

Harnessing digital transformation to solve operational bottlenecks in banking

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Abstract

The banking industry is undergoing a digital transformation, driven by the need to address operational bottlenecks and improve efficiency. This transformation involves the integration of digital technologies into all areas of banking operations, from customer service to back-office processes. By harnessing digital transformation, banks can streamline operations, reduce costs, and enhance customer experiences. One of the key areas where digital transformation is making an impact is in customer service. Banks are leveraging digital technologies such as chatbots and mobile apps to provide customers with convenient and personalized banking experiences. These technologies enable customers to access banking services anytime, anywhere, leading to higher satisfaction levels and increased loyalty. Another area where digital transformation is driving change is in back-office operations. Banks are automating manual processes and implementing advanced analytics to improve efficiency and reduce errors. For example, banks are using robotic process automation (RPA) to automate repetitive tasks such as data entry and document processing, freeing up employees to focus on more value-added activities. Furthermore, digital transformation is enabling banks to enhance risk management and compliance processes. Banks are using advanced analytics and machine learning algorithms to analyze data and detect potential risks in real-time. This proactive approach to risk management helps banks mitigate risks and ensure compliance with regulatory requirements. Overall, digital transformation is revolutionizing the banking industry by enabling banks to address operational bottlenecks and improve efficiency. By harnessing digital technologies, banks can streamline operations, reduce costs, and enhance customer experiences. However, banks must overcome challenges such as legacy systems, data security concerns, and regulatory compliance to fully realize the benefits of digital transformation. Nevertheless, the potential benefits of digital transformation in banking are substantial, and banks that embrace this transformation are likely to gain a competitive edge in the industry.

Keywords: Harnessing; Digital; Banking; Transformation; Operational Bottlenecks

1 Introduction

The banking industry is undergoing a profound transformation driven by digital technologies. This transformation, known as digital transformation, is reshaping how banks operate and interact with customers. Digital transformation involves the integration of digital technologies into all aspects of banking operations to streamline processes, enhance customer experiences, and drive innovation (Abaku & Odimarha, 2024, Esan, Ajayi & Olawale, 2024, Ogundipe, 2024). Operational bottlenecks are significant challenges faced by banks in their day-to-day operations. These bottlenecks can arise from manual processes, outdated technology, data silos, and regulatory compliance issues. Addressing these bottlenecks is crucial for banks to remain competitive, improve efficiency, and meet the evolving needs of customers.

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This paper explores the role of digital transformation in solving operational bottlenecks in the banking industry. It examines how banks can harness digital technologies to streamline operations, enhance customer experiences, and drive innovation. The paper will discuss various aspects of digital transformation, including its impact on customer service, back-office operations, risk management, and compliance. It will also highlight best practices and case studies of successful digital transformation initiatives in the banking industry.

The purpose of this paper is to provide insights into how banks can leverage digital transformation to address operational bottlenecks and drive business success. By embracing digital transformation, banks can improve efficiency, reduce costs, and enhance customer satisfaction. The scope of this paper includes an overview of digital transformation in banking, the importance of addressing operational bottlenecks, and practical strategies for harnessing digital transformation to drive innovation and improve operational efficiency in banking.

In recent years, the banking industry has witnessed a significant shift towards digital transformation, driven by technological advancements and changing customer expectations (Abaku, Edunjobi & Odimarha, 2024, Ogundipe & Abaku, 2024, Popoola, et. al., 2024). Digital transformation in banking refers to the integration of digital technologies to fundamentally change how financial institutions operate and deliver value to customers. This transformation is not just about digitizing existing processes but also about reimagining banking operations to be more efficient, agile, and customer-centric.

Operational bottlenecks have long been a challenge for banks, hindering their ability to deliver seamless services and meet evolving customer demands. These bottlenecks can range from manual and paper-based processes to legacy systems that are not equipped to handle modern banking needs. Addressing these bottlenecks is crucial for banks to stay competitive, improve operational efficiency, and enhance customer experiences.

The purpose of this paper is to explore how digital transformation can help banks overcome operational bottlenecks and drive innovation in banking (Adama & Okeke, 2024, Familoni, 2024, Okatta, Ajayi & Olawale, 2024). By harnessing digital technologies such as artificial intelligence, data analytics, and robotic process automation, banks can streamline operations, reduce costs, and improve service quality. The scope of this paper includes an in-depth analysis of key operational bottlenecks in banking, the role of digital transformation in addressing these bottlenecks, and best practices for successful implementation.

