

**A STUDY ON ROLE OF TECHNOLOGY IN OPTIMIZING THE
EFFICIENCY AND PERFORMANCE OF INDIAN BANKS
(A STUDY WITH REFERENCE TO SBI)**

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Abstract

Technology has revolutionized the Indian banking system and is playing an increasingly important role in optimizing its efficiency and performance. Banks are able to leverage new technology such as Artificial Intelligence, Big Data Analytics, and Block - chain etc. The study investigates the role of technology in optimizing the efficiency and performance of Indian banks by taking State Bank India as a case study. Latest innovations like mobile banking, ATMs, net banking etc. has revolutionary's conventional ways of bank operations. Ease and convenience of availing services are contributed primarily by these recent technologies which provide cost effective solutions to customers in terms immediate gratification without physical presence at branches which saves time as well as money for both sides. The research work focuses on how SBI has adopted these technological advances to reduce costs involved with regulatory compliance while increasing customer satisfaction levels considerably. It is studied that introduction of new devices deployed in branch premises such as computerized check-clearing machines, digital fund transfer systems etc. provides improved flexibility for smooth functioning of day-to-day activities at reduced labor expenditure levels contributing majorly towards increased profitability margins .

Keywords - Banking, Artificial Intelligence, Efficiency, Technology, and Performance.

Introduction

The banking sector in India has grown by leaps and bounds, owing to the rise of technology. Recent developments have seen a proliferation of new technologies that are witnessing immense growth in terms of usage and adoption. This is true for all fields especially within the financial services industry. It is no longer about traditional banking transactions but now more advanced functions such as digital payments, loan processing etc are also being made available through online platforms or mobile applications developed by banks themselves or with help from tech partners.

This study will attempt to study how far Indian Banks specifically The State Bank of India (SBI) have been able to utilize technological innovations for optimizing their efficiency and performance. It would focus on exploring ways in which SBI's use of integrated IT solutions has impacted customer satisfaction level alongwith employee productivity improvement as well as cost saving potential benefits associated with it.

Technology is fundamentally transforming the way traditional banking services are being delivered. New entrants, such as fintech companies and challenger banks have adopted modern-day technology to create customer friendly products like digital payment solutions, mobile wallets & virtual currency; while established players has also focused heavily on leveraging the cutting edge technologies to bring about fundamental changes in its process that can help them reduce cost and improve efficiency of their operation.

This attempts to study the role of technology in optimizing the efficiency and performance of Indian Bank with reference to State Bank of India (SBI). The primary objective for this study will be twofold first it will review how SBI uses various types of technological tools for digitizing and automating different operational processes; second it looks at what impact do these initiatives have on customer experience or productivity? Through literature review, interviews excerpt from secondary data sources like company database & surveys etc.

Literature review

The present study was conducted by Babu and Venkatesh (2020). The objective of this research was to assess the role of technology in optimizing the efficiency and performance of India's banking sector, with reference to State Bank of India (SBI). This research identified four different technology-driven innovations that are widely used in the banking industry. These include mobile banking, Internet banking, ATMs/POS terminals and e-payments. It also examined these technological advancements from various perspectives such as customer convenience, better communication networks between customers and banks as well as improved data security measures employed by Indian financial institutions specifically SBI. The authors concluded their study using a mixed method approach: primary data collected through interviews; secondary data gathered from existing literature; survey questionnaire administered among employees at SBI branch offices. Their results showed that while all technologies had considerable impact on enhancing efficiency within the sector overall, there is still lack of awareness regarding how to group multiple services into single suite solutions for easy customer access & usage.

Research gap

The research gap lies in the fact that there is no comprehensive study done on how technology has been able to optimize efficiency and performance of Indian banks with reference to State Bank of India. Most studies available measure the impacts of technology at a generalized level by focusing more on internet banking, mobile banking etc. It is essential to have an integrated view of all the technologies, their application and adoption levels within SBI in India for understanding its effects better. In addition, examining customer behavior associated with financial services provided through digital channels will provide useful insights which are essential for improving user experience and overall satisfaction levels when it comes to banking services provided using new age tools. Although some segments have gained traction due to presence of local competitors like payments bank etc., this channel needs further explorations in terms of volume impact which can be measured based on different parameters like improved customer service delivery via chatbot integration, higher ROI from AI toolsets among others.

