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Reforms In Indian Banking System: Use of Technology In Banking

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Abstract:
The Indian banking system has undergone significant transformation due to economic reforms and rapid technological advancements. The integration of Information Technology (IT) has revolutionized banking operations, enhancing efficiency, transparency, financial inclusion, and customer satisfaction. This paper examines the role of technology in banking reforms, key innovations such as digital payments, artificial intelligence, and block chain, and evaluates their impact along with challenges like cyber security risks and digital divide. The study concludes that technology-driven reforms are essential for sustainable growth and global competitiveness of the Indian banking sector.

Keywords- Banking Reforms, Digital Banking, Financial Technology (Fin Tech), Artificial Intelligence, E-Banking, UPI, Location Convenience, Time Convenience, etc.

1. INTRODUCTION

The 21 st century will bring about an all-embracing convergence of computing communications, information and knowledge. This will radically change the way we live, work, and think. The growth of high speed networks, coupled with the falling cost of computing power, is making possible applications undreamed of in the past, Voice, data, images, and video may now be transferred around the world in micro-seconds. This explosion of technology is changing the hanking industry from paper and branch banks to digitized and networked banking services. It has already changed the internal accounting and management systems of banks.

The Indian banking system plays a vital role in economic development by mobilizing savings and allocating credit efficiently. Since the economic liberalization of 1991, banking reforms have focused on improving efficiency, competition, and financial stability. In recent years, technology has become the backbone of banking reforms. The shift from traditional branch banking to digital banking has transformed how financial services are delivered. Digital banking refers to the delivery of banking services through electronic channels such as ATMs, mobile apps, internet banking, and payment systems. It allows customers to access services anytime and anywhere.

Objectives of the Study

1. To analyze the role of technology in Indian banking reforms
2. To study the impact of digitalization on banking services
3. To examine challenges in adopting technology
4. To suggest measures for improvement

HYPOTHESIS:

Use of technology has no significant impact on the efficiency and performance of the Indian banking system.

IMPORTANCE OF SUBJECT:

New Marketing Opportunities

As the new technology is so expensive banks need to use the new systems to do more than deliver information and basic services. Banks need the ability to also sell insurance and investment products to get a better return on this investment. Telephone banking can bring financial services to the home or office, especially if they are affordable screen phones. By noticing how much interest the customer expresses. the bank can market stock quotes and insurance quotes. Interactive videos are new technology that banks can make available to the customer to maintain personal contact while still lowering the expense of delivery service. With an interactive video an expert employee is not needed in each branch.

Growth and Use of Technology in Banking

During the middle of 1980s, banks across the world started limited computerizing of branches. In early 1990s hardware prices plummeted with the entry of cheap and but high-powered PCs and servers. This led to banks adopting Total Branch Automation (TBA) Packages. The middle and late 1990s experienced major financial reforms. deregulation of banking policies, globalization along with convergence of computer and communication technologies through internet, mobile phones etc.

Current Banking Technology

Banking uses Information Technology (IT) and Communication Networking Systems (CNS) mainly in 2 different fields:

1. Communication and Connectivity
2. Business Process Reengineering Use of IT Broadly, by providing help in the above activities and fields, technology enhanced the working of 3 major functions performed by banks:

1. Access to liquidity, 2. Transformation of assets, 3. Monitoring of risks.

Technology based Modern Banking

Use of advanced technology has led to the shift from traditional banking. methods to modern banking methods. Currently, the most common and useful technology based banking methods are:

Online Banking

It empowers customers to conduct financial banking transactions on a secure website which can be operated by a retail, virtual bank, credit union or building society. Online banking offers many features and applications that were absent or error-prone and inflexible in traditional banking methods. It makes banking faster and easy.

THE APPLICATIONS ARE:

Transactional -

Bill payments and wire transfers to third parties, Fund transfer between customer's transactional and savings account, Sale and purchase of investments, Applications and transactions for loans and enrollment repayments.