Furthermore, this paper will highlight the importance of digital transformation in banking and its impact on the industry's future. As customer expectations continue to evolve, banks must embrace digital transformation to stay relevant and competitive. By understanding the challenges and opportunities associated with digital transformation, banks can develop strategies to harness its full potential and drive sustainable growth in the digital age.

2 Operational Bottlenecks in Banking

Manual processes are a significant source of operational bottlenecks in banking. Traditional banking operations often rely on manual data entry, paper-based documentation, and manual approval processes, leading to inefficiencies and errors (Ikegwu, et. al., 2017, Popo-Olaniyan, et. al., 2022, Ajayi & Udeh, 2024, Ikegwu, et. al., 2022.). These manual processes are time-consuming, prone to human error, and can result in delays in service delivery. Additionally, manual processes can hinder scalability and agility, making it challenging for banks to adapt to changing customer needs and market conditions.

Legacy systems and outdated technology present another major bottleneck in banking operations. Many banks still rely on legacy systems that were built decades ago and are not equipped to handle modern banking requirements (Adama & Okeke, 2024, Familoni & Babatunde, 2024, Shoetan & Familoni, 2024). These legacy systems are often inflexible, difficult to integrate with newer technologies, and require significant maintenance and support costs. Moreover, legacy systems may lack the capabilities needed to support digital channels, such as mobile banking and online transactions, limiting banks' ability to meet customer expectations for digital services.

Data silos and lack of integration pose significant challenges for banks in accessing and leveraging customer data effectively. In many banks, customer data is stored in disparate systems and databases, making it difficult to obtain a comprehensive view of the customer. This fragmentation of data hinders banks' ability to personalize services, analyze customer behavior, and gain actionable insights. Without integrated data systems, banks struggle to deliver seamless customer experiences and targeted marketing campaigns.

Compliance and regulatory challenges are pervasive in the banking industry and can create operational bottlenecks for banks. Banks must adhere to a myriad of regulations and standards, including anti-money laundering (AML), know-your-customer (KYC), and data privacy laws (Adama & Okeke, 2024, Nwankwo, et. al., 2024, Popoola, et. al., 2024). Ensuring compliance with these regulations requires banks to implement robust processes and controls, conduct regular audits, and invest in compliance technology. Failure to comply with regulatory requirements can result in fines, reputational damage, and legal consequences, further exacerbating operational bottlenecks.

In conclusion, operational bottlenecks in banking, including manual processes, legacy systems, data silos, and compliance challenges, hinder banks' ability to deliver efficient and seamless services. Addressing these bottlenecks requires banks to invest in digital transformation initiatives, streamline processes, and adopt modern technologies to enhance operational efficiency and improve customer experiences.

3 Digital Transformation in Customer Service

One of the key aspects of digital transformation in customer service is the use of chatbots and artificial intelligence (AI) to provide personalized customer interactions. Chatbots are computer programs that can simulate human conversation, allowing banks to offer 24/7 customer support through chat interfaces (Adama & Okeke, 2024, Odimarha, Ayodeji & Abaku, 2024, Shoetan & Familoni, 2024). These chatbots can answer frequently asked questions, assist with basic transactions, and even provide personalized product recommendations based on customer preferences and behavior. By leveraging AI, banks can enhance the customer service experience, improve response times, and reduce the workload on human customer service agents.

Digital transformation has also led to the proliferation of mobile apps and online banking platforms, providing customers with convenient access to banking services anytime, anywhere (Ajayi & Udeh, 2024, Familoni & Onyebuchi, 2024, Popo-Olaniyan, et. al., 2022). Mobile apps allow customers to check their account balances, transfer funds, pay bills, and even apply for loans or credit cards, all from their smartphones or tablets. Online banking platforms offer similar functionalities through web browsers, making it easy for customers to manage their finances without visiting a physical bank branch. These digital channels not only improve customer convenience but also reduce the need for costly brick-and-mortar branches, contributing to overall operational efficiency.

