CASE STUDY

ICICI Bank is using AI to amp up customer centricity

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INTRODUCTION

Banks today have a differentiation problem. According to the research firm Forrester, **one-third of customers** say all banks are essentially the same. In an effort to pull away from the pack, it's critical for banks to create personalized experiences that surprise and delight their customers, making them feel like a valued individual rather than a collection of account numbers.

In this process **ICICI** bank is taking a leap forward by implementing AI in various aspects of banking sector e.g using chatbot for customer facilitation, lending and loan assessment using AI etc.

Banking is a customer oriented service industry and customer satisfaction has become the most important aspect of any banking business due to immense competition. Banks are more determined to retain their existing customers by providing quality services leading to **Customer satisfaction**.

Customers are dissatisfied because of nature and behavior of the banking employees.The customers are encountering problems might be because of insufficient staff or staff should be behaviorally equipped with to satisfy their needs to enhance satisfaction level.

Conversational AI also enhances a bank's ability to build rewarding long-term relationships with customers. For example, some platforms can provide personalized recommendations with contextual offers for products and services and assist customers in making decisions about which loans, credit cards, savings and investment accounts are right for them. A branded virtual assistant gives you a vehicle to share those recommendations, and a unique opportunity to use data to proactively inform your customers and increase their share of wallet with you.

Conversational AI platforms can be implemented to fulfill customer requests, solve problems and predict customers' needs in ways that are as natural as texting a friend. In addition to this, some of the more advanced bots support omnichannel delivery, making it possible to interact with customers anytime, anywhere and allowing them to engage on the channel they most prefer, whether it's voice or text.

It is known fact that 50% of first-time loan applicants have to face rejection from financial institutions. Lending and loan assessment is major source of income for banking institutions including **ICICI** bank, earlier traditional lending systems have relied solely on credit scores, legacy processes and tedious paperwork, it became extremely difficult for customer to avail this service.

Determining the creditworthiness of a borrower without a credit score has been a big problem for financial institutions including **ICICI** bank. This problem leaves many deserving borrowers out of the credit net while lenders lose a big chunk of business. As mentioned earlier, 50% of first-time loan applicants are rejected solely because lending institutions have overemphasised on credit scores and credit history.

AI and Machine Learning (ML) provide a solution to this problem through predictive analytics, digital footprints and other complex algorithms and data points. Financial service providers now can rely on the digital presence of a loan applicant, by assessing online shopping habits, utility and telephone bill payment history or even social media profiles for determining creditworthiness.

Trust and loyalty is major key and challenge for any customer oriented services. By providing their customers with proactive recommendations and helping them achieve their financial goals, banks can foster financial literacy and well-being. Conversational AI gives insights into spending, uncovering those insights to make customers more aware of their financial status and help them reach their goals. Rather than present the

data in a static spreadsheet or long-form statement, AI powers human-like conversations to help build brand affinity and trust, fundamentally changing the relationship between bank and customer.

ANALYSIS

ICICI Bank launched its artificial intelligence-powered **chatbot**, named **iPal**, in February **2017**. Eight months since the launch, the bank has released some numbers: **Six million** queries answered and **3.1 million customers** have interacted with the bot, which managed a **90** percent accuracy rate. According to ICICI Bank, the fact that its AI-led chatbot service is offered both on the mobile app as well as on its website makes it the first bank in India to do so.

According to some numbers released by the bank, **iPal** addresses close to **1 million queries** a month on the website and the app. It is available 24x7 and is available to domestic as well as NRI customers.

Speaking of the eight-month completion of iPal bot's service, B Madhivanan, chief technology & digital officer, ICICI Bank spoke to media persons. According to him, AI is the next step in the evolution of banking services which started with phone-banking with call centre support, followed by internet banking and mobile banking.

