

## Banktech Adoption Opportunities and Challenges in India - An Empirical Study

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**Abstract:** Information Technology has led to the emergence of innovative and new delivery channels that helped in increasing the speed and efficiency of banking operations in India. The new wave of conventional banking and financial service providers are changing the customer experience, moving from “transactions” to “interactions.” Indian Banking sector should be able to compete and grow where margins are thin, competition is fierce, regulations are changing and technology has an increasing impact, banking sector must place innovation as a top priority. Banks need to anticipate consumer needs and innovate in ways that will prioritize the most effective mix of capabilities, processes and people. The five major innovations/changes in the present banking scenario are - targeting, expanding services, re-configuring delivery channels, delivering proactive advice, integrating payments and applying blockchain technology.

The present paper is aimed at examining and understanding the various opportunities and challenges that an Indian bank has to face/facing in the changing landscape of Indian banking sector. It is found that in the last ten years Indian banks have made huge investments in modernizing their IT infrastructure, yet it's still a long way to go particularly in the areas of risk control, analytics, business intelligence and customer relationship management.

**Keywords:** Technology, innovations, CRM, Business Intelligence and challenges.

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### I. Introduction

The advent of globalization and digitalization has transformed the way banking is done today. The Indian banking system is no exception, it has improved manifolds in terms of products and services, technology, banking system, trading facility etc. The increased accessibility of banks to the common man for his diverse requirements has improved. This evidences the competency of the Indian banking system with the rest of the world. The improved terms of Banking technologies have done it all, while banks have become tougher in terms of development and economic growth. The technology driven banks are sure to introduce more offers and services to the customers in the future with robust banking products and innovations. The innovative banking technology has changed the face of Indian banking and the financial sector. Indian Banking Sector provides better services similar with other developed banks. The next generation technologies shall play a vital role in further strengthening the banking sector.

These steady developments are the aftermath of the global financial predicament, incorporating lessons learnt from the crisis. Time and again several exercises were undertaken to review the Indian banking system, despite it coming out relatively unscathed from the crisis. The main plan though, was to study the various options to meet the growing needs of the increasingly globalising economy, providing specialised services and deepening financial inclusion.

A number of studies have sought to examine whether the nature of the banking structure matters for the economic growth of a country. While there is no broad consensus on the issue, it can be reasonably agreed that a dynamic and flexible banking system would be more equipped to address the requirements of a dynamic economy. The objective of the present paper is to look into the technology adoption in the Indian banking sector and examine the opportunities and challenges that banking sector has to face in the years to come.

### Indian Banking system and technology Adoption

Indian banks have deployed technology-intensive solutions to increase revenue, enhance customer experience, optimize cost structure and manage enterprise risk. Despite the introduction, the execution capabilities of these banks vary with their variation in their technology agendas of implementation. Different players of the banking industry have challenges with respect to enhancing core banking value, revamping the

digital agenda, moving from information to insight, dealing with a changing risk regime, from cash to electronic modes of payment, grappling with financial inclusion, empowering employees and accelerating innovation.

#### **Salient features**

##### **1. Internet banking:**

The shift towards internet banking is fuelled by the changing dynamics in India. By 2020 the average age of India will be 29 years and this young consumer base is internet savvy and wants real time online information. Indian banks therefore need to aspire high and move toward implementing a world class internet banking capability.

##### **2. Business intelligence**

The major transformation in India's banking industry is the adoption of Business Intelligence(BI) and analytics to increase overall profitability, with new banking licenses expected to bring in more players in an already competitive environment. RBI has also encouraged banks to adopt BI to increase transparency and control over the banking business. Additionally the Automated Data Flow (ADF) initiative ensures submission of correct and consistent data from banks' systems to the RBI without any manual intervention.

##### **3. Customer management**

Banks need to clearly articulate and measure the expected benefits from the winning strategies which would be dependent on the value various initiatives provide customers. These include- Customer segmentation, Co-creation, CRM to customer experience, Use of alternative channels and Effective cross and upsell

##### **4. Risk management and information security**

Core Banking System (CBS) is widely used across the banks for transaction management. However, its integration with risk management and other enterprise level applications is still at preliminary stages. Certain key risk management methods include - Credit systems, Enterprise Risk Management Systems and Liquidity risk systems. With the arrival of mobile computing, social media, cloud computing and increasing sophistication of hackers it is evident that the risk environment is changing. With more and more cases being registered under the IT Act 2000, banks can no longer ignore privacy of customers.

