

BEING
RESILIENT

REVITALIZE
TRADE
FINANCE
DIGITIZATION

Infosys®
Navigate your next

BEING RESILIENT. THAT'S LIVE ENTERPRISE.

Foreword

Trade and supply chain finance facilitates the businesses to import and export their goods & services across the globe in a secured way. It also helps both the importer and exporter to mitigate risks associated with trade transactions. World economic growth depends on trade finance. The combination of supporting regulatory, financial structures and zero fault logistics processes are needed for the continuous trade growth across the

globe. COVID-19 pandemic has created a worldwide unprecedented disruption and has the potential to immensely impact the global trade finance industry. World Trade Organization has estimated an expected plunge in world trade by 13% -32% in 2020 due to restriction of transport and global trade across countries. Till date, most processes involved in trade finance lifecycle are manually driven. However, the \$7 trillion market has always gone

ignored mainly because of multi country involvement and dependency on different regulators and several external forces. For trade finance sector, on an annual basis, the approximate value of unmet demand is \$1.5 trillion.

This paper addresses the current challenges in trade finance processes and elaborates how to transform the legacy trade finance lifecycle to end to end digitization.



Current challenges in trade finance

Challenges are multi-dimensional in case of trade finance. It is considered to be one of the areas which involves complicated processes and associated risks are

governed by numerous regulations which has geographical scope. International trade is complicated in nature due to involvement of several external parties

across jurisdictions. All these factors make trade finance a cost heavy and time-consuming affair with several challenges.

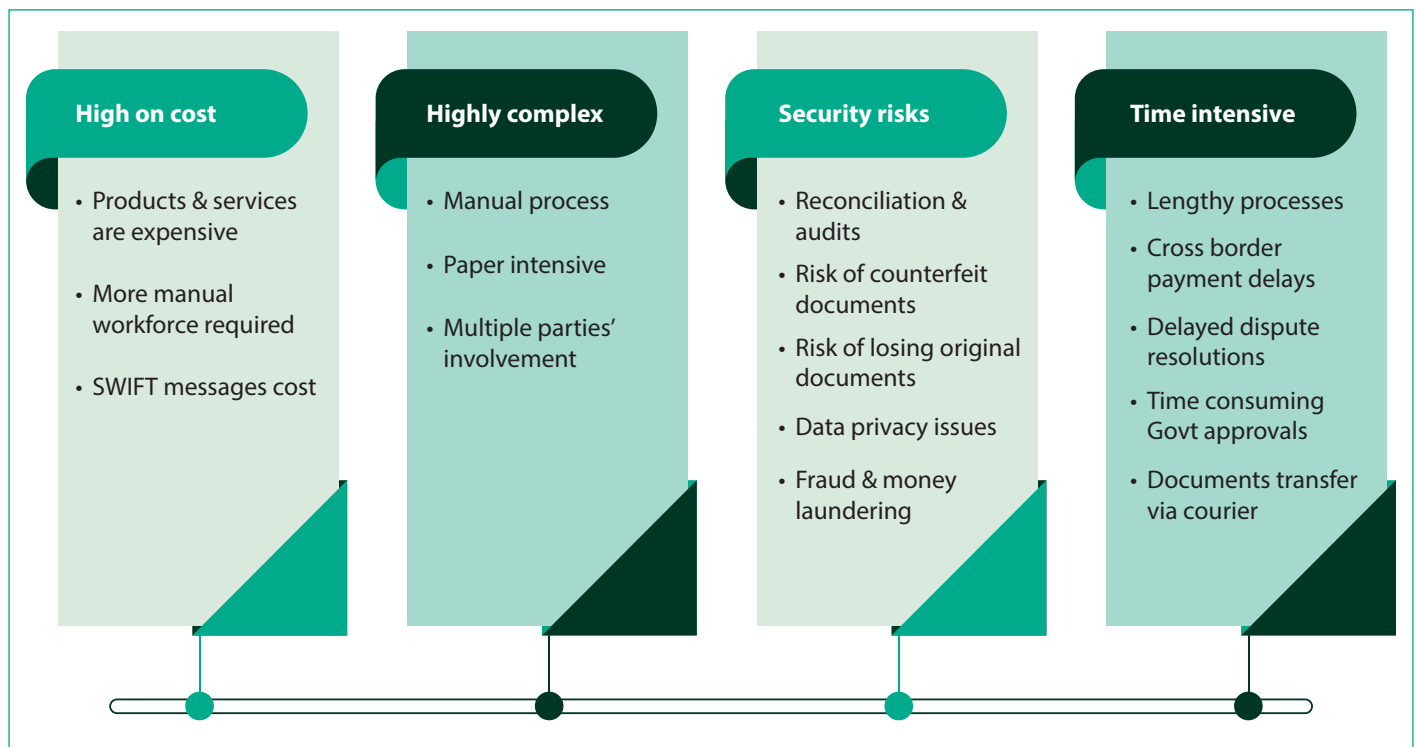


Fig 1: Challenges with traditional trade finance

Impediments for banks in adopting trade finance digitization

Research reveals that below are the potential challenges which holds back banks and therefore digitization of trade finance often takes a back seat in banks' priority list.

