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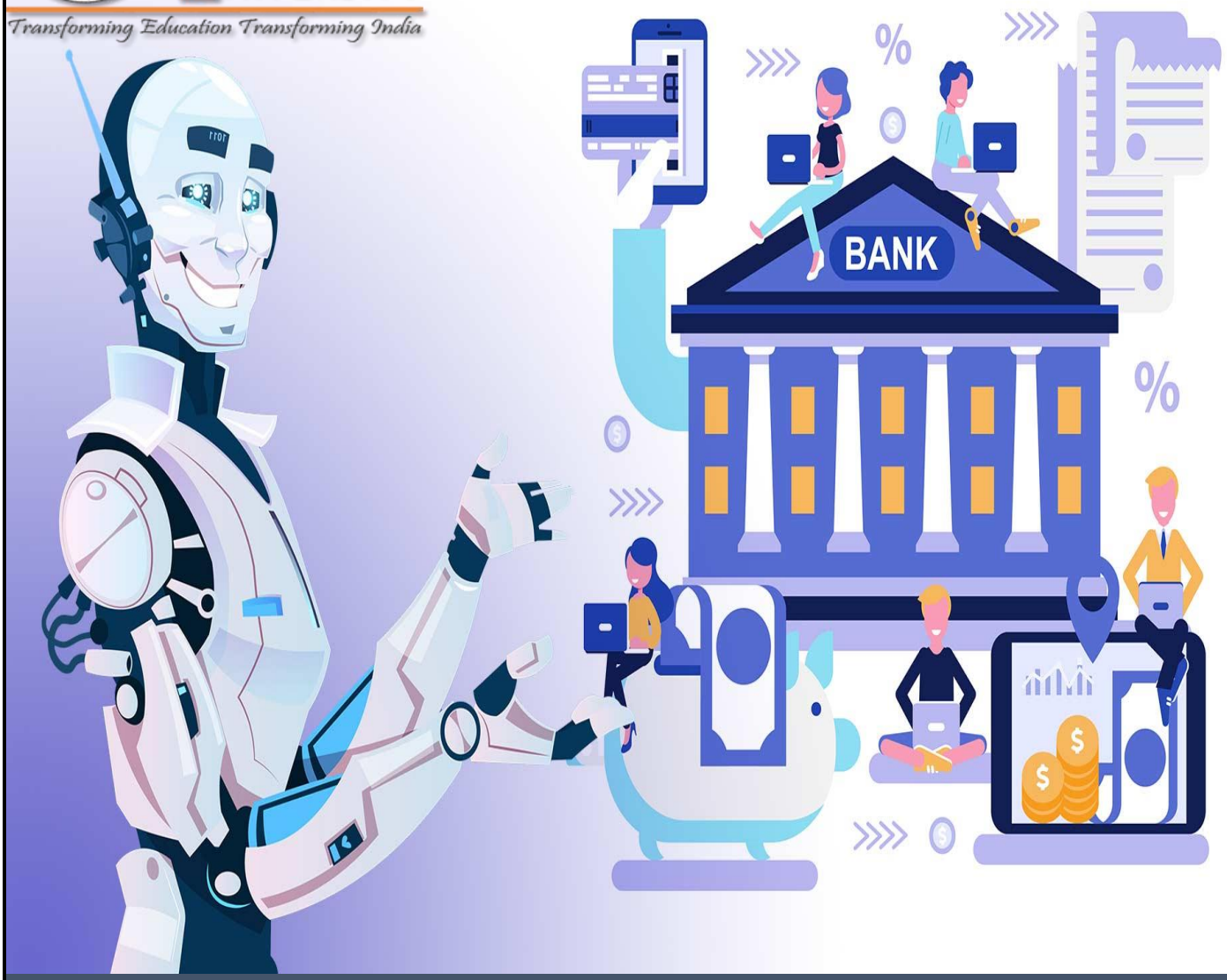

AI IN BANKING

This report explores the significant part that ARTIFICIAL INTELLIGENCE is currently playing in the banking sector.

