

ROBOTICS

IN THE CREDIT CARD INDUSTRY
AND APPLICABLE USE CASES



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INTRODUCTION

The financial industry is under tremendous pressure to enhance the customer experience, meet regulatory requirements, and effectively use data to not only recommend products suitable for individual clients, but to also anticipate which services their clients may need in the future. Industry players are continuously looking for opportunities to transform their business processes and to reduce cost.

The credit card marketplace is among the largest, most diverse, and most complex of any financial product today. Declining profit margins and a surge in the volume of transactions have forced credit card companies to find new ways of reducing their operating costs, hence more companies are looking to disruptive technologies like robotic process automation (RPA), artificial intelligence (AI) and machine learning (ML) to realize this.

In this whitepaper we will explore the credit card value chain and how the implementation of RPA has helped organizations across the credit card industry.

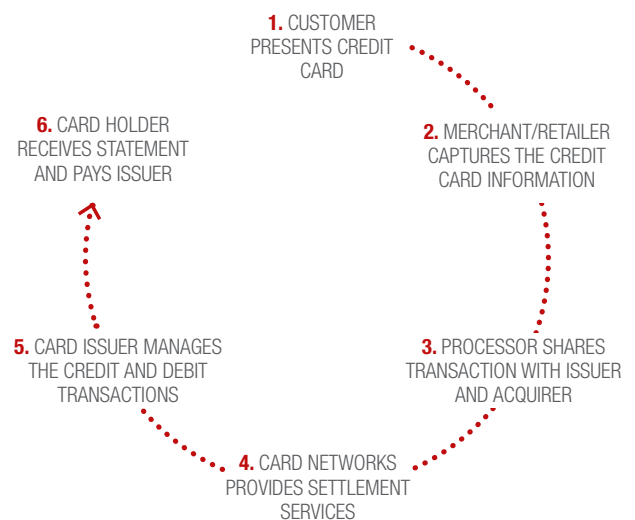
THE CREDIT CARD INDUSTRY

The credit card, or payment card, has come a long way from the early 1930s to its present form, with new features and benefits added sporadically. However, it wasn't until 1950 when Ralph Schneider and Frank McNamara produced the first general-purpose charge card when it really took off. The purchase volume for goods and services by cards is expected to reach \$52.4 Trillion in 2026; that is over double than what it was just two years ago (\$20.6 Trillion)¹. Companies are now enrolling more merchants and even more card members to their respective networks, which means more effort is required to service these customers.



In the United States in mid-2017, the top four issuers above provided more than 57 percent of all the credit card debt issued by 5231 banks, and the top 10 issuers issued nearly 90 percent.² American Express being one of them, was recently ranked highest in terms of customer satisfaction³ and has been an early adopter of RPA.

A typical flow of how a credit card works is shown below:



The different 'touch points' in card processing are:

- 1. Acquirers:** These are the infrastructure companies, and often banks. They help merchants get set up in the payments process and they are responsible for funding merchant banks. They charge a processing fee for the services offered.
- 2. Processors:** These companies are responsible for transmitting transaction data between different entities in the payments process. Some acquirers double as their own processors.

¹ https://nilsonreport.com/publication_chart_and_graphs_archive.php?1=1&year=2014

² <https://www.creditcards.com/credit-card-news/market-share-statistics.php>

³ <http://www.jdpower.com/press-releases/2017-jd-power-credit-card-study>

3. Card issuers: These are banks, but the ones that manage the credit and debits on credit card accounts. Some banks function as all three, acquirers, processors, and issuers.

4. Card networks: The two biggest card networks are Visa and Mastercard. They set rules and fees around card usage and industry standards like the PCI-DSS Security Standard. They charge assessment fees to both the issuer and acquirer.

With so many touch points and sub players in the card processing cycle, it is imperative for companies to ensure customer financial security, meet regulatory requirements and give best-in-class customer experience, and thus making it essential for companies to leverage new technologies in order to meet their objectives.

Some of the applications used within the credit card industry are outdated or no longer supported by tech companies. From being used for so long, they have witnessed that very few people have end-to-end knowledge of the original business logic built into the systems ages ago. With limited visibility and support, organizations cannot risk doing away with these applications easily. Due to these limitations, the cost of re-using or rebuilding these applications is so high that businesses prefer to invest in alternative solutions, focusing on use of technology to advance their innovation agenda.

