Infosys topaz



BANKING ON AI: FINANCIAL SERVICES NEED AI INNOVATION TO THRIVE

Abstract

As the adoption of generative AI (GenAI) gathers pace across industries, financial services organizations remain cautious due to concerns over data security, compliance, and regulatinos. However, to keep pace with the competition and meet sustainability goals, it has become critical for financial services industry to drive innovation in their services and products at speed. GenAI is one way to achieve such outcomes. This paper looks into the imperatives for financial services industry to scale AI across the organization, key considerations, and the roadmap to adopting AI innovation such as GenAI.



Introduction

Most financial services organizatinos have embarked on their transformation journey to adopt AI at scale. On the one hand, late adopters are implementing FAQ-based chatbots and voice bots, robotic process automation (RPA) for repetitive and deterministic tasks, and machine learning (ML). On the other, early AI adopters are embracing higher levels of AI innovation such as generative AI (GenAI), responsible AI, and AI-powered analytics and not agentic AI

Al-powered tools and innovation can unlock greater efficiencies for financial services organizations. But first, banks must be aware of the current imperatives and challenges. Mapping their implementation strategy to address these needs will ensure profitable outcomes at lower complexity, cost, and effort.

Online Banking

\$ 2,678.99

Imperatives for Adopting AI

Banks and financial services organizations are under pressure from customers, stakeholders, regulators, and the competition to revamp their products and how they deliver effective and intuitive services. Technologies such as AI, blockchain, and cloud – while costly and complex to implement – can help them respond with agility and flexibility to different market pressures, such as:



Business and Technical Challenges

To unleash the power of AI at scale, banks must be aware of the key business and technical challenges involved, and find ways to address these. The main challenges include:



Deconstructing the data landscape

Al models need strong levels of automation. Banks should identify slow, labor-intensive, and repetitive manual processes and automate these for faster input into Al models. Data quality and consistency are also critical to ensure the optimum performance of Al models.



Handling model complexity

Most deep learning models can be opaque. The lack of transparency into how AI models reach their conclusions (or model interpretability) can hinder user trust. An important ethical consideration is also reducing bias in data and algorithms to avoid unfair outcomes and discrimination.



Ensuring security and compliance

Protecting AI models from cyberattacks, data breaches, and fraud is an important consideration and key challenge. Adhering to regulations such as the General Data Protection Regulation (GDPR) in the EU, California Consumer Privacy Act (CCPA) in the US, and Basel III for banks is complex, making AI model governance a key priority. Moreover, increased scrutiny from regulators can result in fines and reputational damage.



Acquiring and retaining talent

The growing skills gap in areas such as technology, data analytics, and cybersecurity makes it challenging to find the right talent. Moreover, competition from other industries to hire the best people can drive up salaries and cost of resources.

Applications of AI for financial services industry

There is a slew of Al innovations that can help banks address the above challenges. Machine learning can be applied to various banking functions. Supervised learning can improve credit scoring, fraud detection, and customer retention. Unsupervised learning can assist with market analysis and anomaly detection. Reinforcement learning is useful for algorithmic trading, portfolio optimization, and risk management. Additionally, neural networks, such as those provided by deep learning, can power complex tasks like image recognition.

Al-powered analytics such as predictive analytics can be used to forecast future trends while prescriptive analytics can generate recommendations on critical tasks. Some banks leverage Al techniques such as natural language processing (NLP) to assist with sentiment analysis and virtual assistants. Another area, that of responsible AI, can help banks achieve model explainability, follow ethical principles, improve security, and comply with everchanging regulatory norms.

One of the latest and most powerful Al innovations in the market today is GenAl. It can be used to enhance the productivity of smart chatbots, virtual avatars, financial experts, wealth advisors, relationship managers, Credit Analysts and environment, social, and governance (ESG) analysts. With the rise of an agentic Al framework, which can leverage Generative Al, traditional Al, any many other tools available within banks for end-to-end completion of tasks. It can enhance knowledge management solutions, mine structured and unstructured data in investor documents, support new SME on-boarding, and generate insights on market trends for informed decision-making.



Roadmap to Implementing Next-gen AI for Banks

Based on deep domain expertise and extensive implementation experience with global financial organizations, here is a winning approach from Infosys that can help banks deploy Al innovation at scale and reduced complexity. The approach is built around the Infosys 3D framework – to Discover, Democratize, and De-risk.

Leveraging this framework, banks first need to set up a center of excellence (CoE) to assess the AI maturity of their enterprise. They can use the framework to discover new AI use cases and determine their desirability, feasibility, and viability. After gauging the return on investment (RoI), these financial institutions can establish an opportunity backlog to help create a roadmap.

