

## Innovation in Banking Products and Services

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**Abstract:** Technology proliferation have made banking customers live in a connected world with increased expectations from their financial services provider. The developing customer-bank relationship has necessitated banks to be more customer-centric by taking an innovative approach towards banking with the objective of creating more value for customers and themselves. The banks may not be traditional and conservative anymore, they require innovation in bank products in order to retain and appeal to customers. Banks need to leverage technology to provide simple, easy-to-use, convenient, and cost-effective products and services to customers and improve the productivity of their employees. The objective of this paper is to present the innovative bank products and services which are required in the present technological environment keeping in mind the requirements of the present and future banking customers. The paper identifies new bank products like mobile banking apps, new methods of client verification, cardless payment, digital payments, and use of data, AI and analytics to improve operations. For this purpose, an extensive research on the leading banking product trends from secondary sources was carried out. Development of sophisticated products using low cost and robust technology is the key. This calls for in-depth analysis of customer needs, the market and competitor trends. This analysis plays a very important role in devising new strategies, products and services. The better the banks understand their customers, the more successful they will be in meeting their needs. The research concludes that the business requires innovative bank products and structures to respond to customer requirements and banks need to leverage technology to gain competitive advantage.

**Keywords:** innovative approach, client verification, digital payments, AI, customer needs

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*“The relentless speed of digitization and automation, the rise of fintech and regulatory initiatives will encourage all financial institutions to become more transparent and nurture richer ecosystems of data and partners. It will also force them to better foster internal and external collaboration, accelerate culture change and truly empower their workforce. It will urge them to balance tech investments for customers and employees and furthermore, create a need for open, cognitive systems which not only understand, reason and learn, but also interact with people, entities and other systems.”*

– Christophe Langlois, Executive Consultant at IBM<sup>[6]</sup>

### I. Introduction

The role of a bank is getting redefined from a financial intermediary to a service provider of different financial services under one roof. Customer expectations, competition from other banks and technology has changed the way the entire banking system is considered. The banks are now looking for new ways to attract, retain the customers and gain competitive advantage over their competitors. Refer **Appendix A** for Consumer Value Perception of traditional and non-traditional financial providers. The use of technology in banking has brought the biggest paradigm change in their operations. In the present digital age and hyper-connected environment, banks have to improve their processes and procedures continuously and Indian banks are **transforming from digital to truly digital**.

**Millennials, are using digital banking more regularly**, due to which, they're going to their banks' traditional brick-and-mortar branches lesser than ever before. Youngsters represent the largest share of the Indian population at 50% approximately and in 2020, the average age of an Indian will be 29 years, so it's clear that their behaviours and preferences will have a deep effect on the future of the banking industry, particularly with regard to the way banks interact with their customers.

### II. Review of Literature

Capgemini (December 2016) studied, “Top 10 Trends in Banking – 2017”, with the aim to understand and analyse the trends that are expected to drive the dynamics of the banking ecosystem in the near future and highlighted the growing tendency of banks focusing on innovation, by leveraging new technologies.

Aruna R Shet (2015) studied, “Technological Innovations in Indian Banking Sector” and studied the innovations that have contributed to the development of Indian banking and concluded that development of

sophisticated products with lowcost technology is the key by in- depth analysisof customer needs, the market and competitor trends.

Sandeep Kaur (2015) studied, “A Study on New Innovations in Banking Sector” and highlighted the innovations in banking sector at national and international level. She also concluded that in future, technology will make the engagement with banks more multi-dimensional and Indian banks will continue to develop and expand banking services.

Maithili RP Singh (March 2014) studied, “Innovative Business practices in Banking Industry in India” and identified the recent innovative practices in banking sector and concluded that new concepts,new benchmarks, new forces, are now transforming Indian banking industry.

Dr A Jayakumar and Mr G Anbalagan (December 2012) studied, “A study on Innovations and Challenges in Banking Industries in India” and discussedsignificant changes in the Indian banking sector, concluded that banks need to restructure themselves and identified the practices which needs to be adopted.

