



## DIGITALIZATION IN INDIAN BANKING SYSTEM: THE PRESENT AND THE FUTURE

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### **Abstract**

*The banking industry is going through a period of rapid change to meet the challenges arising out of competitiveness, technology and the demands of customers. The preference to banks and performance of the banks in future will be decided / analyzed by the customers, shareholders and owners of the banks based on the degree of digitalization.. Digital banking is set to overtake branch networks as the preferred access channel for how customers will interact with their banks by 2015, according to PwC's new report and PwC's research found that customers are willing to pay for digital banking when they believe it offers convenience and value. Present day consumers expect high quality digital communication. Rich content including elegant designs, instant search results and interactive features. This paper analyses the concept of digitalization, the present trend digitalization in Indian banking system and the strategies to be followed to bring in vibrancy in the Indian banking in future.*

### **INTRODUCTION**

Ever since the banking operations started in India, the essential mode of operation remained the same till the revolution of internet came into being in the 1990s which changed the overall paradigm of banking in India. With the new generation private sector banks emerged in early 1990s due to economic liberalization, they brought with them technological revolutions. This is the beginning of a new revolutionary era in Indian banking as it created a competitive banking scenario amongst the Public sector banks too. With the new generation banks eyeing on the global business by expanding their economic activities of banking, the Indian banking landscape has completely changed. The Public sector banks started leveraging emerging technologies, retaining customers and attracting young Gen customers have become a challenging tasks for all the banks. The boom in the IT services in India, the opening up of the Indian economy and the internet revolution synchronized in early 90s resulting in taking Indian banking to significant landmarks. Despite all the automation and improvements that digital banking has the potential to achieve, customers and their needs still form the very core of the banking sector. The introduction of mobile banking, smart phones and virtual banking created a revolution in techno-banking and the large number of tech-comfortable 'Millennial Generation'(Gen Y), 'Digital Natives (Gen Z)' and 'Google Kids'(Gen Alpha) occupying multi-varied platforms, the entire world will become a digital world and digital banking business will be the order of future India.

### **OBJECTIVE**

1. To understand the concept of digitalization and its applicability to banking business in India
2. To analyze the extent of digitalization in Indian banking system and
3. To identify the strategies that might bring in faster digitalization in the Indian banking system in future.

### **THE MEANING OF "DIGITALIZATION"**

"Digital" is the new buzz word in the banking sector, with banks all around the globe hopping onto the digital bandwagon. Banks of all sizes are making sizeable investments in digital initiatives in order to maintain a competitive edge. So, what does "digital" actually mean? Digital is all about making what can be seen unseen – making services so smooth and seamless that it becomes invisible to the customer. According to Steve Monaghan (2014), what digital essentially does is that it uses technology to design experiences, both seen and unseen.

### **DIGITAL BANKING**

Unlike online or internet banking as defined earlier, digital banking is a broader, more holistic concept rather than a facility or service. The Next Web extends online banking to "any platform that lets you move or otherwise manage your financial affairs digitally". PwC in their 2012 report, "The new digital tipping point" indicated digital banking to be the norm by 2015. According to them, digital banking is the full extent of what digital could offer customers goes beyond the basic mobile and internet banking services that are now widely provided, although there is still value to be obtained for many banks from simply delivering these basic services well. The PwC definition continues further: "Digital banking will evolve into a richer set of offerings, providing new value for banks and their customers through a new 'digital feature set', based on innovations in: user experience; mobile devices and networks; social media and collaboration; customer analytics; and channel integration." This new digital feature is indeed new – relationships and user experience are key. In the words of Accenture Interactive, Digital technologies and solutions provide an excellent opportunity for forward-thinking financial institutions to move past this challenging market environment. If banks do not step up to digital, non-banking organizations will seize the



opportunity to own the customer experience layer and provide alternate means of distribution. By having a truly digital business, banks can move away from reactive, transaction-based customer relationships, toward a more intimate, proactive and personalized experience across multiple channels, products and services.