##### **5. Technology in training and e-learning**

The increase in investment on training and development by banks in India is caused by a variety of motives, which include — new technology adoption, productivity, responding to skills deficiencies, new hire inculcation, and staff performance management.

##### **6. Financial inclusion**

Technology digital connectivity and mobile phones promises to enable hundreds of millions of people to access financial services for the first time due to its wide reach, convenience and low cost of delivery. Several new ideas are being experimented for financial inclusion in almost all areas requiring immediate focus — banking and payment channels, technology platforms, regulatory. World Bank Findex Survey 2012 has indicated requirement for progress in Indian financial inclusion.

##### **7. Mobile banking**

Several surveys have indicated that Mobile banking continues to be a focus area for all banks in India. This channel is a proven way to increase the customer engagement in urban areas and also to reach out to new ones in rural regions, thereby significantly furthering the banks financial inclusion agenda.

##### **8. Payment systems**

In the last decade, India has seen a shift from traditional payment methods, i.e., cash/paper-based payments to modern electronic payment systems. Despite the shift, payment transactions for public sector banks are still paper based as compared to private sector banks.

In the recent past, the RBI has taken multiple steps to promote electronification of payment instruments such as:

- a. Framing the Payment & Settlements Systems Act to provide for the regulation and supervision of payment systems in India
- b. Providing robust RTGS/NEFT platform, establishing National Payments Corporation of India (NPCI) to act as an umbrella institution for all the retail payment systems
- c. Regulation and promotion of acceptance channels including ATMs, POS and payment gateway policy
- d. Issuance guidelines and security measures for all card transactions

Debit cards (43%), credit cards (28%), internet banking (29%) all comprise a substantial percentage of the overall number of electronic transactions for private sector banks.

### **Opportunities ahead**

The year 2017 was swept in by reforms like demonetisation, digital India drive and global changes like rapid technological advances and an exponential rise in computing power.

From experimentation of use cases on the Block chain technology, Artificial Intelligence (AI) and Machine Learning to bolstering operations through Bots and RPA (robotic process automation), the industry is today geared to embrace challenges and opportunities of the future.

It wouldn't, hence, be an exaggeration to define 2018 as the "Year of Cognitive Banking"; taking the industry to an inflection point by strategically blending technology with processes for real-time business impact.

Below are the trends that would define the industry and role of stakeholders going forward:

#### **1. Data Analytics, Machine Learning and Voice**

There will be several innovations on customer interfaces through use of multilingual text and voice. There are various data points employed to collect customer's profile and transaction behavior, in order to predict user needs and design better customer experience.

#### **2. Next Gen Chatbots**

In the last two years, major banks globally launched Chatbots primarily to streamline information and facilitate transactions. This better quality of interactions with bots, will transform bots to Personal Financial Assistants, thereby, helping customers in financial decision making.

#### **3. Analytics of Things and Alternate Lending**

With increasing implementation of Big Data and Mobility Solutions by Banks, we could see a new wave of Analytics of Things or AOT, which would help banks analyze customer interactions with various devices on Internet of Things IoT and deploy this information to enhance customer experience and design better lending opportunities. The Peer-to-Peer frameworks planned, we could also see some alternate lending platforms flourishing and serving latent customer credit needs.

#### **4. Robotic Process Automation and Operationally Agile Institutions**

Over next two years, operations of Banks would undergo automation through RPA clocking a staggering decline in Turnaround Time TATs to fulfil a request, commensurates improvement in customer service. Further, banks would move into agile architecture and cloud infrastructure in order to shrink various project timelines and budgets resulting in faster go-to-market of various payment solutions.

#### **5. Open Banking and Fintech Partnerships**

Application Programming interfaces API-integrations have made banking more open than ever. Banks will continue to work on opening up APIs for more and more businesses to give enterprises a seamless banking experience. Banks will also partner with various fintech partners and market places to ensure that banking and payments are contextualized for various customer segments.