Title Page

REPORT

ON

AI IN BANKING

COURSE CODE- INT404 (ARTIFICIAL INTELLIGENCE)

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ABSTRACT & INTRODUCTION

The application of artificial intelligence that has been happening in the financial sector will be looked at in this review. There are a variety of viewpoints on artificial intelligence (AI) and its potential to increase efficiency in a variety of sectors. The financial sector is the same. There has been speculation that the financial sector may also be negatively impacted by artificial intelligence. In the discussions and studies that follow, this literature review will be discussed in more detail. Financial institutions are utilizing the power of advanced analytics and machine learning algorithms to increase efficiency, better client experiences, and mitigate risks, which has resulted in a sharp increase in the use of artificial intelligence in the banking sector in recent years. Artificial intelligence (AI) is the use of machines to carry out operations that ordinarily require human intellect, such as learning, logical thought, and problem-solving. In recent years, the use of AI in banking has spread more widely as financial organizations try to stay competitive and satisfy changing customer demands in a rapidly changing digital environment.

In this piece, we'll look at how artificial intelligence is changing the banking sector, as well as its advantages and uses, problems and worries related to its application, and prospects for the future.

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- An understanding of artificial intelligence's effects on the financial industry

The banking sector has benefited from AI's increased effectiveness by being able to automate repetitive duties and procedures. The completion of duties like data input, fraud detection, and compliance tracking frees up staff members to concentrate on more challenging ones. Financial institutions can now spot patterns and trends that would be difficult to spot directly thanks to the real-time analysis of massive amounts of data made possible by AI-powered systems. Institutions may be able to enhance risk management and make more informed choices as a result.

AI has improved the efficiency and security of the financial sector in addition to the client experience. AI algorithms are faster and more accurate than people at spotting and preventing fraudulent activity because they can analyze enormous quantities of data in real time. AI-driven systems are also capable of keeping an eye on transactions for any suspicious behavior and warning financial organizations about possible security lapses. Artificial intelligence has had an overwhelmingly beneficial effect on the banking sector, and it is anticipated that the technology will continue to change the sector in the years to come.

- DIGITALIZATION AND CYBERSECURITY THREATS

The need for effective cybersecurity measures to guard against the rising danger of hacking is expanding as the financial sector continues to develop and adopt automation. With the introduction of services like real-time money transfers, mobile banking, and net banking, the banking industry has changed and consumers now have more access to and convenience with their financial operations. In order to guarantee safe and reliable operations, banks must address new vulnerabilities that have been brought about by digitization.

Banks need the appropriate resources and workforce to move the requirements of the sector in the correct directions in order to fight these threats. The explosion of valuable user information on the internet has resulted from the merging of finance, telecom, and information technology, making it both susceptible and safe. Government agencies have implemented stringent rules to strengthen the banking sector's cybersecurity measures and make them adequate to protect the

vast amounts of data it stores because cybercrime can cause significant disruptions in banking practices.
Banks must make investments in cutting-edge cybersecurity technologies and procedures, such as encryption, firewalls, and multifactor authentication, to guarantee the security of financial operations. In order to recognize and stop possible cyberattacks, banks must also make sure that their staff is properly educated in cybersecurity procedures and knowledgeable about the most recent threats. To maintain clients' confidence and guarantee the sector's ongoing development, the banking industry must, overall, exercise vigilance in the face of changing online dangers.

- AI has the potential to transform the banking industry, enhancing efficiency, improving customer experiences, and mitigating risks.
- AI technologies such as chatbots, robo-advisors, and fraud detection algorithms are already being implemented in the banking sector with promising results.
- The adoption of artificial intelligence in banking industry raises important ethical considerations, such as data privacy, bias, and the impact on employment.
- The digitization of banking services has led to an increase in cybersecurity threats, and banks must invest in advanced technologies and protocols to protect customer data and transactions.
- To realize the full potential of artificial intelligence in banking industry, financial institutions must address challenges such as talent acquisition, regulatory compliance, and customer trust.