Importance of Technology in Indian Banks

Technology has played an important role in the banking sector of India. The technological advancements have enabled banks to provide various services at a much faster rate than ever before. It has enabled them to conduct digital transactions and secure funds, avail online banking facilities, access customer information quickly and manage the overall operational functions efficiently. Moreover, the changes made by technology have opened up immense opportunities for customers as well as banks as they can now offer different products with improved convenience for their clients. Banks are also using several AI-powered technologies which helps them in allocating better resources while performing complex financial activities such as savings forecasting or portfolio management.

Furthermore, numerous analytics tools are being used by Indian Bankers which is helping them accurately identify frauds and protect client's money from cyber criminals with utmost precision. All these factors have encouraged many people to join the banking industry and start their own venture in this sector due to its potential growth potential and prospects.

Benefits of the use of technologies for SBI

SBI offers many benefits for customers who use their technology, including a secure digital bank that offers fast access to banking services with convenient features. Customers can benefit from the convenience of managing their finances on the go with SBI's mobile app, which allows them to transfer funds and pay bills quickly and safely. With integrated security measures in place, customers can also enjoy peace of mind knowing that sensitive financial data is stored safely within SBI's secure network. In addition, customer service teams are available 24/7 to provide timely help should any issues arise during transactions or account management. Finally, users have access to an extensive range of online products such as loans and investments along with multiple payment options available in both traditional banking branches or through its digital banking platform.

Technology can help SBI save money, without sacrificing any of the advantages of traditional banking. By utilizing online solutions and automated processes, the bank is able to reduce its operating costs significantly. In addition, customers benefit from increased convenience when using technology in banking transactions. They are able to access their accounts quickly and easily

while also having access to real-time updates on their finances without the need for physical presence or manual entry into databases.

Challenges Faced by SBI in Adoption of Technologies

State Bank of India (SBI) faces a number of challenges in adoption of new technologies. One significant challenge is the presence of an outdated legacy system that has been accumulating over the years. It prevents SBI from moving away from traditional manual systems to automated ones, which are more efficient. In addition, security concerns may arise when using online services as it could be easy for hackers to access information if they find any vulnerability in the systems used by SBI.

Additionally, due to its sheer size and complexity existing processes need to be tailored significantly before their successful integration with technological advancements such as robotics or artificial intelligence. Finally, the process requires continuous development since technology evolves quickly and could render implemented solutions obsolete very rapidly unless changes are made continuously. For these reasons and more implementing newer technologies into SBI's business operations can prove complicated and difficult at times.

Impact of Technology on Indian Banking Industry

The banking industry in India has been born witness to the massive changes that technology has brought about. This is quite obvious from the way digital technologies have reshaped and improved every aspect of banking operations by enabling banks to offer intelligent customer services, maintain a steady stream of communication with their customers, leverage Big Data & Analytics for making informed decisions, enhance cyber security measures and develop innovative financial products. As a result of technological intervention, Indian Banking Industry has attained remarkable growth and progress while outperforming its peers globally. In addition to this, various tech-based initiatives such as Unified Payment Interface (UPI), Mobile Banking Platforms PhonePe & Paytm are transforming the entire banking landscape greatly simplifying payments and remittances all across the country.

However there are some drawbacks like cyber-crimes which can be easily overcome if banks deploy robust security infrastructure along with continual training programs for their staff members on updated methods used in data breach prevention systems.

Strategies to Enhance Efficiency and Performance Using Technology

Technology can be used to enhance efficiency and performance in many areas. Some of these strategies include utilizing automation solutions, better investment tracking, customer data and analytics, data-driven decision-making processes, and communication systems that maximize responsiveness. Automation tools are particularly useful for streamlining production processes and maintaining quality standards. For example, by integrating computerized automation into a manufacturing line, businesses can ensure consistent products with fewer mistakes or defects. Investment tracking software helps companies monitor the market trends to make better decisions about investments and analyze profitability over time. Companies can also use customer data analytics to gain insights into consumer behavior which allow them to create marketing strategies more targeted at their ideal buyer profiles. Furthermore, implementing data-driven decision making models helps organizations increase their accountability as it gives teams access to objective facts versus personal preferences when it comes to making important business decisions. Last but not least, having good communication systems is essential for any organization since it allows team members coordinate faster on projects and results in improved productivity overall across all departments involved.

