

Indian Banking beyond 2020 - Financial Innovations that will change Indian Banking

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Abstract:

The aim of the paper is to highlight the latest technologies which have started emerging in International Banking arena and will be entering Indian banking in near future and will bring structural and technological changes in the Indian Banking system. Many of the such changes have started entering in Indian Financial system since 2008 post Global Financial crisis but are yet to make a big impact on Indian Banking system.

Introduction:

Technologies such as Artificial Intelligence, Machine learning, distributed ledgers, Block chain, cloud computing, IoT, Robo advisory are being around for some time and have seen adoption in developed economies in past ten years but are in a nascent stage in Indian Landscape. As Indian banking sector enters technological revolution in coming decade, we will see a paradigm shift in ecosystem and dramatic improvement in customer experience. Traditional banking structure will become very dynamic, the boundaries will get blurred and traditional banks and emerging technological companies will be continuously searching new ways to engage with each other and adopting innovative acquisition, retention and replication strategies. The first two decades have seen rapid growth in payment segment and as now payment segment has reached its peak there are new products and technologies are gaining attention.

New Financial Innovations:

Landing Platforms:

Digital loans is growing industry and is providing multiple kinds of loans to the consumers including personal loans, loans for MSME, loans for cash flow and working capital, overdraft against salary or loan against pay. The industry consists of digital landing platforms, which will connect lenders and customers seeking fast, short term loans. There are around 200 plus new start-ups are working in India on providing lending facilities to the retail and SME customers. There is large segment of unserved retail customers due to non-availability of financial information on credit scores and lesser amount of loan demanded by them. There are more than 5 Crore medium and small scale industries which are looking for working capital loans to meet their daily requirements. The financing option in this sector is close to One lac forty thousand crore.

- Direct Lending: NBFCs are major players in this area, they are giving healthy competition to banks because of digitization of sub processes which has reduced cost and given them edge over banks.
- P2P Lending: The industry consists of digital landing platforms, which will connect lenders and customers seeking fast , short term loans. P2P lending has gained popularity with retail customers but has yet to take up in small and mid-sized corporates.
- Marketplaces and Comparison platforms: This segment has the greatest opportunity, potential and is gaining popularities with the start-ups who want to act as enabler for lending business. Comparison platforms are attracting maximum investments. Total investments made in this segment is in tune of 5000 Cr. It reduces loan processing time and helps borrower comparing the lenders and finding best fit lender.

- Invoice trading: Many start-ups and fintech companies are approaching the small and medium corporates to purchase their invoices at discount and providing them funds to meet their daily requirements to run business.
- Crowdfunding: New Start-ups, medium and small corporates are using this method to raise funds from large group of investors. These investors meet the entrepreneurs who have new business ideas, discuss the potential and viability of these ideas and fund them money which helps the business man to start his business and work on his idea on large scale.
- Credit Scoring: Many fintech companies and start ups have taken up role of providing enablement services to ease financing. They are using data like utility bill payment, social media, mobile payment history and psychometric analysis to build credit score of over 1/3rd of unserved Indian population which do not have a documented credit history.

Wealth Management:

- **Robo Advisory:** The current market share is marginal in India and this technology is at very nascent stage in India. Research studies are suggesting that robo advisory will witness significant growth in coming future.
- Micro Insurance, P2P Insurance , Market places and Comparison platforms are other financial innovations and models which will going to disrupt traditional banking and insurance sector with their innovative and customized approach. There are platforms already in place where a customer can compare his investment plans and insurance plans and choose the best fit plan.
- **Artificial Intelligence:** This is the method to utilize the machines or robots to conduct activities in a efficient way and at large scale. It refers to smart algorithms that have ability to provide differentiated output based on data provided. Global investments in AI applications have touched USD 5 Billion mark and a trend of large commercial and investment banks investing in AI applications to improve their operation processes and to ensure better customer experience. In India though the adaption at large scale is yet to be seen but few collaborations between large financial service companies and Fintech companies have been seen to automate and streamline workflows and to have more efficient customer service.
- **Data Analytics:** These systems use various AI applications based on voice and image recognition, improved search and matching abilities, improved logistics, customized selling and marketing approaches to provide insights on large data.

