AI based discourse for Banking Industry

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Literature Survey

The Internet Banking Industry has seen tremendous growth in recent years mainly due to the massive advancement in technology. The thing with the internet is that everyone connected to it can access almost anything around the world. The involvement of the internet in the banking sector has made it more viable and user friendly than ever before. Customers of any bank could access their account details and the transactions across the world with ease and can work with ease around any branches.

Previous Findings:

Online banking is an electronic payment system that enables customers of a bank or other financial institution to conduct a range of financial transactions through the financial institution's website. The online banking system will typically connect to or be part of the core banking system operated by a bank and is in contrast to branch banking which was the traditional way customers accessed banking services.

To access a financial institution's online banking facility, a customer with internet access will need to register with the institution for the service, and set up a password and other credentials for customer verification. The credentials for online banking is normally not the same as for telephone or mobile banking. Financial institutions now routinely allocate customers numbers, whether or not customers have indicated an intention to access their online banking facility.

Customer numbers are normally not the same as account numbers, because a number of customer accounts can be linked to the one customer number. Technically, the customer number can be linked to any account with the financial institution that the customer controls, though the financial institution may limit the range of accounts that may be accessed to, say, cheque, savings, loan, credit card and similar accounts.

Along with the internet and the easy to access user interface, the involvement of AI and machine learning in the banking sector has been huge in recent years. The fact that an algorithm could suggest to people the latest trends in the recent market shares and the feasible investment options tells us how advanced the technology has gone forward.

Literature Review:

Christian Catalini, Chris Foster and Ramana Nanda (2018) in their work 'Machine Intelligence vs. Human Judgment in New Venture Finance' study that machine learning models trained to mimic human evaluators performed relative to models trained purely to maximize financial success. They found out that (1) model trained to mimic the picks of humans performed well out-of-sample, implying that humans had a systematic pattern of early-stage investing that could be identified and replicated; (2) Models trained to maximize success strongly outperformed mimic human models' when picking from a common out-of-sample applicant pool, implying that heuristics used by these evaluators were systematically overlooking certain high-potential applications that were identifiable ex-ante; (3) comparing the focus of the two models suggests that the differences arose in part due to human heuristics systematically under-emphasizing more ‗cognitively demanding' elements of the applications. Their findings have important implications for the selection and financing of high potential ideas, and more broadly for how Artificial Intelligence can help humans screen and evaluate information in an era of increasing "information overload".

Jewandah S (2018, July) in her research paper —How Artificial Intelligence is changing the banking sector - A case study of top four Commercial Indian Banks‖ studies the areas in which Machine Intelligence is being launched in the banks and applications of AI in principal commercial banks in India. There is advancement in traditional banking and gradually banks are adopting innovative technologies like AI, blockchain, cloud computing but banks are still to reach the stage of AI revolution, human touch is still important. The banking sector in India is discovering the ways through which AI can be incorporated which improve working of banks and improve customer service in the near future.

Andrew Ng (2016) in his research paper —What artificial intelligence can do and can't do right now discusses the implications of AI on business. He discusses the automation age, how business is evolving because of robotics and machine learning. AI work requires cautiously picking A and B and providing the essential information to help the AI figure out the A→B relationship. Selecting A and B creatively has already revolutionized numerous industries. It is ready to revolutionize many more.

Chan Kok Thim and Eric Seah (2011) in their research paper "Optimizing portfolio construction using artificial intelligence" intends to improve the viability of Artificial Intelligence utilizing Neural Network (NN) in the real market. This paper summed up the standard Markowitz Theory's Efficient Frontier to emulate and improve the portfolio development and build up a neural system heuristic to better comprehend how Artificial Intelligence can develop ideal portfolio capacity and give yields to all degrees of financial specialists.

Ryoji Kashiwagi (2005) "Utilization of artificial intelligence in finance" studies that man-made artificial intelligence is presently entering another boom stage, the third in its history, in the wake of a technical advancement known as profound learning. Man-made AI is being used in different structures even in the monetary segment. Money related foundations ought to use man-made consciousness all the more effectively through such methods as open innovation.

AI is strengthening competitiveness of banks through:

Enhanced customer experience:

Based on past interactions, AI develops a better understanding of customers and their behavior. This enables banks to customize financial products and services by adding personalized features and intuitive interactions to deliver meaningful customer engagement and build strong relationships with its customers.

Prediction of future outcomes and trends:

With its power to predict future scenarios by analyzing past behaviors, AI helps banks predict future outcomes and trends. This helps banks to identify fraud, detect anti-money laundering patterns and make customer recommendations. Money launderers, through a series of actions, portray that the source of their illegal money is legal. With its power of Machine Learning and Cognition, AI identifies these hidden actions and helps save millions for banks. Similarly, AI is able to detect suspicious data patterns among humongous volumes of data to carry out fraud management. Further, with its key recommendation engines, AI studies past to predict future behavior of data points, which helps banks to successfully up-sell and cross-sell.

Cognitive process automation:

This feature enables automation of a variety of information-intensive, costly and error-prone banking services like claims management. This secures ROI, reduces costs and ensures accurate and quick processing of services at each step. Cognitive process automation fundamentally automates a set of tasks that improvises upon their previous iterations through constant machine learning.

Realistic interactive interfaces:

Chatbots identify the context and emotions in the text chat and respond to it in the most appropriate way. These cognitive machines enable banks to save not only time and improve efficiency, but also help banks to save millions of dollars as a result of cumulative cost savings.

Effective decision-making:

Cognitive systems that think and respond like human experts, provide optimal solutions based on available data in real-time. These systems keep a repository of expert information in its database called knowledge database. Bankers use these cognitive systems to make strategic decisions.

Robotic automation of processes:

AI reviews and transforms processes by applying Robotic Process Automation (RPA). This enables automation of about 80% of repetitive work processes, allowing knowledge workers to dedicate their time in value-add operations that require a high level of human intervention.

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