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Information Technology and its effects on the Banking Industry

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Abstract:
The banking business in India is rapidly evolving, thanks to a growing customer base and technologically enhanced and creative services. As a coin has two sides, so does technology in the Indian banking sector, which has both positive and negative aspects. The dangers are considerable, but they can be reduced, and technology will continue to be the backbone of the Indian banking industry in the future. Currently, the banking environment must become extremely competitive. It refers to the acquisition, distribution, storage, and dissemination of all types of information using computer and telecommunication networks. These technologies are utilized for data input, storage, distribution, and communication. Meeting internal requirements, effective data handling, extending client services, creative assistance for new product development, and end-user development of nontechnical employees are the main essentials of Information Technology (IT) in the banking business. Outsourcing, Combination, Distinguishing Edge, IT as an Income Center, and Flourishing in a Down Market are some of the emerging IT trends in the banking business. Meet customer prospects on service and capability offered by the bank, Customer retention, Dealing with the spread and maintaining the operating profit, Recollecting the current market share in the industry and enlightening the same, Accomplishment from another group of actors in the banking industry are some of the challenges that the Indian banking scenario faces.

Keywords: Emerging Trends, Information Technology, Banking

Objectives of the Study
- To study the perception of customers and bankers towards IT in the study area.
- To understand the various services rendered by banking sectors to their customers through information technology

Research Methodology
- Secondary Data

Introduction
The Indian financial system is supported by the banking sector, which faces many difficulties. One such force is the information technology revolution. Technology support is critical for the banking sector's successful operation in today's world. We cannot imagine the banking industry's prosperity without IT and communication; it has expanded the banking sector's role in the Indian economy. Technology plays a critical role in developing an efficient financial system that can adapt properly to the needs of a growing economy. The financial sector recognises the importance of technology since it provides banks with a competitive advantage through effective client service.
With the advent of the Indian Financial Net in June 1999 an IT revolution occurred in Indian financial institutions, particularly the banking industry, when the world of IT appeared to be too wide open. This

Indian Financial Network includes a wide-area satellite-based network that employed Very Small Aperture Terminals technology. It was co-founded by the Reserve Bank of India and the Institute for Development and Research in Banking Technology. The Indian Financial Network initially exclusively included public sector banks, but it was eventually expanded to include other types of members, including foreign institutions. The introduction of new technology improved the payment system, which was the initial sector of the banking system.

The Information Technology revolution has completely transformed the way financial business is conducted, significantly expanding the number of goods available and raising client expectations. Economic reforms are strengthened by the financial sector and banking sector changes, which are both part and parcel of economic reforms. The Information Technology Act of 2000 provided the Indian financial sector with a fresh lease on life. Banking structure, business processes, work culture, and human resource development have all been transformed as a result of IT. It has a big effect on how productive, profitable, and effective banks are. The primary objectives of the financial sector reforms have been to strengthen the industry and enhance the efficiency of the financial markets.

Indian banking is evolving

Indian banking has undergone a dramatic overhaul in the previous ten years. Going from a manual, scale-restricted situation to a technologically advanced position has been a miracle. Such a shift happens in such little time, and at such little expense. The introduction of technology into the Indian banking industry dates back to the 1990s when the banking sector underwent numerous deregulation measures. One of the main goals of the Indian banking sector reforms was to promote operational self-sufficiency, flexibility, and competitiveness in the system, as well as to raise Indian banking standards to international best practices. With the relaxation of license requirements, numerous private and international banks with cutting-edge technology have arisen. Deregulation has increased the opportunity for banks to expand.

Banking's Information Technology Evolution

- Electronic
- RTGS/NEFT
- Image-based Clearing System (ICS) or Cheque Truncation System (CTS)
- Core Banking Solutions
- MICR-based cheques
- Card-based payments
- Electronic Clearing Services
- RTGS/NEFT (CBS)
- ATMs,

Technology is altering not only the environment but also the interaction between businesses and their customers. Technology has not only broken down barriers, but it has also resulted in better products and channels. The consumer relationship has become more important as a result of this. The upgrade of technological infrastructure in the financial system is a top goal for the RBI. For the banking industry, technology has offered up new goods and services, as well as new markets and more efficient delivery routes. In addition, IT provides the framework for the banking industry to handle the difficulties of today's competitive economy. It allows for a reduction in the cost of international fund transfers.

The banking business is undergoing a significant transformation to keep up with competitiveness, technological hurdles, and end-user demand. Technology is a significant differentiator in bank performance. Banks must consider innovation not only in terms of product but also in terms of procedure.

Information Technology's New Developments in the Banking Industry

Outsourcing: Banking BPO, or banking business process outsourcing, is a highly specialized technique of sourcing used by banks and lending institutions to support the operations associated with the client loan lifecycle, such as business acquisition and account servicing.