Jim Marous (December 2016), studied,“Retail Banking Trends and Predictions for 2017” and identified the major trends impacting banksand their services in 2017.

### **III. Objective of the Study**

To study various innovations that will contribute to the development of banking products and services.

### **IV. Research Methodology**

Being an exploratory research, it is based on secondary data from journals, articles, newspapers and magazines.

### **V. Discussion and Results**

The various innovations that will contribute to the development of banking products and services are enumerated in succeeding paragraphs.

#### **5.1 Facilitating the Customers Financial Transactions**

Customer expects an efficient, effective, dependable and personalized banking service. Banks require to restructure their processes by addressing key customer requirements, identifying novel and improved ways to satisfy their customers. They need to provide a simple and continuous digital experience to improve satisfaction with the bank.

Banks are trying to provide digital account opening, on boarding and transaction processes, in order to become customer focused “Retail Banks”. Some of the steps which can be taken are as under.

The banks have to use more funds to **digitize their businesses**. Banks are spending more than 25% of their IT budget on digital transformation, which includes developing new consumer enabling products and services and updating core transactional systems.

**Mobile banking apps** have been introduced to let customers manage their accounts from their smartphones. These apps facilitate banking transactionsand also provide additional facilities like bill payment, investment, travel support and all other conveniences to the customer.They allow users to locate the nearest ATM, carry out transactions and use video conferencing for technical support. Theycan be used fordirections to the nearest branch, to include distance and phone number on the screen byusing voice recognition system.Peer-to-peer transfers/payments directly from mobile apps are also being provided.

Banks can use**new methods of client verification**, now a new customer can do all verifications onlineand is not needed to visit the bank branch. These techniques are based on **APIs** (Application Programming Interface).It can import data from user’s existing accounts in other institutions, or it can use data, such as biometrics (face/voice/fingerprint recognition), ID information and digitizedpaper documents provided by third parties. Biometric authentication includes fingerprints, DNA, face, hand, retina and ear features and will end the need for password and PIN code.

**Cardless Payments** using NFC (Near Field Communication)capable smartphones with HCE (Host Card Emulation) will be introduced this year and wearables are also supposed to have this feature. It protects from credit card data breaches and shields wallets from theft and fraud. It is available from iPhone 6 onwards and in Apple Watch. It is poised to play an important role in the way we use our phones, when it comes to mobile payments.

#### **5.2 Use of Data, AI and Advanced Analytics**

**Cognitive Systems** constantly build on knowledge and learning, provide the awareness needed to increase efficiency and utility throughout the organization. Cognitive computing will enable banks to exploit the benefits of available data by gathering deeper insights which will help them to make more informed decisions. Cognitive analytics can provide for the customer’sseveral financial requirements,in order to provide superior client service. Banks can also address risk and fraud management more effectively.

**AI** (Artificial Intelligence) will revolutionise banking, it facilitates detecting possible frauds, risk assessment and uses **big data** to find patterns and trends that will align the business with customers' needs. Analytics and artificial intelligence are already being used by banks to do jobs like underwriting loans, once considered sacred. It can help in fast and accurate credit rating, so as to avoid NPAs later.

Possibilities of AI in banking aren't limited just to back office. Customer experience can be improved by using **Chatbots**, which can communicate with users in a natural language, provide assistance and answers just like a real person would do. **ICICI Bank has implemented robotics software.** Over 200 software robots are now performing over 10 lakh transactions per day for the bank which comprises 10% of its total transactions. Virtual branches with more communication channels (chat and video besides a regular voice), will gradually transform into AI-driven Relationship Managers in virtual environments presented in **VR (Virtual Reality) or AR (Augmented Reality)**. AR/VR can transform financial data into a visual, engaging experience and can eventually bring the face-to-face experience into a customer's home.

**Voice support** will be the basic medium for the next generation of mobile banking apps. The solution to the shortcomings of video conferencing could be in the form of virtual reality, augmented reality, or even holograms. As technology advances, a headset or projection device could project visual holograms onto physical space, such as a home, office or any customer defined space. Using virtual reality, a virtual bank and/or virtual banking officer could be created, with the ability to interact in much the same way as is available in a physical branch. Account openings, loan application processes or investment/ financial advisory services could all be carried out with the use of digitized visuals and simulations, personalized with AI.

