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## To Study the Evolution of Technology in Banking

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### Abstract

The developments of innovations like the Unified Payments Interface (UPI), the adoption of cloud technology, etc. have helped India's banking sector flourish in the new fiscal year. The issues facing banking, including shifting client wants and insights, new rules, and developing additional technological innovations for bank customers. The E-Banking system and cash are both common in modern times. The monetary system of India can produce a new instrument in addition to providing liquidity and safety. The introduction of the Indian banking industry the introduction of the card, the Electronic Clearing Service (ECS) in the 1990s, EFT, RTGS, NEFT, mobile banking, and online banking are only a few of the financial advances. This report highlights recent technical advancements in the Indian banking industry.

**Keywords:** Indian Banking Sector, Challenges of Banking, New Technological Changes, Product and Services.

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### Introduction

The Indian banking sector is currently a thriving industry with a primary focus on new banking technical advancements. Banks were established in order to employ technology to deliver high-quality services and products to customers quickly. The current situation has evolved, and there are now roughly 340 public and private banks operating in India. All banks today have launched a variety of channels, including ATMs, credit and debit cards, mobile banking, internet banking, and others. However, users may now easily conduct banking transactions from a variety of locations thanks to Net Banking. India's banking system was the world's fifth-largest in terms of size in 2020 and the third-largest in terms of size in 2025. The banks are also confronting significant difficulties as a result of the advances in policy and strategy, which the Indian Banking System cannot ignore. This essay analyses the banking industry's latest technical developments and advances. Transformation in Banking The Indian banking industry is split in two separate ways, including: -

1. Bank Consolidation from 1961.
2. 1966 Geographic and Functional Term.
3. Branch consolidation from the middle of the 1980s to 1991.

### 2. Objectives

1. To study the recent technological changes in the banking sector.
2. To study the impact of innovation in banking.
3. To analyze tools such as UPI, NEFT, etc.

### 3. Scope of the Study

The aim of this study is to analyze the changes in the technologies in the banking sector. The scope of the study is limited secondary data and there is no utilization of primary data in it.

### 4. Research Methodology

The current analysis is based solely on secondary information that was gathered from a variety of periodicals, books, and handbooks of Indian economic statistics as well as RBI, EXIM reports and Indian indicators.

### 5. Banking Innovation In India

There have been developments in the banking industry in India recently. The majority of banks started to take on an

innovative challenge in banking with the aim of attracting more consumers who would afterwards use their services. Risk in the financial industry has increased as a result of government regulations, tax laws, globalization, liberalization, and privatization. The creation and application of innovative financial processes is considered financial innovation. Innovators in the banking sector are utilizing value-added services, Internet Banking, Mobile Banking, Debit Cards, Credit Cards, ATMs, Fund Transfer, RTGS, NEFT, EFT, ECS, Advisory Services, Utility Bill Payment, Fund Transfer, Insurance Plans, Cheque Books, Travel Cheques, and Fund Transfer during the current fiscal year. Indian banks are leading the pack when it comes to shifting from digital to really digital because of the hyper connected and digitally advanced environment that exists today. The Indian banking industry will continue to thrive in 2017 because to cutting-edge programmes like the Unified Payments Interface (UPI) and technology. The following are our top picks for significant technological innovations that will transform Indian banking:-

1. **Open banking**-The future of banking is open banking, which is an interconnected ecosystem of financial and non-financial activities with numerous underlying service providers.

2. **Banking strategy**- Banks are already advancing in their utilization of the cloud. Big Data, block chain, artificial intelligence (AI), and cloud computing are all transforming the way that business is done. The strategy will also play a significant role in determining the business models for bank mergers.

3. **Block chain**- Block chain will be one of the enablers for re-imagining procedures as banks attempt to satisfy the consumers' rising expectations. The year 2017 will see an increase in projects, products, and the use of block chain to automate activities between organisations. This technology is being advanced by the new partnership between Emirates NBD and ICICI Bank to start a block chain pilot network for trade finance and international remittances.

