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Project for Business Development and Marketing Intern

Case Study on

ICICI Bank is using AI to amp up customer centricity

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Contents

Problem / Objective:

Recently, ICICI Bank began to use software robotics in their banking operations to reduce the response time and to improve efficiency. However, a section of the bank's customers is still unconvinced about the automation tools, often leading them to reach out to the bank with numerous queries, especially when money is remitted from international locations. As a result of the high influx queries, the average time taken for responding to them increased to 12 hours, negatively affecting customer satisfaction.

To overcome this challenge, the ICICI Bank introduced an AI engine that was developed using machine learning, NLP, and cognitive computing tools. The engine process queries from customers using text analysis and semantic analysis. The use of cognitive tools helps the bank's system to understand the query, process the query, and solve the issue through the bank's interface and revert to customers with the right solutions. The use of machine learning allows the engine to self-learn the querying processing and to provide better results to its customers.

Background:

ICICI Bank, India's second-largest private sector bank has deployed software robotics in over 200 business processes across various functions of the company. ICIC seems to be referring to what is often referred to as "robotic software" – a kind of software generally focused on automating office work.

In 2016, ICICI Bank became the first in India and among few organizations globally to deploy software robotics at a large scale to power its operations with 200 software robotics performing 1 million transactions daily.

Two years hence, the private lender has scaled its RPA initiative to more than 750 software robotics handling approx. 2 million transactions daily which is 20% of the transaction volumes.

Software robots have been used in operations across different lines of business, which emulates human actions to automate and perform repetitive, high-volume and time-consuming business tasks. ICICI Bank has deployed software robotics functions across the organization including retail/wholesale/agri banking operations, treasury operations, human resources management, international remittances and private banking.

Earlier, when our customers wanted limits to be set up, the amount was sanctioned and then the operations team would go into our core banking system and set up these limits. But these limits can be complex because there are various sub-sections and fungible limits. And hence it was one of the most critical functions that operations were doing.

Solution by ICICI Bank to their problem:

ICICI Bank has played a pioneering role in the digital transformation of the financial services industry in India.

The benefits of AI for banks
AI has many advantages for lenders in online loan management, assessment and disbursal. However, its benefits are not just limited to loan assessment; it also offers other advantages such as:

- Ensuring faster approval and processing of loans.
- Helping create a credit profile for first-time loan applicants.
- Helping banks bring more borrowers to the lending ambit and ensure business growth.
- Bringing down servicing costs for banks.
- Enhancing security and regulatory compliance.
- Improving data and risk management.

Experts believe that AI will help lenders reach over 350 million first-time credit borrowers and will reduce loan delinquencies by at least 33%. AI and ML technology ensures faster detection of error in information and documents provided by the loan applicant, thus helping banks to reject likely defaulters. The use of predictive analytics is 90% accurate in detecting the repayment behaviour of a prospective customer, thus it helps in bringing down delinquencies.

IPal (Chat bot): Launched in 2017, ICICI Bank's AI chatbot *iPal* has so far handled millions of queries on bank's portal and mobile app iMobile that includes information and financial services with nearly 90% accuracy. ICICI Bank's AI chatbot iPal empowers customers with information and financial services.

iPal chatbot is claimed to be the only AI led chatbot services in India that is available on the bank's website as well as mobile application.

What is iPal?
iPal is an Artificial Intelligence based virtual financial assistant. It is always available to answer your banking questions, helps you do basic transactions and make everyday banking easier. All answers given by iPal are automated, but iPal is trained to understand your queries and improve the responses.

iPal Features & benefits: ICICI Bank 'iPal' is designed to

- Interact using voice command
- Available 24*7 at your service
- Personalized contextual offers
- Conversational way to make your transactions

What can iPal help with?
 iPal can help with:

- General banking queries
- Transactions like bill payments, mobile recharge, fund transfer, etc.
- Navigate within app/website
- Show your personalised offers
- Get your branch details, find nearest branch and ATM.

In which languages iPal can speak?
Currently iPal understands and speaks English only.

Are the conversations with iPal recorded?

Conversations of all users are stored in order to train and improve iPal's understanding.

The services offered by iPal are divided into three broad categories, most of which are mapped to the iMobile app:

- Category 1: It involves FAQs, which are simple questions that you may want to ask your bank executive for which there are simple, structured answers. You ask the queries and the bot will give you the correct response, and it learns along the way.
- Category 2: It involves financial transactions, wherein you can make fund transfers from person-to-person, pay your bills or recharge your mobile phone bills using queries.
- Category 3: It involves helping people discover new features. These are simple how-to tasks such as how to reset your ATM pin, which is a bit more evolved and is like interacting with your bank executive.

The bank is currently in the process of integrating iPal with existing voice assistants such as Cortana, Siri and Assistant.

This initiative is part of ICICI Bank's big move to leverage new technologies like artificial intelligence (AI) and (ML) to enhance the customer experience as well as organisational efficiency.

