

# Application of Business Technology in Management : A Case Study of Using Technology Innovation to Improve Business Operational Efficiency and Effectiveness

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## ABSTRACT

This research focuses on the application of business technology in management, specifically examining a case study of a conventional bank in Sukabumi. The objective of the study is to explore the use of technological innovation to increase the efficiency and effectiveness of business operations at the bank. The research methodology involves a comprehensive analysis of the technological innovations implemented, their impact on customer service and transaction processing, and the overall organizational performance. The findings reveal that the bank has successfully implemented online banking platforms, a mobile application, and advanced ATMs, resulting in improved customer service, streamlined transaction processing, and enhanced organizational performance. The study contributes to the existing literature by emphasizing the importance of technological innovation in the banking sector and providing recommendations for banks to optimize their technological investments.

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## 1. INTRODUCTION

Technological advancements have significantly changed the business landscape, prompting organizations to integrate business technology into their management practices. In the banking sector, where efficient and effective operations are critical to maintaining customer satisfaction and competitive advantage, the adoption of technological innovations has become increasingly important. The banking industry has experienced significant technological advancements in recent years, resulting in

improved services and operations. Some of the technological advancements in the banking industry. ATMs have made money accessibility easy for bank customers as they can obtain it at their convenience. The even distribution of ATMs in most parts of Indonesia has made it easier for bank customers to withdraw and deposit money and/or checks at their convenience [1]. Mobile banking allows customers to access their accounts and perform transactions using their mobile devices. This makes banking more convenient and accessible to customers [1]–[3]. Internet banking systems allow bank

customers to have easy access to their accounts and general information about the bank's products and services. This can be achieved through the use of the bank's website without the inconvenience of sending letters, faxes, original signatures, and confirmations over the phone [1]. Debit and credit cards have made it easier for customers to make transactions without the need for cash [2]. Cloud computing is a technology that provides solutions for almost all sectors to improve their business. This technology helps organizations to improve or redesign services at a very low cost. Cloud computing is being adopted by banks to improve their services and operations [4].

The adoption of these technological innovations is not without challenges. Some of the challenges faced by the banking industry in adopting technology. Some bank customers still cling to old traditions that make them resistant and not easily adapt to technological innovation. This can be seen from the behavior of most bank customers who still queue at branch offices despite the availability of Mobile Banking, Automated Teller Machines (ATMs), and Internet Banking [1].

The cost of adopting new technology can be high, and this can be a challenge for banks [4]. The bank's organizational structure can also be a challenge in adopting new technologies [4]. Decision making: Decision-making can be a challenge in adopting new technologies, especially in cases where there is a lack of understanding of the benefits of such technologies [3]. Despite these challenges, banks are investing heavily in the adoption of new technologies to improve their services and operations [2], [3].

This technological advancement has made banking more convenient and accessible to customers. Technological advances have had a significant impact on the banking industry, especially in terms of customer satisfaction and behavior. The implementation of e-banking services has the potential to increase customer satisfaction while providing a competitive advantage for banks [5]. A study evaluated the number and

types of e-banking services used by customers of various banks and their satisfaction after using technology-based services based on service quality dimensions such as ease/convenience of use, reliability, security, responsiveness, and personalization<sup>1</sup>. The study found that the impact of e-banking service delivery on customer satisfaction with the bank is positive [5].

The development of Industry 4.0 has revolutionized the way businesses are conducted, and Industry 4.0 applications are rapidly growing in the financial sector, including the banking industry<sup>2</sup>. Banks are challenged to realize their service strategies by leveraging advanced technologies to meet the expectations of modern customers [6]. A maturity model has been proposed to assess the level of readiness to adapt to Industry 4.0 in the banking sector, consisting of five maturity levels: early, managed, defined, established, and digitally oriented [6].