4. **Artificial Intelligence**- It has the ability to change ICICI Bank's front office and back office processes through its self-improving programmes. In order to incorporate a

conversational interface into their multichannel approach, the banks will research several concepts.

5. **More things to bank**- In 2016, mobile-first strategy dominated marketing. Indian banks took advantage of the growing popularity of mobile to offer specialised services through their applications.

6. **Banking architecture simplification**-The foundation of the banking industry's architectural simplification is the new technology. In the coming year, banks will abandon the conventional monolithic design in favour of componentization. In other words, complicated infrastructure will be divided into simpler, easier-to-deploy, and easier-to-upgrade parts for individual functionalities. India would be tugged away from a cash-based economy, the Indian government has stated clearly. The introduction of the GST will boost the Indian economy even more. In addition to meeting the increasing demands of a billion connected clients, banks will need to ensure that they are light years ahead of the burgeoning competition in 2017.

Different Players of the Banking Industry

1. Increasing updating the digital agenda
2. The value of core banking
3. Information to insight transition
4. Managing a shifting risk regime
5. From cash to electronic payment methods
6. Fight for financial inclusion
7. Employee empowerment
8. Speeding up innovation

#### **6. Recent Trends In Banking-**

Over the past 25 years, there has been a significant transformation in the Indian banking industry, largely as a result of technical advancement. ECS, RTGS, NEFT, ATM, retail banking, and other developments in the banking and financial sector, as well as the addition of new products and services, are some of the contributing reasons.

##### **6.1 Atm**

There is no single inventor of the automated teller machine (ATM), as it is such a complex piece of technology. ATMs that we use now are a combination of several different inventions. Customers can withdraw cash from an ATM any time, day or night, seven days a week. ATMs can be used to withdraw cash, pay utility bills, transfer money between accounts, deposit checks and cash

into accounts, check account balances, and more.

### **6.2 Electronic Payment Services**

It is mostly based on electronic systems including e-mail, e-commerce, and e-tail. EPS is being developed in the US to introduce e-cheques. NEC Act on Negotiable Instruments.

### **6.3 Real Time Gross Settlement (RTGS)**

India's introduction Operating since March 2004; managed by RBI; allow for quick transfers of funds from one bank to another; (2 hours).

### **6.4 NEFT**

One-to-one fund transfers using a national payment system.

### **6.5 Electronic Funds Transfer**

Anyone who wishes to make a payment to another person, business, etc. can do so via the electronic system. Information such as the name of the recipient, bank account number, account type (savings or current account), bank name, city, branch name, etc. EFT is a service offered by RBI.

### **6.6 Point of Sale Terminal**

Internet connection to a bank's computerized customer information files The customer's account is debited and the retailer's account is credited when using a plastic transaction card.

### **6.7 Tele Banking**

Complete banking for non-cash transactions via telephone Manned phone terminals and an automatic voice recorder are both employed.

### **6.8 Electronic Data Interchange (EDI)**

the electronic exchange between commercial partners of legal documents such as purchase orders, invoices, shipping notifications, receiving advices, etc. in a standardised, computer-processed, and widely recognised format.

### **6.9 Customer Management**

Customer service Banks must distinctly define and quantify the projected benefits from the successful strategies, which will depend on the value that various efforts offer to customers. Customer segmentation, co-creation, and CRM to customer experience are a few of them. Utilization of alternate channels Successful cross- and up-selling.

### **6.10 Risk management and information security**

Credit systems, enterprise risk management systems, and liquidity risk systems are a few examples of risk management techniques.

### **6.11 Technology in training and e-learning**

Increased training and development investment by Indian banks during the country's era of liberalization and reform Utilizing new technology, getting it adopted, being productive, and filling skill gaps Performance appraisal for employees.

### **6.12 Mobile banking**

A bank or other financial institution's mobile banking service gives its customers the ability to carry out financial transactions and use various other services of mobile remotely using a mobile device, like a smartphone or tablet which has a significant impact on the lives of the users.