The credit card offerings across customer and merchant value chain are as follows:

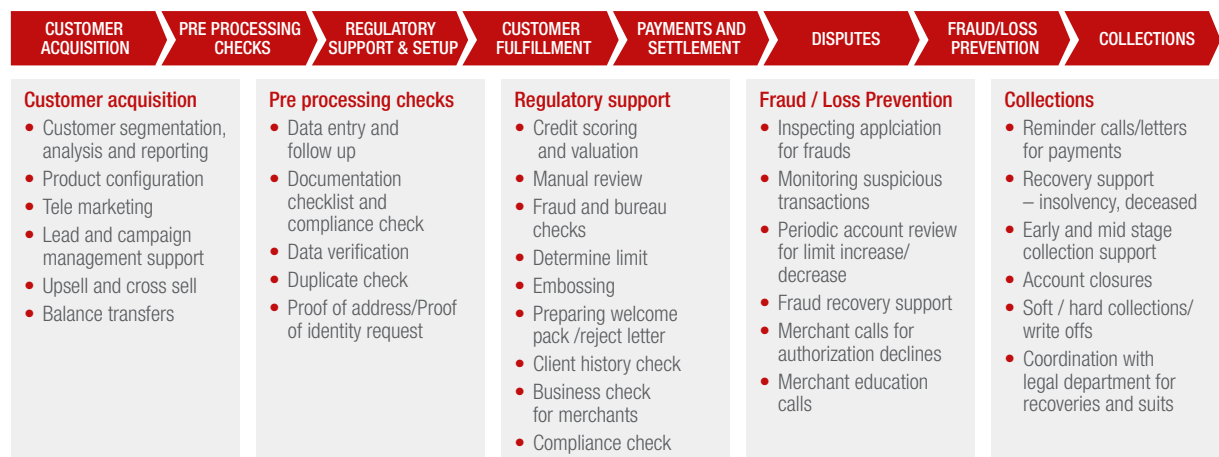
THE CHALLENGES FACED BY THE INDUSTRY:

Like any other business, cards payments businesses have been undergoing a churn and also a revolution triggered by innovation in technology and competition. These challenges can be categorized into three areas: technological, capability and players.

Technological growth has impacted the credit card industry by forcing them to embrace new and more modern methods of making payments and to not just look at 'plastic' as the only way that customers can make payments. Also, to make financial services more secure, technology is being leveraged to ensure regulatory compliance. Hence, use of digital channels for accepting payments are no longer an option – they are now a matter of survival for the payment industry.

Availability of technology has also forced industry players to improve their **capabilities** in order to meet new industry demands, as more businesses are trying to own more parts of the value chain to reduce cost. For example, Uber is looking to launch its own payments solution.

Traditional **competitors** are another reason of concern. High profitability in the credit card business has attracted many new entrants, thus resulting in resulting in the piece of the pie becoming smaller and smaller. The key question is: "How do you encourage customers to repeat transactions with the same card?" In order to overcome competition and stay relevant to the customer, companies are continuously investing to innovate their current offering. With reduced profit margins, they are looking for efficiencies and cost reduction to support these initiatives. With ever greater pressure to cut costs, credit card industry players alike are experiencing a fundamental shift in the way they look to service their customers' bases.



Digital communication channels are now more prominent than ever, serving as the primary medium through which the credit card industry aims to reduce its operating costs heavily.

At the same time, the industry faces ever greater competition from new ‘challenger’ institutions, who are not encumbered by legacy infrastructure, and are able to offer much faster, modern and more compelling customer experiences. These technology advancements, regulatory pressures and increased market competitiveness have created new complexities in meeting and executing on strategic and operational goals. But we believe that RPA and AI can help provide solutions to address these challenges by automating rule-based, standardized and repetitive processes.

RPA

RPA is the use of software or robots to mimic actions a human user would perform on a computer at scale, RPA automates the human element of mundane, manual and repetitive tasks.

RPA tools integrate with existing applications to interpret interfaces, manipulate data, trigger responses, and communicate across multiple systems without making any changes to the application it is supposed to work on and performs in a similar way as tasks done by humans. Technology innovation such as RPA also encompasses the initial steps towards enhanced cognitive solutions such as AI and machine learning, which, once matured, will further transform the automation agenda in the credit card industry.

AI

AI is a broad category of disruptive technology that can be applied to a myriad of different technologies, whose fundamental unified goal remains the same, i.e. to strive towards ever greater levels of automation. These technologies, although different in in nature, are designed to tackle different areas of the automation spectrum and can thus be used together to create meaningful solutions to real world problems - including challenges faced by the credit card industry.