Future uses of AI:

- Customer Acquisition
- KYC and on boarding
- Risk and Credit
- Brand management
- Customer Service

Blockchain Technology:

In recent past we have seen funding of blockchain based cryptocurrency trading in India. However in traditional banking sector, the underlying architecture of blockchain ie DLT (Distributed Ledger Technology) has seen adoption and is finding support from regulators.

- **Distributed Ledger technology:** The main implementation of this technology is being seen in remittances, trade finance and smart contracts. Few banks are exploring the technology with one/two banks had already utilized the technology for entering into a smart contract for vendor financing.
- **DLT in Payments and Cross border transactions:** Blockchain technology reduces the time taken in making payments and allowing instantaneous transactions. It also reduces number of intermediaries hence reduces the costs.
- **Smart Contracts:** It facilitates exchanging and closing of complex agreements such as Housing loans, derivative/online trading, mortgages, derivatives, insurance policies and letter of credit where all parties can see and validate the agreements immediately.

Cloud Computing:

Use of cloud computing has matured over a period of time. Earlier organisations were using the technology to save costs in departments like payments, receivables and Human resources but now cloud computing is seen as a tool which provides business enablement and adds flexibility and newness to traditional systems. DBS Bank has moved half of its compute workload to the cloud.

More and more companies are migrating their core systems to the cloud. Big companies like Google, Facebook, Amazon have developed their own cloud assets, with database, infrastructure and applications. The performance of these cloud-based services are better than solutions provided earlier on the premises. The security systems of these cloud-based applications are also equivalent or better than earlier solutions.

Cloud technology has gained wider adoption in financial companies as the regulatory guidelines are friendly for this technology. Cloud service providers are working in close coordination with governments and regulators to ensure ease in adoption of technology.

Voice Based Technology/Chatbots :

With augmentation of computing power chatbots have evolved over a period of ten years. From a simple digital tool it has been now actively used as a tool of conversational analytics and as a digital assistant. It's the right time for the corporates and institutions to increase the efficiencies and capabilities of chatbots to create a great customer experience by using chatbots which can combine and assimilate knowledge from various segments to provide better information to customer so as to enable him to take informed decision. This will take banking to a new platform where with help of conversations the results will be delivered on a real time basis.

Biometric Recognition and payments:

Banks and Financial Institutions are using biometric technology like use of finger prints and face to enable login on banking applications. The popularity and adoption is higher in the banks based in western and developed countries. Asian banks and Indian banks have just started exploring this technology and have not yet started its wide spread usage. HSBC and Singapore OCBC Banks have taken lead and are allowing their customers to log into their bank accounts on mobile using Face ID i.e. just by looking on their mobiles. Face ID is no doubt a more secure and convenient way to access bank account than a password or a pin.

Even digital wallets like Apple Pay, Samsung Pay and Google pay are providing biometric authentication to their customers to enable them to do shopping digitally. Samsung is making iris scanning popular so that its customers can authorize a purchase just by staring at their phones. Similarly, Apple is promoting face id as a authentication tool to make digital shopping convenient and safer.

Biometric payment cards : This is the latest technology which will have roll out on a larger scale in recent future. Most of the card service providers are working with technology and biometric experts for providing a tap and go solution. The card holders can authenticate transaction through biometrics by just placing their finger on the card sensor instead of entering the passcode or pin.

Biometric ATM Though the concept exists from some time but it has not been in use by any of the bank at large scale so far. Biometric ATM will allow the customer to transact i.e. withdraw/deposit money, cheques, take statements etc by use of biometrics like a fingerprint scan. Bank of China Hong Kong has started finger authentication system across most of its ATM network, similarly, South Africa's First National Bank announced it would deploy ATMs that allow users to open accounts with a fingerprint scan and Bahrain's Ithmaar Bank is also in process of launching a new ATM early next year that will allow customers to access their accounts with only fingerprint scan and a PIN.

White Label Banking

White labelling is an innovation which allows non-banking companies to provide financial solutions to their customers by doing a tie up with a bank and utilizing their core banking systems at the backend.

