

Banking in the Age of ChatGPT: Shape of Things to Come in India

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ChatGPT is making headlines these days. What is it? In a lighter vein, we begin this explainer with a story in 'The Economist' (December 8, 2022) that reports the following verse in Shakespearean tradition:

"Aye, 'tis true that 'tis a wondrous thing, these Generative Artificial Intelligences, or GPTs as they be known.

'Tis a marvel of modern science, and 'tis no wonder that 'tis taking the world by storm.

But what are they, truly? And why should we care?

GPTs be a type of AI technology that can generate natural language in response to input.

'Tis a form of deep learning, wherein a computer system is trained on vast amounts of text data.

And then can generate its own text based on what it hath learned.

'Tis more than mere hype; 'tis a powerful tool that can be used for a multitude of applications.

From creating content to aiding in customer service."

What is ChatGPT?

More seriously, as we know now, ChatGPT is a type of Artificial Intelligence (AI) known as a language model. It is trained on a large dataset of text, and it can generate human-like text based on the input it receives. ChatGPT can be used for a variety of tasks, such as language translation, text summarization, content generation, and more. It can also be integrated into conversational interfaces such as chatbots or voice assistants to provide a more natural and human-like interaction with users.

Natural Language Processing (NLP) has become a gradually significant area of research in the field of finance, as it aids the analysis of unstructured financial data, such as news articles, social media posts, and financial reports. In recent years, the progress of GPT (Generative

Pre-trained Transformer) technology has further enhanced the performance of NLP-based financial applications. Among the different types of GPT, the most current and dominant one is ChatGPT. ChatGPT is a large language model developed by OpenAI, which is based on the transformer architecture and fine-tuned on an enormous amount of data. The transformer architecture is a deep neural network that uses self-attention mechanisms to process input sequences, which permits it to handle variable-length input and output sequences, and to create human-like text. The training data used to fine-tune ChatGPT includes a varied set of texts, such as books, articles, and websites, which permits the model to learn from a wide range of language styles and content. The training data has been preprocessed and filtered to eliminate low-quality and repetitive text, and to certify that the model is not prejudiced towards any particular group or viewpoint. The transformer architecture and the huge amount of data used for training allow GPT-3 (Generative Pre-trained Transformer) technologies to perform well on a wide range of language understanding and generation tasks, such as machine translation, summarization, and question answering. The model is able to create human-like text that is hard to differentiate from text written by humans. The transformer-based architecture is able to produce comprehensible and fluent text in a wide variety of contexts, including text completion and summarization. The model is able to generalize new tasks and domains quite well, which is a crucial part of its flexibility.

ChatGPT was launched on November 30, 2022, is part of a broader set of technologies developed by San Francisco-based startup OpenAI, which has a close association with Microsoft. It is part of a new generation of AI systems that can converse, create readable text on demand and even produce innovative images and videos based on what they have learned from a vast database of digital books, online writings and other media. But unlike earlier types of large linguistic models, such as OpenAI's GPT-3 launched in 2020, the ChatGPT tool is freely available to anyone with an internet connection and is designed to be easy to use. It works as a written dialogue between the AI system and the person asking it questions. Lots of people have played with ChatGPT using the program to write either songs or poems, to try to trick it into making mistakes, or for more practical purposes, such as helping to compose an email. Like other similar systems, ChatGPT can produce convincing prose, but that doesn't mean that what it says is true or rational. Its launch came with little guidance on how to use it, other than the assurance that ChatGPT will admit when it's wrong, challenge 'incorrect premises' and reject those requests intended to generate offensive responses. Since then, however, its popularity has led its creators to try to lower some people's hopes. "ChatGPT is incredibly limited, but good enough at some things to create a misleading impression of greatness," OpenAI CEO Sam Altman tweeted in December. "It's a mistake to rely on it for anything important right now," Altman admitted. "It's a preview of progress; we have lots of work to do on robustness and truthfulness."

What Does ChatGPT Have for Banks

Banks are always looking for ways to improve their financial performance, customer experience, operational excellence and increase their customer base. This may include trying out innovative financial business models, introducing new products and services, and investing in technology

to improve efficiency and customer experience. Banks are also likely to focus on compliance with regulatory requirements and risk management to protect against potential financial losses. Additionally, as digital banking becomes more prevalent, banks may also focus on developing and enhancing their digital capabilities to better serve their customers.

In this context conversational banking backed by intelligent data driven ecosystem will play a major role. Conversational banking backed by AI technology, can also be used to provide personalized and proactive service, such as sending alerts and recommendations based on customers' spending patterns or account balances. Additionally, by using conversational banking, banks can reduce the costs associated with traditional banking channels and improve the efficiency of their operations. Therefore, the adoption of AI technologies has become a must for Indian banks.

Power of Artificial Intelligence

This technology can improve the customer experience by making banking services more accessible and convenient, allowing customers to perform tasks such as checking account balances, making payments, and getting account information without having to visit a physical branch or navigate through a complex website.

