Application of AI in Financial Institutions

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Why in news?

The evolving expectations of consumers in the banking and financial services industry, highlights the need for traditional institutions to adapt to a digital-first approach.

Artificial Intelligence
• Artificial Intelligence (AI) refers to the development of computer systems of performing tasks that require *human intelligence*. • AI aids, in processing amounts of data identifying patterns and making decisions based on the collected information. • **Techniques**-AI can be achieved through techniques like Machine Learning, Natural Language Processing, Computer Vision and Robotics. • **Range of abilities**- It includes learning, reasoning, perception, problem solving, data analysis and language comprehension. • **Ultimate goal**- To create machines that can emulate capabilities and carry out diverse tasks, with enhanced efficiency and precision.

How banks can use technology to transform customer experience?

Technology	About	Significance
Embedded finance	It refers to integration of financial services into nonfinancial platforms, such as e-commerce, social media or business software.	It can offer *convenience, choice and personalization* to customers, as well as new revenue streams for platform providers and financial institutions.
Platform based models	These are business models that rely on digital platforms to connect different types of users, such as producers, consumers and service providers.	It can enable *faster and cheaper transactions*, greater network effects, and more data-driven insights
Exponential technologies	These are technologies that have the potential to create exponential growth and impact in various domains, such as artificial intelligence, *big data*, *cloud computing*, *biotechnology*, and nanotechnology	It can help banks improve their efficiency, agility, scalability, and innovation

Virtual enterprise	These are organizations that operate primarily through digital channels and networks, rather than physical locations and assets.	It can leverage *advanced data science* and emerging technologies to accelerate innovation and collaboration, as well as create more relevant and personalized customer experiences
Generative AI	It refers to a category of AI, that is designed to generate new content, information, or responses based on patterns learned from existing data	It enhances customer engagement, fraud detection and provide conversational interfaces like chatbot, voice assistant etc.,

What is the significance of using Generative AI in financial institutions?

- **Reduction in identity fraud**- It can be used to analyse and *authenticate customer documents* submitted during the digital Know Your Customer (KYC) process.
- **Data summary**- *Natural Language Processing (NLP)* process and summarize a variety of textual data, including call- center interactions, documents, financial reports, analyst articles, emails, news and media trends.
- **Conversational knowledge**- Generative AI can be employed to develop conversational knowledge based on customer reviews, existing knowledge bases, product descriptions, and other relevant data sources.

A large global bank could better the accuracy of its conversational AI by 25% in addition to substantially improving testing and classification.

- **Personalized content creation**- It can assist in creating various types of content, including personas, user stories, synthetic data, images, personalized user interfaces (UI), and marketing communications.
- **Personalized wealth management**- It delivers a *highly personalized and tailored financial experience* for users, optimizing investment decisions and payment processes based on individual preferences and financial goals.

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What are the challenges in use of AI in financial institutions?

- **Data privacy-** Financial institutions deal with sensitive customer information, AI requires large datasets raising concerns about the privacy and security of customer data.
- **Poor data quality**- AI algorithm may unintentionally perpetuate biases present in historical data, this can result in discriminatory outcomes, impacting decisions related to lending, credit scoring, and other financial processes.
- **Cybersecurity risks**- AI systems are vulnerable to cyberattacks that can compromise their integrity, availability, or confidentiality which is vulnerable to attack from hackers.
- **Lack of standardized framework**- The absence of clear standards can hinder collaboration, interoperability and the establishment of best practices.

- **Digital financial exclusion**- The increasing complexity of emerging technologies introduces risks that users may not be fully aware of, leading to potential digital financial exclusion for a significant portion of the population.
- **Skill deficit**- There is a shortage of skilled workforce in the field of data science, machine learning and AI which impede the development and deployment of AI solutions.

What lies ahead?

- The technological innovations like generative AI, advanced analytics, foundation models signify AI's remarkable progress over the past decade, allowing for scalability and customer satisfaction like never before in the financial services domain.
- Generative AI can unlock business and human potential at scale when properly tailored to suit the business needs of financial institutions.
- The financial regulators, especially central banks, should focus on *responsible use*, *data security*, *privacy*, *legal compliance*, and *ethical considerations* when adopting new technologies in the financial sector.

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Reference

1. Business Line- AI aids in hyper personalisation of data
2. Business Line- Concern about transparency

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