"Some of the initiatives we have taken in the artificial intelligence/ machine language world as to how is it we can pick up some of these new technologies and scale it up primarily from two perspectives – customer experience side and another, from the bank's perspective in terms of efficiency and productivity increases of our employees," said *Balakrishnan Madhivanan, ICICI Bank's (CTDO)*.

Interestingly, iPal chat serves customers with their queries as well as it offers financial services like micro transaction, such as bill payment, fund transfer, account view, recharge and more going ahead.
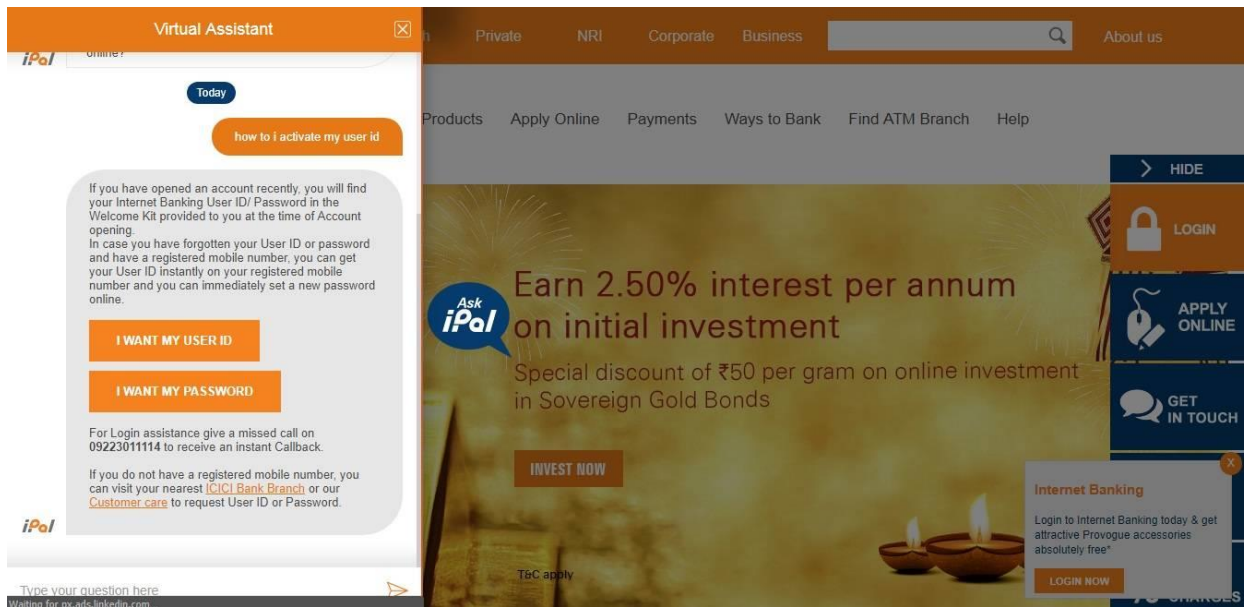
At present, chatbot largely supports English language-based text or chat queries. In case, if the chat becomes complex and bit cumbersome then it naturally shifts to a live operator (human agent). Based on the way the live operate treats that particular chat, iPal chatbot is learning and building its insights and there is one of iteration by which the learning module for internal parley service requests and provide convenience to customers. Besides, on the internet side, the bank wants to build more responsive website to support internet-based search using a search-based module.

This will help the customers with chatbot enabled search of relevant information and services with a certain percentage of accuracy, which improves automatically over a span of time.

The iPal chatbot is actually built on a combined partnership of internal teams, a fintech and an international tech player. However, the bank didn't disclose the names of these entities citing commercial and other reasons. NLP module for internal parley service requests and provide convenience to customers. Besides, on the internet side, the bank wants to build more responsive website to support internet-based search using a search-based module.

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In terms of voice based biometric authentication, it's a different kind of challenge. Voice actually brings in more complexity and so instead of reducing the turnaround time and making the experience much more pleasant, sometimes it ends up having a wrong impact. So, they are going about this particular issue, cautiously.

Software robotics material:

The software robotics at ICICI Bank are configured to capture and interpret information from systems, recognize patterns and run business processes across multiple applications to execute activities including demographic data validation and updation, data formatting and consistency verification, multi-format message creation, text mining, workflow acceleration and reconciliations among others. *Anita Pai, Head-Operations*, ICICI Banks shares how the bank has scaled up the RPA initiative and placed big bets on AI, chatbots and a host of other emerging technologies to *amp up operational efficiency:*
"We have implemented the 'Software Robotics' platform mostly in-house, leveraging recent advancements in artificial intelligence such as natural language processing, machine learning, cognitive tools, optical character recognition, data analytics and bots amongst others. Optical Character Recognition (OCR) is an old functionality but using it in conjunction with robotics to improve the efficiency and efficacy of OCR are some of the new initiatives we are embarking on."