AI can be used to automate repetitive tasks, such as answering frequently asked questions thereby freeing up human customer service representatives to focus on more complex and nuanced interactions.

AI-powered chatbots can also be used to provide 24/7 customer service, allowing customers to get assistance whenever they need it. Additionally, AI can be used to analyze customer data and provide personalized recommendations and advice, helping to improve the overall customer experience.

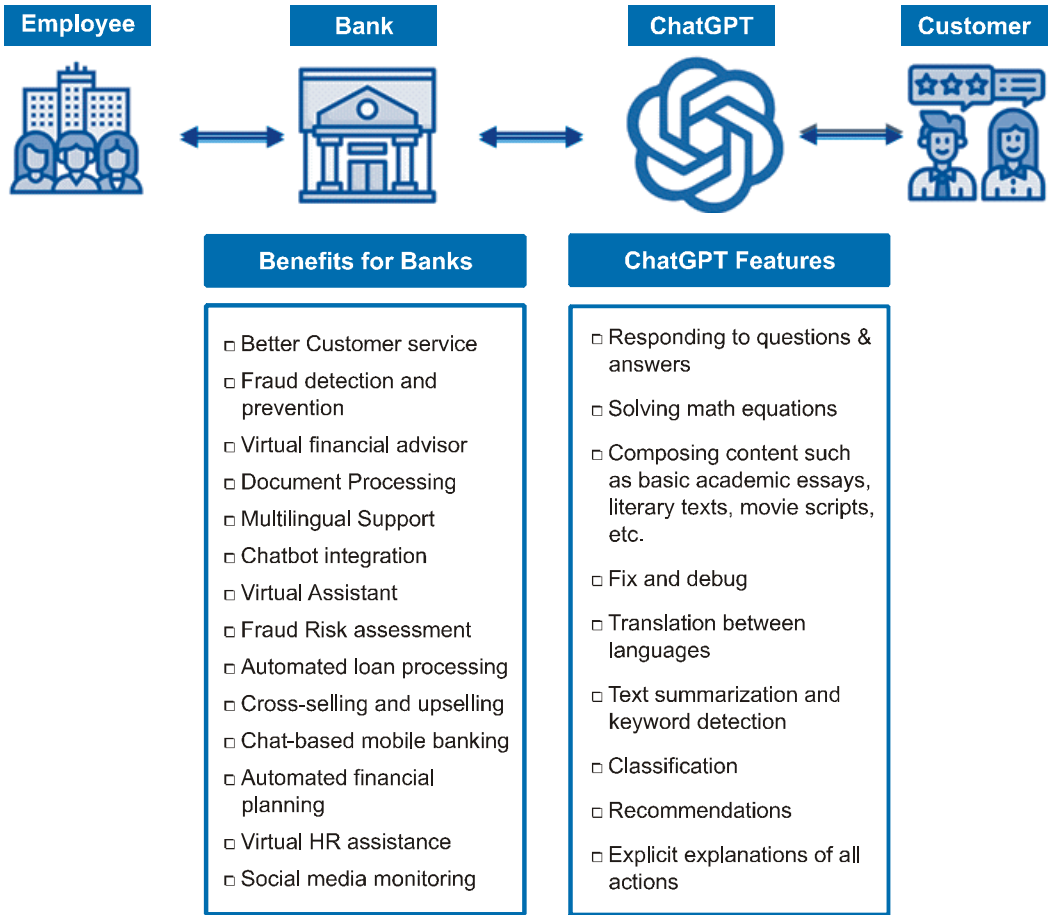
AI can also help banks to improve their operations by identifying potential issues and fraud, as well as detecting any unusual activity on customer accounts. This can help to improve security, reduce financial losses, and increase customer trust in the bank.

However, it is worth noting that the customer experience with AI depends on the quality of the AI technology, the design of the conversational interface, and the availability of appropriate security and fraud prevention measures. To provide a good AI based customer service, banks should also invest in training their AI systems with a variety of data in order to enable it to understand the customers in a better way and provide them with appropriate solutions.

Rise of ChatGPT for Indian Bank

We know how chatbots in banking services are capable of enhancing operations by being at the center of many crucial tasks, such as, Money Management; Financial Advice; Instant Loan Approval; Insurance Claim Settlement; Tax Assistance; Mortgage Management; Virtual Assistant; Regulatory Compliance; Fraud Detection; Customer Support. The integration of ChatGPT within the banking ecosystem will help both employees and customers for sure.

Figure 1
Banking Services with ChatGPT



Source: Developed by the authors

It would be interesting to note what ChatGPT can offer to Indian banks:

1. **24x7 Customer Service:** It can be integrated into the bank's customer channels like website, internet banking app or mobile app to provide 24/7 customer service support. It can answer frequently asked questions, provide account information, and even assist with account management tasks. Chat-based mobile banking experience, which can make it easier for customers to conduct transactions and manage their accounts on the go.
2. **Fraud Detection and Prevention:** Fraud Risk Management is one of the important aspects for banks, and ChatGPT can be trained on bank's historical data to detect patterns of fraudulent activity. It can also assist in identifying suspicious transactions and alerting the bank's security team to take appropriate actions.