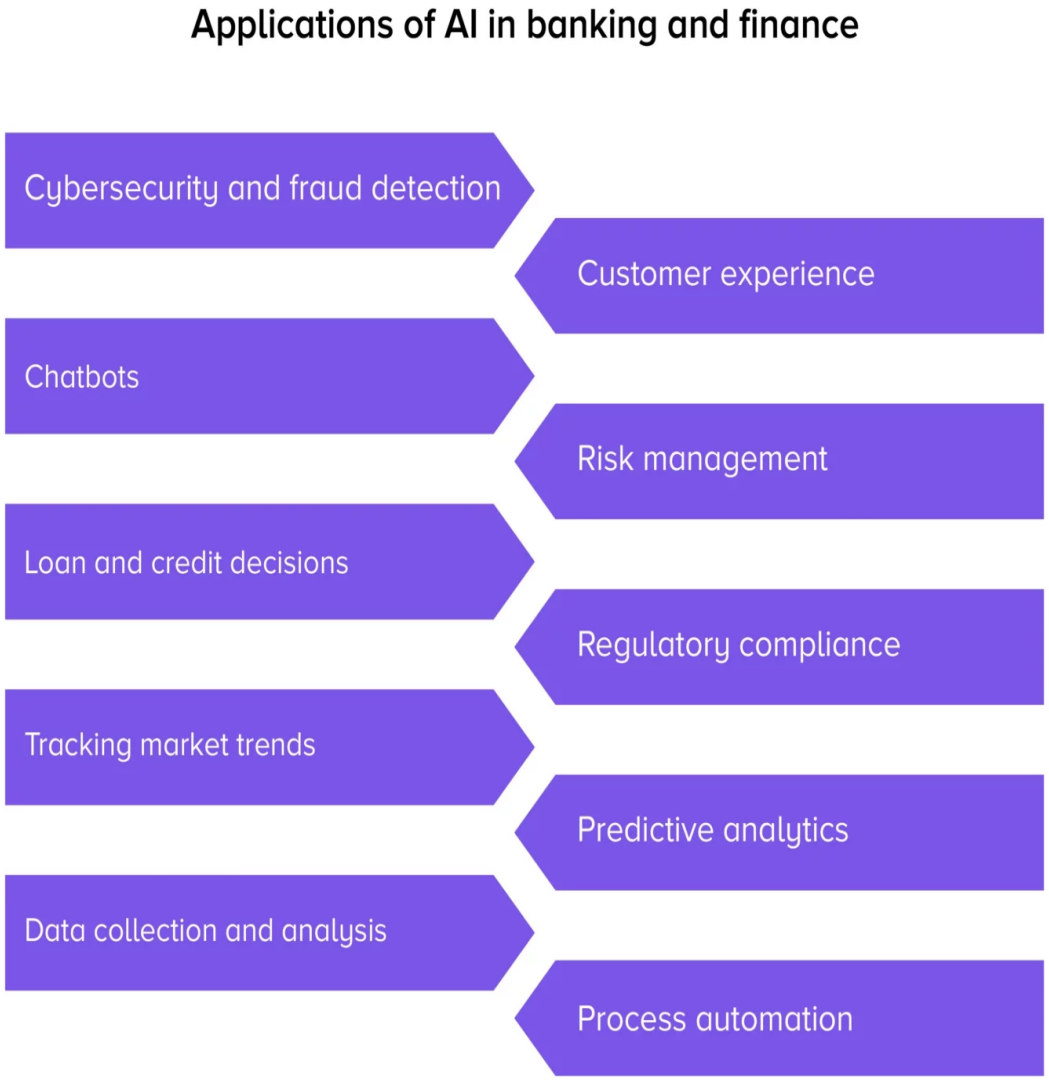
- Applications of AI in banking and finance

Encryption, firewalls, and multifactor authentication are just a few of the cutting-edge cybersecurity tools and techniques that banks must engage in to ensure the security of banking processes. Banks must ensure that their staff has received the necessary training in cybersecurity protocols and is aware of the most recent threats in order to identify and prevent potential cyberattacks. The banking industry must, generally, practice vigilance in the face of evolving online dangers in order to uphold clients' trust and ensure the sector's continued growth.

