

# Research & Development in Banking Sector

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## Abstract

Indian economic environment is witnessing unprecedented reform measures. The financial sector, of which the banking industry is the huge player, has also been undergoing a considerable change. Today the banking industry is stronger and capable of facing the pressures of competition. While internationally accepted essential norms have been adopted, with higher disclosures and transparency, Indian banking industry is moving towards adopting the innovative practices in accounting, corporate governance and risk management. Interest rates have been deregulated, while the urge of directed lending is being progressively reduced.

During the last 73 years since 1949, tremendous changes have taken place in the banking industry. The banks have kept aside their traditional functions and have been innovating, improving and coming out with new types of the services to meet to the emerging needs of their customers.

Extensive branch expansion in the rural and underdeveloped areas, mobilization of savings and diversification of credit facilities to neglected areas like small scale industrial sector, agricultural and other preferred areas like export sector etc. have resulted in the widening and deepening of the financial infrastructure and transferred the fundamental character of class banking into mass banking.

**Keywords:** RTGS, NEFT, API, ECS, EDI, UPI, e-RUPI.

## Introcuccion

Development in banking sector in India has been more promising and more time evolving. it has been very interesting since the inception of UPI, India is now the first and the biggest transaction doing country through UPI.

Now today with the introduction of e-RUPI the ride is going to be a roller coaster for India that will prove milestone in the Indian history of banking industry. Indians have become techno savvy and even a small vendor of vegetables panwala or fruits prefer doing UPI transaction they will be overjoyed with the use of e-RUPI. Of course some shortcomings will also follow but India is capable enough of facing that glitch and make out of it a favorable and prosperous way for the cashless economy and development of digital transactions throughout the country.

## THE INDIAN BANKING SECTOR

The history of Indian banking can be divided into six main phases.

**Phase I (1857- 1891)** -Initial phase of banking in India when many small banks were set up.

**Phase II (1891- 1934)** - Regularization and growth.

**Phase III (1934- 1956)** –Pre & Post Independence Nationalization.

**Phase IV (1956- 1991)** – Pre Liberalization.

**Phase V (1991- 2016)** – Post Liberalization.

**Phase VI (2016- Present)** –Digital India since UPI.

## RESEARCH METHODOLOGY

The procedure adopted for conducting the research requires a lot of attention as it has direct bearing on accuracy, reliability and adequacy of result obtained. It is due to reason that research methodology, which researcher used at the time of conducting the research, needs to be elaborate upon. It may be understood as a science of studying how research is done scientifically. So, the research methodology not only talks about the research methods but also consider the logic behind the method used in the context of the research study. Research methodology is a way to systematically study and solve the research problems. If a researcher wants to claim his study as a good study, he must clearly state the methodology adapted in conducting the research so that it may be judged by the reader whether the methodology of work done is sound or not.

## RECENT TRENDS IN BANKING

### 1) Electronic Payment Services – E Cheques

Now-a-days we are hearing about e-governance, e-mail, e-commerce, e-tail etc. In the same manner, a new technology is being developed in US for introduction of E-cheque, which will eventually replace the conventional paper cheque. India, as harbinger to the introduction of e-cheque, the Negotiable Instruments Act has already been amended to include; Truncated cheque and E-cheque instruments.

### 2) Real Time Gross Settlement (RTGS)

Real Time Gross Settlement system, introduced in India since March 2004, is a system through which electronics instructions can be given by banks to transfer funds from their account to the account of another bank. The RTGS system is maintained and operated by the RBI and provides a means of efficient and faster funds transfer among banks facilitating their financial operations. As the name suggests, funds transfer between banks takes place on a 'Real Time' basis. Therefore, money can reach the beneficiary instantaneously and the beneficiary's bank has the responsibility to credit the beneficiary's account within two hours.

### 3) National Electronic Funds Transfer (NEFT)

National Electronic Funds Transfer (NEFT) is a system whereby anyone who wants to make payment to another person/company etc. can approach his bank and make cash payment or give instructions/authorization to transfer funds directly from his own account to the bank account of the receiver/beneficiary. Complete details such as the receiver's name, bank account number, account type (savings or current account), bank name, city, branch name etc. should be furnished to the bank at the time of requesting for such transfers so that the amount reaches the beneficiaries' account correctly and faster. RBI is the service provider of EFT.