3. **Personalized Marketing:** Hyper-personalisation has been an unmet need of the customers till date. But, now AI technologies like ChatGPT can be used to analyse customer data to generate personalized marketing content, such as targeted email campaigns and personalized offers.
4. **Virtual Financial Advisor:** The concept of a 'Personal Finance Manager' is something that every bank is trying to implement towards achieving superior customer service. Here ChatGPT can be used to provide personalized financial advice to customers based on their individual needs and goals. It can be used to provide automated financial planning services to customers, such as creating budget plans and investment strategies.
5. **Multilingual Support:** Multilingual Support is must for any bank in India. ChatGPT can be used to translate customer queries in different languages to provide better customer service.
6. **Chatbot Integration:** Many Indian banks have implemented chatbots in their banking channels. A high degree of artificial intelligence is required at the backend to provide a more natural and human-like conversation experience. ChatGPT can certainly help to enhance this feature.

Benefits for Employees

1. **Virtual Assistant:** ChatGPT can be used to assist the bank's employees in their day to day tasks such as scheduling appointments, sending emails and looking up information.
2. **Risk Assessment:** ChatGPT can be trained on the bank's historical data to assess the risk associated with a particular transaction or customer. This can help the bank to make more informed decisions and manage risk more effectively.
3. **Automated Loan Processing:** ChatGPT can be used to automate the loan application process by answering customer's queries, collecting and verifying their information, and even approving or denying loans.
4. **Document Processing:** ChatGPT can be used to automate document processing such as invoice processing, KYC forms, loan documents, vendor agreements, etc.
5. **Social Media Monitoring:** It can be used to monitor the bank's social media accounts and respond to customer queries and complaints in real-time. This can ease the burden on the contact center.
6. **360 Degree View via Business Intelligence:** ChatGPT can be used to analyse the bank's data and generate insights that can help the bank make better business decisions. It can also be used to analyze customer data and make personalized product recommendations, which can help the bank to cross-sell and upsell its products and services.

Implications for India

By using ChatGPT to create a chatbot that can understand and respond to customer inquiries and requests naturally and conversationally, businesses can provide a more efficient and

convenient customer service experience. This can save time and money resources for both the business and the customer.

The use of ChatGPT and other AI-driven technologies can have significant implications for various industries in India, including:

1. **Banking and Finance:** ChatGPT can be used to improve customer service and automate tasks such as account management, fraud detection, and compliance with regulatory requirements. This can help to reduce costs and improve efficiency for banks and other financial institutions.
2. **E-commerce:** ChatGPT can be used to provide personalized recommendations and improve the overall customer experience for e-commerce businesses. It can also help to automate customer service and reduce the costs associated with traditional channels such as phone and email.
3. **Healthcare:** ChatGPT can be used to improve patient engagement and automate tasks such as appointment scheduling and medical record management. This can help to improve the overall patient experience and reduce costs for healthcare providers.
4. **Education:** ChatGPT can be used to improve the quality of education and make it more accessible by providing personalized learning experiences and automating the grading process. Students and employees can gain from the personalized learning experience that customized content and assessments bring to the table. These are based on the user's needs and progress. This can be especially useful in industries where ongoing training is necessary, such as healthcare or finance.
5. **Manufacturing:** ChatGPT can be used to improve the efficiency of manufacturing processes by automating tasks such as inventory management, production scheduling, and quality control.
6. **Agriculture:** ChatGPT can be used to improve crop yields, optimize irrigation, and automate tasks such as forecasting and monitoring weather conditions.
7. **Entertainment and Leisure -** ChatGPT could create virtual assistants for music or movie recommendations or provide personalized workouts or meditation routines. ChatGPT's ability to understand and respond to user input naturally and conversationally makes it well-suited for these applications.
8. **Travel Industry:** Chatbots could assist in booking flights, hotels and rental cars whilst providing recommendations for destinations and activities. This could make the travel planning process more efficient and convenient for users.

However, it is worth noting that the implications of ChatGPT and AI-driven technologies also include potential job displacement and the need for re-skilling. Additionally, there is also the need to ensure data privacy, security, and ethical use of AI.

Concluding Observations

Technology has always helped industry to move from one trajectory to another based on the ever-changing customer expectations. ChatGPT will certainly move industries to the next orbit. Certainly, the future of ChatGPT is promising and its potential for growth and impact is significant for various industries.

The future of ChatGPT is likely to involve the following trends:

1. Increased use in customer service.
2. Expansion in natural language processing.
3. Integration in new applications and customer channels.
4. Advancements in conversational AI.
5. Wider adoption across industries.

ChatGPT in banking could fuel new types of products that are more personalized and more connected to users. Overall, the integration of ChatGPT in the banking industry has the potential to improve efficiency, reduce costs and enhance customer experience.

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