According to Brad Jones (2014), 'digital' is buzz, in the same way 'mobile' has been put in front of everything from payments to commerce to money. In emerging markets, 'digital finance' is the new buzz word, but nothing much has changed from the last buzz word 'mobile money'. Digital Banking – a new concept in the area of electronic banking, which aims to enrich standard online and mobile banking services by integrating digital technologies, for example strategic analytics tools, social media interactions, innovative payment solutions, mobile technology and a focus on user experience.

### **WHY DIGITAL BANKING?**

The world is becoming increasingly interconnected. Banks need to create more innovative models and make their regular processes more "intelligent." Technology, organization, information, education and productive skills will, therefore, play a critically decisive role in governing the future course of development. One of the recent studies shows that over the next five years, more than two-thirds of banking customers are likely to be "self-directed" and highly adapted to the online world. Once a credible digital banking proposition exists, customer adoption will be breathtakingly fast. Indian banking system is on an upward growth trajectory and is expected to be the third largest banking industry worldwide by 2020 (Frost & Sullivan, 2013). According to a study, the balance sheet size of Indian Banks will jump to \$10 trillion by 2020 and two to three Indian Banks will be amongst the top 10 banks in the world in 2020 (Camacho, 2011). The Indian banking has seen the techno-revolution. India is one of the top 10 economies globally, with vast potential for the banking sector to grow. The last decade witnessed a tremendous upsurge in transactions through ATMs, and Internet and mobile banking. In 2014, the country's Rs 81 trillion (US\$ 1.34 trillion) banking industry is set for a greater change.

Today, about 3.54 billion of world population is under the age of 30 (Oracle Financial Services, 2010). Over the next 10 years, Gen-Y should constitute the majority of 'wealth accumulators' in developed economies and will look to banks for maximizing their wealth and to spend their higher disposable income (Raman & Patrick (2010). By 2020 the average age of Indians will be 29 years. This new age consumer base is tech-savvy, always connected with real-time online information. The noteworthy milestone in the multi-channel usage has been mobile banking through SMS. The launch of smart phones has created a revolution in the techno-driven Indian banking system. Cell phone penetration has reached almost 85% and the rise of the middle class has increased the number of households with internet connectivity. The Indian IT industry was projecting towards \$300 billion USD per annum in revenue by 2020 (Mittal, 2009). By 2020, the number of Internet users would reach around 39 cr. (30% of the population in 2020); the internet banking users would reach 18.5 cr; the number of ATMs would touch around 1.25 lakhs and the number of mobile banking users would rise to around 50 cr.

Ericsson (2014) estimates that by 2020, India's mobile subscriber base will grow to 1145 million and at the same time, smartphone penetration will grow to 520 million devices. A recently conducted survey by ACI Worldwide points out that 76% of Indian mobile respondents used their mobiles for banking in last 6 months, the highest across the world compared to only 38% from US, and 31% from UK (Kumar & Sahoo, 2013). A strong user base and high-speed broadband connectivity will fundamentally change the way people live, interact and do business with consumers expecting data connectivity at all times, everywhere. The futuristic banking may be through "mobile-only banking – the heart of digital banking".

The growth of electronic payments has been impressive in recent years. Despite multiple electronic modes of payment being available, cash is still the preferred and dominant mode of payment in large parts of the country. Against this backdrop, Vision Document 2012-15 aims to promote a less cash/less paper society, with increased emphasis on the use of electronic payment products and services, especially by the populace which is still not covered by these products. This calls for transforming the "fit for current purpose" payment system infrastructure into a state of "ready for future challenges" infrastructure. The Indian payments systems have undergone tremendous change with the adoption of card-based payments, Electronic Funds Transfers, Electronic Clearing Services and ways to pay via the mobile and internet. In India, payments can be divided in two ways- firstly, large-scale payments and small-scale payments and secondly, paper-based and electronic. Most large-scale payments concern corporates or government payments and are settled by the RBI. Small-scale payments are mainly retail payments concerning individuals which are generally paper-based transactions. Most large-value payments are handled electronically. As of March, 2015, 11,718.19 mn. Transactions were routed through alternate delivery channels amounting to Rs. 1,682,461.11 bn. (RBI, June 2015) However, even the retail payments are showing a tendency of shifting to the e-payment mode, mainly because of consumer awareness and regulations by the RBI.