### 4) Electronic Clearing Service (ECS)

Electronic Clearing Service is a retail payment system that can be used to make bulk payments/receipts of a similar nature especially where each individual payment is of a repetitive nature and of relatively smaller amount. This facility is meant for companies and government departments to make/receive large volumes of payments rather than for funds transfers by individuals.

### 5) Automatic Teller Machine (ATM)

Automatic Teller Machine is the most popular device in India, which enables the customers to withdraw their money 24 hours a day 7 days a week. It is a device that allows customer who has an ATM card to perform routine banking transactions without interacting with a human teller. In addition to cash

withdrawal, ATMs can be used for payment of utility bills, funds transfer between accounts, deposit of cheques and cash into accounts, balance enquiry etc.

### 6) Point of Sale Terminal

Point of Sale Terminal is a computer terminal that is linked online to the computerized customer information files in a bank and magnetically encoded plastic transaction card that identifies the customer to the computer. During a transaction, the customer's account is debited and the retailer's account is credited by the computer for the amount of purchase.

### 7) Tele Banking

Tele Banking facilitates the customer to do entire non-cash related banking on telephone. Under this device Automatic Voice Recorder is used for simpler queries and transactions. For complicated queries and transactions, manned phone terminals are used.

### 8) Electronic Data Interchange (EDI)

Electronic Data Interchange is the electronic exchange of business documents like purchase order, invoices, shipping notices, receiving advices etc. in a standard, computer processed, universally accepted format between trading partners. EDI can also be used to transmit financial information and payments in electronic form.

### 9) UPI Unified Payments Interface (UPI)

Unified Payments Interface (UPI) is a system that powers multiple bank accounts into a single mobile application (of any participating bank), merging several banking features, seamless fund routing & merchant payments into one hood. It also caters to the "Peer to Peer" collect request which can be scheduled and paid as per requirement and convenience.

With the above context in mind, NPCI conducted a pilot launch with 21 member banks. The pilot launch was on 11th April 2016 by Dr. Raghuram G Rajan, Governor, RBI at Mumbai. Banks have started to upload their UPI enabled Apps on Google Play store from 25th August, 2016 onwards.

### 10) e-RUPI

On 2 August 2022, the Prime Minister of India Mr. **Narendra Modi** is going to launch a digital payment platform called **e-RUPI Digital Platform**. This platform is a cashless and contactless instrument that will be used for making digital payments. It is a **QR code or SMS string-based e-voucher** which will be delivered to the mobile of the users. The users will be able to redeem this voucher without any digital payment app, internet banking, or card. This digital payment platform has been developed by the national payments corporation of India on its UPI platform. The collaborating partners are the Department of Financial Services, the Ministry of health and family welfare, and the national health authority. This initiative will connect the sponsor of services with the beneficiaries and service providers. The connection will hold in a digital manner without any kind of physical interface.

### Uses of e-RUPI Digital Payment Platform

With the help of the e-RUPI platform, the payment of the service provider will be made only after the completion of a transaction. This payment platform will be prepaid in nature which does not require any kind of intermediary to make payment of the service provider. Other than that this platform can also be used for delivering services under schemes that are meant for providing drugs and nutritional support like mother and child welfare scheme, TB eradication program, drug and diagnostic under a scheme like **Ayushman Bharat, Pradhan Mantri Jan Arogya Yojana**, fertilizer subsidies, etc. The private sector can also leverage

these digital vouchers for their employee welfare and corporate social responsibility programs. Leak-proof revolutionary delivery of welfare services will be ensured through this initiative.

### Voucher Issuing Procedure

The **e-RUPI digital payment** system has been developed by the National Payment Corporation of India on its UPI platform. The national payment corporation of India has boarded banks that will be the issuing authority of the voucher. The corporate or government agency is required to approach the partner bank (private and public sector lenders) along with the details of the specific person and purpose for which the payment is required to be made. The identification of beneficiaries will be done by using their mobile number voucher allocated by the bank. This platform will be our revolutionary digital initiative which will improve the standard of living and make the procedure of payment simple.