Artificial intelligence has become an integral part of the world we live in, and banks have already started integrating this technology into their products and services.

1. Cybersecurity and fraud detection

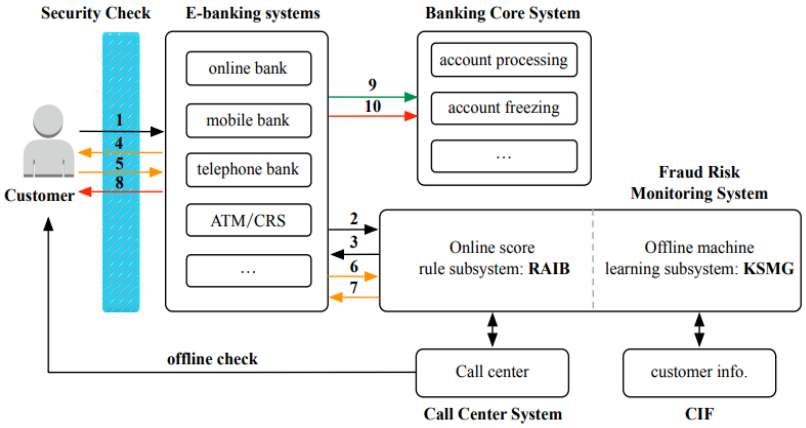
Huge numbers of digital interactions happen every day as users use apps or online accounts to pay expenses, withdraw money, submit checks, and do much more. Therefore, there is a growing need for the financial



industry to step up its cybersecurity and fraud identification efforts.

This is where financial artificial intelligence is useful. AI can assist banks in reducing dangers, tracking system flaws, and enhancing the security of online banking. AI and machine learning can quickly spot fraudulent activity and notify both customers and institutions.

For instance, Danske Bank, Denmark's largest bank, implemented a fraud detection algorithm to replace its old rules-based fraud detection system. This deep learning tool increased the bank's fraud detection capability by 50% and reduced false positives by 60%. The system also automated a lot of crucial decisions while routing some cases to human analysts for further inspection.

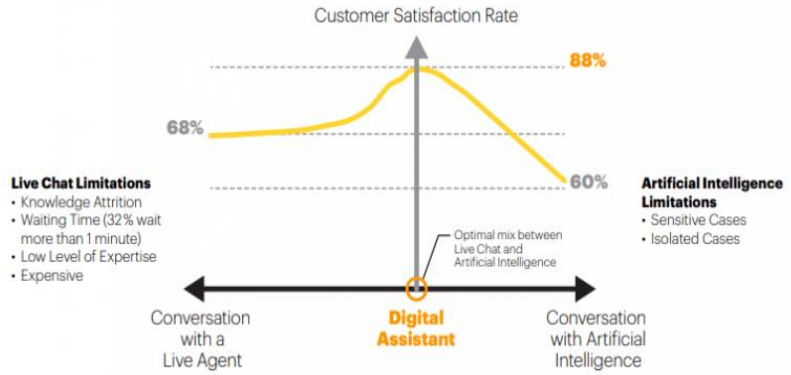


AI can also help banks to manage cyber threats. In 2019, the financial sector accounted for 29% of all cyber attacks, making it the most-targeted industry. With the continuous monitoring capabilities of artificial intelligence in financial services, banks can respond to potential cyberattacks before they affect employees, customers, or internal systems.

