

# The Great Custodian Bank Shake-up Part 2: Transforming Operations by Leveraging Intelligent Technologies

## Abstract

Custodian banks continue to grapple with cost pressures, operational challenges, and legacy infrastructure. The advent of disruptive technologies such as blockchain, robotic process automation (RPA), and cognitive technologies have helped custodian banks to resolve these challenges. In Part 1, of a two-part series, we examined the potential of blockchain in transforming custodial operations. This paper, the concluding part of the series, highlights how artificial intelligence (AI) robotic process automation (RPA), machine learning (ML), and other cognitive tools can be leveraged to reimagine key service areas in custodial operations.

## Reimagining Custodial Operations: Technology Leads the Way

Custodian banks are under pressure to offer competitive and cost effective services to their customers despite operating with legacy infrastructure and manual, sub-optimal processes. This, coupled with the need to comply with stringent regulations, leads to huge maintenance costs, operational risks and poor customer experience. Improving operational efficiency, reducing costs, and enhancing customer experience are the primary goals of custodian banks today. To achieve these goals, custodian banks are adopting the latest digital technologies such as robotic process automation (RPA), intelligent automation tools, and decision support systems built using machine learning (ML).

Table 1 shows the functional areas where AI technologies, automation, and robotics can be implemented in custodian banks. Let’s examine the functional areas where each of these technologies can be used to reimagine custodial operations.

Functional area	Process or sub functional area	Technology	Adoption possibility
Reference data setup	Customer information setup	RPA	High
Trades and settlement	Trade capture	RPA, NLP	Medium
	Instructions to sub custodians	RPA	High
	Settlement instructions processing	ML	Low
Asset servicing	Announcements capture	NLP, RPA	Medium

Table 1. Disruptive Technologies - Adoption Areas

### Robotic Process Automation

Many custodian firms still rely on manual operations to complete processes in different business areas. For example, capturing announcements for corporate actions (CA) or scrubbing and, CA event creation are still dependent on manual collection, collation, and data entry. Such manual, error-prone, and time consuming, processes are prime candidates for robotic automaton. Similarly, there are other custodial processes suitable for automation through RPA. RPA helps automate the mundane and repetitive manual processes freeing up operations staff or shared services teams for higher value adding activities thereby creating exponential value for custodian banks. RPA solutions that can be used instead of full-fledged software applications do not typically require any change to the underlying legacy systems. Instead, they have the capability to interface with the existing applications and



mimic human actions. Let's examine a few custodial processes where RPA can be successfully applied.

### **Data setup and maintenance for client account**

To set up a client account, information is usually retrieved from client documents and manually entered into the application. This is followed by a review. RPA solutions built using intelligent character recognition (ICR) and optical character recognition (OCR) technologies can be deployed to access and configure the data files and the applications. OCR helps recognize the typed data while ICR deciphers hand-written forms and helps eliminate manual data entry. However, manual intervention is still required to validate the data extracted from client documents.

### **Product reference data setup and maintenance**

Custodians receive securities related information from several reference data vendors like Bloomberg, Reuters, TELEKURS and so on. Many custodians configure their securities reference data by referring to these feeds or websites of the reference data vendors. However, manual errors during the information-capture process often expose banks to operational risks. RPA can help automate the process of accessing reference data from vendor sites, querying data for product setup, and merging the data collected with other reference data. This can in turn help eliminate manual errors and corresponding operational risks.

### **Reconciliation of trade settlement fails**

Custodians receive settlement instructions for customer trades, which are matched to the counterparty settlement instructions in the trade matching systems. However, when settlement instructions do not match due to breaks, they have to be manually reconciled and matched, which requires around five to 10 minutes of time and effort. A RPA solution that incorporates the appropriate matching rules can be employed to fix the breaks in seconds saving manual effort and mitigating the operational risks involved in manual reconciliation.

### **Capturing announcements for corporate actions**

The custodians receive CA announcements from different sources and users identify the type of CA that need to be created from the available information. Operational executives leverage their skills and expertise to identify and create the right type of CA based on information in the announcement, reference data, the market and the source of announcement. This process requires significant time and effort. Given there are limited varieties of CAs RPA can be employed to identify the

right type and accurately configure the event. This would help unlock value by minimising time, effort and cost incurred on the process.

## Intelligent Automation Tools

Intelligent automation tools can perform more advanced tasks compared with RPA solutions. These tools are built using ML algorithms and are equipped with cognitive capabilities. The custodian banks can adopt them for tasks that require human judgment and decision-making abilities. These systems are typically self-learning, which means that they learn from each interaction and become progressively better equipped to perform judgment and decision-based tasks. These tools can be employed in conjunction with RPA solutions to realize their complete potential.