#### **6. Digital Convergence of Fintechs, Ecommerce and Banks**

The Digital convergence, Google and Hike entering the payments space, Banks entering the e-commerce game, Paytm offering chat, commerce and banking services, Flipkart and Amazon entering the payments space, is the coming together of Fintechs, Banking and e-commerce companies. All these aims at providing a one-stop solution to customers and increasing respective mindshare and wallet share. Regulations to cover adjacent entities offering banking-related services are in the pipeline.

#### **7. Smart Cities and Block Chains**

Heightened activity for implementation of Smart Cities could herald interesting times for connected payments and IoT. Further, with NITI Aayog the National Institution to Transform India, focusing on setting up IndiaChain, Banks could look for potential participation on this platform and make the KYC and documentation process interoperable –computer and software able to exchange and make use of information.

#### **8. Cyber Security and Biometrics**

Cyber security remains a major challenge for Digital India the core of National Agenda. It is natural that miscreants would be tempted to discover loopholes and make attempts to breach existing security infrastructure. Hence, banks have a laser- focus on cyber security investments and in implementing newer tools and techniques

to defend possible threats. The mandatory seeding of Aadhaar and the use of biometrics for customer authentication can reduce transaction risks.

### **9. Impetus to Digital Acceptance**

Government policies around Merchant Discount Rates (MDR) would definitely incentivize small-size peer-to-peer transfers and small merchant transactions. This will have a multiplier effect on acceptance of digital payment solutions especially by smaller merchants and eventually result in much needed evangelism and penetration of small payment solutions.

### **10. Banks will Create In-house Technology Teams**

Technology will play a pivotal role in hiring decisions. Technology will aid in preliminary elimination process in point being the increased use of video resume softwares for automatic screening of candidates by bots which will help in identifying certain pre-defined characteristic matches from video interviews submitted by candidates. Also, hiring and training is moving towards building Deep-tech skills and understanding emerging technologies. Robotic Process Automations call for up-skilling of human capital and movement of repetitive jobs to intellectually stimulating ones.

## **II. Challenges**

The study foresees the following challenges -

- a) The huge investments in integration of technologies in banking functions would increase profitability only with a commitment for strong management and good governance.
- b) The competitive advantage from introduction of bank technologies stem only from the organizational dynamic capabilities which becomes a major challenge. That is in terms of timely responsiveness, rapid and flexible product innovation and management capabilities to effectively coordinate internal and external competencies.
- c) Training of managerial staff, the operative level personnel in the use and management of information technology to acquire new skills is a daunting task. The modernization of work technology without ensuring reasonable command and control system can lead to loss of managerial effectiveness.
- d) Technology inputs have become increasingly economical for banks. An overriding feature of banks using information technology is that they are close to a real time interaction between suppliers, producers, distributors and customers. In the context of public sector banks, the organization structure is poorly suited to the effective implementation of information technology and it needs to be restructured.
- e) To achieve and maintain a high service and efficiency standard, digitalisation needs to go beyond the mere arithmetical calculations and needs to be leveraged optimally. The main challenge, therefore, is driving the productivity improvements in banking, acquiring the right dose of technology, deploying it optimally and at the same time remaining cost effective.
- f) Banks must improve their existing HR practices of recruitment, training and deployment to make the best use of their primary asset, i.e., human resources. The focus must shift from generalist orientation of the staff to specialist orientation, i.e., the ability to imbibe and absorb technology.
- g) Present day organization needs intellectual capital that is a function of human capital, structural capital and relationship capital. This alone will translate the information technology investment into higher performance. There needs to be a positive interaction between information technology, skills and work organization. Adopting efficient and productive methodologies that will foster innovations is need of the time.

## **III. Conclusion**

Banks are expected to play a very useful role in the economic development. The emerging markets will provide enough opportunities for banking business. As banking in India will become more and more knowledge supported, capital will emerge as the finest assets of the banking system. Ultimately banking is people and not just figures. To conclude, the newly improved and innovative facilities offered by banks has increased the much needed customer base. The Indian economy is projected to grow at a rate of 5-6 per cent and the country's banking industry is expected to reflect this growth. The onus for the growth lies in the capabilities of the Reserve Bank of India as an able central regulatory authority. The central bank policies have always shielded Indian banks from excessive leveraging and making high risk investments. The government support and a careful re-evaluation of existing business strategies, can set the stage for Indian banks to become bigger and stronger. The integration of bank technologies for better banking functions can expand banking business with a global consumer base.

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