Requirement of multiple technologies in trade finance digitization: There are several technologies such as distributed ledger technology, robotic process automation, artificial intelligence, internet of things, optical character recognition, machine learning, API, data analytics are required in digitization of the trade finance process. This means more substantial investment, availability of products and resources are required to leverage these technologies.

Systems in siloes and need manual intervention: Legacy applications were not designed to integrate with the digital environment. Trade finance systems are typically operating in silos and have heavy dependency on manual processes.

Numerous third-party involvement: Banks face difficulty in adopting the digital value chain in trade finance due to involvement of numerous third parties in areas like logistics, insurance, customs, third party agencies and more.

Regulations & compliance: In trade finance world, ICC guidelines, FEMA, AML, Basel III, FATCA, Dodd Frank regulations and other local regulations need to be

followed by the banks to prevent money laundering, financial crime and more. Validations like KYC compliance, enhanced due diligence, sanctions screening involve many manual steps in many countries which is another constraint for banks.

Limitations in replacing original bill of lading with electronic Bills of Lading: Survey for electronic bills of lading conducted by ICC in 2018 across ten countries reveals that the legal status of electronic bills of lading is still not clear in most of the countries.

Beyond digitization - trade finance value chain

According to ICC research around 50% of the trade finance requests made by small & medium businesses (SMBs) are rejected due to non-flexibility of the banks & financial institutions in processing applications and determining credit scores. The existing customers can apply for the desired trade products via multiple channels (branch, mobile, and portal) but

new to the bank customers must approach bank to start the initial relationship. Onboarding new customers is a challenge in the current situation

Typically, banks take almost two to four weeks to complete end to end LC process through legacy trade finance systems. Digitization of end to end LC

value chain has enabled transparent process across the parties involved in all the stages with dramatic reduction in the turnaround time from four weeks to two days. This remarkable change is the result of digitization and amalgamation of technologies under the same platform with highest level of data protection and security.



Fig 2: Time taken in traditional LC process



Fig 3: New improved LC value chain embracing digitization and technology amalgamation



Leverage technology stack in trade finance digitization

BLOCKCHAIN technology – A panacea

Blockchain is revolutionizing the exchange of value in similar way to how the internet revolutionized the exchange of information and communication. According to the OECD (Organization for Economic Co-

operation and Development), up to 15% of the value of traded goods are hidden costs of complex paper documents. As a result, the industry is estimated to lose billions of dollars in revenue each year.

Distributed Ledger Technology (DLT) ecosystem in trade finance: Blockchain

uses shared distributed ledger, so all participants of a transaction get the same information events that takes place in the network are easily auditable and immutable. The identity of a participant is authenticated using cryptography and digital signatures.