Cognitive tools predominantly focus on cost reduction by eliminating human intervention in customer processes while decision support systems typically center on customer experience and revenue enhancement. Cognitive use cases are industry agnostic and more mature whereas decision support systems are industry specific and can even be organization specific and complex. Customer support centers and operations staff can leverage intelligent search tools equipped with smart search capabilities built upon natural language processing (NLP) technologies. For example, operations staff can search the knowledge repository of all CA announcements using a simple NLP based search tool. Such a smart tool can understand search criteria expressed in natural language and convert it into a structured query to retrieve details of a similar complex CA announcement. Back office tasks like report generation, e-mail classification and response, which are currently manual, can be automated using smart tools.

Existing decision-making processes involve obtaining and analyzing data from multiple sources, which can be time consuming. Data used to arrive at a particular decision may be limited and the underlying logic of using the data can be inflexible to change. ML-powered decision support systems have the capability to process several thousand attributes and build a model for various decisions. Such a model comes with the capability to learn from erroneous decisions and cater to shifts in parameters like customer demography and macro-economic conditions. Some use cases for decision support systems include:

- Building counterparty credit risk profiles for customers based on their counterparty exposures and available historical risk data. This can help custodian banks understand and predict the possibilities of a default for their customers' counterparties.

- Risk assessment of financial securities by analysing social sentiment based on information gleaned from news sites, social media platforms, and company reports of the issuer company. This analysis can deliver early warnings for impending market risks related to specific securities. Consequently, custodians will be able to proactively take appropriate collateral management decisions involving a specific security well before the risk event occurs.

## Embracing Disruptive Technologies: From Theory to Action

The way forward lies in implementing RPA-based solutions as well as creating a roadmap for adopting AI and ML based solutions in the intermediate term. Custodian banks should start rolling out cognitive use cases as these are more mature and can deliver quick returns. They must also start exploring decision-support use cases to improve customer experience and create new revenue opportunities while also framing a data strategy to feed into decision-support solutions.

The most important step in the adoption of these technologies is to identify the data for analysis and feature engineering (see Figure 2). The next step is to identify the ML model to address the problem. At times, a combination of models (ensemble modelling) may be needed to train the model. After the production roll out the chosen model will have to be reviewed and re-trained at regular intervals.

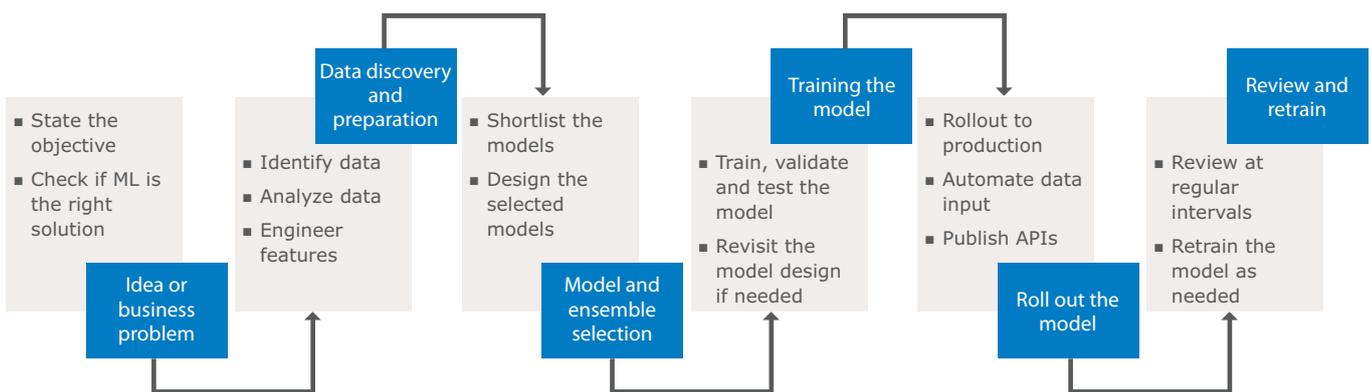


Figure 2: AI Adoption Cycle

## The Bottom Line

Custodian banks must actively consider adopting disruptive technologies to improve operational efficiencies and reduce costs. Enterprise grade software and tools powered by disruptive technologies are maturing and custodian banks must grab this opportunity to create exponential value for their organizations as well as their customers.

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