Demonetisation has pushed India towards a cashless society, and as banks handle increased number of electronic transactions, **Cloud** will provide banks with the required infrastructure to meet these demands. Banks need not invest heavily in dedicated hardware, software and related manpower. Banks can scale up and scale down technology according to requirement. Banks will be able to boost computing power to meet peak demand. Employees will be able to access bank systems using web browsers from anywhere at any time.

### **5.3 Open Banking APIs**

**Open banking** is a connected network for financial and non-financial services with several service providers. **UPI** (Unified Payment Interface) and **BHIM** (Bharat Interface for Money), a mobile app based on UPI Interface by the National Payments Corporation of India (NPCI) provides opportunity for innovation in the open banking space. UPI will allow payment service providers to create state-of-the-art products/offering without being limited by the underlying account relationship. Flexible, unified, interoperable interface will allow all service providers to innovate for better customer experiences. The benefits include easy transfer of funds and providing financial products to best meet each user's needs in the most cost-effective way. Technology is the key support to open banking.

BHIM facilitates sending and receiving money to other UPI accounts or addresses. You can also send money via IFSC (Indian Financial System Code) and MMID (Mobile Money Identifier) Code to users who don't have a UPI-based bank account. There's also the option of creating your own QR (Quick Response) code for a fixed amount of money, which the merchant can scan to make the deduction.

**APIs** facilitate banks to restructure their IT architecture and work with FinTech start-ups to develop innovative solutions for their clients. Open banking APIs enable incumbent banks to build and launch products more quickly and easily. Open APIs require minimal connection effort on bank's part and offer access to multiple third parties. APIs can help banks pursue new distribution channels, while also finding new ways to improve the customer digital banking experience. In addition, the product development process can occur more quickly, responding to rapid changes in digital technology and abilities (voice banking, P2P, loan processing, risk management, etc).

### **5.4 Partnerships between Banking and FinTech**

**FinTech start-ups** are companies using novel technologies to provide cutting-edge financial services. These companies allow "unbundling of banking" by providing specific services, rather than providing services which consumer may not need.

Partnerships between banks and FinTechs will bring shared benefits and will change the banking industry. FinTechs can use banking infrastructure and data from different providers to create the products for specific clients, reach more customers, bring in new technologies, services and features which are faster and more efficient. They are providing support in merchant services, personal finance and consumer payments in areas such as payments, lending, insurance, taxes, wealth management, mobile wallets and e-commerce.

### **5.5 Expansion of Digital Payments**

Cheques will gradually be phased out and replaced by RTGS and NEFT and other **electronic forms of money transfers** and payment mechanisms offering safety and more efficiency, with the beneficiary receiving the

credit in real time online. Consumers will use **mobile wallets** in an increased manner in future. While digital payments options will increase exponentially, traditional payment alternatives will decline.

For financial institutions to digitize money transactions, barriers to consumer adoption of digital payments through mobile must be addressed. Convenience and greater confidence in the **security of digital transactions** will encourage the customer to switch to digital payments. Availability of smartphones, affordable internet, enhanced security and encryption methods and a progressive regulatory framework are the key drivers. Refer **Appendix B** for growth of internet usage in India and adoption of mobile banking. India ranks number four worldwide, ahead of all the G7 countries but behind China, South Africa, South Korea and Singapore in adoption of mobile banking. This is vital for the Indian economy as it enables greater financial inclusion and propels innovation in the financial sector, while reducing the massive cost of running a cash-based economy.