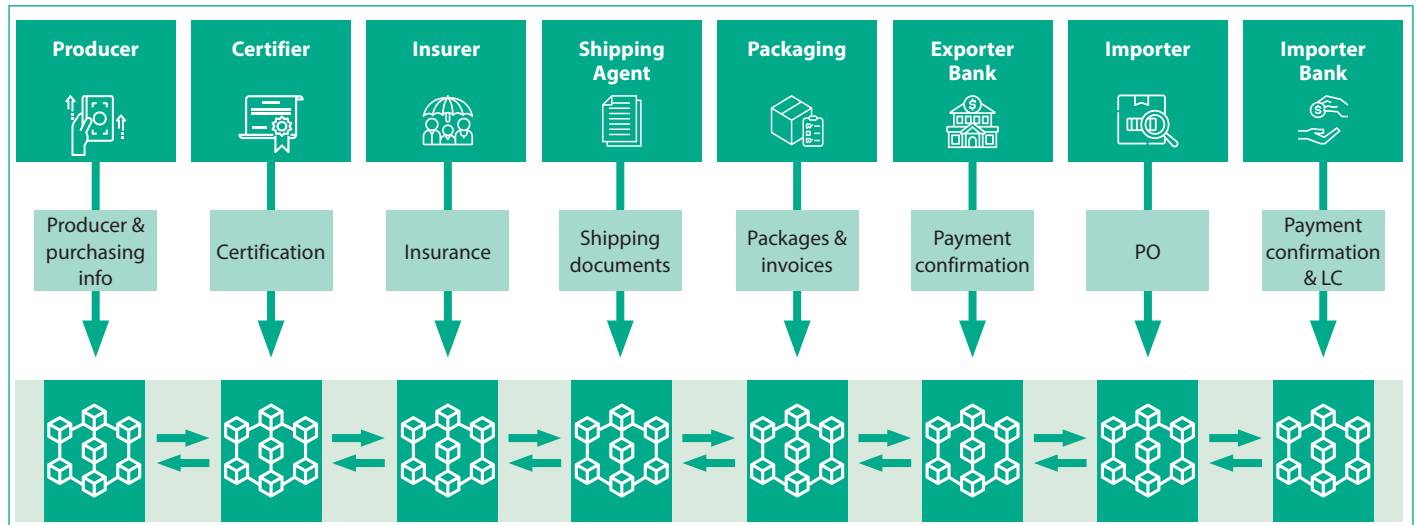


Fig 4: Trade finance ecosystem using Blockchain

Smart Contract as a catalyst:

Smart Contract is a definite catalyst in enhancing benefits of using Blockchain technology. These computer protocols are generated to substantiate the underlying contractual obligations if the necessary conditions are satisfied. Trade documents are being replaced by smart contracts with the help of Distributed Ledger Technology – DLT, which can self-verify and execute by itself. The Smart contract only permits the importer, exporter and participating banks to access and this will be executed automatically. LC terms and conditions will be coded in the smart contract by

importer and updated in Blockchain which is immutable by nature. The same LC is simultaneously reviewed and digitally signed by the participating banks before sending it to the exporter, and any amendments need to be verified & digitally approved by all the parties.

The banks either invest or make alliances with the available solutions for the process betterments and thus they can remove the manual paperwork and third-party involvement fees and timelines immensely.

CLOUD computing in trade finance

As trade processes involves more paper-based documents, it is cumbersome for the exporter to submit the documents within stipulated time period as most of the documents were prepared by the third parties. Cloud technology, a solution that can link all the parties involved in the trade cycle in a single platform so that any update happened in the document will be known to all the parties. Cloud technology help the banks to remove the pain arising from handling the manual documents, it is very easier to deploy and increases the business efficiency.



Data analytics & artificial intelligence

Impact of Open Banking APIs in data verification and validation

A lot of plug and play API solutions are available in the financial industry which can be customized based on retail and commercial banking domain. These API solutions provide range of tools which are also compliant with latest PSD2 regulations. The main objective of APIs is to interact with numerous systems across multiple locations to pull out and pass the data to the single location. This will help the banks and financial institutions to interchange the authorized customer's financial data with third party service providers for real-time IDV processes and to get confirmation on the creditworthiness of the business customers.

Data in machine readable format

Trade finance service providers can use 'Robotic Process Automation (RPA) or

related technologies to capture the unstructured data into machine readable format for documents such as invoices, bill of lading, airway bills etc. and this in turn help to shorten the validation and rectification timelines and enables the straight through document processing.

Validating the electronic data

The captured electronic data can be validated for applicable trade finance clauses, ICC rules and the applicable product terms and conditions. AI, machine learning (ML), natural language processing (NLP) are being used in cross verification of personal and financial data from numerous trusted resources and make fair recommendations on complex decisions. NLP can be used to convert the trade related conversations into readable electronic files and helps to compare the details with trade related transaction

documents and this will be referenced between all the parties involved in the transaction.

Compliance checks

The ITO, WTO, ICC and their periodic updates are being released in both pdfs and electronic files. The trade finance platforms also perform complete real time compliance checks, fraud detections, FATCA, OFAC and locally maintained blacklists are scanned. ICC team has evaluated the existing rules to support banks and financial institutions to accept documents in electronic format and electronic signatures (eUCP V2.0 & eURC V1.0 in July 2019). ICC's Current contributions are towards ICC rules e-compatibility, supporting reliable fintech collaborations and policy changes to enable digital roadmap.