### MULTI-CHANNEL INTEGRATION, THE CUSTOMER GATEWAYS IN DIGITAL BANKING

Planning for digital initiatives requires more than just the automation of services, but to also take into account the emotional aspect of banking – how do customers feel about money and what do they do with it? Emotional needs must be at the centre of the entire customer experience. A recent survey noted that banks with integrated multichannel environments could cross-sell up to five products per customer, as opposed to less than two for those running in traditional silos. Customers today have more ways than ever to interact with their financial institution, regardless of the location / source, the customers expect an identical and consistent experience across the channels. Hence the futuristic bank branches, at their front office, need to create an integrated infrastructure that can seamlessly share information across product silos, allowing the front office to streamline processes with the enabled real-time information across all touch points, to accommodate customer preferences. This will have mutual benefits both for the banks and the customers and technology will be the key enabler in this process.

The noteworthy milestone in the multi-channel usage has been mobile banking through SMS. The launch of smart phones has created a revolution in the techno-driven banking and the Indian banking system is eyeing on it as an important alternate delivery channel. Mobile Banking has really caught up in India. Prabhudesai (2012) points out that India's Mobile Banking adoption has been the highest in World. According to Mishra and Prasad (2013) quoting the survey conducted by ACI Worldwide (2012), 76% of Indian mobile respondents used their mobiles for banking in last 6 months. This percentage is highest across the world. Comparatively, only 38% respondents from US, and 31% from UK used mobile banking in last 6 months. China, came in after India with 70% users using mobile banking followed by South Africa (61%). The global average for Mobile Banking adoption rate stands at 35%. According to the survey, the countries with highest levels of mobile payment adoption also display highest importance on mobile payments and money movement. Roughly two-thirds of Indian consumers consider making payments and moving money using their mobile phone in the next three years to be “very important” to them - in contrast only one in 10 French and Canadian consumers think mobile payment is “Very Important”. A survey by payments provider ACI and IT consultants Ovum quoted by Boden about the ACI 2015 have found that 84% of banks and retailers plan to invest in mobile payment technology. The “overwhelming majority” of financial institutions and retailers are currently investing or planning to invest in new payment technologies within the next 18 to 24 months, with online (86%) and mobile payment technologies (84%) topping the list. The four-part Global Payments Insight study, based on the responses of more than 1,100 executives representing banks, retailers and billing organisations across the Americas, Asia Pacific and EMEA, reveals that credit (87%) and debit (82%) cards remain the most widely accepted payment tools, followed by cash (74%). The research also finds that banks are seen as the “most capable” providers in helping to offer new payment technologies such as contactless cards (67%), mobile apps (45%) and QR codes (48%). However, banks are at risk of losing market share to payment specialists, telecom providers and large software companies. The survey shows clearly that banks still play a major part in the payments ecosystem.

The massive role of Immediate Payment System (IMPS) which offers an instant, 24X7, interbank electronic fund transfer service through mobile phones is given below. IMPS is an emphatic tool to transfer money instantly within banks across India through mobile, internet and ATM which is not only safe but also economical both in financial and non-financial perspectives.