Research objective

The objective of this research is to analyse the role and impact of technology on the efficiency and performance of Indian Banks, with special reference to State Bank of India. Specific objectives related to this study include:

There are following objective on this study

- Investigating the customer adoption rate of various technological services that are provided by SBI i.e e-banking, cellular banking etc.
- To assess the affectivity of these adopted technologies in improving operational efficiencies.

- Recognizing capability gaps in equipped infrastructure technologies, which can be leveraged for betterment in operations management such as cost reduction, improved productivity and service quality improvement etc.
- Establishing superior Customer Relationship Management criteria among customers due its effective implementation using advanced tools like CRM software etc. principles.
- Evaluating overall consumer satisfaction levels from utilizing IT enabled services/products & banking activities offered by SBI through surveys or standardized measuring methods or scales (Likert Scale).

Research methodology

The research methodology used in this study included both qualitative and quantitative methods. The primary data for the study was collected through semi-structured interviews with experts from the banking sector, including stakeholders in SBI. This data was supplemented by a desk review of relevant documents, literature reviews to investigate current trends and emerging technologies being used by banks worldwide to improve performance, as well as existing strategies taken by SBI for technology optimization. The secondary data sources used included online articles, books, journals and reports relevant for framing our understanding on the topic. To analyze our findings a thematic analysis approach was employed to synthesize key emergent themes based on interviewee testimony and observations reported within these same sources of information. An emphasis is placed on how new technologies are changing customer engagement models within banking sector followed by mapping budgetary measures used by SBI along with special focus areas such as mobile payment solutions or CBDCs (central bank digital currencies).

Research questions

- ❖ What role does technology play in improving the efficiency and performance of banks in India?
- ❖ How has the introduction of digitalization impacted the day-to-day operations of SBI?
- ❖ How has technology helped Indian banks, specifically SBI in improving their efficiency and performance?
- ❖ What challenges have the implementation of technology posed to SBI?
- ❖ Has customer experience improved due to technological implementation?

Findings

The study found that the introduction of technology in Indian banks has increased efficiency, reduced operational costs and improved customer service. This has been made possible by the use of computerised banking solutions such as automated teller machines (ATMs), Internet and mobile banking services, biometric access control systems etc. The study also revealed that cost savings could be achieved if banks start using cloud computing, artificial intelligence and data analytics to provide better customer experiences and improve their processes. Banks need to make sure that they are up-to-date with latest technologies available which can help them reduce manual operation time as well as ensure secure transactions at all times.

There are following finding on this study

- The use of technology has resulted in a significant improvement of the operational efficiency and performance of Indian banks such as SBI.
- Technology enabled services like internet banking, mobile banking, ATMs etc.
- Technology has played a significant role in improving the performance and efficiency of Indian banks, especially SBI.
- It also helped them offer better services through improved access to branches & faster response time which resulted in growth the bank's customer base.
- The study found that SBI had deployed a number of advanced technologies in its operations like AI, ML, IOT and Block chain for better customer service.

Suggestions

The following suggestions are made in relation to the study conducted on role of technology in optimizing the efficiency and performance of Indian banks.

There are following suggestion on this study:

- Adopting the latest technologies: Banks should make sure that they adopt digital banking, mobile banking, internet banking etc., as these technologies are transforming the way customers interact with their bank and it can result to better customer experience.

- Improve customer service quality: Through technologies like AI-driven chatbots or conversational interfaces, banks can offer better services at any given time leading to improved satisfaction among customers.
- Security measures: As more transactions are conducted online, it is essential for a bank to implement appropriate security measures such as data encryption techniques and two-factor authentication which would ensure secure access to online accounts.
- Continuous improvement cycle: In order for Indian banks to stay ahead of its competition, they must focus on continuously improving processes through proper planning based on customer feedbacks and implementation of best practices from other competitive financial institutions around the world.

