

AUTOMATION IN TRADE FINANCE PROCESSING

How to put your trade finance operations on auto-pilot with cognitive RPA



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EXECUTIVE SUMMARY

Financing global trade sits at the heart of the relationship between banks and corporates. Although this is a business characterized by small margins, it is one of huge volumes: by 2026, trade flows are predicted to reach **US\$24 trillion.**¹

Given this growth trajectory, banks have identified trade finance as a critical pillar of their future business strategy. However, market growth alone is not the only ingredient for success. To succeed, banks must position themselves as leaders in the digitization of trade finance. Because only through maximized digitization, automated processing and comprehensive audit capabilities in a multi-step, multi-part processing ecosystem like trade finance can financial institutions be competitive enough to pick the fruits of market growth.

How can financial institutions prepare for this digital journey? What are the challenges of digitizing the front end of trade finance? How will the "digital worker" mimic, sense, comprehend and act like a human? To answer these questions, we explored how combining proven market technology with AI and machine learning can help banks master key challenges in trade finance.

THE OPPORTUNITY: TRADE FINANCE MARKET & TECHNOLOGY

With global trade projected to grow, trade finance continues to be a significant pillar of banks' business model. Other business areas, such as investment banking and global markets trading, face a perfect storm of "compressive disruption" characterized by a gradual erosion of revenue and profitability that reduces their ability to invest in new technologies. On the other hand, corporate banking, particularly trade finance, presents a perfect opportunity for revenue and profitability growth when leveraging new technologies.

According to a 2018 ICC Global Survey, revenues from trade finance are expected to **grow at an annual rate of up to 6%**. Trade finance revenues could be as high as **US\$48 billion by 2021**.² The outlook is promising, but organizations need first to overcome several challenges to optimizing their trade finance business to maximize profitability. It is especially significant since trade finance is mainly paper-based and labor-intensive and suffers from fragmented information (see Figure 1). The lack of standardization is costly, time-consuming and error-prone and further squeezes already tight margins.³

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Figure 1: Challenges in optimizing Trade Finance Processing

INFLEXIBLE BUSINESS MODELS Image: Stress of the s

REGULATORY AND COMPLIANCE CONSTRAINTS



Numerous trade-related regulations such as Basel III, and AML/CTF

POORLY INTEGRATED LEGACY IT SYSTEMS



Fragmented and outdated legacy systems that are integrated in an ad-hoc manner

IMPACTS

- Limitations in growing client base and expanding range of products/services
- Fintechs and tech platform providers providing innovative solutions to clients leading to disintermediation of bank-client relationship
- Longer transaction turnaround time
- High handling & storage costs
- High error rates from manual document verification
- Lack of standardization
- Operational risk due to staff turnover
- High costs due to manual compliance screening with non-integrated platforms (eg. World Check, blacklists)
- Non-standard reporting processes and formats of adhoc transactions to regulators
- Slow adoption of new technologies
- Process breakage and complexity in tracking due to manual handoffs
- Reconciliation of data across systems

One way to master these challenges is to embrace a multifaceted strategy, pairing your business vision and strategic goals with a clear market access strategy as well as a defined plan to bring this strategy to life. Only a holistic definition will unleash revenue potential and enable an organization to join the leadership ranks of trade finance.



Figure 2: Holistic trade finance strategy alignment

With technology as a key enabler, the trade finance industry is facing a major technology overhaul. Banks are in a race to go digital. While many are trying to digitize their front end, others are collaborating to build blockchain-based networks for automating trade. However, the results are nascent. Only 9% of banks have successfully reaped benefits while others are either just beginning to develop their capabilities or have plans to invest in technology in the coming years (see Figure 2).

Online Banking

Accounts Overview Transactions

Service

20.00

THE CHALLENGE: GETTING LABOR-INTENSIVE PROCESSES RIGHT

By its very nature, trade finance maintains processes that are highly focused on documentation and checking. The use of paper documents throughout the transaction cycle and across stakeholders is immense. Experts estimate that four billion pages and documents circulate in documentary trade alone.⁵ Since all of them are potentially subject to compliance checks, there's an immense advantage in removing manual and error-prone processes to overcome significant limitations, including:

- Long transaction turnaround times
- High handling and storage costs
- High error rates associated with manual document verification
- Lack of process standardization
- Operational risks due to highly manual processes

Looking at the exemplary case of pre-checks and transaction requests—two of the most labor-intensive process categories—Traydstream cites **the potential for a 60–70% cost outtake and a reduced turnaround time from up to a week to 10–15 minutes per stage when automation is applied** (see Figure 3).⁶