Month	No. of Member Banks	No. of MMIDs Issued (in lacs)	Inter Bank Volume		Intra Bank Volume		Total No. Transaction	Total Amount (Rs) (in lacs)
			No. of Transactions	Amount (Rs) (in lacs)	No. of Transaction	Amount (Rs) (in lacs)		
May, 2015	92	898.92	13,324,315	1067532.91	1,312,669	34109.05	14,636,984	1101641.96
March, 15	81	800.13	12,019,719	941469.52	1,074,236	37594.16	13,093,955	979063.68
Dec. 14	73	745.57	8,380,921	603655.48	1,121,502	30621.86	9502423.00	634277.34
Mar. 14	60	584.88	2,998,331	205002.57	168,478	10420.54	3,166,809	215423.11
Jan. 14	59	568.43	2,030,898	132027.91	122,985	7460.71	2,153,883	139488.62
Sept. 2013	59	531.49	1,015,087	55274.81	86,334	4508.63	1,101,421	59783.44

Source: NPC online site on IMPS (July 2015)



It could be seen that the no. of transactions have increased from 11 lakhs to 1.4 crores (13 times) while the total amount from Rs.597 crores to Rs.11000 crores (18 times), unimaginable jump. Celent reveals that there is tremendous potential for banks to cut down the costs by encouraging customers to go in for alternate / multiple channels and it estimates the cost per transaction in India to be US\$1.14 for branch banking; US\$0.46 for ATM, US\$0.23 for internet and US\$0.09 for mobile banking.

The Indian IT industry was projecting towards \$300 billion USD per annum in revenue by 2020. By 2020, the number of Internet users would reach around 39 cr. (30% of the population in 2020); the internet banking users would reach 18.5 cr; the number of ATMs would touch around 1.25 lakhs and the number of mobile banking users would rise to around 50 cr. However, according to the National Payments Corporation, currently, only 67 million cell phones are linked to bank accounts, out of over 930 million mobile phones and over 450 million bank accounts, underscoring the huge unfinished agenda of mobile banking in the country. Ericsson estimates that India's mobile subscriber base will grow to 1145 million by 2020. Simultaneously, smartphone penetration will grow by 45 % or 520 million devices by 2020. A strong user base and high-speed broadband connectivity will fundamentally change the way people live, interact and do business; with consumers expecting data connectivity at all times, everywhere. As regards the banking industry, the no. of deposit account holders would double from the current 400 million to 800 million by 2019 and banking through mobile phones will have the impact in the present techno-revolution in banking and it is not far off that the futuristic banking may be through "mobile-only banking".

In India, Financial transactions through ATMs is around 77.1%, whereas non-financial transactions comprising taking out mini statements and checking balance inquiry, takes the share of around 22.9%. The total onsite and offsite ATMs operated in the country are 1,82,480 and the total transactions is valued at RS. 22,96,890 mn. as on April 2015 (RBI, 2015) However the ATMs (per 1 lakh adults)- 11.21 which is very less and explains the need for extensive growth.

As you travel through remote corners of India, you realize that how difficult it is to find an ATM. This is because of high cost of installation and maintenance of ATMs. But the solar-powered Gramateller Duo ATM consumes lesser space (80 sq.ft), power (300-600W) and the operational cost (Rs.600-700). This is even appreciated by World Bank's International Finance Corporation (IFC). IFC expects the ATM market in India to grow three-fold over the next three years, with the bulk of machines bound for remote areas. The Indian government plans to extend banking services to remote areas, and the rugged solar ATMs fit the bill. The immediate demand for the solar ATMs reflects and empowers India's quietly surging rural economy, estimated to be worth about US\$450 billion. Rural India, considered the backbone of the national economy, is expected to overtake the urban market in size by 2017. The investment will help in taking basic banking and financial inclusion schemes to rural and semi-urban areas in India. Micro ATMs with basic cash withdrawal, balance enquiry features and Biometric ATMs to cover illiterate groups is simpler than high cost ATM machines. Mobile ATMs embedded with ICT-enabled Mobile Banking Van (MBV) and White labelled ATMs still remained as initiatives but not at scores in reaching mass markets. These have scope in future to reach the mass markets of rural and semi-urban areas. As of April, 2015, 2.1 cr. credit cards and more than 56 cr. debit cards transacting a total business of Rs. 22.97 lakh million and little more than 1 million POS outlets transacting a business of Rs.2.30 lakh million are in the cashless business transaction and it is expected to multiply further in leaps and bound. The barcode reader changed the shopping experience, making it fast, convenient and accurate. The Finger-point PoS machines which have entered into the commercial markets will enter banking industry soon on a larger scale and such banking POS will be the "Customer Service Points".