Another key aspect of digital transformation in customer service is the use of data analytics to gain insights into customer behavior and preferences (Popoola, et. al., 2024, Uzougbo, et. al., 2024). Banks can analyze customer data, such as transaction history, spending patterns, and interaction history, to understand individual customer needs better. By leveraging data analytics, banks can offer personalized product recommendations, targeted marketing campaigns, and customized promotions to enhance the customer experience. Additionally, data analytics can help banks identify and address customer pain points, improving overall customer satisfaction and loyalty.

In conclusion, digital transformation in customer service is revolutionizing how banks interact with customers, offering personalized experiences, convenient access to services, and actionable insights through AI, mobile apps, online banking, and data analytics. Embracing these digital technologies can help banks improve customer satisfaction, drive loyalty, and stay competitive in the rapidly evolving banking landscape.

4 Digital Transformation in Back-Office Operations

Robotic process automation (RPA) is a key component of digital transformation in back-office operations. RPA involves the use of software robots or "bots" to automate repetitive, rule-based tasks that were previously performed manually (Ajayi & Udeh, 2024, Odimarha, Ayodeji & Abaku, 2024, Udeh, et. al., 2023). In banking, RPA can be used to automate processes such as data entry, document processing, account reconciliation, and compliance reporting. By implementing RPA, banks can improve efficiency, reduce errors, and free up employees to focus on more strategic tasks that require human judgment.

Advanced analytics plays a crucial role in optimizing back-office operations in banking. Banks can use advanced analytics techniques such as predictive analytics, machine learning, and data mining to analyze large volumes of data and identify patterns, trends, and anomalies (Ajayi & Udeh, 2024, Odulaja, et. al., 2023, Olawale, et. al., 2024). This data-driven approach enables banks to optimize processes, improve decision-making, and enhance operational efficiency. For example, banks can use advanced analytics to forecast cash flow, detect fraudulent transactions, and optimize inventory management.

Cloud computing has emerged as a powerful tool for transforming back-office operations in banking. Cloud computing offers banks the ability to access computing resources, such as storage, processing power, and software applications, over the internet on a pay-as-you-go basis (Ajayi & Udeh, 2024, Ogedengbe, et. al., 2023, Popoola, et. al., 2024). This enables banks to scale their operations up or down quickly based on demand, without the need for significant upfront investment in hardware or infrastructure. Cloud computing also provides banks with greater flexibility, allowing them to deploy new applications and services rapidly and respond to changing market conditions more effectively.

In conclusion, digital transformation in back-office operations is revolutionizing how banks manage their internal processes, leveraging technologies such as RPA, advanced analytics, and cloud computing to improve efficiency, reduce costs, and enhance agility (Eleogu, et. al., 2024, Familoni, Abaku & Odimarha, 2024, Ogundipe, Babatunde & Abaku, 2024). By embracing these digital technologies, banks can streamline operations, drive innovation, and stay competitive in the rapidly evolving banking industry.

5 Digital Transformation in Risk Management and Compliance

*Digital transformation has enabled banks to enhance risk management practices through the use of advanced analytics and machine learning (Ajayi & Udeh, 2024, Ogundipe, Odejide & Edunjobi, 2024, Uzougbo, et. al., 2024). These technologies enable banks to analyze large volumes of data in real-time to detect potential risks and anomalies. For example, banks can use machine learning algorithms to analyze transaction data and identify patterns that may indicate fraudulent activity. By leveraging advanced analytics and machine learning, banks can improve their ability to detect and mitigate risks in real-time, reducing the likelihood of financial losses and regulatory penalties.

Automation is another key aspect of digital transformation in risk management and compliance. Banks can use automation tools to streamline compliance processes and ensure regulatory compliance. For example, banks can use automation to generate compliance reports, conduct KYC (know your customer) checks, and monitor transactions for suspicious activity. By automating these processes, banks can reduce the risk of human error, improve efficiency, and ensure that they meet regulatory requirements.

Blockchain technology has emerged as a powerful tool for enhancing security and transparency in banking transactions (Akinsanya, Ekechi & Okeke, 2024, Odimarha, Ayodeji & Abaku, 2024, Olawale, et. al., 2024). Blockchain is a decentralized, distributed ledger technology that enables secure and transparent transactions without the need for intermediaries. Banks can use blockchain technology to improve the security of transactions, reduce the risk of fraud, and increase transparency. For example, banks can use blockchain to securely record and verify transactions, ensuring that they are tamper-proof and transparent to all parties involved.