## **5.6 Digital Banks**

*“Customers will want and expect to access their bank via a chatbot on Facebook Messenger, or via a voice interface, such as Apple’s Siri and Amazon’s Alexa. This will start with basic information, customer servicing, and ‘simple’ transactions, and will get more sophisticated over time.”*

– Zilvinas Bareisis, Senior Analyst at Celent<sup>[6]</sup>

Digital banks will be designed and created upon a **digital core infrastructure**. The digital core is a consistent enterprise wide, updated data store that is accessible internally and externally. The customer may visit a branch, call the contact centre, make a remark on twitter or face book, or browse the bank’s mortgage offers by google search. By using its digital core, the bank will be aware of all these access points and touches, and will respond swiftly and adequately. For example, if the customer has researched the previous night, online loan deals, checked the latest interest rates on the banking app in the morning and walks into the branch at lunchtime, the bank will be prepared with their loan specialists, possibly through a video link to the concerned branch, to provide the advice needed for the customer to make the decision over the loan and its terms.

Digital Bank focuses upon enhancing the customers’ life through digital outreach, but recognises that the customer needs to engage directly with human contact. The human contact through the network, telephone or face-to-face, will facilitate the customer’s banking experience. They will leverage data to have an essential knowledge of the customer’s financial requirements.

## **5.7 Emergence of Small Finance & Payment Banks**

Reserve Bank of India (RBI) has granted 23 banking licences to new players - two were given universal banking licences (April 2, 2014), 11 were issued payments banks licences (August 19, 2015) and 10 were given licences for small finance banks (September 16, 2015). The Small Finance and Payment Banks, have been set up to facilitate the objective of spreading the financial inclusion. Refer **Appendix C** for services offered by Small Finance & Payment Banks.

These Banks to attract significant numbers of customers, must offer better and convenient banking facilities and innovative products. They must also convince customers that they can be trusted for security and privacy. They must offer better interest rates and lower bank charges, easy and improved digital services, tailored to specific needs. The biggest advantage of a **Payment Bank** is that it can provide the last-mile connectivity, which regular banks cannot. So, it is possible that your neighbourhood store can also function as a bank branch.

**Small Finance banks** must offer specific deposit and lending products to low-income groups. The new small finance banks like Au Financiers, Equitas or Ujjivan would require to hire large number of employees as they expand to rural areas. Automation for them means improving productivity to ensure an employee can work more efficiently. 50 % of their loans are with a ticket size of less than Rs 25 lakh. Their customers will require help right from the application to the payment stage and they need specialised staff for that. Hence, the way they provide services will be different from the universal banks.

## **5.8 Microfinance**

Microfinance is gathering energy in India. The self-help group (SHG) model with bank lending to poor women, small businesses, without collateral has become an accepted part of rural finance. The Micro Finance Institutions are providing access to wide range of affordable, high quality financial products and services, including credit, savings, insurance, payment services, and fund transfers. The supply side of microfinance in India is grossly inadequate and it provides a great opportunity for the banking sector. Over the next few years, we would be seeing many banks enter into **microfinance** business which will, reduce the gap between banking services provided in urban and rural India. Merger of IndusInd Bank and Bharat Financial Inclusion is a case in point.

### 5.9 Security for Digital Transactions

Banks need to upgrade and establish their cyber defences so as to prevent hackers from attempting to steal funds from banks or steal credit/debit card details of retail customers. The key targets by the attackers is the credential and data of the customers. A single hack can ensure millions of accounts being compromised, as it happened in October 16 when 3.2 million card details were stolen in a malware related security breach. These cards from customers of State Bank of India, HDFC Bank, ICICI Bank, Axis Bank and others, were used at ATMs.

The digital payments will be safe and secure if the customers follow laid down instructions and procedures. People tend to ignore some simple instructions mentioned in the guidelines which causes breach of security for the digital payments. All the payment banks, the wallet owners, mobile banking apps manufacturers keep improving the software to make the payments secure. Hence it is necessary that the people upgrade all the apps/ software regularly. The government should also make cyber laws strict and severe so that frauds of even very small amounts are prevented. The government also needs to invest heavily in cyber infrastructure to make it secure and risk free.