A study looked at the impact of various demographic parameters on internet banking service excellence, customer value, need fulfillment, and trust [7]. The study found that customers with higher levels of education and income who use internet banking for most of their financial needs and have done so for a longer period of time, have higher levels of satisfaction [7]. The impact of digital and technological advancements in the Indonesian banking industry has been examined from a marketing perspective [8]. The study found that digital advancement and technological advancement have a positive relationship with marketing fraud risk and IT utilization by banks, and also found that marketing fraud risk may also increase if banks increase IT utilization in terms of introducing their products to current and potential customers [8].

The use of social media channels and its effect on bank performance has been investigated [9]. The study found that there is a significant relationship between useful and trustworthy content and customer satisfaction, as well as between customer satisfaction and retention<sup>5</sup>. Recommendations from this study can help

banks to use social media channels in ways that can improve customer satisfaction and retention [9].

Overall, technological advancements have the potential to improve customer satisfaction and give banks a competitive advantage. However, it is important to consider demographic parameters, risk of marketing fraud, and use of social media channels to ensure that technological advancements are implemented effectively.

This research focuses on exploring the application of business technology in management and its impact on the efficiency and effectiveness of business operations in a conventional bank in Sukabumi, Indonesia. By examining a real-world case study, this research aims to shed light on the practical implications of technological innovation in the banking industry. The main objective of this study is to analyze the use of technological innovation and its impact on various aspects of business operations at a conventional bank in Sukabumi.

## 2. LITERATURE REVIEW

### 2.1 *Business Technology and Management*

Business technology includes tools, systems, and strategies used by organizations to improve their operations, increase efficiency, and achieve competitive advantage. The integration of business technology in management practices has become essential in today's rapidly evolving business landscape [10], [11]. This includes various aspects, such as digitization, automation, data analysis, and communication technologies [12]. By effectively adopting and utilizing these technologies, organizations can streamline processes, optimize resource allocation, and make data-driven decisions, ultimately leading to improved overall performance [13], [14].

### 2.2 *Technology Innovation in the Banking Sector*

The banking sector has witnessed significant technological innovations in recent

years. Traditional banks have leveraged digitization and technological advancements to improve their operations and services [15]. Technological innovations in the banking industry have led to the development of online banking, mobile banking applications, automated teller machines (ATMs), and other digital platforms [16]. These innovations have changed the way customers interact with banks, facilitating convenient and efficient banking services [17]. In addition, technological innovations have also enabled banks to streamline internal processes, automate routine tasks, and improve risk management and compliance measures [18].

### 2.3 *Efficiency and Effectiveness in Business Operations*

Efficiency and effectiveness are important aspects of successful business operations. Efficiency refers to the ability to complete tasks with minimum resources, reducing costs and time while maximizing results [18], [19]. Effectiveness, on the other hand, pertains to achieving desired results and goals. Technological innovation plays an important role in improving efficiency and effectiveness in business operations [20]. By leveraging technology, organizations can automate processes, eliminate manual errors, improve workflows, and increase productivity [21]. In addition, technology enables organizations to collect, analyze, and utilize data for informed decision-making, leading to more effective strategies and outcomes [22].

### 2.4 *Previous Studies on Technology Innovation in Banking*

A number of studies have explored the impact of technological innovation in the banking sector. These studies have highlighted the positive effects of technology adoption on various aspects of banking operations, including customer satisfaction, operational efficiency, financial performance, and competitive advantage [23]. For example, research [24] has shown that the implementation of digital banking services improves convenience, accessibility, and overall customer satisfaction. In addition, research has also shown that technology-

based solutions can improve the speed, accuracy, and security of transaction processing, thereby improving operational efficiency and reducing costs [25].

### 3. METHODS

This research utilizes a mixed methods approach to gather comprehensive insights into the application of business technology in management and its impact on the efficiency and effectiveness of business operations at a conventional bank in Sukabumi. The mixed methods approach allows the integration of qualitative and quantitative data collection and analysis techniques, thereby increasing the validity and reliability of the findings.