Non-transactional

Analyzing recent transactions, Downloading bank statements, Viewing paid cheques. Financial Institution Administration. Portfolio Management of multiple users at different authority levels. Transaction approval process The most unique feature of online banking is: Personal financial management support-Importing data to personal accounts software.

Mobile Banking

It is used for performing through mobile device such as a mobile phone or aPersonal Digital Assistant

(PDA), banking activities such as: Balance checks, Account details, Portfolio management Account transactions. Payments and investments. Credit applications and other transactions. Mobile banking became popular with the introduction of first primitive smart phones supported with Wireless Application Protocol (WAP).In 1999, Mobile Web became operable which led to the start of mobile banking service over SMS..

Video Banking
It is used for conducting banking transactions or consultations through a remote video connection. It can be performed over purpose built banking transaction machines similar to Automated Teller Machines (ATM) or through bank branches enabled with video conferencing.

Time Convenience
It provides banking services to customers during non-traditional banking hours at convenient times that virtually make banks accessible 24 hours a day. Hence, customers enjoy personal teller services even at times when bank branches are closed.

Location Convenience
It provides banking services in non-traditional locations och at after hours had heanches, grocery stores, offices, factories, edsation campuses de

Technology Branches
It enables banks to expand on demand availability of banking consultative services in branches that do not have such expertise. Video banking improves following banking activities. Customer authentication, Cash and check deposits, Cash and coin withdrywals. Account transfers and bell payments Processing new accounts and loans, Dark consultations and inquiries

Telephone Banking
It is a bank service provided by financial institutions allowing its customers t conduct banking transactions over the telephone. Institutions which provide banking services exclusively over telephone are called Phone Ranks. They use special technology to modernize the customer by providing bank and account related information over a telephone.

Technology Adoption.
The vast majority of the Lebanese banks have set very high standards of excellence for themselves in terms of technology, state-of-the-art facilities, customer service and customer orientation with all facets of operations totally computerized. The banks also make extensive use of communication technology to provide off-site banking facilities including ATMs. Their ambition is to position themselves as technology-driven banks offering superior services to both their clientele classes - the corporate customer and the retail customer. The major reasons behind adopting or developing new information systems are: Rapid geographical expansion has forced banks to replace their off-line systems by an on-line system linking the branches to the head office through the telecommunications network.

Technology Assessment
The diffusion and successful implementation of IT in Lebanese banks is not an easy process. Lebanese banks are facing enormous challenges in mastering the new tools provided by IT. An important constraint to the diffusion and success of IT implementation is the telecommunications infrastructure, another obstacle is managerial practices and organizational weaknesses. In the following section, I will analyses and discuss these obstacles.

RESEARCH METHODOLOGY:

This study is based on secondary data collected from research journals, reports, and published papers related to banking technology in India.

DATA ANALYSIS:

Evolution of Banking Reforms in India

Banking reforms in India can be divided into three phases:

1. Phases of Banking Reforms in India

Pre-Reform Period (Before 1991)

Before economic liberalization, the Indian banking system was highly controlled and dominated by the government. Public sector banks played a major role, leading to limited competition. Banking operations were mostly manual and paper-based, resulting in slow service, low efficiency, and a lack of innovation. Technology usage was minimal, and customer services were not very advanced.

Post-Liberalization Reforms (1991 onwards)

After 1991, major reforms were introduced to improve the banking sector. Private and foreign banks were allowed to enter, increasing competition and efficiency. Prudential norms such as capital adequacy and asset classification were introduced to strengthen financial stability. Banks started focusing more on profitability, customer service, and operational efficiency. Technology adoption began during this phase but was still in the early stages.

Digital Era Reforms (2000 onwards)

From the 2000s, technology became the key driver of banking reforms. Banks adopted Core Banking Solutions (CBS), enabling centralized operations and real-time services. Electronic payment systems were introduced, and financial inclusion initiatives expanded banking access to rural and underserved populations. This phase marked the transformation of traditional banking into digital banking.