2. Chatbots

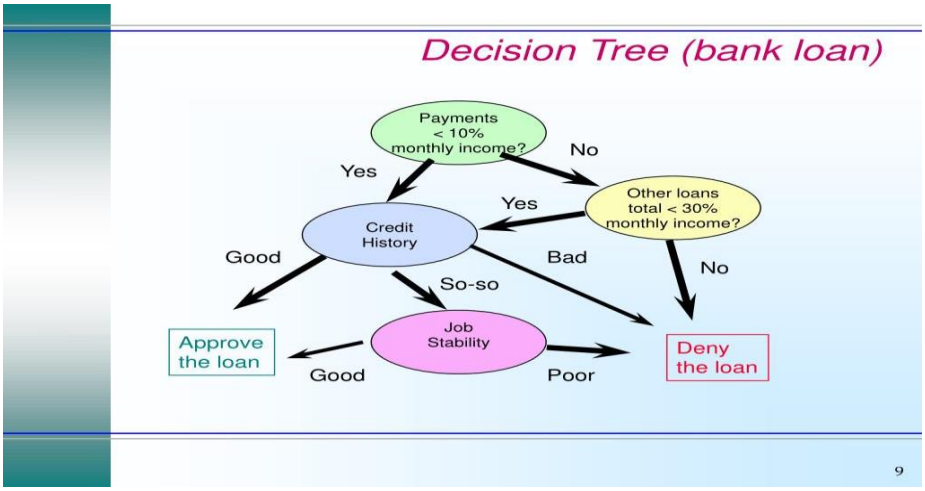
Chatbots, without a doubt, are one of the best examples of practical applications of artificial intelligence in banking. Once deployed, they can work 24 hours a day, seven days a week, unlike humans, who have set working hours. Additionally, they continuously learn about a specific customer's usage pattern, which helps them understand the user's requirements in an efficient manner. Banks can guarantee that they are accessible to their clients around the clock by integrating chatbots into their banking applications. Furthermore, by knowing customer behavior, robots can provide personalized customer assistance and suggest appropriate banking services and goods.

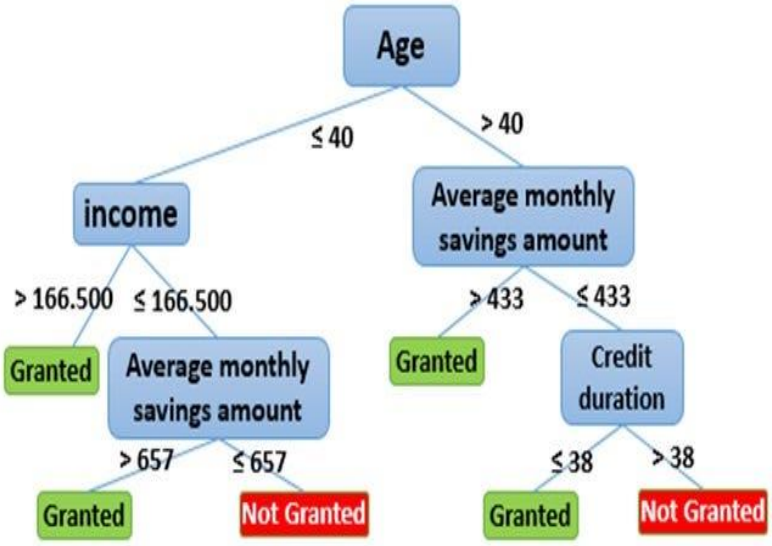
Erica, a virtual assistant from Bank of America, is one of the finest instances of AI chatbot in financial applications. This AI chatbot is capable of performing duties such as credit card debt reduction and card security upgrades. In 2019, Erica handled over 50 million customer inquiries.