This case study focuses on a conventional bank located in Sukabumi, Indonesia. The selection of this bank was based on its significance in the local banking sector and its adoption of technological innovations to improve business operations. The bank's profile, including size, customer base, products, and services, will be described to provide context for the analysis.

To collect comprehensive data, both qualitative and quantitative data collection methods will be used.

Qualitative data will be collected through semi-structured interviews with key stakeholders, including bank executives, managers, and employees. The interviews will explore their experiences, perspectives, and insights regarding the application of business technology in management and its impact on various aspects of business operations. Interviews will be audio-recorded with participants' consent and transcribed for analysis.

In addition, document analysis will be conducted to collect relevant internal documents, such as reports, memos, and policies, relating to the application of technological innovation and its impact on business operations. These documents will provide valuable insights into the bank's strategies, challenges, and outcomes related to technological innovation.

Quantitative data will be collected through surveys distributed to customers and bank employees. The surveys will assess their perception of the bank's technological innovations, their satisfaction with the services, and their perception of the efficiency and effectiveness of business operations. The data collected from the surveys will be analyzed using statistical techniques to identify patterns, trends, and relationships.

The collected data will be analyzed using appropriate qualitative and quantitative data analysis techniques.

Qualitative data from interviews and document analysis will be analyzed using thematic analysis. Transcribed interviews and relevant documents will be coded and categorized into themes and sub-themes, allowing the identification of patterns, trends, and key findings related to the application of business technology in management. Quantitative data from the survey will be analyzed using SPSS statistical software.

## 4. RESULTS AND DISCUSSION

### 4.1 Bank Profile

A conventional bank located in Sukabumi, Indonesia, is an established financial institution with a significant presence in the local banking sector. The Bank serves a diverse clientele and offers a wide range of banking products and services, including savings accounts, loans, investments, and payment solutions. With a strong reputation for customer service and operational efficiency, Bank Mandiri has been proactive in adopting technological innovations to enhance its business operations.

### 4.2 Technology Innovations Implemented

The Bank has implemented several technological innovations to streamline operations and improve customer experience. These include the introduction of a robust online banking platform, user-friendly mobile banking applications and state-of-the-art automated teller machines (ATMs). The online banking platform allows customers to

perform various transactions, access account information, and transfer funds with ease. The mobile banking application provides a seamless and secure banking experience, allowing customers to conduct transactions via their smart phones. State-of-the-art ATMs are equipped with features such as cash deposits and withdrawals, account balance information, and bill payments.

#### ***4.3 Impact on Customer Service***

The adoption of technological innovations has had a positive impact on customer service at banks. Through online banking platforms and mobile applications, customers have experienced greater convenience and accessibility. They can now perform transactions and access account information at their preferred time and location, reducing the need to physically visit branches. Advanced self-service features on ATMs have also contributed to improved customer service, as customers can perform routine transactions quickly and efficiently. Surveys conducted among bank customers indicate a high level of satisfaction with the convenience and ease of use provided by these technological innovations.

#### ***4.4 Impact on Transaction Processing***

Technological innovations have significantly improved transaction processing in banks. Online banking platforms and mobile applications have accelerated transaction processing time, enabling quick fund transfers, bill payments and account updates. Customers no longer need to visit the bank in person or wait in long queues, resulting in time and cost savings for both customers and banks. In addition, state-of-the-art ATMs have reduced transaction errors and increased transaction speed, thereby improving overall transaction processing efficiency. Surveys conducted among customers and employees highlighted the improved transaction processing capabilities and the positive impact on operational efficiency.

#### ***4.5 Impact on Organizational Performance***

The implementation of technological innovations has positively impacted the

Bank's organizational performance. Improved efficiency in customer service and transaction processing has resulted in increased levels of customer satisfaction. Satisfied customers tend to remain loyal to the Bank, thereby increasing customer retention and potentially attracting new customers. Technology innovation has also contributed to cost savings for the bank, as manual processes have been automated, reducing the need for staff or physical resources. This has positively impacted the bank's financial performance, with improved operational efficiency and lower operating costs.