THE BENEFITS OF RPA








| | |
|---------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
|  REDUCTION IN CASE PROCESSING TIMES |  REDUCTION IN COST OF OPERATIONS |
|  IMPROVED AUDIT TRAIL |  IMPROVED PROCESS INDICATORS |
|  EFFECTIVE HANDLING OF BUSINESS BOTTLENECK |  IMPROVED CUSTOMER EXPERIENCE |

We also see companies benefiting from an analytics perspective, in terms of improved data quality and increased scope for data collection from RPA implementation.

The benefits realized from applying RPA are not applicable for one financial year only. The virtual workforce or automated full-time equivalent (AFTEs) helps in reducing operations costs year on year. Companies have started publishing the number of robots versus number of employees and number of transactions performed by these AFTEs.

HOW TO IDENTIFY CASES FOR RPA

The key criteria to identify use cases for RPA are:

| GOOD CANDIDATE | PARAMETERS | BAD CANDIDATE |
|----------------|-------------------------------------------------------------------------------------------------------------------------|---------------------|
| HIGH |  VOLUME | LOW |
| HIGH |  FTEs REQUIREMENT | LOW |
| STRUCTURED |  INPUT | NON-DIGITIZED INPUT |
| MULTIPLE |  NO. OF APPLICATIONS /INTERFACES | ONE |
| LOW |  COMPLEXITY | HIGH |
| DAILY |  FREQUENCY /RECURRENCE | ANNUAL, HALF-YEARLY |
| DAILY |  STABILITY OF APPLICATION | LOW |

Though majority of the RPA roadmap is based on the above-mentioned parameters, there may be instances wherein other business priorities such as cost savings or regulatory initiatives, can supersede the roadmap.



USE CASES FROM THE CREDIT CARD INDUSTRY

In a typical credit card organization, examples of suitable use cases are:



Account setup is one of the high-volume activities wherein the information from application form is captured, reviewed and processed in the respective systems.

- New card member enrollment: Consumer, Corporate
- Merchant enrollment
- Amendment of customer data



Customer fulfillment: servicing and fulfillments is a typical back office function where all the maintenance and query handling is done. This includes: addressing customer requests, reward points redemption, account status changes, finance charge calculations, limit/enhancement/upgrades, reconciling merchant transactions, card activation and authorization, account maintenance, terminal order and setups.

The top volume contributors are:

- Credit balance refund
- Credit balance transfer
- Direct debit maintenance
- Cancellation
- Trade up trade down



Payments and settlement covers generation of billing statements, dispatch statements, payment posting, reconcile payment received, generate payment not received letters, tracing misapplied payments, post monetary adjustments to card accounts, etc.

The top volume contributors are:

- Allocation
- Remediation







This is for managing enquiries, investigation support, processing chargeback on system, adjustment credits, arbitration, client contact, merchant contact, reconciliations, handling disputed transactions from merchants.

The top volume contributors are:

- Card members not aware of the charge
- Card members that cancelled the services or purchase
- Defective goods by merchant/services provided by merchant didn't meet expectation

USE CASE 1 – DIRECT DEBIT MAINTENANCE

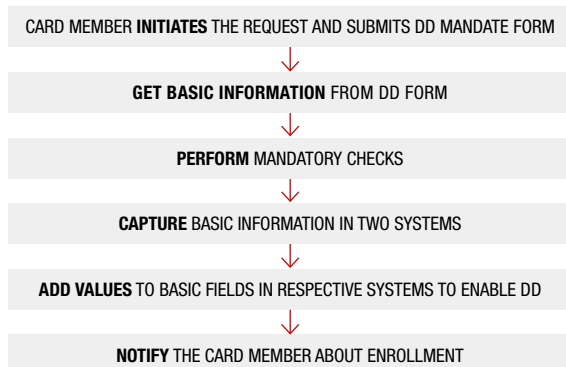
Direct debit maintenance: This process is initiated when a card member wants to enroll themselves for direct debit or to amend their already captured details or they want to cancel their enrollment. This process is completely manual, where agents are responsible for performing repetitive tasks of capturing account data of the customer to internal systems. The dashboard below shares the key indicators of the process.

| | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| <p>MORE THAN 200,000 TRANSACTIONS ANNUALLY</p>  <p>VOLUME</p> | <p>DAILY</p>  <p>FREQUENCY</p> |
| <p>20 FTE APPROX. ACROSS ALL MARKETS</p>  <p>FTE</p> | <p>MEDIUM</p>  <p>COMPLEXITY</p> |

The case is presented to back office for processing. To enroll or amend each market, requires individual forms to be filled in, and then once done, these are scanned and sent to the back office for processing.

