank Award for our collaborative efforts on blockchain. By being part of the India Trade Connect, our quest for innovation continues. We are confident that we can jointly develop a robust Trade Finance Platform powered by blockchain, which could revolutionize the current business models in this important area.”
ICICI Bank, a leading private sector bank in India has enabled inter-organization automation leveraging blockchain. The bank has got its international subsidiaries connected together on the blockchain network to drive operational efficiencies and create customer value. The bank has on-boarded more than 500 leading corporates for domestic / international trade finance transactions on the blockchain network.

Built on Finacle Trade Connect, the blockchain solution simplifies the paper-intensive trade finance process by bringing counterparties on the same platform and enabling decision-making in near real-time. The network participants can track documentation, authenticate ownership of assets digitally and execute a trade finance transaction through a series of encrypted and secure digital contracts. This has enabled faster and cost-effective processing and significantly improved operational efficiency across different corporate processes.

**Corporate Trade Network between international subsidiaries /entities and corporate clients**

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**Banking group corporate communication network**

- **Corporate Trade Network**
- **Banking group corporate communication network**

**500+ corporates on-boarded**
ICICI Bank, a leading private sector bank in India, offers trade “as-a-service” to partner banks. The bank has set up captive networks with its subsidiaries and offers a “landing hub” to partner banks and exchange houses, enabling them to fulfill transactions even in countries where they do not have a presence. The landing hub receives trade and remittance requests from various partner banks – typically small institutions – and forwards them to the appropriate international office for further action. Partner banks need not invest in any hardware and can plug and play the services of the landing hub to facilitate trade transactions or send remittances to any location within the ICICI subsidiary network.

Reset your trade remittance indexes for the digital world
- Offer “trade and remittance as-a-service” to exchange houses and partner banks seeking to transfer funds to any geography where ICICI Bank operates
- Cost optimization
- New revenue generation opportunities
- Driving speed and agility.

ICICI Bank network between international subsidiaries and partner banks in strategic corridors
Experience That Speaks for Itself

We build winning partnerships with clients

A global solution built on the experience of servicing 1.05 billion customers - esteemed to be nearly 16.5 percent of the world's adult banked population.

100 Countries

1.05 billion Consumers

81,560 Branches

1.3 billion Accounts

Industry recognition for our work

Most innovative use of Blockchain in Banking - Infosys Finacle & ICICI Bank

Best Use of Emerging or Innovative Technology – Infosys Finacle & Royal Bank of Scotland

Juniper Future Digital Awards - 2018

Best Blockchain Deployment in Banking & Payments
Best Blockchain Platform – Trade Connect
Best B2B Payments Platform

‘Emerging Innovation’ 2017
‘Trade & Supply Chain’ 2018

‘Innovative Excellence’

‘Innovation in Emerging Technology’
Infosys Finacle has launched a blockchain-based network for banks with the goal of evaluating the Finacle Trade Connect solution. Multiple banks have partnered to be on the network already to transform their international Trade business. We invite you to collaborate with us and lay the foundations of the next-generation global trade ecosystem.

• Join our pilot network in just two days and conduct a 6-8 week pilot to evaluate Finacle Trade Connect.

• Take our functionally rich, enterprise grade solution to production today and transform and grow your international trade business.

Join existing networks or create/own your own networks using our solution as an accelerator to enable speed and efficiency in your trade business, globally.

Get in touch with us at contact@edgeverve.com to know more.
Finacle is the industry-leading digital banking solution suite from EdgeVerve Systems, a wholly owned product subsidiary of Infosys. Finacle helps traditional and emerging financial institutions drive truly digital transformation to achieve frictionless customer experiences, larger ecosystem play, insights-driven interactions and ubiquitous automation. Today, banks in over 100 countries rely on Finacle to service more than a billion consumers and 1.3 billion accounts.

Finacle solutions address the core banking, omnichannel banking, payments, treasury, origination, liquidity management, Islamic banking, wealth management, analytics, artificial intelligence, and blockchain requirements of financial institutions to drive business excellence. An assessment of the top 1250 banks in the world reveals that institutions powered by the Finacle Core Banking solution, on average, enjoy 7.2% points lower costs-to-income ratio than others.

For more information, contact finacle@edgeverve.com www.finacle.com