

ROLE OF INFORMATION TECHNOLOGY IN PROVIDING FINANCIAL SERVICES BY REGIONAL RURAL BANK IN INDIA

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Abstract

Information technology plays a crucial role in the growth and development of a nation's economy. It refers to the equipment and tools used for receiving, storing, retrieving and sending data and information. The latest information technology is expected to bring a new innovation in the functioning and management of bank especially for those banks which are growing gradually and are rural oriented in nature. Information technology plays a rather significant role for these developmental banks associated with the development function of the rural areas of the country. With researches, it is evident that the lack of capital and specialization in the use of IT enabled technology is the main drawback in the implementation of Information Technologies in these Regional Rural Banks. Thus, this study focuses on primarily studying the role the Information technology plays in the overall banking operation of the RRBs in India. This paper also aims at to determine the constraints associated with the introduction of IT tools in Regional Rural Banks.

Keywords: Financial Services, Banking System, Information Technology, RRBs

1. INTRODUCTION

For the economic growth and development of any nation, technological infrastructure plays a very crucial and significant role. In today's competitive business environment, it has become very much essential for every business organization to implement latest and innovative technologies in business operations. Information technology is a combination or package of all those computer's tools and equipment which assist in gathering, processing, storing and dispersal of facts and figures to the users of information. A powerful force drives the world towards a converging commonality, and that force is technology (**Levitt, 1992**) Introduction of Information Technology (IT) in different sectors has changed the complete scenario of economy.

Certain definitions on Information technology, given by some prominent authors, have been presented below in tabular form:

Sl. No	Authors	Definition/meaning of IT	Year
1.	Thong & Yap	IT means computer software and hardware solutions that provide support of management, operations, and strategists in organizations.	1995
2.	Boar	IT refers to those technologies which engaged in the operation, collection, transport, retrieving, storage, access presentation, and transformation of information in all its forms.	1997
3.	Attaran	IT is defined as capabilities offered to organization by Computers, software application and tele-Communication to deliver data, information and Knowledge to individuals and processes.	2003
4.	Tan et al.	IT means application of Information and Communication Technologies tools including computer network, software and hardware required for internet connection.	2009
5.	Shirshendu Maitra et al.	IT is the application of computers and telecommunications equipment to store, retrieve, transmit and manipulate data, often in the context of a research and data analysis.	2017
6.	Dr. Leela Kumari et al.	IT refers to the acquisition, processing, storage and dissemination of all types of information using computer technology and telecommunication systems.	2018
7.	Madhushree L. M., Revathi Radhakrishnan, & P. S. Aithal	IT states to the gaining, dealing out, storing and broadcasting of all forms of material using computer knowledge and telecommunication systems class banking	2018

The information technology has rapidly altered the traditional ways of doing banking business. **(Harsh, 2010)** In order to operate banking business smoothly and efficiently, banks requires those data and information which are accurate, reliable, confidential, free from errors and readily available in nature and IT assures all these features during data handling and processing by a banker. Technological infrastructure has become an indispensable part of the reforms process in the banking system **(Satinder et. al 2016)**. Banks provides a number of financial services to the customer like accepting deposits, granting loans and advances, credit creation, agencies function services, general utilities services, transfer of funds, giving financial guarantees, providing foreign exchange facilities etc. The basic essential of Information Technology (IT) in the banking sector are meeting internal requirements, effective in data handling, extending customer services, creative support for new product development, end-user development of the non-technical staff. **(Madhushree et. al)** After introduction of IT in banking sector all services are provided by banker to customer with high speed, more accuracy and transparency and with low cost. These emerging technologies have changed the banking industry from paper and Branch based banks to digitized and networked banking services. **(Dr. Leela Kumari v.v. And B. Suresh Kumar, 2018)**

Regional Rural Bank and Information technology:

To meet socio-economic necessities of the weaker sections of the society and to develop rural economy of nation a new set of regionally oriented rural banks were set up in 1975 after recommendation provided by a working group under the chairmanship of Shri M. Narsimham. The RRBs were established "with a view to developing the rural economy by providing, for the purpose of development of agriculture, trade, commerce, industry and other productive activities in the rural areas, credit and other facilities, particularly to small and marginal farmers, agricultural laborers, artisans and small entrepreneurs, and for matters connected therewith and incidental thereto"(RRBs Act, 1976). These banks were meant to take banking to the rural masses, particularly in areas without banking facilities, make available cheaper institutional credit to the weaker sections of the society, mobilize rural savings and channelize them for other productive activities in rural areas and bring down the cost of providing credit in rural areas. **(Harsh Kumar Bhanwala, 2010)**

The impact of Information technology on the working of RRBs can be understood on the basis of various innovative services offered by these banks which are stated below;

1. Electronic Payment Services - E Cheques
2. Real Time Gross Settlement (RTGS)
3. Electronic Funds Transfer (EFT)
4. Electronic Clearing Service (ECS)
5. ATM
6. Debit/Credit cards

Role of Information Technology (IT) in Banking Sector

IT is gradually transitioning from a support role to a key ally in boosting a bank's worth over time. IT accomplishes this by maximising banks' proactive measures, such as enhancing and standardising banks' infrastructure in terms of security, communication, and networking, achieving inter-branch connectivity, transitioning to an RTGS environment, forecasting liquidity by creating real-time databases, and using imaging and magnetic ink character recognition technology for cheque clearing, to name a few. Indian banks are making a major push into retail banking.

The increased sophistication of technology and the rising popularity of the Internet have been the primary drivers of change. Customers' expectations are evolving as they transition from traditional banking to e-banking.

2. LITERATURE REVIEW

The following studies on Information technology in banking sector related directly or indirectly have been reviewed in this chapter.

Dr Satish Tanaji Bhosale, Dr. B.S. Sawant, “Technological Developments in Indian Banking Sector” (2011)

In this Paper, the banking industry's contribution to the growth of the Indian economy is discussed. In order to enhance penetration, increase production and efficiency, supply cost-effective goods and services, and serve quicker, banks may choose to use technology. Providing customers with effective and convenient service can help the nation as a whole thrive and prosper. It emphasises how technology enables speedier transactions and unparalleled convenience through a variety of delivery routes. This study also discusses several technologies, including RTGS, NEFT, MICR, and the cheque transaction system.

KPMG, “Technology enabled transformation in Banking”, The Economic Times Banking Technology, Conclave 2011

The article's conclusion is that financial information technology is quickly developing. Information technology has the potential to disrupt the banking business in the next years by enabling new banking services and promoting change across the sector. In the Indian banking industry, newcomers are attempting to take use of their current advantages. The opportunity open to these newcomers promises novel business models with a focus on providing value to customers by using their grasp of the technology and areas they operate in. Over the next four years, the speed of change and regulatory requirements will force banks to focus their strategy on their customers.

Dr. Arunangshu Giri and Ipsita Paria (2018) “A Literature Review on Impact of Digitalization on Indian Rural Banking System and Rural Economy”.

The focus of the current study is on a review and summary of numerous studies on the effect of digitization on India's rural banking system that have been conducted by various researchers in various parts of the country. According to the survey, online banking has the potential to significantly alter the financial inclusion landscape. The study also discovered that low cost, user-friendly features in digital banking can hasten the mainstreaming of the unbanked economy.

3. OBJECTIVES OF THE STUDY

- (i) To evaluate the impact of Information Technology (IT) on financial service delivery by the bank
- (ii) To analyse the benefits and challenges of adopting IT in Regional Rural Banks (RRBs)
- (iii) To identify areas for improvement and future prospects for Regional Rural Banks to enhance their Information Technology (IT) infrastructure.

4. RESEARCH METHODOLOGY

The data required for the present study are collected mainly from secondary data. The findings and recommendations reported in this document were developed using this data.

Additionally, in order to improve knowledge, the viewpoints and opinions of many individuals from diverse organisations have been researched.