Figure 3: Potential efficiency increases in pre-check stages

Transaction request	Pre-checks	Processing	Payments	Documents release
	 limit checking compliance screening Document checks 	 Issuance of L/C, bank guarantee, etc Discounting Settlement 	AM	
		REDEFINING TRADE FINANCE	AM	
inputs /	Processing		/ Outputs	
Transaction data Reference data sources Paper- based trade documents	 Digitization o OCR + RPA to documents in Documentary AI/ML + NLP-te engine to che UCP rules Compliance o AI/ML and int out compliance (e.g. vessel so screening) 	f document digitize paper to data sources / checks based rules eckdata against checks erfaces to carry ce screenings creening, name	 Outputs Blank/missi Discrepand documents Non-compl trade rules Compliance 	ing data fields ies between iance of UCP e screening hits

TANSACTION PROCESSING VALUE CHAIN

The use of Robot Process Automation (RPA) technology seems to be the most straightforward answer, especially since the technology has become a universal enabler in banks these days. RPA is best described as a business process tool to automate manual, intensive, repetitive and rule-based tasks. Those who have successfully implemented RPA elsewhere in their banking operations will be best placed to apply it to trade finance. However, does RPA in its traditional form solve this problem in full? Enhancements are needed to enable savings and support the business strategy to the greatest extent possible, including:

- Using intelligent OCR to digitize and turn unstructured documents into readily available data sources
- Applying artificial intelligence (AI) or machine learning (ML) along with natural language processing rules to carry out documentary checks
- Leveraging AI and ML interfaces to run compliance checks, such as on vessel and name screening

The case for RPA in trade finance

In general, trade finance workflow has four stages before settlement takes place. During the trade finance transaction, a bank receives the documents, such as application forms, bills of exchange, commercial invoices, transport documents, insurance documents, purchase orders and debit/credit notes, and statements. Data from these documents is then analyzed and captured in the bank's core processing infrastructure. At many points during this journey, transaction processors are required to validate details and make decisions, mostly in a manual way (see Figure 4).

Figure 4: Work flow in Trade Finance process



Global trade is exposed to various types of risk and is subject to high degrees of regulation. Compliance during trade financing involves, amongst other inspections, checks on country sanctions, credit limits, anti-money laundering (AML) verification and financial crime compliance (FCC). Transaction processors need to carry out a series of validations and checks and then escalate the issue if any discrepancies are found. These steps require simultaneously feeding data into the trade back-office applications and making decisions. Many of these steps are repetitive in nature, while others require scrutiny, such as verifying the transaction details against a customer's business nature, a bill amount against the trade contract, signatures and the bank's charge collections.

Expert decision-making and judgment are required for these process steps and are vital to effective risk management. While the deterministic rule-based steps during (pre)processing are natural candidates for automation by traditional RPA, the judgmental processing steps, such as validating compliance to Uniform Custom and Practice for Documentary Credit (UCP) rules, legality and terms matching, remain very labor-intensive. Automating these can lead to significant streamlining and cost reduction. This is where enhancements to the traditional RPA approach come into play.

Using intelligent OCR to read unstructured and even hand-written instructions will complement the set of data to be evaluated. Then applying ML algorithms onto this complete data set will help support manual judgment and can, over time, replace human decision-making. For example, if the history of a client had been financing trade originating from one specific entity address and for a limited set of goods, applying for financing under the same name but with a different entity and for different goods will be an exception scenario that would first be highlighted by the robot for manual decision-making. **ML algorithms will take such decisions into account going forward and add it to the historical data set, thus enabling them to "decide" automatically in future occurrences.** Increasing the historical dataset over time and applying it will lead to the human worker acknowledging decisions only up to the robot making judgement fully automated. Table 1 outlines the application scenarios for enhanced RPA, starting from traditional prerequisites.

Table 1: Complementing traditional RPA with new technologies to bringadditional gains in Trade Finance

