

OPEN ACCESS

Volume: 8

Issue: 1

Month: January

Year: 2020

P-ISSN: 2320-4168

E-ISSN: 2582-0729

Received: 18.10.2019

Accepted: 29.11.2019

Published: 01.01.2020

Citation:

Vijai, C., and P. Anitha.  
“Information Technology  
in Indian Banking  
Sector Some Recent  
Developments.” *Shanlax  
International Journal of  
Commerce*, vol. 8, no. 1,  
2020, pp. 65–71.

DOI:

[https://doi.org/10.34293/  
commerce.v8i1.985](https://doi.org/10.34293/commerce.v8i1.985)



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# Information Technology in Indian Banking Sector Some Recent Developments

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## Abstract

*The banking sector could be the backbone of the Indian economy. In today's era, technology support is incredibly necessary for the triple-crown functioning of the banking sector. While not IT and communication, we tend to cannot accept the success and growth of the industry and economy, it's enlarged the role of the banking sector within the Indian economy. Run batted in new rules and supporting new technology and innovation for the client within the banks. The Indian banking sector was introduced the RTGS, mobile banking, Digital Wallets, UPI, Blockchain Technology, computing, Cloud Banking, wearable Technology, Omnichannel Banking, the point of sale, square measure numerous innovations within the Indian banking sector. This paper highlights the information technology in the Indian banking sector. This paper is descriptive. Secondary information square measures collected from numerous websites, reports, and journals.*

**Keywords:** Indian Banking Sector, Information Technology, Digital Wallets, UPI, Blockchain Technology, Cloud Banking, wearable Technology.

**JEL Classification:** G20, G21, O32, O33.

## Introduction

Technology has opened new stocks and services, new markets, and efficient delivery channels for the banking industry. IT also provides a framework for the banking industry to meet challenges in the present competitive environment. IT enables us to cut the cost of global fund transfer. Banks need to take a gander at advancement for the new administrations as well as for the procedure too. The financial area is the foundation of the Indian economy. Furthermore, it is burdened by many testing powers. One such power is the unrest of data innovation. In the present period, innovation backing is significant for the fruitful working of the financial segment. Without IT and correspondence, we can't consider the achievement and development of the financial business and economy; it has extended the job of the financial division in the Indian economy.

In the past 10 years, Indian banking sector invested huge amount for information technology such as mobile banking, telebanking, net banking, green banking, ATMs, credit cards, electronic payment system, Artificial intelligent (AI) and data mining solutions, to bring improvements in quality of customer services and the fast processing of banking operation. The banks have made heavy investments in IT in the expectation of growth in their performance. But essential in the performance depends upon differences in the deployment, use, and effectiveness of IT.

## Research Methodology

The study is descriptive and is based on secondary data. To achieve the above-stated purposes, the secondary data is used. The secondary data that mainly consists of published annual reports of various banks. The secondary data was also used from several reference books related to E-Banking, E-Commerce, Information Technology, Marketing, Banking, Finance, Commerce, etc.

## Importance of Information Technology in Banking

The Banking area in India has encountered a quick change. Because of the coming of innovation and computerization, there is another pattern in the financial framework. The progression in innovation and the presentation of data innovation assumed a critical job in improving the administrations in the business.

## Recent Technological Developments in Indian Banks

In recent years, the Reserve Bank has attempted to improve the efficiency of the financial system by guaranteeing the presence of a safe, secure, and valid payment and settlement system. In the process, apart from performing administrative and oversight functions, the Reserve Bank has also played an essential role in promoting the system's functionality and modernization on an ongoing basis. The role of

banking information technology is redefined from a mere intermediary to a service provider of various financial services under one roof acting as a financial supermarket.

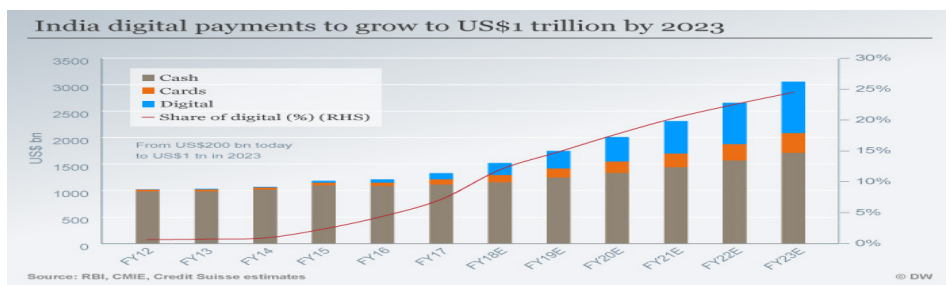
## Important events in the evolution of Information Technology

- Introduction of MICR based cheque processing
- The arrival of card-based payments
- Introduction of Electronic Clearing Services
- Introduction of RTGS/NEFT
- Introduction of Cheque Truncation System (CTS) or Image-based Clearing System (ICS)
- Introduction of Core Banking Solutions (CBS)
- Introduction of Automated Teller Machine (ATMs)
- Introduction of Phone and Tele Banking
- Introduction of Internet and Mobile Banking.