The challenges in this process from an automation perspective is a scanned ⓘ and handwritten direct debit (DD) form.

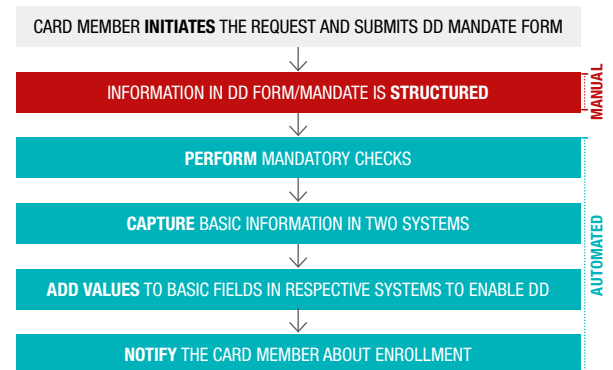
AS-IS DESIGN







The following were considered as exception scenarios due to low volume scenarios were kept out of scope due to low volume:

- The card is blocked (approximately 1% of total volume)
- The DD mandate form is not signed (approximately 1% of total volume)

TO-BE DESIGN







The process was automated using RPA technology, where the reading of information from the scanned form is either manual or automated using OCR. The capturing of information in different systems, along with mandatory prechecks, is performed by RPA. This new automated process has helped in achieving the following:

| | |
|----------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
|  <p>A REDUCTION IN MANUAL EFFORT BY 60%</p> | <p>AN AUTOMATION RATE OF 70%</p>  |
|  <p>MEETING REGULATORY REQUIREMENTS</p> | <p>IMPROVEMENTS IN TURN AROUND TIME</p>  |

USE CASE 2 – CBR





Credit balance refund (card member initiated) (CBR): RPA experts will not recommend a complex process like Credit Balance Refund to be prioritized during the early days of RPA implementation (includes financial impact as well).

Initiation of CBR request can be company initiated or card member initiated. Due to regulatory requirements, any credit balance lying in credit card account for more than a specific number of days. This type of request is called a company-initiated credit balance refund. Both type of processes are similar except that the process 'card member initiated', the only difference being that the company reaches out to the card member for confirmation on mode of refund. Once confirmation is received, the process is exactly like that of the card member-initiated process. The indicative numbers below for card member-initiated request are:

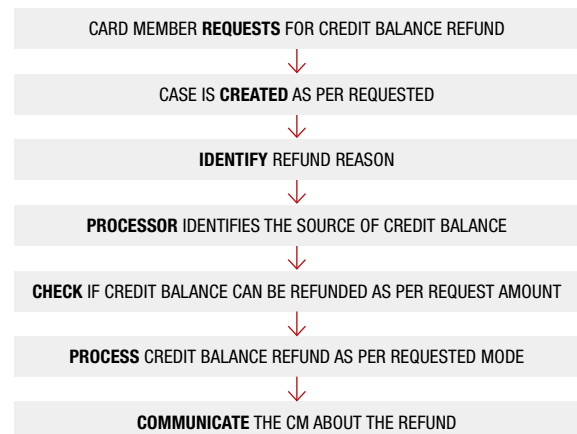
| | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| <p>MORE THAN 3,600,000 TRANSACTIONS ANNUALLY</p>  <p>VOLUME</p> | <p>DAILY</p>  <p>FREQUENCY</p> |
| <p>35 FTE APPROX.</p>  <p>FTE</p> | <p>HIGH</p>  <p>COMPLEXITY</p> |

This process is initiated when the card member reaches out to the company, requesting they refund the credit available in their account. This is when the source of requestor and payment details are to be validated. Also, it needs to be ensured that if the card member has requested to refund their credit balance to someone who is not related to his/her account, their name is validated for anti-money laundering (AML). As per regulation, credit can only be refunded to those who are not identified by the AML tool.