5. DIGITAL PAYMENT PROCESS IN RURAL INDIA

Using more than 500,000 volunteers, commonly referred to as banking correspondents, job seekers in various rural projects have accomplished a new objective. The new objective is to bring people and businesses into the e-economy by providing outstanding training based on cashless transactions. Every village business is given a reward, though, for accepting any kind of payment over a digital platform, which is a difficult task for BCs all throughout India. In addition, it has been projected that over 55,000 businesses have migrated to a digital payment network, and approximately 2.5 million consumers in India's rural areas have joined up for cashless transactions (**Purmal, Alam 2013**). However, after the Indian government imposed demonetization on November 8th, these tactical adjustments became obvious.

6. BENEFITS AND CHALLENGES OF ADOPTING INFORMATION TECHNOLOGY IN REGIONAL RURAL BANKS (RRBS)

Various benefits associated with the adoption of Information Technology (IT) in Regional Rural Banks (RRB) include:

- (i) **Efficiency Gains:** The incorporation of IT simplifies banking operations, automates manual tasks, and minimises paperwork. This enhances RRBs' overall effectiveness, enabling them to provide consumers with faster, more efficient service.
- (ii) **Cost Savings:** Over time, IT installation may result in cost savings. RRBs can optimise their costs and distribute resources more effectively by automating procedures and using less physical equipment.
- (iii) **Data analytics:** IT enables RRBs to examine client data, comprehend client behaviour, and spot trends. Better decisions may be made thanks to this data-driven strategy.
- (iv) **Financial Inclusion:** The use of IT can provide financial services to underserved and rural places. RRBs can access a wider customer base because to mobile banking and digital platforms, which supports financial inclusion in rural areas.
- (v) **Agriculture and Rural Financing:** IT has made it possible for banks to gather and analyse information about rural economies, agricultural practises, and revenue trends. This data-driven approach has made it easier to create financial services and products that are specifically suited to the needs of rural people, like microfinance, crop insurance, and agricultural loans.
- (vi) **Mobile banking and payments:** The widespread use of mobile phones in rural regions has created new possibilities for the provision of financial services. Particularly in regions with sparse physical banking infrastructure, mobile banking

apps and mobile money platforms have become popular ways to conduct transactions and access banking services.

Challenges of adopting Information Technology (IT) in Regional Rural Banks in India:

- (i) **Infrastructure and Connectivity:** The lack of proper internet connectivity and IT infrastructure in rural areas can make it difficult to install IT systems in RRBs smoothly.
- (ii) **Security issues:** As IT systems get more complex, there is a higher chance of cyber-attacks and data breaches. To protect consumer data and transactions, RRBs must make significant investments in cyber security protection.
- (iii) **Digital Literacy:** The inability of customers and employees to use technology effectively can be a major impediment. To ensure the efficient use of digital banking services, RRBs might need to make an investment in training programmes.
- (iv) **Initial investment Cost:** Setting up IT systems and infrastructure requires a sizable upfront expenditure, which could be expensive for certain RRBs, especially smaller ones.
- (v) **Integration with Legacy Systems:** Given the potential prevalence of legacy systems among RRBs, integrating contemporary IT solutions can be challenging. It can be difficult to ensure smooth interoperability and data movement.
- (vi) **Regulatory Compliance:** With regard to IT deployment and data protection, RRBs are required to go by a number of rules and regulations established by the Reserve Bank of India (RBI). There may be additional fees and resources involved in meeting these standards.

7. FINDINGS

- a) IT has been essential in providing financial services to remote and underserved rural locations. Internal processes have been optimised through the use of core banking solutions (CBS), resulting in transactions that are quicker and more accurate.
- b) In order to serve the agricultural sector specifically, some RRBs have implemented mobile banking services. Farmers' productivity and revenue can be increased by having access to information on crop pricing, weather predictions, and government programmes. Thus, it also helps in agricultural and rural development.
- c) RRB have utilised IT tools to impart financial literacy to the rural customers.
- d) In order to take use of IT infrastructure and support the spread of digital financial services in rural areas, RRBs have worked with government initiatives like Digital India and Financial Inclusion.

- e) IT has enabled RRBs to implement e-KYC (Know Your Customer) procedures, making it easier for customers to open accounts digitally without the need for physical paperwork.
- f) RRBs need to set aside enough money for modernising and upgrading their IT infrastructure.

8. RECOMMENDATIONS:

There are numerous avenues for enhancing the Information Technology for providing better financial services by Regional Rural Banks (RRB) in India. Here are few Recommendations.