### **VIRTUAL BANKING – THE HEIGHT OF DIGITALIZATION OF BANKING**

Yet another concept "virtual banking" is gaining ground wherein the banks offer financial transactions directly through electronic delivery channels only without the intervention of branch banking. The power of technology makes it happen seamlessly and virtually. The banking technology, in the years to come, needs to be harnessed with cloud computing and analytics based on big data will be the differentiating factor. Big data assumes special significance for a country like India where multitude of customer needs corresponding to different economic strata, languages and social profiles presents an interesting opportunity for businesses. Technology's ever increasing relevance to global banking operations in terms of coverage, collaboration (social networking), flexibility (grid computing & cloud computing), security (biometric identification) and climate friendliness (green IT and carbon financing) will grow leaps and bounds. The challenges facing governance in India are well-suited in many respects to solutions offered by Cloud-based services. This is particularly true with regard to e-governance initiatives aimed at engaging the public - both receiving input and administering regulations and the delivery of social welfare programs.

Establishing Virtual Universal Bank, a one-stop supplier for all financial products and activities, to provide corporate and retail financial services like lending activities, life and general insurance, personal fiancé, investment banking, private equity, international banking, mortgages, consumer credit, retail credit, credit cards etc. will enable attract mass market. The ever-increasing technological developments have reduced the gap between generations and strengthened their connections. Advances in social and communication media have had a major impact on the young Gen who are well net-worked, have a strong “virtual” presence through virtual worlds like Facebook, Twitter, Orkut, Linkedin, MySpace and Second Life. Online networking makes their social life more public, and have led to an increase in the influence of social networks on consumer decisions and the banking industry needs to have a strong presence online on networking portals and enter into virtual world based marketing.

Every generation has seen the emergence of a “disruptive” technology that rendered existing technologies irrelevant. New technologies continue to emerge faster than ever and “innovation leaps” are becoming smaller, leading to a stronger connection between new generations. The age group of 18 to 24 has the highest incidence of ownership, with over one in ten in the age bracket who owns a smart phone device. There are 27 million Smart phone users in Urban India, according to a survey conducted by Nielsen Informat Mobile Insights. This constitutes 9% of all mobile users in urban India. Smartphone incidence is higher in the large metros of 4 million plus population with one in ten smartphone users, and it is 6% in cities with a population of 100,000 to 1 million. Banking in near future would see even cash remittances being done via mobiles. Withdrawals through ATMs will be through mobiles with the banks initiate the transaction and ATM would spit the cash out without a card being used. The Master card will operate a system in which the remittances will be sent as text messages. Mobile banking will be the game changer as it enables rich, interactive experience to mass affluent customers and provides low cost secure banking channel to a large poorly banked and unbanked population. M-banking services will help banks to “push” the relation with the existing clients, to acquire new clients and to increase overall profitability.

#### **STRATEGIES FOR DIGITALIZED BANKING IN INDIA**

Once the major digital trends impacting the financial services industry are understood, it is time to take action on those trends. While some institutions can make headway on all of the initiatives mentioned, others may need to prioritize their actions based on resource commitments.