API Driven Banking

API is the great innovation which provides opportunities to the banks to use their strong core banking systems at the back end and top it up with new products and new business models of Third party providers. It is helping banks to bundle and retain customers by offering them innovative and new products which are authenticated by service providers and backed by the brand value of the bank. It helps banks in expanding its customer base and enter into entirely new product segment or market. This is done by treating the third part provider as customer of bank. Banks develop open and top ended API which has multiple capabilities and get it integrated with trusted and selected partners. Digital Payments, Digital loans, transfers, insurance policies are few examples of such integration.

Banks are investing heavily in creating innovative abilities which can give them edge over competition and provide new opportunities to generate revenue.

Internet of Things (IoT) IoT is ability of an thing or an object to collect required data and provide the information on Internet. There is no human interface involved in IoT and it is communication which happens between two machines or objects. Few simple examples of IoT are appliances used for home/office security, health or fitness bands, smartwatches, fire sticks etc. Smart Phones are central to all this communication as now and in future too the common connection between these devices is a smartphone only.

IoT ensures more customization and personalization of services and allows organisations to work on real time data which in turn allows much better understanding of customer requirements at point in time and helps in early decision making. IoT will have a far reaching impact on financial services industries especially lending and insurance segments will gain a lot from use of IoT technology. IoT will enable higher customer engagement and will motivate customers to interact with service provider by incentivizing him on each interaction or on particular behavior. For example, regular health checkups and uploading reports on device can reduce your health insurance premium, careful driving and no challans can reduce your car insurance premium etc. This all will lead to deeper and meaningful customer relations and interactions and thus creating scope for generating more revenue by developing and providing more value added services.

Conclusion:

The past years has seen lot of financial innovations carried out by fintech's, start ups and traditional players in banking. More and more financial innovations are happening and are coming up with better offers and value added services for the customers. This trend will continue to grow in coming years with number of innovators, fintech's and start ups further increasing. Our country is on cusp of impactful and far reaching fintech transformation. This is getting further accelerated by government initiatives on financial inclusion and cashless and electronic economy. Country has vast unbanked and new to bank population which creates lot of opportunities in fintech and banking space. There are many startups emerging in India and as on date around 1500 big/small start ups are operating in India most of which were set up in past two years only. These start ups need technical, regulatory and financial support from traditional players, investors and government for them to grow and expand in Indian market. The country is at verge of financial revolution as the investment in fintech industry was at boom during 2015-17 and we will continue to see this trend rising further. The mantra will be collaboration with healthy competition.

Bibliography:

- [1]. Akhtar, M. A. Financial Innovations and Their Implications for Monetary Policy: An International Perspective. Basle: Bank for International Settlements, 1983.
- [2]. Anderloni, L., Bongini, P. (2009). Is Financial Innovation Still a Relevant Issue? In: L. Anderloni, D. T. Llewellyn, R. H. Schmidt (ed.), Financial Innovation in Retail and Corporate Banking, Cheltenham: Edward Elgar.
- [3]. Allen, F., J. Barth and G. Yago (2012). Fixing the Housing Market: Financial Innovations for the Future, Wharton School Publishing-Milken Institute Series on Financial Innovations, Upper Saddle River, NJ: Pearson Education.