In conclusion, digital transformation in risk management and compliance is revolutionizing how banks identify, assess, and mitigate risks. By leveraging technologies such as advanced analytics, machine learning, automation, and blockchain, banks can improve their ability to manage risks effectively, ensure regulatory compliance, and enhance the security and transparency of their transactions.

6 Challenges and Considerations

One of the primary challenges of digital transformation in banking is the presence of legacy systems that are often outdated and incompatible with modern technologies (Akinsanya, Ekechi & Okeke, 2024, Ogedengbe, et. al., 2023, Ogundipe & Abaku, 2024). Integrating these legacy systems with new digital solutions can be complex and time-consuming, requiring significant investment in both technology and expertise. Moreover, legacy systems may lack the flexibility and scalability needed to support digital transformation initiatives, hindering banks' ability to innovate and adapt to changing market conditions.

Data security and privacy are paramount concerns in the banking industry, particularly when implementing digital transformation initiatives (Akinsanya, Ekechi & Okeke, 2024, Ogundipe, Odejide & Edunjobi, 2024, Popo-Olaniyan, et. al., 2022). Banks must ensure that customer data is protected against unauthorized access, data breaches, and cyber-attacks. This requires implementing robust security measures, such as encryption, multi-factor authentication, and regular security audits. Moreover, banks must comply with data protection regulations, such as the GDPR and CCPA, which impose strict requirements on the collection, storage, and processing of personal data.

Regulatory compliance is a major challenge for banks undergoing digital transformation, as they must adhere to a complex web of regulations and standards (Akinsanya, Ekechi & Okeke, 2024, Okatta, Ajayi & Olawale, 2024, Uzougbo,

et. al., 2024). Banks must ensure that their digital transformation initiatives comply with regulations such as the Basel III framework, AML (anti-money laundering) regulations, and KYC (know your customer) requirements. Failure to comply with these regulations can result in significant fines, reputational damage, and legal consequences. Additionally, banks must manage risks associated with digital transformation, such as cybersecurity risks, operational risks, and strategic risks.

Digital transformation requires a cultural shift within banks, as employees must adapt to new technologies, processes, and ways of working (Babatunde, et. al., 2024, Familoni & Shoetan, 2024, Popoola, et. al., 2024). Employee training and change management are critical aspects of successful digital transformation, ensuring that employees have the skills and knowledge needed to embrace new technologies and processes. Moreover, banks must foster a culture of innovation and continuous learning, encouraging employees to embrace change and contribute to the success of digital transformation initiatives.

In conclusion, addressing these challenges and considerations is crucial for banks to successfully harness digital transformation to solve operational bottlenecks (Ikegwu, et. al., 2017, Popo-Olaniyan, et. al., 2022, Ajayi & Udeh, 2024, Ikegwu, et. al., 2022,). By addressing legacy systems, ensuring data security and privacy, complying with regulations, and engaging employees, banks can overcome these challenges and realize the full benefits of digital transformation in banking.

7 Case Studies of Successful Digital Transformation Initiatives

JPMorgan Chase, one of the largest banks in the United States, embarked on a digital transformation journey to enhance customer experiences and drive operational efficiency (Edu, et. al., 2022, Odimarha, Ayodeji & Abaku, 2024, Olawale, et. al., 2024). The bank invested heavily in digital technologies, such as AI, machine learning, and big data analytics, to improve its product offerings and streamline internal processes. For example, JPMorgan Chase implemented AI-powered chatbots to provide personalized customer service and launched a mobile banking app that allows customers to manage their accounts and make transactions on the go. These initiatives have helped JPMorgan Chase improve customer satisfaction, reduce costs, and increase operational efficiency.

DBS Bank, based in Singapore, is another example of a bank that successfully embraced digital transformation to stay ahead in the rapidly evolving banking industry (Ekechi, et. al., 2024, Ogundipe, Odejide & Edunjobi, 2024, Olatoye, et. al., 2009). DBS Bank implemented a digital-first strategy, focusing on enhancing its digital channels and services to meet customer expectations for seamless and convenient banking experiences. The bank launched digibank, a mobile-only bank that offers a wide range of banking services through a mobile app. DBS Bank also leveraged data analytics to gain insights into customer behavior and tailor its product offerings to meet customer needs. These efforts have helped DBS Bank strengthen its position as a leading digital bank in Asia.