## Recent IT Trends of Indian Banks

### Digital Wallets

The Digital movement in India is in full flow, and it's making our lives much easier. Digital Wallets are helping us in our quest to become cashless economics. Top Digital wallets and UPI apps in India. Paytm, BHIM App, Mobiwik, FreeCharge, Oxigen, ICICI Pockets, PhonePe, Jio Money, State Bank Buddy, Vodafone M-Pesa Chillr, Citrus Wallet, LIME, CitiMasterPass, mRupee, Trupay, Airtel money, MomoXpress, Ezetap.



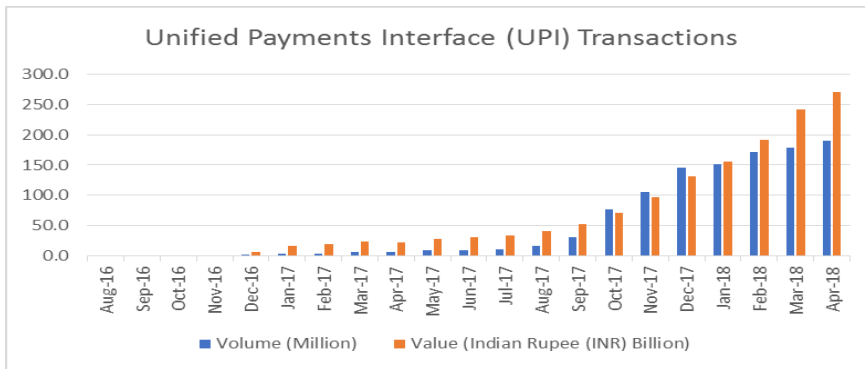
## UPI (Unified Payments Interface)

National Payments Corporation of India (NPCI) started the Unified Payments Interface (UPI) in 2016 with 21 member banks. UPI is a system that powers multiple bank accounts into a single mobile application, merging several banking features and seamless fund routing. UPI has been considered a

revolutionary product in the payment system. The interface is directed by the Reserve Bank of India and works by right away moving assets between two ledgers on a versatile stage. As of March 2019, there are 142 banks live on UPI with a month to month volume of 799.54 million exchanges and an estimation of Rs.1.334 trillion (US\$19 billion) UPI

saw 1,029.44 crore exchanges till August 2019. The portable just installment framework executed a

sum of Rs.17.29-lakh crore during the 37 months of activity beginning from 2016.



Source: National Payments Corporation of India - May 2018

### Block Chain Technology

The first block chain project in the country went live some months ago, wherein MonetaGo developed a blockchain platform for the Trade Receivables Discounting System (TReDS) or bill discounting exchanges.

The first block chain project in the country went live some months ago, wherein MonetaGo developed a block chain platform for the Trade Receivables Discounting System (TReDS) or bill discounting exchanges. Block chain solutions are demanded to bring operational efficiency, simplicity, and transparency in banking operations. It also enhances banking experiences for customers by reducing transaction time from hours to seconds.

### Artificial Intelligence (AI)

Artificial Intelligence (AI) is a fast-developing technology across the world. The technology itself is

getting better and smarter day by day, allowing more and newer industries to adopt the AI for different applications. The banking sector is becoming one of the first adopters of AI. And just like other segments, banks are exploring and implementing the technology in various ways. According to Accenture’s recent Accenture Banking Technology Vision 2018 report, 83% of Indian bankers believe that AI will work alongside humans in the next two years — higher than the global average of 79%. “93% of bankers in India said they increasingly use data to drive critical and automated decision-making. More partner-supplied customer data means a higher degree of responsibility for banks. Yet, 77% of Indian bankers agree that most firms are not provided to confront impending waves of corrupted insights from falsified data,” said the report.

Examples of Chatbot (Chat robot – a computer program that simulates human conversation through AI) launched by a few banks in India.



Source: <https://haptik.ai/blog/chatbots-in-banking-examples-best-usecases-future/>

## Cloud Banking

In short, cloud computing, “cloud storage,” is a new technology for data storage. It is a hybrid computing technology for various services, including servers, software, networking, storage, databases, analytics, and much more on the internet. Banks of all sizes in India have understood the importance of cloud-based banking services and how these services

can aid their issues. Earlier banks had to contact IT personnel to provide additional applications and compute power, which was very time consuming and would delay the decision-making process. Hence, nowadays, IT is no longer seen as a complex scenario, and the banks have started recognizing the opportunity and scope in cloud computing services.



Source: <https://www.cloudoye.com/bfsi-on-cloud>

## Biometric Technology

Linking of Aadhaar number to accounts has enabled banks to recognize their customers by evaluating one or more distinguishing biological traits like face, hand, retina, voice, and ear features in the wake of an issue. The growth of such technology is far more reliable and will continue to spread across in the times to come since it can eliminate the requirement of multiple passwords and PINs.

of devices, linked by a common simple feature – it can be worn on the human body. This covers all conceivable applications – from stylish watches and glasses, right the way to underwear, shoes – and even tattoos. These devices matter because they can offer the most accurate view yet into customer behavior. Between them, they could give a 24-hour picture of every action a customer takes. Major banks in India like SBI and YES Bank have rolled out intelligent watch apps that can help users with information like tracking transactions, account balances, mini statements, ATM locations.