"Unlike structured queries, using iPal is more like an interaction. In case the chatbot does not have a resolution to your query, you can go to a live human operator. The chatbot will learn how the human operator resolved your query to become more intelligent. On the web platform, we have also integrated the chatbot with the search module, so that the bot can learn your search habits and provide better experience," said Madhivanan.

According to Madhivanan, the services offered by iPal are divided into three broad categories, most of which are mapped to the **iMobile app**. The first category involves the FAQs which are simple questions which 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. The second category involves financial transactions, wherein you can make funds transfer from person to person, pay your bills or recharge your mobile phone bills using queries. Finally, the last category involves helping people discover new features. These are simple how-to tasks such as how to reset your **ATM Pin** or something along those lines which is a bit more evolved and is like interacting with your bank executive.

multiple voice assistants and that certainly presents different challenges," said Madhivanan.

Madhivanan said that **80 percent** of the calls to their call centres were about simple things which could be resolved through straight-forward processes. According to him, the idea

of using an artificial intelligence powered chatbot was to reduce the mundane load on its human resources and redeploy them.

"AI reduces load on mundane queries, which gives them more time to handle higher quality queries. While we may not be able to recruit more people, we are certainly not laying off people due to this — there is a lot of redeployment happening. At least for the next 4-5 years the chatbot will not be a primary usage," said Madhivanan.

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. 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.

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, work flow acceleration and reconciliations among others.

ICICI bank 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 ICICI bank is embarking on.

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.

ICICI 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 us with demographic data validation thereby ensuring consistency across various operations. ICICI bank 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.

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, bank 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.
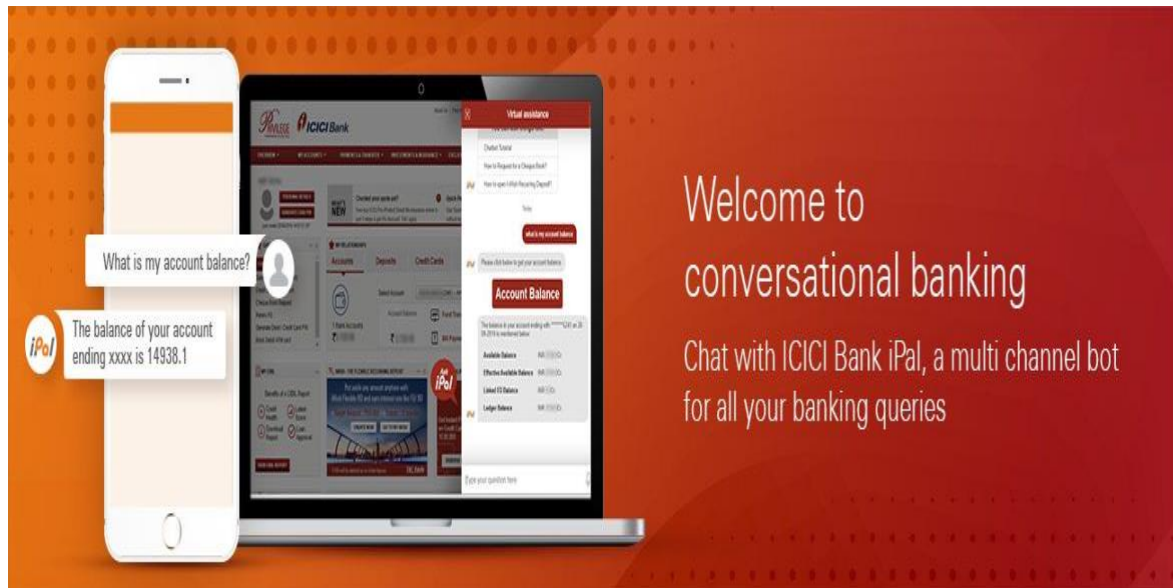
The other big use case is portability of accounts. If the customer opens an account in a particular branch and subsequently would have changed address and would like to move this account to a branch closer to them, it requires a lot of checks that need to be done prior to ensuring that the account if 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.