The software robots at ICICI Bank are configured to capture and interpret information from systems, recognize patterns and run business processes across multiple applications to execute activities, including data entry and validation, automated formatting, multi-format message creation, text mining, workflow acceleration, reconciliations and currency exchange rate processing among others.

The bank has created the software robotics platform mostly in-house, leveraging AI features such as facial and voice recognition, natural language processing, machine learning and bots among others.

It should be noted that robotic software is by no means new, and is a staple in large white collar work environments – including many [US banks](). That being said, we're unable to judge ICIC's applications one way or another from the outside. We suspect that if ICIC will see improved margins (and ethical concerns around job loss) if they succeed in truly pushing the boundary on robotic software.

Impact / Implementation:

Software robotics have reduced the response time to customers by up to 60% and increased accuracy to 100% thereby sharply improving the bank's productivity, ability to handle scale efficiently. It has also enabled the bank's employees to focus more on value-added and customer service-related functions.

Besides, the ability to handle scale has improved. The bank has fulfilled the objective of being scale agnostic. Moving away from manual processes has helped the employees to ensure that processes are designed correctly and any fallouts in the process are handled quickly. So, the employees are able to focus on more value-added and customer service functions.

Most of the software robotics is geared to manage voluminous repetitive processes to be dealt with efficiently. In the banking operations, there is a lot of information that we sometimes move from one application to the other and while doing this we use some rules. These are the kind of operations that the software robotics platform has helped us simplify. For instance, it has helped them with demographic data validation thereby ensuring consistency across various operations. They are at various stages of doing user acceptance training etc. This will help them further reduce turnaround time for customers and automate another .4 million transactions on an annual basis.

Let's take another example. One important use case is with respect to the 15G/H which every senior citizen submits at the beginning of the financial year. Typically, the time to submit it is April and May so the volumes go up during that period.

When the customer submits the 15G/15H, it is the duty of Operations to ensure that all the holdings that he has with us have been covered in the 15G/15 H certificate. The minute the customer's hands over the 15G/H to the branch, they check it for signature and then through internal application the branch scans it and sends it to Operations. The software robotics platform checks the core banking to make sure that all the fixed deposits that the customer has are covered and therefore ensures that there is no miss-out and there is no hassle to a customer subsequently for any inaccuracy that there may be.

The other big use case is portability of accounts. If the customer opens an account in a particular branch and subsequently would have changed address and would like to move this account to a branch closer to them, it requires a lot of checks that need to be done prior to ensuring that the account if ported. Moreover, if the customer has a standing instruction or a bill pay attached to his account then it has to be done very carefully. We need to ensure that nothing is allowed to be missed out or lapsed. Earlier, the series of checkpoints through which the operations staff would go through were many and the process was still prone to error. Now through RPA, all these functions are performed very quickly and without any error.

 Now, we can use the platform of software robotics to ensure that the limits are set up the way it has been designed because the sanctioned document is also a digitized document and the operations unit can read from there and insert it in the right place in the customer's limit node. The process has to be 100 percent accurate and we've been able to achieve that with software robotics.

Final Outcome:

AI-powered customer service is the future of operations. ICICI Bank has started leveraging AI along with their software robots and NLP.

AI is also used in document scrutiny. An AI engine aided by OCR is able to do this much faster and much more efficiently.

Es told by the bank to Emerj: *"At ICICI Bank, software robots have reduced the response time to customers by up to 60 percent and increased accuracy to around 100 percent thereby sharply improving the bank's productivity and efficiency. It*

has also enabled the bank's employees to focus more on value-added and customer-related functions."

Future roadmap and learnings:

ICICI Bank is moving into more complex automation, which is RPA + OCR + AI, ML. "It involves, going through multiple processes, picking data through OCR, running AI, ML on it and also validating the same data and updating an altogether different system," says Anubhuti Sanghai, Head – Operations and Customer Service, ICICI Bank.

"I believe that the implementation of software robotics will herald a transformational change in the Indian banking industry. We plan to more than double the software robots to over 500 by end of this fiscal," said Chanda Kochhar, chief executive, ICICI.

Companies should ultimately go for a services-based architecture. Moving towards an end-to-end automated platform, which eliminates RPA over a period of time.

References:

- https://indiaai.gov.in/case-study/icici-bank-leveraging-ai-to-augment-customer-service-and-support
- https://cio.economictimes.indiatimes.com/news/strategy-and-management/how-icici-bank-is-using-ai-to-amp-up-customer-centricity/63390838
- https://www.icicibank.com/blogs/personal-loan/artificial-intelligence-in-loan-assessment-how-does-it-work.page?
- https://www.icicibank.com/Personal-Banking/ipalchatbot.page
- https://emerj.com/
- https://cio.economictimes.indiatimes.com/news/enterprise-services-and-applications/icici-banks-ai-chatbot-ipal-empowers-customers-with-information-and-financial-services/61118452