## Wearable Technology

Wearable technology comprises a wide range



Source: <https://www.businessinsider.in/hereshow-top-5-indian-banks-use-technology/articleshow/48003107.cms>

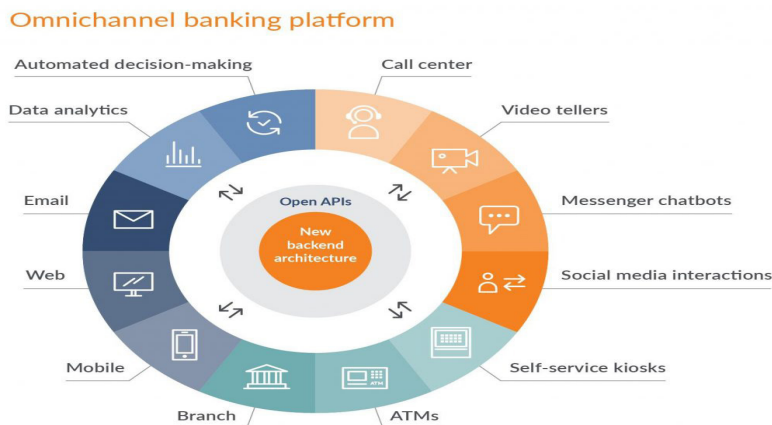
## FinTech Services

Fintech is financial technology; Fintech gives alternative resolutions for banking services and non-banking finance services. Fintech is an emerging concept in the financial industry. The fintech provide digitalization transaction and more secure for the user. The advantages of fintech services, decreasing operation costs, and user-friendly. The fintech services India fastest developed in the world. fin-tech services are going to change the habits and behavior of the Indian banking sector. The (NASSCOM)- (KPMG) report assesses that the all-out fintech programming and administrations showcase in India was around \$8 billion of every 2016 and liable to develop 1.7 occasions by 2020. The report includes that the exchange an incentive for the Indian fintech part was roughly \$33 billion every 2016 and scheduled to reach \$73 billion out

of 2020, developing at a five-year compound yearly development rate (CAGR) of 22%.

## Omni Channel Banking

IBM offers the following definition: Keypoint built on a multichannel strategy that allows anytime, anywhere, any device access with a consistent experience across channels, omnichannel enables interactions across multiple customer touchpoints where intents are captured, insights are derived, and conversations are personalized and optimized. The omnichannel approach appeared in retail in the early 2010s. Since then, it's been making its way into industries like telecommunications, media, and retail banking. With omnichannel banking, financial institutions can cut costs through process automation and boost revenues thanks to superior customer experiences.

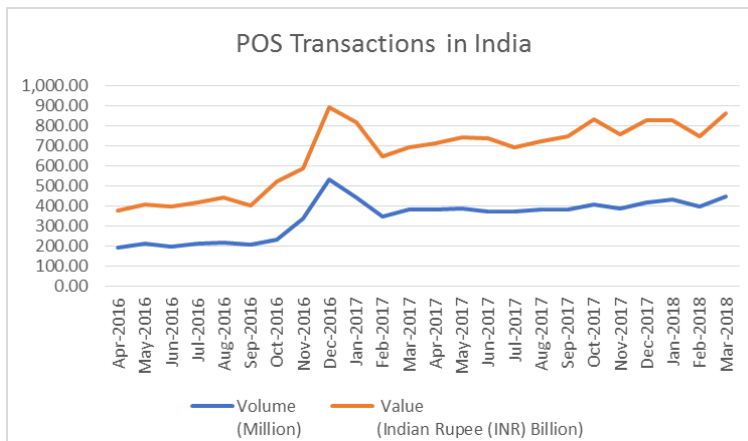


**Source:** <https://www.thedigitaltransformationpeople.com/channels/customer-engagement/best-way-digital-transformation-banking/>

## Point of Sale (POS)

“POS” is an abbreviation for point of sale, which refers to any place where a transaction can happen, whether it's for a product or service. Up until November 2016, the term ‘demonetization’ was largely relegated to macroeconomic textbooks and viewed largely only as a theoretical policy idea; that

changed when the Government of India realized it. It can be debated whether the policy was a success or not, but what cannot be discussed is the fillip it gave to digital payments, and more importantly, fundamentally changed the nature of people largely accustomed to cash – by some estimates, cash accounted for over 97% of transactions.



Source: Reserve Bank of India - May 2018

## Conclusion

Information technology is one of the most important for the Indian banking sector. Without IT and communication, we cannot believe about the success of the banking industry; information technology provides more services and cost-effectively the fastest services to the customer. And increased transaction volumes of banks that come with a large customer base. The Indian banking sector is greatly benefiting from information technology. The initiative of the Government of India will very soon achieve its mission, and rural India, too, would be „digitally literate.“ Banks will have to develop a strategy to bridge the gap of technology in rural banks and urban banks. Today, the Indian banking industry is on the threshold of „next-generation banking.“ Information technology innovation clubbed with the dream of „cashless economy“ will certainly bring about a metamorphosis in the banking sector.

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