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. Now, we can we 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 they have been able to achieve that with software robotics.

Indeed, AI-powered customer service is the future of operations. ICICI Bank, have also started leveraging AI along with their software robots and NLP. They are also trying new experiments and initiatives in the space of cognitive tools.

ICICI bank has also introduced AI led engine in their **international remittance** operations. This has helped to reduce the query resolution time. Earlier, it took about 12 hours but now done in real time. When customers remit money from international locations into India, there is a bit of anxiety and so they write to them asking for an update. This was manually handled earlier. They have now been able to create an AI engine which is able to read the customer query, understand the intent of the mail and make sure it goes into the processing system, make a reply and submit it to the customer. Earlier, it was manually handled and took them 12 hours to turnaround the request. Now it is real time.

ICICI bank also use AI in document scrutiny. The Operations team is responsible for documents submitted by customers in line with what is required of them. We were doing these checks manually. Now, an AI engine aided by OCR is able to do this much faster and much more efficiently.

CONCLUSION

ICICI bank is the first in the country to deploy Artificial Intelligence and software robotics in banking sector.

They have used Machine learning for predicting lending and loan assessment. With the help of **Chatbot ipal** and **iMobile app** they have been able to answered **Six million** queries answered and **3.1 million customers** have interacted with the bot, which managed a **90** percent accuracy rate.

ICICI bank have deployed **chatbots** for customer queries and documentation. This has helped them operations to give real-time responses to customer queries including their own employees. So if an employee needs to know what documents he needs to pick up from a customer he can invoke the chatbot, get the reply and even get the formats of the documents that he is supposed to collect from the customer. Chatbots have been another improvement that they have done in customer operations.

FUTURE ASPECTS/ RECOMMENDATION

ICICI bank also aims to start local language support for its **natural language processing** feature with **iPal**. They are cognizant of the importance of local languages. **'Mera iMobile'** app supports 12 languages. Bank have not initiated smart chatbot iPal with multiple language functions just yet. The most obvious languages seem to be Hindi and Tamil, but they aims to extend it.

They are also aiming at voice banking integrating **iPal** chatbot with existing voice assistants such as **Cortana, Siri** and **Google Assistant.** They have started providing **Alexa** Amazon voice assistant integrated with **iPal**.

AI encompasses a wide range of technologies, including robotic process automation, natural language processing, advanced data analytics, and image analytics. Use of these technologies will help banks improve both front-office and back-office processes.

Customer-facing uses of AI include chatbots that improve communication between banks and their customers, advanced analytics that can offer proactive advice to consumers and take simple financial decisions on their behalf, and facial recognition that improves onboarding and makes it easier for consumers to log into their accounts.

Data Analytics to predict future results and trends:
The effortless and fast processing of large volumes of data enables banks to observe patterns of customer behavior, predict future results, and contact the right customer with the right product at the right time. It also helps in detecting fraud and fraudulent transactions and simultaneously identifying the anti-moneylending model on a real-time basis.

Intelligent Character Recognition System

This system has been identified by some foreign banks, used to collect important information from old loan applications, to lease contracts and to feed a central database that is accessible to everyone. This helps with expensive and error-prone banking services, such as managing claims, drastically reducing the time spent reading or recording client information.

For example, JPMorgan Chase's COIN documents and extracts data from 12,000 documents (which require more than 360,000 hours of work without automation) in just seconds.

Risk management and fraud detection
Surveillance in banks was done through audits and sampling. Some data sets and files that cause major losses are not covered in these models. The algorithmic rules-based approach helps monitor each file, and machine learning techniques can keep a database of such files vulnerable to the bank.

Insurance Underwriting and Claims

In this era of bankruptcy, consumers are more likely to arrive at banks than visit insurance companies. The insurance industry can take advantage of AI in detecting underwriting, claim-handling policies and fraud. This helps identify risky behavior and charges higher premiums to groups of customers. There is an enormous amount of data in insurance com

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