3. <u>Loan and credit decisions</u>

Banks have begun to implement AI-based systems in order to make more educated, safer, and lucrative lending and credit choices. Many banks are still too reliant on credit records, credit scores, and client referrals to identify an individual's or company's creditworthiness.





However, these credit reporting systems are frequently riddled with mistakes, missing real-world transaction records, and incorrectly categorizing debtors. To assess creditworthiness, an AI-based loan and credit system can examine the behavior and trends of clients with restricted credit history. In addition, the algorithm alerts banks to particular behaviors that may raise the likelihood of default. In essence, such tools are transforming the future of consumer lending.

4. **Risk management**

Currency fluctuations, natural catastrophes, and political turmoil all have severe consequences for the banking and finance sectors. In such turbulent times, it is critical to make business choices with extreme caution. AI-powered analytics can provide a fairly accurate forecast of what is to come, allowing you to remain prepared and make prompt choices.

AI also aids in the identification of risky applications by calculating the likelihood of a customer failing to repay a debt. It forecasts future behavior by analyzing previous trends and smartphone data.

Why must banking sector embrace the AI-first world?

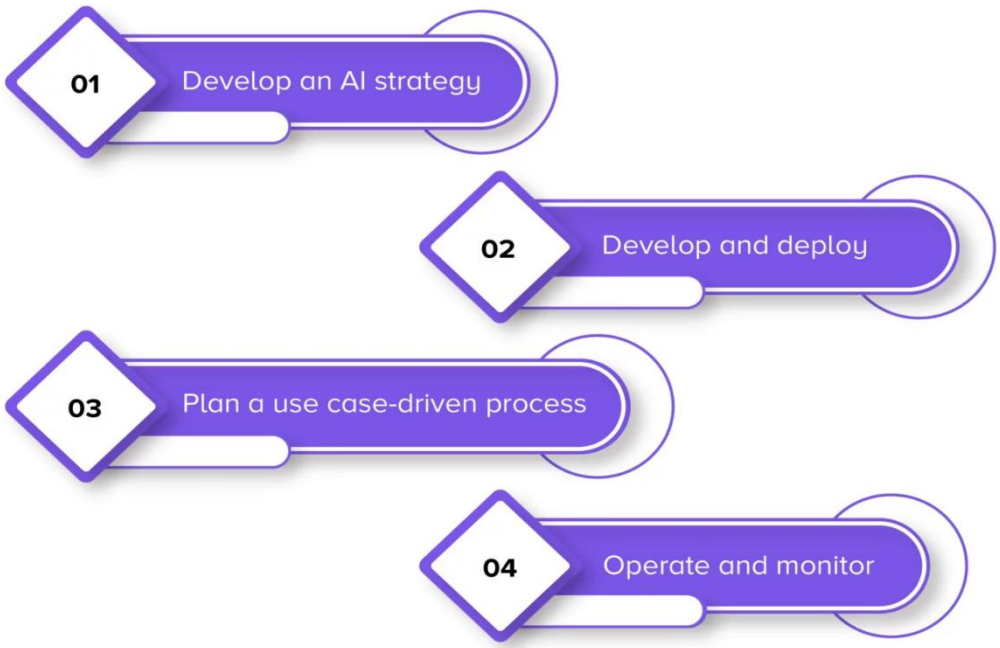
Banks are racing to be the first to implement AI, and for good cause. For many years, the banking industry has been trying to

transition from a people-centric to a customer-centric company. This shift has compelled banks to take a more comprehensive strategy to meeting the demands and needs of their customers.