- **Improve digital literacy:** People in India struggle to use digital banking services due to a lack of digital literacy. Banks should collaborate with NGOs and other groups to raise the nation's level of digital literacy.
- **Boost security and transparency:** Security and transparency are crucial issues for online banking. Banks must guarantee the security of their systems and that their clients are aware of all of their rules and procedures.
- **Embrace Artificial Intelligence (AI) and Machine Learning (ML):** Bank should use chatbots, credit scoring models, and fraud detection algorithms powered by AI to revolutionise customer service, risk assessment, and operational efficiency.
- **Cloud Computing:** Increase scalability, flexibility, and cost-effectiveness by implementing cloud-based solutions.

Following are the Key areas of Improvement for Regional Rural Banks to enhance their Information Technology (IT) infrastructure:

- **Digital Literacy Training:** RRBs must provide comprehensive training to their staff and customers to enhance digital literacy
- **Internet Connectivity in rural areas:** For RRBs to implement IT successfully, rural areas' internet connectivity must be improved. Better IT access for customers and branch offices can be facilitated by working with public and private initiatives to increase network coverage.
- **Integration of Legacy System:** The integration of new IT solutions must be carefully planned for RRBs with old systems. Middleware or application programming interfaces (APIs) implementation can provide efficient data transmission and functioning between old and new systems.
- **Biometrics and Facial fingerprints:** Customer authentication procedures can be made more efficient and secure by using biometric authentication techniques like fingerprint scanning and facial recognition.
- **Data Warehousing and Real time Analytics:** RRBs can handle and analyse enormous amounts of data quickly by implementing data warehousing and real-

time analytics capabilities, supporting prompt decision-making and customer insights.

Future Prospects for Regional Rural Banks in Enhancing their Information Technology

- **Block chain technology:** Block chain can improve transaction efficiency, security, and transparency. RRBs can investigate block chain-based options for secure transfers, smart contracts, and record-keeping.
- **Artificial intelligence (AI) and Machine learning (ML):** Operational efficiency can be increased by implementing AI-powered chatbots, credit scoring models, and fraud detection algorithms.
- **Internet of Things (IoT):** IoT enables RRBs to provide individualised financial services and more efficiently manage rural or agricultural assets. IoT devices, for instance, may monitor livestock health and crop health, assisting farmers in making data-driven decisions.

By proactively addressing the areas for improvement and embracing emerging technologies, Regional Rural Banks can elevate their IT infrastructure, drive financial inclusion, and deliver enhanced services to rural communities in India

9. CONCLUSION:

The RRBs are basically termed as backbone for uplifting the rural economy; these are playing a vital role since their establishment and still performing various important functions for the rural development. The efficient use of technology has facilitated accurate and timely management of the increased transaction volumes of banks which comes with larger customer base. Indian banking industry is greatly benefiting from Information Technology. (IT) revolution all over the world. Basically, the information technology is emerged in a broader way during Covid-19 period and it still going to an improvement stage day after day, in banking sector its importance cannot determined properly. Though IT becomes quite easy for them; it's also opens up several employment opportunities for IT experts in various financial institutions.

RRBs various initiatives through IT results in a positive way for performing its activities and functioning like other banks. IT is now available in various developing areas and still it is emerging into other rural areas, and it became very easy for its customers for accessing them. Financial inclusion which is a scheme of RBI also emphasizes on Information Technology (IT) for providing financial services in to rural areas properly and RRBs are executing these. So, IT is a vast concept in every aspect and making use of this for executing activities is a dynamic and never-ending process. RRBs take this is an opportunity and made optimum use of this but still they are trying to improve this for future days.

Every industry has been affected by the digitization. There are advantages and disadvantages to the advent of digitization in the banking industry, much like in anything

else. Fraud is one potential issue with digitalization's downsides. When bank accounts are connected to other types of information, the Offenders are closely following. There is only one way out, and that is to impose more laws and regulations as well as a better infrastructure for surveillance. Although the digitalization cannot be reversed to its earlier, simpler state, a more sophisticated implementation scheme may be developed.

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