### VI. Conclusion

*“2017 is the year to marry Tech + Touch. Find a balance between accelerated digital adoption and the human touch. It’s time that banks start using data to digitally personalize customer interactions.”*

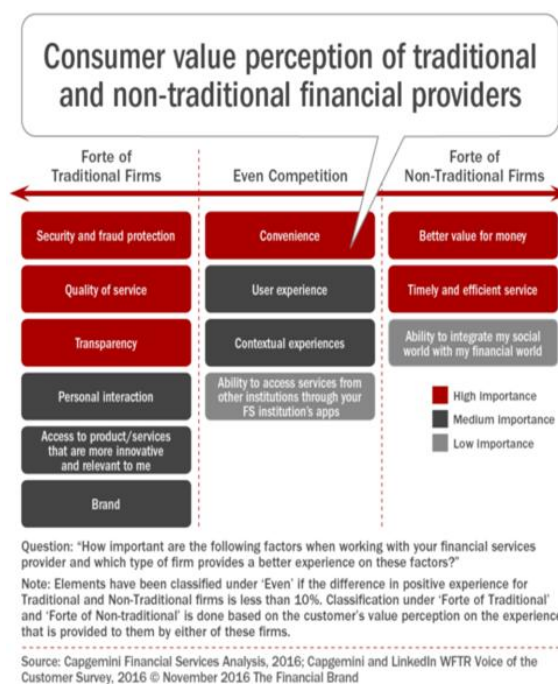
– Vikram Krishna, EVP and Head of Group Marketing at Emirates NBD<sup>[6]</sup>

The Banking sector in India is becoming competitive and aiming at higher productivity and efficiency. Exposure to international competition and deregulation in Indian financial sector has led to the advent of better quality products and services. The banking sector has improved manifolds in terms of technology, infrastructure, product & services, information systems, etc. The choice before the customer today is far wider both in the selection of banks as well as products than ever before. The future growth will largely be in corporate finance and retail banking, with innovative products backed by superior service providing the cutting edge. Banking will be better for the customer in future: more convenient, more personal, more productive and less effort.