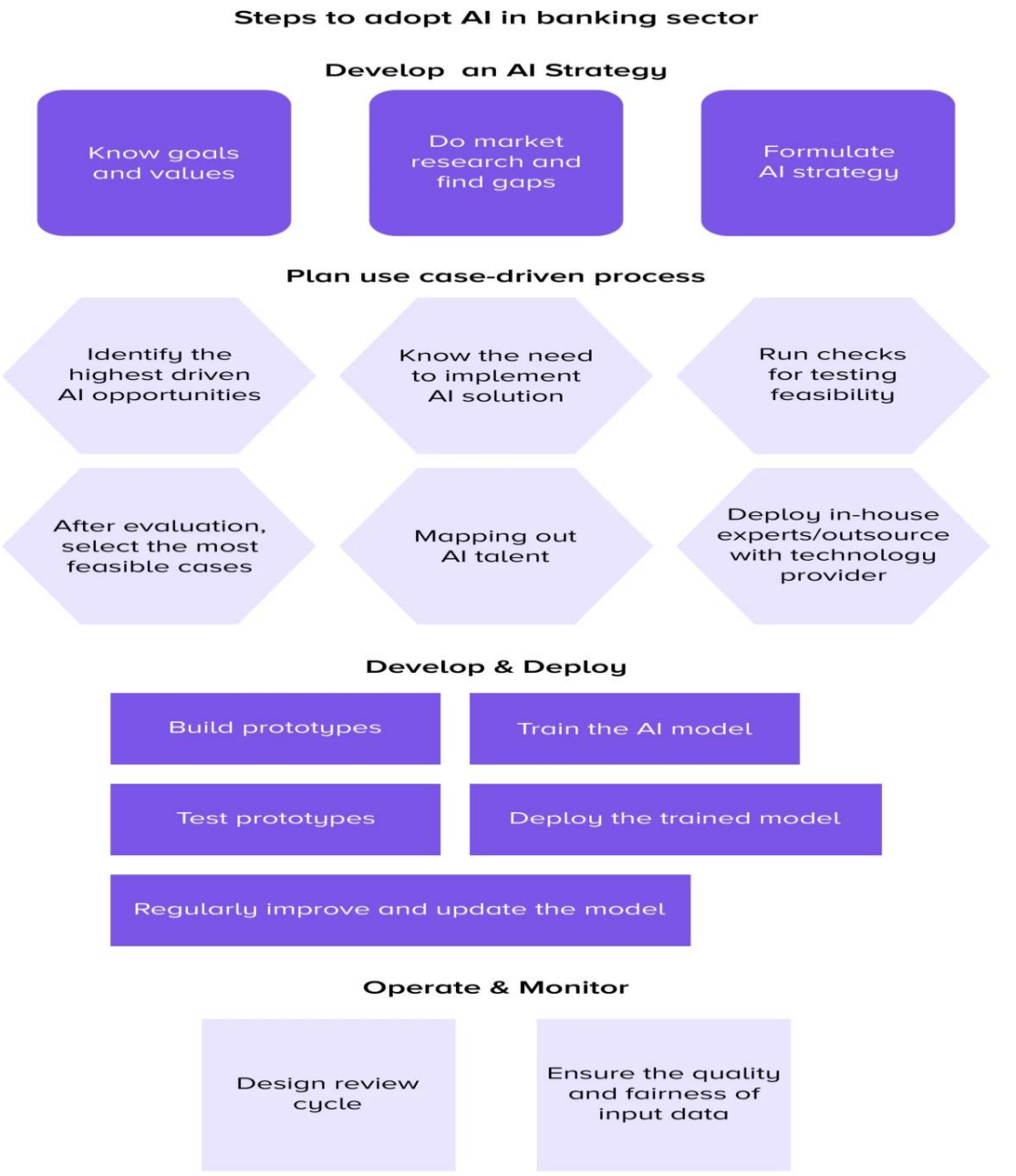
With their attention now focused on the client, banks must consider how to better service them. Customers now expect their bank to be accessible whenever they need it - that is, 24 hours a day, seven days a week - and to do so on a large basis. AI is one method for institutions to accomplish this.

To meet these client standards, banks must first surmount internal obstacles such as legacy systems, data silos, asset quality, and restricted budgets. As these are just a few of the issues that prevent banks from moving fast enough to meet their customers' demands, it's no surprise that many banks have turned to AI as a change facilitator - but the question remains, how?