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When financial markets in neighboring, regional, and/or international economies are intimately linked, this is referred to as integration. As a result of defects in the financial market, financial integration in neighboring, regional, and/or global economies is imperfect.
Distinctive Edge: a bank that is owned by a state or federally chartered BANK and has a global business reach. Edge Act banks are permitted to establish inter-state branches, take DEPOSITS from foreign sources, invest in foreign companies and stocks, and extend loans abroad.
Down Market Prosperity is the term used to describe inexpensive, low-status goods and services. A self-sustaining bad feeling has been produced by the current financial scenario, in which the value of safe assets is decreasing and there is widespread gloom.

Review of Literature

Deshpande, B. (2018). Digitalization in banking sector mentioned in her paper that .The digitalization brings innovation, ease of working, new job opportunities and growth in the economy.

Kandalgaonkar, S. R., Tilak, P., & Harchekar, J. (2020). Banking Industry: Nationalization and its impact on Public Sector Banks. - Mentioned in their paper that one of the main drivers of the economy is the banking sector. In fact, the nation's efficient and trustworthy financial system is substantially responsible for all other economic activity. Indian commercial banks have been nationalized for 50 years, just lately. The nation has benefited economically from nationalization in various ways, and during the past 50 years, nationalized banks have contributed greatly. The recent changes in banking and the economy as a whole, however, indicate that it is past time to reevaluate the nationalization programme. In India's banking industry, a lot of changes are anticipated during the next ten years

Sobol and Cron (2016) "Impact of Information Technology on Indian banks", To determine the relationship between computerization and several indicators of overall business performance, a study was conducted for this article. Users vs non-users of computers, three levels of usage, and a class of computer users are provided as three performance comparisons. According to the findings, computerization and overall performance are associated. Non-users typically consist of modestly performing small businesses.

Manoharan (2017) highlighted the e-payment system in India and its performance impact on the Indian banking sector. The author said that the banking industry's rivalry had compelled banks to reconsider how they conduct business. Therefore, finding alternative banking methods is now possible thanks to e-banking. The author of the report categorised the Indian payment system into three categories: big value payments, retail payments, and retail electronic payments.

The paper "Technological Developments in Indian Banking Sector" **by Dr Satish Tanaji Bhosale (2018)** discusses the contribution of the banking industry to the growth of the Indian economy. As a result, banks may choose to use technology to expand their market share, boost productivity and efficiency, provide more quickly, and deliver cost-effective goods and services. Providing efficient and practical customer service will help the nation as a whole thrive and develop

Prabhakar Rao (2014) wrote on the revolutionary developments in the global financial industry in his paper, "Indian Banking in 2015 IBA Bulletin Special Issues." He said that the branches worked by the net. ATMs, technology-based payment and settlement systems, the Reserve Bank of India's technological strategy, and floating interest rates have all altered the Indian banking industry.

In their study titled "Usage of Information Technology by the Commercial Banks Operating in Bangladesh-Current Situation and Its Future," **Chowdhury M.S.A. and Marufullah M. (2013)** note that it is challenging to pinpoint the positive effects of information technology on bank productivity in terms of net profit and asset growth (predominantly loans). However, banks can boost productivity by increasing IT spending and improving IT resource management. Through differentiation and bettering customer service,

lowering costs, better-avoiding risks, and maintaining the stability of their client base and market share, this would boost their competitiveness.

The Banking industry has been taking advantage of the following technology Products