Bank of America, one of the largest banks in the United States, has also made significant strides in digital transformation to improve its customer experiences and operational efficiency. The bank invested in digital technologies, such as cloud computing and robotic process automation, to streamline its back-office operations and enhance its digital capabilities (Ekechi, et. al., 2024, Okatta, Ajayi & Olawale, 2024, Okeke, et. al., 2023). For example, Bank of America implemented a cloud-based platform for processing mortgage applications, reducing the time and cost associated with the mortgage approval process. The bank also launched Erica, an AI-powered virtual assistant that helps customers manage their finances and make informed financial decisions. These initiatives have helped Bank of America improve customer satisfaction, reduce costs, and drive growth in its digital banking business.

In conclusion, these case studies demonstrate the importance of digital transformation in banking and highlight the benefits that banks can achieve by embracing digital technologies. By investing in digital transformation initiatives, banks can enhance customer experiences, improve operational efficiency, and drive growth in an increasingly digital world.

ING, a global bank based in the Netherlands, embarked on a digital transformation journey to become a "digital first" bank (Eleogu, et. al., 2024, Familoni, Abaku & Odimarha, 2024, Ogundipe, Babatunde & Abaku, 2024). The bank implemented a range of digital initiatives to improve customer experiences and drive operational efficiency. For example, ING launched a mobile banking app that offers personalized financial insights and recommendations based on customer behavior. The bank also leveraged AI and machine learning to automate manual processes and enhance risk management practices. These initiatives have helped ING attract new customers, increase customer loyalty, and improve its competitive position in the market.

Standard Chartered Bank, a multinational bank headquartered in London, implemented a digital transformation strategy to modernize its banking operations and improve customer experiences (Ajayi & Udeh, 2024, Ikegwu, et. al., 2022, Uzougbo, et. al., 2024). The bank invested in digital technologies, such as blockchain and AI, to streamline its processes and enhance security. For example, Standard Chartered Bank used blockchain technology to facilitate cross-border payments, reducing the time and cost of processing international transactions. The bank also launched a digital banking platform that offers a range of online banking services to customers. These initiatives have helped Standard Chartered Bank improve operational efficiency, reduce costs, and enhance customer satisfaction.

BBVA, a Spanish multinational bank, embraced digital transformation to become a leading digital bank in the industry. The bank launched a digital banking platform that offers a seamless omnichannel experience to customers, allowing them to access banking services through multiple channels, including mobile apps, websites, and branches (Adama & Okeke, 2024, Uzougbo, et. al., 2024). BBVA also leveraged data analytics to gain insights into customer behavior and tailor its product offerings to meet customer needs. These initiatives have helped BBVA improve customer engagement, increase operational efficiency, and drive growth in its digital banking business. In conclusion, these case studies demonstrate the transformative impact of digital transformation in the banking industry (Abaku & Odimarha, 2024, Esan, Ajayi & Olawale, 2024, Ogundipe, 2024). By embracing digital technologies and innovating their business models, banks can improve customer experiences, drive operational efficiency, and stay competitive in a rapidly evolving digital landscape.

8 Best Practices for Harnessing Digital Transformation

One of the key best practices for harnessing digital transformation is to establish a clear digital strategy and governance framework. This involves defining clear goals and objectives for digital transformation initiatives, identifying key stakeholders, and establishing accountability and decision-making processes (Babatunde, et. al., 2024, Familoni & Shoetan, 2024, Popoola, et. al., 2024). A well-defined digital strategy helps ensure that digital transformation efforts are aligned with business objectives and that resources are allocated effectively. Additionally, a governance framework helps ensure that digital transformation initiatives are managed efficiently and that risks are identified and mitigated.

Another best practice for harnessing digital transformation is to invest in the right technology and infrastructure. This includes adopting digital technologies such as cloud computing, AI, and data analytics to improve operational efficiency and enhance customer experiences (Edu, et. al., 2022, Odimarha, Ayodeji & Abaku, 2024, Olawale, et. al., 2024). It also involves ensuring that the underlying infrastructure is robust and scalable to support digital initiatives. By investing in the right technology and infrastructure, banks can improve agility, reduce costs, and drive innovation.