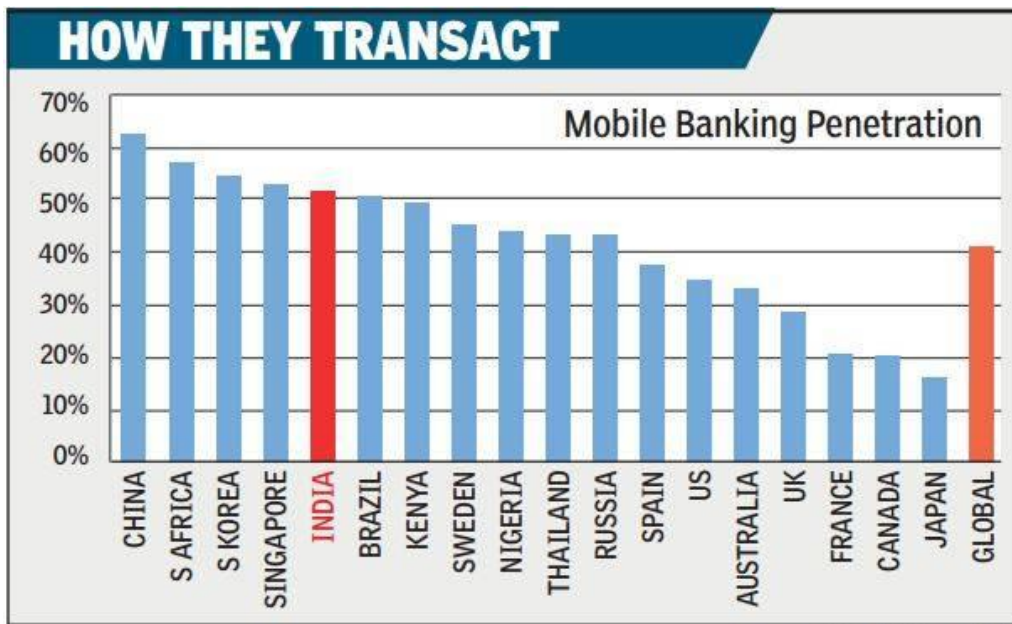
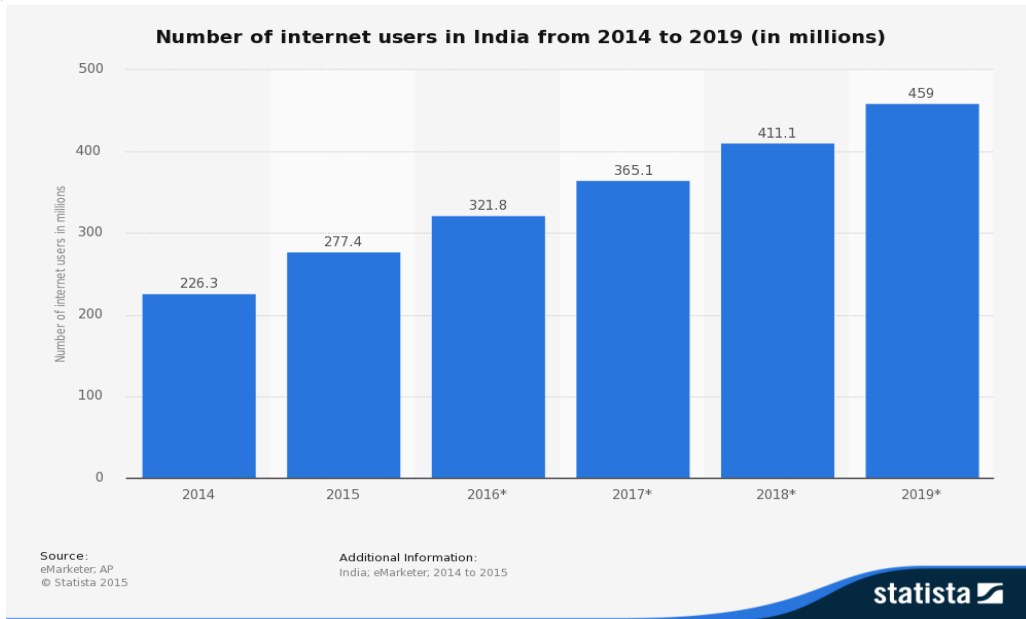
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### Appendix A



Appendix B



Source: UBS Evidence Lab

Appendix C

## GOING FURTHER AFIELD

While some services offered by payments banks and small finance banks will be similar, there are some key differences. Here is a look at what they will offer.

PAYMENTS BANK	SMALL FINANCE BANK
<ul style="list-style-type: none"> <li>Can accept deposits, but only up to ₹1 lakh per individual customer</li> </ul>	<ul style="list-style-type: none"> <li>Allowed to take deposits of any amount</li> </ul>
<ul style="list-style-type: none"> <li>Can't lend in any form</li> </ul>	<ul style="list-style-type: none"> <li>Can lend but the focus will be on small lending</li> </ul>
<ul style="list-style-type: none"> <li>Can open small savings accounts</li> </ul>	<ul style="list-style-type: none"> <li>Can finance small business units, small and marginal farmers, micro and small industries and unorganised sector entities</li> </ul>
<ul style="list-style-type: none"> <li>Can provide remittance services</li> </ul>	<ul style="list-style-type: none"> <li>Can provide remittances as well as credit cards</li> </ul>
<ul style="list-style-type: none"> <li>Allowed to issue automated teller machine (ATM) or debit cards</li> </ul>	<ul style="list-style-type: none"> <li>Allowed to issue ATM or debit cards</li> </ul>
<ul style="list-style-type: none"> <li>Not allowed to issue credit cards</li> </ul>	<ul style="list-style-type: none"> <li>Has to ensure that 50% of loan portfolio constitutes advances of up to ₹25 lakh</li> </ul>
<ul style="list-style-type: none"> <li>Can distribute products such as mutual funds, insurance and third-party loans</li> </ul>	<ul style="list-style-type: none"> <li>Can distribute financial products such as mutual funds, insurance and pension</li> </ul>

Source: RBI website