- Use of MICR Technology - MICR overcomes the restriction of clearing checks during banking hours, allowing customers to obtain credit rapidly. These are machine-readable codes affixed to the bottom of every check leaf to aid in the sorting of cheques by bank and branch for easy delivery to the banks on which they are drawn. Although this undoubtedly aided in the speeding up of the clearing process, physical delivery of checks continued despite the partial automation.
- Electronic Payment and Settlement System - Negotiable instruments such as cheques are the most prevalent form of receipt and payment through banks. These instruments could be used as a substitute for money. Clearing-house systems could be used to realize inter-bank cheques. The process of the clearing was initially carried out manually, but as the volume of financial transactions grew, automation was required.
- Electronic Clearing Services (ECS) - India used "Electronic Payments" for the first time with the ECS. It is a sort of electronic money transfer that moves money from one bank account to another using the clearing house system. It is useful when transferring a sizable sum from one account to several accounts or vice versa. The recipient is required to keep a bank account with the bank of the ECS Center. Two types of ECS are available (Electronic Clearing Service)
- Truncation is the process of stopping the flow of physical checks from a drawer to the drawee branch. CTS (Cheque Truncation System) is one such system. The actual instrument is shortened at some point on the way to the drawee branch, and an electronic copy of the check is sent along with it.
- Electronic Fund Transfer (EFT) - EFT was a nationwide retail electronic funds transfer system that allowed banks to send money to each other's networked branches. NEFT allowed for interaction with the Indian Financial Network's Structured Financial Messaging Solution (SFMS) (INFINITE). The NEFT uses SFMS to create and transmit EFT messages from the branch to the bank's gateway and the NEFT Centre, significantly improving the security of financial transfers.
- Core Banking Solutions (CBS) — Computerization of bank branches began with the installation of modest computers to automate branch operations, particularly at high-traffic locations. Core Banking Solutions are the connections between a bank's branches that allow consumers to manage their accounts from any bank branch, regardless of where they established the account. The CBS branch network allows for centralized data administration and facilitates the adoption of internet and mobile banking.
- Real-Time Gross Settlement (RTGS) - The RTGS system is a means of transferring money from one bank to another in real-time and on a gross basis. The quickest way to transfer money through the financial system is this way. Real-time settlement of payment transactions indicates that there is no waiting period. The transactions are finalized as soon as they are completed. A transaction that is completed on a one-to-one basis without being combined with other transactions is referred to as a "gross settlement.
- “Customers can now call the bank's specified phone number and connect to the designated computer by dialing their ID number. The customer can execute any banking transactions not involving cash.
- Automated Teller Machines (ATMs) – The ATM is arguably the most innovative aspect of virtual banking. ATMs can be accessed using plastic cards with magnetic strips that store data about the user and the bank. In today's society, ATMs are the most practical tool for ensuring the idea of " Time Banking" and "Anywhere Banking."
- Mobile Banking - The internet banking service is extended through the use of mobile devices. Customers can carry out financial transactions remotely using a mobile device with the help of a bank's or another financial institution's mobile banking service. It utilizes software provided by the

financial institution, frequently referred to as an App, in contrast to linked internet banking. Mobile banking is frequently accessible around-the-clock, every day of the week.

- Another innovation that enables clients to bank around the clock, seven days a week is Tele-banking. Tele-banking relies on bank computers' capacity to process voice messages. Typically, the caller is a customer who calls the bank whenever he has a question regarding his account balance or other transactional information. Internet Banking - A consumer can conduct financial transactions through the bank's online website. It is a computer-based system that allows users to access accounts and general data about bank services and products from either their home or place of employment. This practice is known as virtual banking.

Mobile banking offers access to account balances, transaction histories, electronic bill payments, and financial transfers from one customer's account to another's.

Technology has aided the banking industry.

- Digitization is the most significant change in the banking industry
- The basic banking system is also improved by computerized banking. All branches of the CBS (core banking system) have access to the same centralized data and are networked.
- Cheque processing has grown faster and more efficient thanks to the development of the MICR cheque processing system.
- The government launched USSD (Unstructured supplementary service data) so that those who don't have access to the internet may still access their bank accounts without having to go to a branch.
- As the internet's reach grew, so did Internet Banking, which is now offered by practically every bank. Every transaction information and inquiry can be completed online using this method.
- Transactions were more transparent as a result of it.
- The usage of passwords and double authentication in online banking helps to reduce the scope of bank fraud.
- Technology also encourages competition among banks, resulting in greater services for customers.
- With the launch of mobile banking, customers may now access their accounts from any location, at any time. Everything is just a couple of steps away.
- To enable better services, banks have deployed Automated Banking Services Solutions like Cash Deposit Machines, Cheque Deposit Machines, and Passbook Printing Machines. It is now simpler to use these services.

Making payments online as in previous years, large value credit transfers made up 80.8 per cent of all digital transactions in 2020–21, dominating the overall digital payments landscape.