#### **Research Findings**

##### **Technological Innovations Applied**

Conventional banks in Sukabumi have successfully implemented several technological innovations to improve their business operations. These innovations include the use of online banking platforms, mobile applications, and state-of-the-art automated teller machines (ATMs). The online banking platform provides convenient access for customers to access banking services, such as fund transfers, bill payments, and account information, anytime and anywhere. Mobile applications offer an easy-to-use interface for customers to conduct banking transactions via their smart phones. State-of-the-art ATMs are equipped with features such as cash deposits, withdrawals, and account balance information, thus providing customers with self-service options.

##### **Impact on Customer Service**

The implementation of technological innovations has had a positive impact on customer service at banks. Customers report high levels of satisfaction with the convenience and accessibility provided by online banking platforms and mobile applications. They appreciate the ability to conduct transactions and access their account information without the need to visit a physical branch. State-of-the-art ATMs have also improved customer service by reducing waiting times and enabling self-service options. Overall, technological innovations

have improved the customer experience and contributed to higher levels of satisfaction.

#### *Impact on Transaction Processing*

Technological innovations have significantly improved transaction processing in banks. Online banking platforms and mobile applications have simplified transaction execution, making the process faster and more efficient. Customers can now complete fund transfers, bill payments and other transactions quickly, without the need for manual intervention. State-of-the-art ATMs have also accelerated transaction processing, thereby reducing waiting time for customers. This improvement in transaction processing has enhanced operational efficiency and customer satisfaction.

#### *Impact on Organizational Performance*

The implementation of technological innovation has positively impacted the Bank's organizational performance. Customer satisfaction levels have increased due to the convenience and accessibility provided by technology solutions. The Bank has experienced higher customer retention rates and increased customer loyalty. In addition, improved operational efficiency has resulted in cost savings for the bank. By automating manual processes and reducing the need for physical resources, the bank has been able to optimize its operations and allocate resources more effectively. This has contributed to improved financial performance and overall organizational success.

#### **Discussion**

The findings of this case study highlight the significant impact of technological innovation on business operations in a conventional bank in Sukabumi. The successful implementation of advanced online banking platforms, mobile applications, and ATMs has resulted in improved customer service, efficient transaction processing, and enhanced organizational performance. These findings are in line with existing literature on the benefits of technological innovation in the banking sector [26]–[29].

Technological innovations have enabled banks to provide greater convenience and accessibility to customers, which is an important factor in customer satisfaction. By offering self-service options and reducing reliance on physical branches, banks have met the changing preferences and expectations of customers. Faster and more efficient transaction processing not only enhances customer experience but also improves operational efficiency. Automation of manual processes and incorporation of advanced features in ATMs have contributed to cost savings and resource optimization.

Based on these findings, it is recommended that banks continue to invest in technological advancements to maintain a competitive edge. Regular updates and upgrades to online banking platforms, mobile applications, and ATMs will ensure that customers have access to the latest features and functionalities. Customer education and engagement programs can also be implemented to maximize the benefits of technological innovation. In addition, banks should also prioritize data security measures to ensure customer trust and confidence in using digital banking services.

It is important to acknowledge the limitations of this study. This case study focuses on one conventional bank in Sukabumi, limiting the generalizability of the findings to other banks or banking sectors. The study relied on self-reported data through surveys and interviews, which may introduce bias. Future research could expand the scope to include multiple banks and use comparative analysis to gain a broader understanding of the impact of technological innovation in different banking contexts.

## 5. CONCLUSION

In conclusion, the case study analysis highlights the positive impact of technological innovation on the efficiency, effectiveness, and customer service in the conventional bank in Sukabumi. The adoption of online banking platforms, mobile applications, and advanced ATMs has improved customer

experiences, streamlined transaction processing, and enhanced the bank's overall organizational performance. The findings contribute to the existing literature on the importance of embracing technological advancements in the banking industry and provide valuable recommendations for banks to optimize their technological investments.

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