- [4]. Cargill, Thomas F., and Gillian G. Garcia. Financial Deregulation and Monetary Control: Historical Perspective and Impact of the 1980 Act. Stanford, Calif.: Hoover Institution Press, 1982.
- [5]. Demirguc-Kunt, A. and E. Detragiache (1998). "Financial Liberalization and Financial Fragility," Working Paper 98/83, International Monetary Fund, Washington, D.C.
- [6]. Drees, B. and C. Pazarbasioglu. (1995). "The Nordic Banking Crises: Pitfalls in Financial Liberalization?," Working Paper 95/61, International Monetary Fund, Washington, D.C. Gubler,
- [7]. Davis S, Haltiwanger J, Jarmin R, Lerner J, Miranda J. 2009. Private Equity, Jobs and Productivity. In Globalization of Alternative Investments Working Papers Volume 2: Global Economic Impact of Private Equity 2009, ed. Gurung A, Lerner J. New York: World Economic Forum USA, 2009, pp. 25-44
- [8]. Goetzmann W, and Rouwenhorst G, ed. 2005. The Origins of Value: The Financial Innovations that Created Modern Capital Markets. New York: Oxford University Press
- [9]. Henderson, BJ and ND Pearson (2011), "The dark side of financial innovation: a case study of the pricing of a retail financial product", Journal of Financial Economics, 100:227-247.
- [10]. Jameson M, Dewan S, Sirmans C. 1992. Measuring Welfare Effects of "Unbundling" Financial
- [11]. Innovations: The Case of Collateralized Mortgage Obligations. Journal of Urban Economics, 31: 1-13 [12]. Llewellyn, D. T. (2009). Financial Innovation and the Economics of Banking and the Financial System. In: L. Anderloni, D. T. Llewellyn, R. H. Schmidt, Financial Innovation in Retail and Corporate Banking. Cheltenham: Edward Elgar.
- [13]. Lumpkin, S. A. (2010). Regulatory Issues Related to Financial Innovation. OECD Journal: Financial Market Trends, 2009(2), 91- 121
- [14]. Mullineux, A. W. (2010). Financial Innovation and Social Welfare. Journal of Financial Regulation and Compliance, 18(3), 243- 256.
- [15]. Mollica, M. and L. Zingales (2007). "The Impact of Venture Capital on Innovation and the Creation of New Business," Working Paper, University of Chicago.
- [16]. OECD (2003) Creativity, Innovation and Economic Growth In The 21st Century. Business and Industry Advisory Committee to the OECD.
- [17]. Pierce, James L. "Did Financial Innovation Hurt the Great Monetarist Experiment?" American Economic Review 74 (May 1980), 392-96.
- [18]. Reinhart, C., and K. Rogoff (2009). This Time is Different: Eight Centuries of Financial Folly, Oxford and Princeton: Princeton University Press.
- [19]. Rose, P. S., Marquis, M. H. (2009). Money Market and Capital Market, Financial Institutions and Instruments in a Global Marketplace. New York: McGraw Hill.
- [20]. Z. J. (2010). Instruments, Institutions and the Modern Process of Financial Innovation. Obtained from <http://ssrn.com/abstract=1608409>
- [21]: Reddy, C.R. Banking Sector in India A Regional Growth
- [22] Gopal K. Perspectives in Indian Banking. Bombay, Popular Prakashan, 1977, P. 64-65.
- [23] Thingalaiah, M.K., "Banks Have A Long Way to Go", Yoiana vol.31, No.19 October 16-31, 1987, P.23.
- [24] Madhukar, Indian Banking - The Phase "Journal of Indian Institute of Bankers. vol.58, No.3, July-September, 1987, P.136.
- [25] Upadhaya, T.N. "Banking Industry - Challenges and Strategies", Yoiana, vol. 33. No.13, July 16-31, 1989. P.34
- [26] Narasimham, M., "Role of Banks in Development", The TamilNadu Journal of Cooperation, vol.81, No.6, December, 1989, P.307.
- [27] Reddy C.R, Banking Towards 21st century", Vangya (Dibrugarh University Journal of Business Studies), vol.1, No.1, March 1989, P.43.

[28] Ferguson, Niall (2008-11-13). *The Ascent of Money: A Financial History of the World*. The Penguin Press HC. ISBN 978-1-59420-192-9

[29] Fault Lines: How Hidden Fractures Still Threaten the World Economy, Raghuram Rajan

[30] The Tip of the Iceberg: The Unknown Truth Behind India's Start-Ups , Suveen K Sinha

[31] RBI Reports and Bulletins From 2009-10 till 2019-20

[32] www/rbi.org.in and www.npci.in

[33] Arya P.P. & Tandon B.B.(2003), *Economic reforms in India: From First to Second Generation and Beyond*. Deep & Deep Publications. pp. 369-. ISBN 978-81- 7629-435-5

[34] Singh, H. (2019). *Structure of Banking Sector In India*.