### **6.13 Core Banking**

Core banking is a type of banking service offered via a network of connected.

### **6.14 Corporate Banking**

The area of banking that deals with corporate clients is referred to as corporate banking, sometimes known as business banking. Services Domestic and international payments, Overdraft Letters of Guarantee, Working Capital Facilities, Funding, Channel Financing, International Trade.

### **6.15 Investment Banking**

There are primarily two methods of money creation: Corporate Finance and M&A.

### **6.16 Smart Card**

Powerful cards such as ATM, credit card, and debit card with chip technology and pins.

### **Advantages-**

It can be challenging for someone to find time in their hectic schedule to visit the bank to check their account balance, interest rates, successful money transfers, and any other updates. For the betterment of its customers, the banks and financial institutions from their side have created virtual banking systems that may be accessed from any location and at any time with the devices such as mobiles. There are several reasons why a banking holiday prevents the transfer of your money. By offering services around-the-clock, 365 days a year, online banking systems have made things easier. It fixes problems that clients had with the old banking system. There is no need to wait in line for any money transfers or deportations.

The virtual banking system makes it simple to transfer money 365 days a year. Also the customers don't have to limit themselves to carrying out transactions during business hours, they can carry out the transactions whenever they want to according to their choice. Because it offers a feature to pay any sort of bill, including energy, water supply, telephone, and other services, you don't need to stand in line to pay your bills.

#### Disadvantages-

1. No option for cashless deposits. No provision is made for monetary deposits.
2. Internet is necessary. In the absence of a steady internet connection, your ability to access Internet banking services may be restricted.
3. Online scams.

4. The current and future risk to capital and earnings from fraud, mistakes, and the incapacity to provide goods or services, keep one's position competitive, and handle information are all examples of transaction risk.

5. For managing user difficulties, online banking requires efficient customer care. However, a deficiency of excellent customer service and relationship makes the existing customers disappointed. Due to technical difficulties, some online payments might not be reflected in the system. Additionally, it makes the customers feel uneasy. Therefore, a barrier to internet banking is a lack of support from customer service representatives.

#### 6.17 Upi Transactions In Volume And Value.

Month	No. of Banks live on UPI	Volume (in Mn)	Value (in Cr.)
Oct-22	365	7,305.42	12,11,582.51
Sep-22	358	6,780.80	11,16,438.10
Aug-22	346	6,579.63	10,72,792.68
Jul-22	338	6,288.40	10,62,747
Jun-22	330	5,862.75	10,14,384
May-22	323	5,955.20	10,41,506
Apr-22	316	5,583.05	9,83,302.27
Mar-22	314	5,405.65	9,60,581.66
Feb-22	304	4,527.49	8,26,843.00
Jan-22	297	4,617.15	8,31,993.11
Dec-21	282	4,566.30	8,26,848.22
Nov-21	274	4,186.48	7,68,436.11
Oct-21	261	4,218.65	7,71,444.98
Sep-21	259	3,654.30	6,54,351.81
Aug-21	249	3,555.55	6,39,116.95
Jul-21	235	3,247.82	6,06,281.14
Jun-21	229	2,807.51	5,47,373.17
May-21	224	2,539.57	4,90,638.65
Apr-21	220	2,641.06	4,93,663.68
Mar-21	216	2,731.68	5,04,886.44
Feb-21	213	2,292.90	4,25,062.76
Jan-21	207	2,302.73	4,31,181.89
Dec-20	207	2,234.16	4,16,176.21
Nov-20	200	2,210.23	3,90,999.15
Oct-20	189	2,071.62	3,86,106.74
Sept-20	174	1,800.14	3,29,027.66
Aug-20	168	1,618.83	2,98,307.61
July-20	164	1,497.36	2,90,537.86
June-20	155	1,336.93	2,61,835.00
May-20	155	1,234.50	218,391.60
Apr-20	153	999.57	151,140.66
Mar-20	148	1,246.84	206,462.31