What are the prerequisites for a successful RPA implementation?	Given the prerequisites, what makes RPA implementation for trade finance operations specifically difficult?	How can you address the challenges and increase gains from RPA investments in trade finance?
Structured source data	At large, customers and correspondent banks provide unstructured data via non- digital channels, such as fax, physical documents and e-mail attachments. The accuracy and subsequent success of RPA suffer tremendously when dealing with unstructured and non-digital data sources.	Intelligent OCR can help address this problem by digitizing the documents and feeding analyzed and extracted typed and handwritten data into banking systems as a full data set.
No or low-touch transaction processing flow (manual intervention)	A majority of trade finance transactions typically demand high-touch processing due to: 1. Higher risks of large values and complex transactions that require thorough vetting and expert judgment. This may involve checks for dual-purpose goods, matching invoice terms, document reviews against UCP/URC, vetting legal terms and conditions, AML, and more. 2. Low adoption of digital channels and internally disjointed systems, leading to process breakage, such as during signature verification, FX booking, B/L and invoice validation, vessel checks, and more. The very sustenance of a bank's trade finance business remains in its ability to identify and mitigate the multitude risks involved in financing trade. To date, it relies heavily on expert judgment. The lack of unambiguous and digitally encodable rules combined with unstructured source data makes most steps involving expert judgment a non- candidate for RPA, while lack of full system integration to support different processing steps remains an Achilles heel in reaping the benefits of RPA in trade finance.	Al-enhanced ML can help to analyze data, derive insights, recognize patterns, predict outcomes and identify false positives. The due diligence-heavy trade finance operations can benefit significantly from the application of ML in analyzing risks quickly and accurately. Poorly interfaced systems can only be addressed by analyzing and, where required, investing in connecting systems for seamless information flow.
Less frequent changes to systems involved in the trade finance processing flow, especially those on which RPA depends.	Trade transaction involves validation and data capture across multiple applications, including core banking, trade platforms, workflow engines, credit approval systems, payment hubs and internal and external screening systems. Introducing system changes without end- to-end impact analysis and validation will potentially derail RPA engines.	Effective and coordinated change management across systems involved in trade finance processing will help prevent such issues.

Table 2: Overlaying of RPA, ML & Intelligent OCR technologies in the Letter of Credit process flow

Steps	RPA	ML	Intelligent OCR
The buyer approaches his/her issuing bank and requests opening an LC favoring the seller. Bank processor inputs customer details, performs a credit limit check, checks the nature of goods being imported and completes a sanction check. These tasks are performed in the bank's underlying application and a third-party application.	Yes, capturing and validating buyers' details across multiple banking applications	Yes, sanction check, anti-money laundering check, financial crime compliance check judgment and decision- making steps	Yes, extracting data from scanned documents
Issuing bank prepares an LC and incorporates all buyer's instructions to the seller, including shipment details and required trade documents. It also generates an LC reference number, fees and issuance charges. Buyer's bank mentions the list of trade documents to be submitted by the seller under the LC: bill of exchange, invoice, credit/debit note, insurance document, transport document, inspection certificate and certificate of origin.	Yes, capturing transaction details, generating an LC reference number, listing the trade document, fees and charges	No	No
The buyer's bank transmits LC to advising bank in seller's country (MT700). The seller's bank does due diligence. Issuing bank amends T&C (MT707) if required, and the seller bank acknowledges the LC (MT730). The seller presents requisite documents to the advising/ negotiating bank to be fully compliant with LC. Negotiating bank reviews and dispatches the document to the confirming/advising bank. Charges include an advising fee. The negotiating bank pays the buyer after receiving funds from the reimbursement bank.	Yes, capturing transaction details, rule-based validation	Yes, sanction check, transaction screening suspicious activity check, attaching trade documents, judgment and decision-making steps	Yes, extracting data from trade and other documents
The issuing bank receives the documents from the advising bank and examines it. If compliant, the issuing bank notifies the buyer of the documents and settles by acceptance or immediate payment based on the LC terms.	Yes, capturing transaction details and a notification e-mail	Yes, judgment and decision- making steps based on exception logs and logs in underlying applications	Yes, extracting details from semi- structured and unstructured documents

What benefits can I achieve, and how can I measure them?

Process automation reduces labor costs and average handling time (AHT). However, this does not mean that the return on investment is a given, so it does not remove the need to create a business case. A mapping exercise will determine the total ratio of the process(es) that can be automated. It should also be compared with the existing full-time equivalent (FTE) cost needed over a period to manually handle the scenario. It's essential to recognize that trade processes have exception scenarios that might require manual intervention. **Therefore, achieving 100% automation is hardly feasible.**

Accenture has helped banks automate pre-processing and processing activities for pre-shipment finance. Pre-processing included completing pre-screening activities; retrieving application forms, invoices and transport document; workflow automation; and generating reference numbers. Processing activities included checking terms and conditions, including anti-money laundering, financial crime and compliance and sanction checks. We also helped capture payment details into underlying banking applications before transaction authorization takes place. We established that up to 60% of processes were suitable for automation. The remainder involved retrieving details from third-party websites, manual intervention and process exceptions.

By putting in an RPA solution, our clients were able to save up to 60% of annual FTE costs related to these processes, which kept numerous employees busy before automation. They could also break-even within **15 months**, adding a one-off investment for implementation resources, licenses and virtual machines.