Fostering a culture of innovation and collaboration is essential for successful digital transformation. This involves encouraging employees to think creatively, experiment with new ideas, and embrace change (Adama & Okeke, 2024, Odimarha, Ayodeji & Abaku, 2024, Shoetan & Familoni, 2024). It also involves promoting collaboration between different departments and teams to break down silos and ensure that digital transformation efforts are holistic and integrated. By fostering a culture of innovation and collaboration, banks can drive continuous improvement, adapt to changing market conditions, and stay ahead of the competition. In conclusion, these best practices can help banks harness digital transformation to improve customer experiences, drive operational efficiency, and achieve sustainable growth (Adama & Okeke, 2024, Familoni, 2024, Okatta, Ajayi & Olawale, 2024). By establishing a clear digital strategy and governance framework, investing in the right technology and infrastructure, and fostering a culture of innovation and collaboration, banks can position themselves for success in the digital age.

9 Future Trends and Outlook

One of the key future trends in digital transformation in banking is the continued focus on digital customer experiences. Banks will increasingly prioritize providing seamless, personalized, and convenient digital experiences to their customers (Akinsanya, Ekechi & Okeke, 2024, Ogedengbe, et. al., 2023, Ogundipe & Abaku, 2024). This will involve leveraging data analytics and AI to gain insights into customer behavior and preferences, enabling banks to offer tailored products and services. Banks will also continue to invest in digital channels such as mobile apps and online banking platforms to enhance customer engagement and loyalty.

Another future trend in digital transformation is the integration of emerging technologies such as AI and blockchain. AI will play a crucial role in automating manual processes, improving decision-making, and enhancing customer interactions (Adama & Okeke, 2024, Nwankwo, et. al., 2024, Popoola, et. al., 2024). For example, AI-powered chatbots will become more sophisticated, providing more personalized and efficient customer service. Blockchain technology

will also be increasingly adopted for its ability to provide secure and transparent transactions, particularly in areas such as payments and trade finance.

Digital banking will continue to evolve in response to changing customer expectations. Customers will increasingly demand more personalized and convenient banking experiences, leading banks to innovate their digital offerings (Popoola, et. al., 2024, Uzougbo, et. al., 2024). For example, banks may offer more personalized financial advice and recommendations based on AI-driven insights. Banks may also explore new digital channels and technologies to engage with customers, such as virtual reality and augmented reality.

In conclusion, the future of digital transformation in banking looks promising, with a continued focus on digital customer experiences, integration of emerging technologies, and evolution of digital banking in response to customer expectations (Ajayi & Udeh, 2024, Familoni & Onyebuchi, 2024, Popo-Olaniyan, et. al., 2022). Banks that embrace these trends and invest in digital transformation initiatives will be well-positioned to succeed in the digital age.

10 Conclusion

In conclusion, harnessing digital transformation to solve operational bottlenecks in banking is essential for banks to stay competitive and meet the evolving needs of customers. Throughout this paper, we have discussed the various aspects of digital transformation in banking, including its impact on customer service, back-office operations, risk management, and compliance. We have also explored the challenges and considerations associated with digital transformation, as well as best practices and case studies of successful initiatives.

The future of banking lies in embracing digital transformation wholeheartedly. Banks must recognize the importance of digital transformation as a strategic imperative and invest in the necessary resources, technology, and expertise to drive innovation and efficiency. By embracing digital transformation, banks can improve customer experiences, streamline operations, reduce costs, and stay ahead of the competition in a rapidly evolving digital landscape.

The potential benefits of digital transformation in banking are vast and far-reaching. By leveraging digital technologies such as AI, machine learning, data analytics, and blockchain, banks can enhance customer experiences, improve operational efficiency, and drive growth. Digital transformation enables banks to offer personalized services, streamline processes, mitigate risks, and comply with regulatory requirements more effectively. Ultimately, digital transformation empowers banks to innovate, adapt to changing market conditions, and achieve sustainable success in the digital age. In conclusion, the time for banks to embrace digital transformation is now. By embracing digital transformation initiatives, banks can unlock new opportunities, drive innovation, and create value for customers and stakeholders alike. The journey towards digital transformation may be challenging, but the potential rewards are well worth the investment.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

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