Table IV.20: Payment Systems Indicators

Item	Volume (Lakh)			Value (₹ Crore)		
	2018-19	2019-20	2020-21	2018-19	2019-20	2020-21
1. Large Value Credit Transfers – RTGS	1,366	1,507	1,592	13,56,88,187	13,11,56,475	10,55,99,849
2. Credit Transfers	1,18,481	2,06,297	3,17,868	2,60,90,471	2,85,56,593	3,35,04,226
2.1 AePS (Fund Transfers)	11	10	11	501	469	623
2.2 APBS	14,949	16,747	14,373	86,226	99,048	1,11,001
2.3 ECS Cr	54	18	-	13,235	5,146	-
2.4 IMPS	17,529	25,792	32,783	15,90,257	23,37,541	29,41,500
2.5 NACH Cr	8,834	11,100	16,465	7,29,673	10,37,079	12,16,535
2.6 NEFT	23,189	27,445	30,928	2,27,93,608	2,29,45,580	2,51,30,910
2.7 UPI	53,915	1,25,186	2,23,307	8,76,971	21,31,730	41,03,658
3. Debit Transfers and Direct Debits	4,914	6,027	10,457	5,24,556	6,05,939	8,65,520
3.1 BHIM Aadhaar Pay	68	91	161	815	1,303	2,580
3.2 ECS Dr	9	1	-	1,260	39	-
3.3 NACH Dr	4,830	5,842	9,646	5,22,461	6,04,397	8,62,027
3.4 NETC (linked to bank account)	6	93	650	20	200	913
4. Card Payments	61,769	72,384	57,787	11,96,888	14,34,813	12,91,799
4.1 Credit Cards	17,626	21,773	17,641	6,03,413	7,30,894	6,30,414
4.2 Debit Cards	44,143	50,611	40,146	5,93,475	7,03,920	6,61,385
5. Prepaid Payment Instruments	46,072	53,811	49,743	2,13,323	2,15,558	1,97,696
6. Paper-based Instruments	11,238	10,414	6,704	82,46,065	78,24,822	56,27,108
Total - Retail Payments (2+3+4+5+6)	**2,42,473**	**3,48,933**	**4,42,557**	**3,62,71,304**	**3,86,37,726**	**4,14,86,348**
Total Digital Payments (1+2+3+4+5)	**2,32,602**	**3,40,026**	**4,37,445**	**16,37,13,425**	**16,19,69,379**	**14,14,59,089**
Total Payments (1+2+3+4+5+6)	**2,43,839**	**3,50,440**	**4,44,149**	**17,19,59,490**	**16,97,94,201**	**14,70,86,197**

Source: Trend and Progress of Banking in India 2021-22 RBI Report

The most common method of credit transfers, however, was through the Immediate Payment Service (IMPS), National Electronic Funds Transfer (NEFT), and Unified Payments Interface (UPI). Debit card transactions climbed by 35.6 per cent compared to credit card transactions 21.1 per cent growth when it comes to card payments.

Technology's harmful influence on the banking sector:

- The most significant negative impact of technology is the loss of jobs, as automation has displaced a large number of banking jobs.
- Through technology comes the threat of a Cyber Attack, a system flaw that can result in the loss of millions of data in the blink of an eye.
- While these technologies save time, they can also make people negligent, resulting in the loss of personal information, as happened last year when many debit card details from major banks were compromised.

Need of the Study

The necessity for the study is to list the benefits and drawbacks, as well as the many models to assess the impact of a person's intention to use mobile banking, the various technologies that banks are presently implementing, and what the future of mobile banking holds. Over time, information technology (IT) has revolutionized how business is done and progressed. People now conduct business in a simpler, more effective way. New technologies are now being employed in both business and personal usage thanks to IT, and the banking industry is no exception. Fewer individuals now visit bank locations since mobile banking is the banking method that is expanding the fastest.

Findings and Suggestions

- Marketing initiative designed to raise awareness among banking customers about E-channels and the services offered through them. Customers are introduced to the characteristics and advantages of using the service through these E-channels, such as saving time, effort, money, and other things, through this marketing campaign, which must be conducted regularly.
- Maintaining a campaign to promote E-cards in addition to the ATM card, as the bank should promote additional E-cards like the Visa card, MasterCard, online shopping cards, and other

cards that encourage customers to use such electronic channels. Commercial banks must follow certain procedures to make it easier for customers to obtain those cards, like waiving the first-year card issuing commission for the customer.

- The bank should take steps to increase the participation of female clients, offer online banking for senior citizens' transactions like pension and retirement benefits, and engage in marketing initiatives to draw in new internet banking users.
- The bank should reduce the use of conventional methods and increase the use of internet banking services, guarantee the security and confidentiality of customer information, provide a platform from which customers can access multiple accounts at once without incurring additional fees, and foster customer confidence in the security of their accounts.
- It is crucial to recognize and comprehend the barriers preventing the growth of E-banking clients, as well as the analysis of the client's current

Conclusion

Information technology has greatly increased the potential and prospects for the Indian banking industry. Customers receive fast, methodical, cost-effective services from it. Banks are now able to manage the rising transaction volumes that come with a larger client base in a more precise and timely manner because of the efficient use of technology. The global IT revolution is greatly benefiting the Indian banking sector. Indian banks fall far behind foreign banks in terms of online banking. In reality, this is not possible without adequate infrastructure or a large enough user base. Technological developments will decide the direction of banking. Banks should therefore make an effort to identify the cause of the shift.

To sum up, information technology is the key enabler of the Indian banking sector's change. This study uses primary data to examine consumer awareness, perception, and satisfaction levels regarding the usage of technology in the banking sector in Mangalore, India. Its major goal is to evaluate the significance of technology in the banking sector. To arrive at a relevant conclusion, the data gathered for the purpose will be analyzed and evaluated. The field of existing knowledge on technology in the banking business will benefit from this study.

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