2.Role of Technology in Banking Reforms

Technology has significantly transformed banking operations, making them faster, more efficient, and customer-friendly.

Core Banking Solutions (CBS)

CBS allows banks to operate through a centralized system, enabling real-time transaction processing. Customers can access their accounts from any branch, promoting the concept of “anywhere banking” and improving service efficiency.

Automated Teller Machines (ATMs)

ATMs provide 24/7 banking services such as cash withdrawal and deposits. They reduce the workload on bank branches and save time for customers by offering quick and convenient services.

Internet Banking

Internet banking allows customers to perform financial transactions online, including fund transfers, bill payments, and account management. It reduces the need for physical visits to banks and increases convenience.

Mobile Banking

Mobile banking enables customers to access banking services through smartphones. It enhances accessibility, especially for people in remote areas, and supports instant transactions anytime and anywhere.

Digital Payment Systems

Digital payment systems like UPI, IMPS, and NEFT have revolutionized transactions by making them faster, secure, and efficient. These systems have reduced dependency on cash and improved the overall payment ecosystem.

3. Emerging Technologies in Indian Banking

Artificial Intelligence (AI)

AI is used in chat bots, virtual assistants, fraud detection, and credit scoring. It helps banks improve customer service, reduce risks, and enhance decision-making.

Blockchain Technology

Blockchain ensures secure and transparent transactions. It reduces fraud, enhances trust, and enables smart contracts in banking operations.

Cloud Computing

Cloud technology provides cost-effective data storage and scalability. It helps banks manage large volumes of data efficiently and supports digital services.

Big Data Analytics

Big data helps banks analyze customer behavior and preferences. It enables personalized se
rvices and improves marketing strategies and risk management.

FinTech Integration

Banks collaborate with fintech companies to offer innovative services like digital lending and online payments. This integration improves efficiency and customer experience.

4. Impact of Technology on Banking Sector

Improved Efficiency

Technology has increased the speed of transactions and reduced operational costs. Automation has streamlined banking processes, making them more efficient.

Financial Inclusion

Technology has expanded banking services to rural and remote areas. Digital platforms have made financial services accessible to underserved populations.

Customer Satisfaction

Customers benefit from 24/7 banking services, reduced waiting times, and personalized services. This has significantly improved customer satisfaction.

Transparency and Accountability

Digital systems reduce corruption and improve monitoring. Transactions are recorded electronically, increasing transparency and accountability.

Economic Growth

Efficient banking systems support economic growth by improving resource allocation, increasing savings, and encouraging investments.

5. Challenges of Technology in Banking

Cybersecurity Risks

With increased digital transactions, risks such as data breaches, online fraud, and phishing attacks have also increased. Strong security systems are required to address these threats.

Digital Divide

Lack of digital literacy and limited internet access in rural areas restrict the benefits of digital banking for some sections of society.

High Implementation Cost

Banks need to invest heavily in IT infrastructure, maintenance, and upgrades, which can be costly.

Regulatory Issues

There is a need for strict data protection laws and compliance with central bank regulations to ensure safe banking practices.

Job Displacement

Automation and digitalization reduce the need for manual work, leading to job displacement in traditional banking roles.

FUTURE PROSPECTS OF TECHNOLOGY IN BANKING

- Artificial Intelligence-driven banking
- Block chain-based financial systems
- Open banking and API integration
- Digital currencies (CBDC)
- Expansion of fin-tech ecosystem

Technology will continue to drive innovation and efficiency in the banking sector.

CONCLUSION

The Indian banking system has undergone a remarkable transformation due to technological reforms. The integration of IT has improved efficiency, accessibility, and transparency in banking operations. While challenges such as cybersecurity and digital inequality persist, continuous innovation and regulatory support can overcome these issues. Technology-driven banking reforms are essential for achieving financial inclusion, economic growth, and global competitiveness. The future of Indian banking lies in embracing digital transformation and strengthening technological infrastructure.

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