Strategic move in trade finance digitization

FinTech – Crossing the hurdles

Even in this modern age, banks are struggling to move towards the digital phase. Since the COVID-19 situation demands faster turnaround time with respect to embracing technologies, a wiser approach for the banks is to

collaborate with the appropriate Fintech. Without compromising on cost and time, partnership with fintechs can enable the banks to achieve faster turnaround time. FinTechs help the bank to automate and digitize the trade finance processes. In today's era, the banking clients demand solutions that can reduce the cost and

complexity of the trade transactions. Hence the banks are looking to adopt new technologies so that the banks can develop more value-added solutions to their clients. FinTech is the repository of new technologies that provides a pathway to digitize the trade finance processes.



End to End digitization – A game changer

Harnessing new technologies

The end-to-end digitization is the key for faster processing of letter of credits and payments in global trade. Here is a technology blueprint which clearly shows the digital letter of credit processing landscape.

New technologies	Letter of credit creation	Letter of credit processing		Payments
Robotic Process Automation (RPA)	Invoice & eB/L text recognition	Multiple systems interactions using single interface		
Artificial Intelligence (AI)	Prepopulate contractual obligations	Auto-filter suspicious transactions. Predictive analysis in decision making	Real-time document validation and completion	
Machine Learning (ML) & Analytics	Real-time KYC & AML checks	Real-time monitoring & predictive analysis of LC patterns		
Internet of Things (IoT)		Sensors help in real-time cargo tracking, route changes, weather conditions and container conditions etc.		Auto trigger payments
Blockchain (DLT)	Smart contract replaces LC documents	Smart contracts auto-executed as per the specified conditions. No manual and third-party involvement required	Any changes must be confirmed by all parties (Consensus algorithm)	

Fig 5: Technology Blueprint for Digital Letter of credit processing

Integrating digital compliance modules

New to bank (NTB) customers often face challenges in applying working capital loans as well as credit finance. Even some banks and financial institutions expect 100% collateral to be pledged for their trade finance requirements. Sometimes the banks cannot derive the credit and business profile of the existing customers due to inability to cross verify the customer credentials because of limited resources.

Hence, the banks and financial institutions are already focusing on AI powered robotic processes that can streamline these processes and can accurately provide judgment, based on machine learning algorithms. Open banking APIs can integrate these legacy systems data efficiently and allow the banking systems to exchange data.

Harnessing the disruptive technologies such as AI & Machine learning and the new innovative trade finance APIs will speed up the below features.

- Multiple channel Interaction
- Customers data exchange from banks, credit reference agencies and 3rd parties instantly
- AI, ML & APIs will eliminate multiple reviews on customer profiles and credit decisions
- Customer's credit worthiness can be checked, and cross verified from multiple sources instantly and decision can be taken on credit limit increase immediately

Adoption of next gen technologies by incumbent banks

Leading global banks have already started investing in next generation technologies.

- Citi Bank commercial line of business has invested in trade information management system for a 3-year modernization to provides a flexible trade management infrastructure
- Deutsche Bank has collaborated with JP Morgan's Blockchain based inter-bank information network to facilitate their cross border and international payments. This has helped Deutsche bank to lower its payment processing costs.
- Standard Chartered Bank joined with Huawei to utilize IoT to monitor the cargo movement real-time. This helps the bank to mitigate supply chain risks. Huawei's IoT platform also supports Big Data and Cloud computing.

Adopting trade finance digitization – A way forward for banks

Regulators have started relaxing compliance around adoption of digitization in trade finance processes and now it is the time for financial institutions to act. There is always an uncertainty prevailing in banks in taking decisions with respect to building inhouse solutions or in collaborating with FinTechs. COVID-19 has created the need of the hour where banks need to react fast and in cost efficient manner. Time and Cost will play crucial role together in this decision. Relevant Fintech offering should become an obvious choice in order to reduce the time to market.

- Using API as the accelerators in integrating source data country by country
- Amalgamation of technologies should be considered to enhance efficiencies in each gap
- The predictive analysis power of AI-ML in decision making with respect to

compliance need to be leveraged by banks in various steps of trade process. Many times, the pattern of the entities is same, hence AI can play a major role in taking an automatic decision for the false hits so that the transactions can be processed as an STP transaction.

- Adopting Blockchain has become imperative and a must needed step for the commercial banks in the trade finance business. Creating a trade and supply chain finance DLT ecosystem, to enhance efficiency, transparency and security across all participants, optimize costs.
- Banks with the help of RPA able to recognize the text in the documents and different systems can be interacted using single interface, hence this reduce manual dependency as much as possible

- Last but not the least, introducing Internet of Things (IOT) is equally important to aid in tracking the shipments and auto-trigger payment as per the smart contract conditions, allowing a seamless and transparent ecosystem.