How to become an AI-first bank?



Now that we've seen how AI is used in banking, we'll look at the steps that banks can take to implement AI on a large scale and develop their processes while keeping the four



Challenges and concerns with ARTIFICIAL INTELLIGENCE in Banking Industry

While the use of artificial intelligence in the financial industry has several advantages, it also has some drawbacks and concerns. Let's look at some of the most important drawbacks and concerns:

DATA SECURITY AND SECURITY

The likelihood of data leaks and cyberattacks rises as financial organisations gather and analyze more data using AI algorithms. Given how delicate financial information is, this is especially worrisome. For the sake of both themselves and their clients' safety, institutions must put robust data privacy and security steps in place.

BIAS AND DISCRIMINATION

The data that AI systems are educated on determines how impartial they are. An AI program will generate biased or prejudiced outcomes if the data used to teach it is biased or discriminatory. To prevent the perpetuation of prejudice and discrimination, financial organizations must guarantee that their AI algorithms are educated on varied and unbiased data.

CUSTOMER TRUST AND TRANSPARENCY

The banking sector may perceive less human contact as a result of the use of artificial intelligence, which could undermine consumer confidence. The use of artificial intelligence by financial organisations must be openly disclosed, and consumers must be given detailed explanations of how AI is put to use in their services.

INTEGRATION WITH LEGACY SYSTEMS

It can be difficult to integrate AI with old systems, especially for organizations with complicated and disjointed IT infrastructures. Institutions must make sure that their IT systems can support the incorporation of AI and that their staff is equipped with the skills needed to use it.

Future prospects for artificial intelligence in the BANKING sector

There is still much space for development and invention in the banking sector's use of artificial intelligence. These possible future advancements in the application of artificial intelligence to the banking sector are listed below:

ADVANCED FRAUD DETECTION AND PREVENTION

The capacity of AI to identify and stop deception will increase as the technology does. Advanced fraud detection algorithms might be able to spot and stop previously untraceable new kinds of scam.

INCREASED PERSONALIZATION

AI algorithms may be able to offer even more individualized financial encounters as they become more advanced. This might include individualized financial planning, product suggestions, and investment guidance.

INTEGRATION WITH VOICE ASSISTANTS

Voice aides like Google Home and Alexa from Amazon are becoming more and more common in homes. In order to give consumers a more convenient and streamlined banking experience, AI-powered speech assistants may one day be combined with financial services.

COLLABORATION WITH FINTECH STARTUPS

The growth of fintech startups has disrupted the conventional banking industry, and many of these startups are utilizing artificial intelligence to create innovative goods and services. More collaborations between financial organizations and fintech startups may result in new and creative uses of artificial intelligence in the banking industry in the future.

- AI-powered credit scoring and loan underwriting have the potential to increase access to credit for underbanked populations and small businesses.
- AI can help banks improve their operational efficiency by automating repetitive tasks and optimizing resource allocation.
- The use of artificial intelligence in banking industry requires a significant investment in data infrastructure and analytics capabilities, as well as ongoing maintenance and updates.
- The use of AI in banking is still in its early stages, and financial institutions must remain flexible and open to experimentation and iteration.
- The successful adoption of AI in banking requires a collaborative approach between banks, regulators, and technology providers to ensure the development of ethical and responsible AI systems.

- **CONCLUSION**

Finally, the use of artificial intelligence in the financial business provides several advantages, including better client encounters, enhanced security, and

increased productivity. However, there are some challenges and concerns that must be handled in order to guarantee that AI is used responsibly and ethically.

The future of artificial intelligence in banking is bright, with possible advancements such as improved fraud detection, greater personalization, integration with speech assistants, and cooperation with fintech companies. As AI technology advances, financial institutions must ensure that they remain current on the latest advancements and apply AI responsibly and ethically.