In addition to these quantitative factors, numerous qualitative benefits should be considered when creating an investment case. These additional benefits include significantly enhanced accuracy through reduced manual errors in the daily service level target.

How can I implement RPA?

Implementing RPA starts with identifying the process(es) suitable for automation and establishing a high-level business case. It is followed by design, build and test, go-live and process control. It can be grouped in two stages:

DISCOVERY PHASE

- Selecting a candidate product for automation (not all trade finance products are equal candidates for automation).
- Process mapping, capturing As-Is pain points, process breakages, overall TAT for selected product fulfillment and total volume handled.
- Defining To-Be state after applying the automation solution and highlight the gain in term of FTE savings, reduction in AHT.
- Listing the maturity, efficiency gain, cost involved of each individual soultion (such as IOCR, ML, RPA)
- Capturing any changes required in process, system & policies.
- Phased implementation plan showing cost benefit against individual solutions, to enable à la-carte style investments in phases.
- A brief vendor analysis throwing light on potential market products & solutions.
- Ways to monitor, measure and improve gains and manage risks under the new process.

IMPLEMENTATION PHASE

- Decision on buy, build or co-create.
- Agile vs Waterfall
- Testing and manage defect.
- Go-Live
- Run and benefit realization phase

An agile approach to deploying RPA is always recommended over traditional waterfall methods, given its incremental and iterative approach.

- Agile helps prioritize critical process steps to automate first to implement a minimum viable product (MVP) very quickly.
- Based on an MVP, features can be added via collaborative prioritization across stakeholders to increase business value over time.
- Constant retrospective feedback allows banks to quickly apply learnings to new developments, simultaneously increasing quality and time to production.

What do I need to watch out for along the journey?

Challenges that organizations could potentially face during RPA implementation in trade finance can be grouped under business, operational and IT themes. The agile approach will help address each of these themes:

• The power of bringing business and IT change teams together early Business challenges during RPA arise when process automation feasibility is not evaluated sufficiently. Initial process assessments should involve business, operations and IT teams to demonstrate feasibility and benefit potential. The required business capacity should be planned.

The power of ongoing involvement across teams

Trade processes need to be captured at a keystroke level for the end-to-end process and should cover all the underlying applications in scope. This helps to classify the process into low, medium, high or very high complexity, which in turn determines the project time and development cost. Different teams (e.g., business, operations, risk and compliance and technology) need to be involved before and while introducing automation. A robust escalation path consisting of operation and IT teams is required if there are issues in running the RPA tool post-implementation.

The power of aligning technology across all areas

The automation solution is usually installed on virtual machines. Thus, system requirements should be clearly defined, and access for the "robots" ensured. At the same time, IT, data and access requirements should align with the enterprise-wide IT security architecture and policies from the outset.

Accenture's Cognitive Robotics Platform

Accenture has a proven automation delivery framework and deep experience in technical implementations. **We have more than 1,200 automation experts and over 9,000 automation and bot deployments.** Our organization leverages multiple global alliances with major technology partners, including Blue Prism, Automation Anywhere and UiPath. In addition to our proprietary RPA solution, Accenture Cognitive Robotics has three main capabilities:

CAPABILITY

DESCRIPTION

Cognitive Robotic Process Automation (CRPA)	Tooling to support automation of business processes by digital workers.
Cognitive Monitoring Agent (CMA)	Monitor, record and document activities and processes carried out on machines.
Cognitive Reader	Read and understand scanned documents e.g text extraction and stamp detection.



Figure 5 shows how Accenture Cognitive Robotics can help at each stage of trade finance:⁷

Figure 5: Digitizing front end through Accenture's cognitive robotics



Key Features of Accenture's Cognitive Robotics Solution

- Round-the-clock operation
- Collaboration with any integrated enterprise system with minimum to no changes to existing systems
- Bot action transparency with comprehensive daily reporting
- ML-ready for AML transaction monitoring
- Data extraction and capture from scanned trade documents
- Decision-making and compliance checks through ML and cognitive RPA

Key Benefits of Accenture's Cognitive Robotics Solution

- Cognitive RPA is easier to set up and learn than traditional RPA because it doesn't require parameterization.
- Unlike traditional RPA, cognitive RPA is vision-based, meaning it is far less dependent on the underlying applications.

SUMMARY

To be an industry leader, banks should embrace cognitive RPA and ML to switch their trade finance operations to auto-pilot. It will soon be the only way to remain competitive in this growing but challenging business.

Are you prepared to put your trade finance operations on **auto-pilot with cognitive RPA?**

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