### IMPLICATIONS

The banks were quickly responded to the changes in the industry; especially the new generation banks. The continuance of the trend has re-defined and re-engineered the banking operations as whole with more customization through leveraging technology. As technology makes banking convenient, customers can access banking services and do banking transactions any time and from any ware. The importance of physical branches is going down.

### Application Program Interfaces APIs included in India stack

The following APIs are considered to be a core part of the India Stack:

- Aadhaar Authentication
- Aadhaar e-KY
- eSign
- Digital Locker
- Unified Payment Interface (UPI)
- Digital User Consent – still work in progress.
- The following APIs are also considered to be societal platforms built on similar principles like India Stack:
  - GSTN – The Goods and Services Tax Network
  - BBPS – The Bharat Bill Payment System
  - ETC – Electronic Toll Collection (known under the brand FASTag)

### Emerging technologies in Banking

- Artificial Intelligence (AI) and Machine Learning (ML)-
- Develop better customer engagement using data
- Driving Credit underwriting ( use of alternate data)
- Chatbots for handling interactions,
- AI's predictive analysis for optimizes the lending process
- Advance reporting and analytical capabilities
- Open Source
- Advancement and improvement in open-source technologies across layers
- Lower cost of development and maintenance
- Cloud Computing
- Cloud repositories offer scalability, data integrity and security to provide agility and faster go to market
- RBI is aggregable to hosting in the cloud. NBFCs have migrated and banks will migrate soon.

- Application Program Interfaces (APIs)
- Standard set of APIs make integration easier with faster time to market
- Mambu offers a full suite APIs to provide programmatic access to nearly every aspect of our banking software.
- Setu APIs facilitate onboarding, payments, deposits, lending and data empowerment for their end customers
- Automation
- Workflows to handle different customer journeys BPM and Product Management automation to enable release of variants of loan products

### **The following are the advantages of Banking to its customers**

1. The customer can right away make utility payments through any corner of the country; therefore it helps in avoiding penalties which may occur due to late payments of utility bills.
2. A new system of funds transfer has been introduced in recent times which is called as IMPS (Immediate Payment Service) It is a type of transfer in which the amount is credited to the beneficiary account immediately after the transfer
3. The banking also provides OTP (One Time Password) at the time of transaction which helps in ensuring secure transaction of the payment
4. Nowadays banks also provide E Statements of the account to its customers helping saving the environment /nature
5. Nowadays there are CDM's (Cash Deposit Machines) available at the ATM counters of the bank branch which help customers deposit cash into their bank account using debit card and account number and these systems are available 24x7x365.

Digitalization and electronic represent a complex shift for financial institutions constrained by extremely strict security and regulatory policies, but which also make it possible to offer new value-added services which were inaccessible several years ago. The appearance of new technologies allow the genesis of heavy R&D programs: block chain is a perfect example, and banking institutions are perfect candidates for experimenting with these state-of-the-art technologies. Similarly, the importance of what is now called Big Data is no longer to be revealed in banking information systems which handle huge amounts of data on a daily basis, thus providing fertile ground for data processing projects. Consequently, Data Science and Artificial Intelligence make it possible to leverage these volumes of data by offering value-added services for customers.

### **Conclusion**

After analyzing different research paper and collecting information from different sources it can be concluded that there has been enormous changes which took place in different phases. Despite various changes which took place in the banking sector. The introduction of UPI has brought about a major change in the transaction of the banking system but we find that with improvement in technology there is also a threat to the data of the customers. Although banks takes steps to avoid such problems which maybe faced by the customers of the bank. As we know that the only thing permanent in the world is the change therefore there is a vast scope of Indian banking industry in future as in future there will be mostly IoT (Internet of Things) based technology and the AI based technology which will help people process the banking transactions very fast and their own convenience the people can transact at any time and at place of the country.

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