In traditional method of trade processes, importer and exporter do not have a clear idea on the logistics of goods shipped. Therefore, it is very difficult to manage the inventory. IoT helps the customers in tracking the shipment on a real time basis which in turn aids for better inventory information. Big data platforms empower importer and exporter to have the better business forecast by manipulating the data. A solution using disparate technologies like IoT, data analytics, AI and Blockchain can solve the challenges. This solution can improve the overall digitization of trade finance processes.

Conclusion

History has proven that human beings are the most intelligent creatures in the world and have survived multiple pandemics in the past and COVID-19 will not be an exception. These waves also bring changes with them, we learn new ways of living and techniques of survival. The changes also bring new thought processes and behaviors. Banks are also set to ride these waves of change and technologies can

shield financial institutions from these disruptions. Banks need to eliminate manual reliance, as much as possible, in all domains, including trade finance. Banks, trade finance regulators and economic reformers need to work together to bring a common reporting structure applicable to all the parties involved in export & import globally. The ability to adopt digitization end to end in trade finance is vital. Banks

should prioritize their spend in this area. Also, introducing stringent processes around cyber security for protecting customers indulged in digital trade process. By stitching new age technologies like IoT, Big Data, AI, Blockchain, end to end digitizing banks can help their commercial customers in their trade forecasting process, procurement and achieve significant time and cost savings in future.



Authors



Mandar Joshi

Senior Industry Principal, Infosys Financial Service

Mandar is a Senior Industry Principal in Infosys Financial Service business unit. He is responsible for banking and capital market segments at Domain Consulting Group. Mandar has a proven track record of building and leading technology and consulting teams in financial services technology. His expertise includes leadership, technology consulting, and strategic program implementations.



Abhik Kar

Principal Consultant, Infosys Financial Service

Abhik is a Principal consultant with Banking Practice as part of Financial Services – Domain Consulting Group within Infosys. Abhik's consulting experience spans across Commercial & Consumer banking domain, where he currently continues to actively work on several engagements on digital transformation, process modernization, automation and FinTech alliance in conjunction with new age technologies AI-ML.



Sowme Sundaram

Senior Consultant, Infosys Financial Service

Sowme Sundaram is a senior Consultant having majority of experience in Corporate Banking domain. She has good experience, profound knowledge in the areas of trade finance domain, corporate payments and various types of clearing systems. She has extensively worked as a business analyst for leading UK banks to implement various functionalities in the payments and trade finance domain areas.



Jagan Babu Vasudevan

Senior Consultant, Infosys Financial Service

Jagan Babu Vasudevan is a senior Consultant with 13+ years of experience in Corporate and Retail Banking domain. Extensive knowledge in Retail & Corporate banking Customer Onboarding processes. Expertise in Trade Finance products, Back office settlements, Secured Lending processes and Collateral Management.

References

https://www.wto.org/english/news_e/pres20_e/pr855_e.htm

https://www.wto.org/english/news_e/pres20_e/pr855_e.htm

https://cib.db.com/insights-and-initiatives/flow/trade_finance_and_the_blockchain_three_essential_case_studies.htm

<https://cloudcomputing-news.net/news/2013/jul/01/why-trade-finance-moving-cloud2/>

<https://www.finextra.com/blogposting/17084/trade-finance-a-step-by-step-approach-to-digitalisation>

<https://iccwbo.org/global-issues-trends/banking-finance/icc-digitalisation-of-trade-finance/>

https://www.citibank.com/tts/sa/eSource_academy/docs/best_practices.pdf

<https://www.ft.com/content/6363036a-d597-11e9-a0bd-ab8ec6435630>

<https://www.huawei.com/en/press-events/news/2018/10/standard-chartered-huawei-partner>

<https://www2.deloitte.com/content/dam/Deloitte/in/Documents/financial-services/in-fs-role-of-trade-finance-for-inclusive-growth-web-noexp.pdf>

<https://iccwbo.org/content/uploads/sites/3/2020/04/2020-icc-covid-response-banks-3.pdf>

https://www.wto.org/english/res_e/booksp_e/tradefinnace19_e.pdf

For more information, contact askus@infosys.com

Infosys[®]
Navigate your next

© 2020 Infosys Limited, Bengaluru, India. All Rights Reserved. Infosys believes the information in this document is accurate as of its publication date; such information is subject to change without notice. Infosys acknowledges the proprietary rights of other companies to the trademarks, product names and such other intellectual property rights mentioned in this document. Except as expressly permitted, neither this documentation nor any part of it may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, printing, photocopying, recording or otherwise, without the prior permission of Infosys Limited and/ or any named intellectual property rights holders under this document.