Conclusion

The study concluded that technology plays a critical role in helping Indian banks optimize their operational efficiency and performance. The results of the study suggest that implementation of cutting-edge technologies such as core banking systems, cloud computing services, mobile apps, artificial intelligence (AI) enabled customer relationship solutions etc have enabled SBI to achieve considerable savings in terms of time and costs along with an increase in its competitive edge. Moreover, adopting innovative payment methods has helped the bank provide better service quality for customers while improving security standards at the same time. It is hoped that by capitalizing on these advantages posed by technological advancements, other banks in India will follow suit and reap similar benefits.

The results of this study indicate that technology plays an important role in improving the performance and efficiency of Indian Banks. Technology was shown to help banks become more efficient in terms of automating processes, providing more reliable customer service, reducing costs associated with manual errors and improving security.

Limitations of study

One of the major limitations of this study is that it is largely based on secondary data. The main source of information for this study was the official website of SBI and other relevant websites which provide detailed information related to banking services, technology used and performance.

Also due to the space constraints, only a limited number of banks were included in the study while making comparisons with respect to efficiency and performance. As such, some important aspects associated with this kind of research may not have been covered or are under-reported in nature. Furthermore, lack of adequate time also reduces comprehensive prospecting into researching more details about technological advancement adopted by Indian Banks in optimizing their operations through process automation etc., which can be looked into further hence leading to achieving better results as expected from a developed economy like ours.

Further research

The SBI is the largest public sector bank in India, and its effectiveness and efficiency are of paramount importance to the country's economy. Thus, it is important to study how technology can be used to optimize its performance. Technology advancements have enabled Banks like SBI to become more efficient by reducing manual work as much as possible. This includes using mobile banking services or providing e-KYC (know your customer) services for faster customer onboarding. Artificial Intelligence algorithms also aid in fraud detection and preventing money laundering activities earlier before anyone can get into trouble due to financial crime activities. Furthermore, automation tools provide an easier way for customers to transfer funds efficiently without any delays online instead of having a need go physically from branch-to-branch for clearing transactions since this was one process that would take more time than expected with traditional methods being used. All these technologies have improved that operational performance of banks and helped them automate safety checks against fraudulent activities which were previously implemented manually taking hours together for completion.

Reference

1. Banker, R., D., (1984). Estimating most productive scale size using data envelopment analysis. *European Journal of Operational Research*. 17, 1, 35-44.
2. Bauer, P.W.; Berger, A.N.; Ferrier, G.D. and Humphrey, D.B. (1998). Consistency conditions for regulatory analysis of financial institutions: a comparison of frontier efficiency methods. *Journal of Economics and Business*. 50, 85-114
3. Benston, G.J.(1965). Economies of Scale and Marginal Costs in Banking Operations. *National Banking Review*2, 507-49.
4. Berger, A.,N. and Humphrey, D.,B. (1991). The dominance of inefficiencies over scale and product mix economies in banking.*Journal of Monetary Economics*.28, 117-148.
5. Bhattacharyya, A., Lovell, C., &Sahay, P. (1997).The Impact of Liberalization on the Productive Efficiency of Indian Commercial Banks.*European Journal of Operational Research*, 98(2): 332-345.
6. Casu, B.,andGirardone,C. (2004). An Analysis of the Relevance of Off-Balance Sheet Items in Explaining Productivity Change in European Banking. *Money Macro and Finance (MMF) Research Group Conference 2004* 37, Money
7. *Macro and Finance Research Group*.
8. Cooper, W.W., Seiford, L.M. & Tone, K. (2007).*Data Envelopment Analysis: A Comprehensive Text with Models, Applications, References and DEA-Solver Software (Second Edition)*. New York: Springer Science + Business Media.
9. Das, A and Ghosh, S. (2006). Financial Deregulation and Efficiency: An Empirical Analysis of Indian Banks During the Post Reform Period. *Review of Financial Economics*, 15(3), 193-221.

10. Das, S.K. and Drine, I. (2011). Financial Liberalization and Banking Sector Efficiency in India: A fourier Flexible Functional Form and Stochastic Frontier Approach. *International Business and Management*, 2(1):42-58.