Feb-20	146	1,325.69	222,516.95
Jan-20	144	1,305.02	216,242.97
Dec-19	143	1,308.40	202,520.76
Nov-19	143	1,218.77	189,229.09
Oct-19	141	1,148.36	191,359.94
Sept-19	141	955.02	161,456.56
Aug-19	141	918.35	154,504.89
July-19	143	822.29	146,386.64
June-19	142	754.54	146,566.35
May-19	143	733.54	152,449.29
Apr-19	144	781.79	142,034.39
Mar-19	142	799.54	133,460.72
Feb-19	139	674.19	106,737.12
Jan-19	134	672.75	109,932.43
Dec-18	129	620.17	102,594.82
Nov-18	128	524.94	82,232.21
Oct-18	128	482.36	74,978.27
Sep-18	122	405.87	59,835.36
Aug-18	114	312.02	54,212.26
July-18	114	273.75	51,843.14
June-18	110	246.37	40,834.03
May-18	101	189.48	33,288.51
Apr-18	97	190.08	27,021.85
Mar-18	91	178.05	24,172.6
Feb-18	86	171.40	19,126.2
Jan-18	71	151.83	15,571.2
Dec-17	67	145.64	13,174.24
Nov-17	61	105.02	9,669.33
Oct-17	60	76.96	7057.78
Sep-17	57	30.98	5,325.81
Aug-17	55	16.80	4,156.62
July-17	53	11.63	3,411.35
June-17	52	10.35	3,098.36
May-17	49	9.36	2,797.07
Apr-17	48	7.20	2,271.24
Mar-17	44	6.37	2,425.14
Feb-17	44	4.38	1,937.71
Jan-17	36	4.46	1,696.22
Dec-16	35	1.99	707.93
Nov-16	30	0.29	100.46
Oct-16	26	0.10	48.57
Sep-16	25	0.09	32.64
Aug-16	21	0.09	3.09
Jul-16	21	0.09	0.38
Jun-16	21	0.00	0.00
May-16	21	0.00	0.00
Apr-16	21	0.00	0.00

## . Product and Services of Innovative Banking

### Automated Banking

- 1) Quicken
- 2) Amity and Adaptability
- 3) Aiming for fewer transactions

### Offices of banks

1. Withdrawing Money
2. Payment with Cash
3. A statement of accounts
4. Checks
5. Money exchange
6. Balance Check
7. Demand Fulfillment
8. A draught pay order
9. A loan account repayment Demat Services - Offer an online trading platform
10. Microfinance: Activities That Generate Income, Build Assets, and Stabilize Consumption
11. Plastic money is a portable and convenient alternative to cash.
12. Fund transfers and balance inquiries via mobile banking.

### Conclusion

In terms of growth and economic development as well as the number of consumers in the financial sector, the banking industry in India has become more competitive. The next generation will be crucial in furthering the development of the banking industry. The future of banking

will undoubtedly provide additional offers and services to the clients with the breakthrough financial products and advances thanks to today's new technology. A common person now has more access to banking services for his or her needs and productivity thanks to the banking sector. The terms and new technology have been enhanced in the Indian banking industry. The banking and financial sector in India now has a new look thanks to innovative banking technology innovations. The banking industry has advanced significantly in terms of goods and services, technology, banking infrastructure, trading opportunities, etc. It is clear that India's financial sector has improved when compared to other nations. In the future, banks will understand their customers' needs and fulfil them. In comparison to other developed banks, Indian banks offer better services.

### References

1. [https://serialsjournals.com/abstract/54264\\_4-new.pdf](https://serialsjournals.com/abstract/54264_4-new.pdf)
2. <https://www.yesbank.in/life-matters/how-technology-has-changed-the-face-of-banking-industry>
3. <https://bank.caknowledge.com/importance-technology-banking/>
4. <https://useoftechnology.com/role-technology-banking-industry/>