The challenges in this process from an automation perspective are:

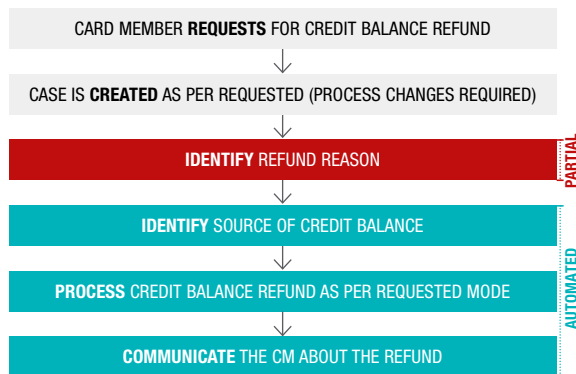
| | |
|----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
|  <p>UNSTRUCTURED DATA</p> |  <p>FREE TEXT NOTES AND CASE DETAILS ENTERED BY TEAM</p> |
|  <p>IDENTIFICATION OF CREDIT SOURCE</p> |  <p>VALIDATION OF CHECK PAYMENTS</p> |

AS-IS DESIGN



As you can see from the above, there was a break in the existing process, where AML checks were carried out at the end of day and the case was closed post-AML checks thereby increasing the service level agreements.



FUTURE STATE DESIGN



Due to unstructured notes, the upstream process was streamlined to ensure that a format is used to identify the requestor, the address where the individual wants to get the refund, and if they have nominated someone else to get the refund (applicable to certain conditions only). The AML check was included as part of the refund process so that automation could check if the name is approved during sanction screening. The following were defined as 'out of scope' scenarios for robotic process automation:

1. Input is a letter/fax (approximately 10% of entire volume)
2. Credit balance generated because of previous payment (approximately 10% of entire volume)
3. If sanction screening result is positive (approximately 1% volume)
4. If credit balance is generated due to multiple payments and not single payment (this is why the step above is marked as partial)

The advantages of RPA implementation in the process are:

| | |
|-------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
|  <p>REDUCTION IN MANUAL EFFORT BY 60%</p> |  <p>AUTOMATION RATE OF 70%</p> |
|  <p>MEET REGULATORY REQUIREMENTS</p> |  <p>IMPROVEMENT IN SLA</p> |
|  <p>ACCURACY</p> | |

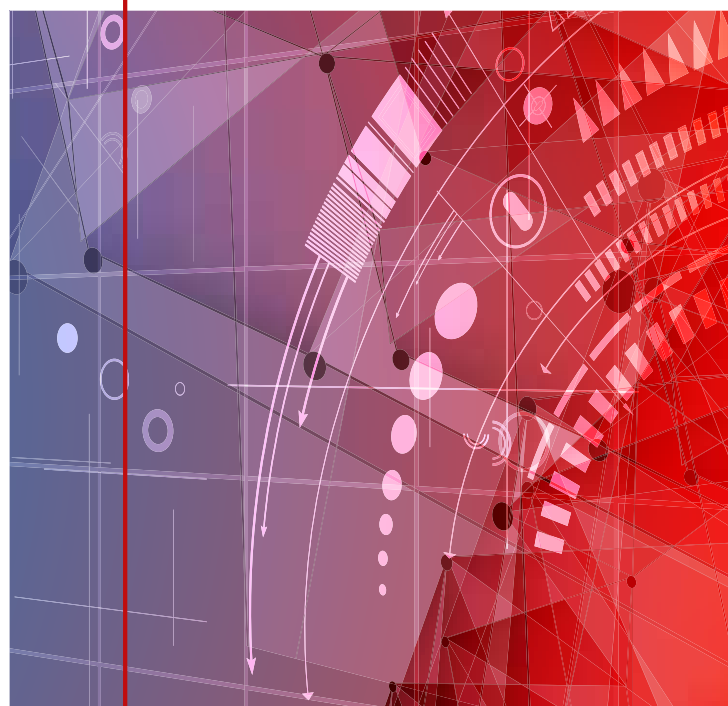
CONCLUSION

The virtual workforce can help in effectively transforming the credit card industry without interfering and investing in underlying infrastructure. This in turn will translate into faster processes, efficiency gains and quicker time to market. Provided the processes and workflows are mapped with accuracy and foresight, RPA and AI (or other new technologies) can have huge benefits for its adopters. RPA and AI can also be enabled to meet the gap between increasing workload and reduced funding. These advantages cannot be ignored in the current environment when companies are battling a variety of internal and external challenges. Thus, adoption of disruptive technologies like RPA can help financial institutions to focus on further improving their value chain, and retain their market position.

We know that competition is fierce in today's financial markets – and the credit card industry especially. As we have shared in this paper, RPA is not the panacea for every business process, but its various operational efficiencies and cost benefits, is part of an exciting direction of travel for credit card industry players.

For further information on how to build a successful RPA and AI roadmap, or advice on implementations, governance and production support, please contact:

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