The next step is to create a solution architect layer to design the Al solution for enterprise-wide deployment. Leveraging the factory model helps scale Al use cases. Finally, banks de-risk the use-cases by enabling responsible Al pods that adhere to principles such as ethical, explainable, accountable, non-biased, non-toxic Al. This also helps ensure regulatory compliance.

How AI Innovation Can Address Banking Imperatives

The above approach can equip banks with a successful AI and GenAI adoption strategy to help them address their imperatives and challenges. Leveraging this approach, banks can:



Maintain a competitive edge

Generative AI can automate routine tasks, freeing up human resources for more strategic work. Moreover, Al-powered chatbots and virtual assistants can provide personalized customer service experiences, enhancing customer satisfaction.

Ensure regulatory compliance

Generative AI can automate the generation of regulatory reports, thereby reducing errors and improving compliance. Al-powered risk assessment tools can help identify and overcome regulatory pitfalls. Further, GenAl can generate synthetic data to train models for fraud detection, improving accuracy and reducing

Mitigate economic uncertainty

Generative AI can be used to develop predictive models for market trends, helping organizations make informed decisions. GenAl can also help with scenario planning by creating various scenarios to help organizations prepare for economic downturns.

Meet changing customer expectations

Generative AI can provide personalized financial advice and product recommendations based on customer preferences and behavior. It can also drive Al-powered marketing campaigns that are tailored to individual customers, improving engagement and conversion rates.

Acquire and retain talent

Generative AI can create personalized training materials and simulations to upskill employees. By automating routine tasks, AI can free up employees to focus on more strategic and creative work.

Enable sustainability

Generative AI can be used to assess climate-related risks and identify potential vulnerabilities. It can also help develop sustainable financial products and services that align with environmental goals.

Business Benefits

With this approach, banks can establish a robust system and governance layer to help the business build relevant use cases for greater efficiencies. Some of the key benefits of successfully adopting AI at scale are:

Enhanced customer experience

Generative AI can create personalized experiences for customers such as tailored financial advice, product recommendations, and chatbots that offer 24/7 support.

Improved efficiency

Automation of tasks like document generation, data analysis, and risk assessment can significantly boost operational efficiency.

Risk mitigation

Generative AI can be used to identify and mitigate risks, such as fraud detection and credit risk assessment.

Competitive advantage

Organizations that effectively leverage generative AI can gain a significant competitive advantage in the market. For instance, GenAI can help develop innovative financial products and services that cater to evolving customer needs. It can also drive the creation of new business models and products.



Research and development

GenAl can be used to accelerate research and development in areas such as financial modelling and risk management.

Education and training

Generative AI can be used to create personalized training materials and simulations for financial professionals.



Conclusion

Financial services organizations seeking to become Al-first must first embrace Al, go with platform based strategy instead of use case based approach, set up ethical Al practices, establish security guardrails, and ensure regulatory compliance. Be open to adopt Agentic Al, which will further drive innovation and change the way banks do their business. As new Al innovation arrives on the scene, there is a significant opportunity for banks to sharpen their competitive edge and thrive in this new era. Advances in GenAl can help banks respond effectively to changing customer expectations, market volatility, the need for sustainable offerings, and tightening regulatory norms. The right approach will help financial services organizations discover opportunities, democratize data, and de-risk GenAl implementations. This will enable them to augment their existing workforce with efficient co-pilots and boost operational efficiency.

References

https://www.mckinsey.com/industries/financial-services/our-insights/capturing-the-full-value-of-generative-ai-in-banking https://www3.weforum.org/docs/WEF_Forging_New_Pathways_2020.pdf https://www.mckinsey.com/industries/financial-services/our-insights/disrupting-the-disruptors-business-building-for-banks https://www.pwc.com/us/en/industries/financial-services/library/asset-wealth-management-trends.html

Discover the latest insights on Al's business value in our latest report, the Al Business Value Radar 2025:

https://www.infosys.com/iki/research/ai-business-value-radar2025.html

Infosys Topaz is an AI-first set of services, solutions and platforms using generative AI technologies. It amplifies the potential of humans, enterprises, and communities to create value. With 12,000+ AI assets, 150+ pre-trained AI models, 10+ AI platforms steered by AI-first specialists and data strategists, and a 'responsible by design' approach, Infosys Topaz helps enterprises accelerate growth, unlock efficiencies at scale and build connected ecosystems. Connect with us at infosystopaz@infosys.com.



For more information, contact askus@infosys.com

© 2025 Infosys Limited, Bengaluru, India. All Rights Reserved. Infosys believes the information in this document is accurate as of its publication date; such information is subject to change without notice. Infosys acknowledges the proprietary rights of other companies to the trademarks, product names and such other intellectual property rights mentioned in this document. Except as expressly permitted, neither this documentation nor any part of it may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, printing, photocopying, recording or otherwise, without the prior permission of Infosys Limited and/ or any named intellectual property rights holders under this document.