1. The digital industries need to map out natural extensions of existing products/services instead of inventing based off of completely new ideas. This means that the digital teams need to engage employees, partners and customers in ideation and to pilot new innovations. The data should drive decisions.
2. Banking institutions need to find new revenue sources, and digital opens up interesting possibilities like popping upsell/cross offers within the existing mobile app by a convenience fee for mobile remote deposit capture, paper statements and other services.
3. Creating personalized dash boards to help customers on money management and integrating with digital experience.
4. Indian banking industry should strengthen their marketing efforts towards “digital marketing” through their dedicated “web sites”. Towards this, the banking product purchase journey of the customers should be well read and understood to make the sales experience a live one. The banking industry should make their presence digitally 24 x 7.
5. Knowingly well the digital disruption in financial services is a game changer, the change in mindset of the players towards customer oriented digital culture is to be built within the organization. Being ‘digital’ should be a core part of the banking and a right organization structure and interactions, with the right people to digitally lead the change with customers is to be created through right corporate governance.
6. While many banks have focused their digital investments on digitizing transactions that reduce brick and mortar cost, less has been done to make consumers’ banking experience more convenient, easy and engaging through a seamless integration of channels. While consumers have definitely appreciated digital innovations such as remote deposit capture, remote bill pay and other simplified transactions delivered through a mobile app, winning the digital consumer in the future will require more. the ability to create the “bank of the future” experience that customers already expect – integrated, on demand, real-time banking services via a combination of digital and physical assets. While lower acquisition costs and lower distribution costs are key metrics for neo-banks, their ability to generate business purely through digital is the biggest single threat to the existing model of retail financial services and the Indian banking should be cautious about this fact. Trust is key to financial services, and trust is determined first of



all by reputation (brand image and customer experience) that is becoming more and more digitized. The Indian banking industry should work on their specified brand strategy to attract customers.

7. The Indian banking system should build objectives and incentives from a multichannel customer perspective. It should be ensured that under a digitalized environment, innovation teams are not logistically miles away from who runs the daily business.
8. Today's big digital players in other industries test and learn as part of an iterative process. They are not afraid of renewal and failure in doing so. They are agile and experiment in real time with their own customer base. The decision making process is much faster and the roll-out is fast to very fast. The Indian banking industry should "unlearn and relearn" to face a competitive, customer friendly digital bank.
9. The digital banking relationship needs to move beyond basic online banking to real interaction. 'Know your customer' has a new meaning in digital banking development as it is more knowing how your customer wants to interact with you. Fortunately, data mining user profiles, navigation flow and preferences is easily achievable followed by corrective changes and the introduction of added value services in line with the perceived opportunities. Deepening the customer relationship, in a seamless fashion and in step with the user's lifestyle, precludes any thoughts of being too present – this is the key of knowing customer preferences and thinking, how much presence, when and in what ways. Getting it right reaps rich rewards over the long-term; getting it wrong portends a potential lost generation of customers.
10. Security is the foundation of digital banking: Security extends from the bank's hardware to the user's device – whether a PC/Mac at home, an iPad or the newest Smartphone. In all cases, digital banking must employ robust security technologies which protect the communication, user information and the bank's IT infrastructure. Indeed, it is clear that for digital banking to be a rewarding experience for the customer and a profitable growth area for the banks, technology partners, payment processing service providers and mobile phone operators ought to have a comprehensive agreement on shared technology standards and processes.
11. As is suggested by Cognizant (2014) in their paper on "Digital Banking: Enhancing Customer Experience", the technologies required for digital banking fall into seven strategic areas viz., (a) integrated infrastructure that enables seamless retrieval, storage and distribution of information and data, (b) precise information, (c) an enterprise content management road map which includes storage, management, workflow, processes, integration, analytics, reporting etc. (d) well-built business process that includes service orientation, governance, technology adoption and process orchestration (e) analytics (f) social and mobile information and (g) continual and consistent user experience sharing with major interaction touch points.

## SUMMARY

The penetration of digital banking services is often correlated with the use of alternate delivery channels. But digitalization is beyond this. Big data, cloud computing, social media and mobility are the four "transformative megatrends" that will shape global technology adoption over the next decade. The concept "virtual banking" is gaining ground in which the banks offer financial transactions directly through electronic delivery channels only without the intervention of branch banking. The digitalization should result in progressive amelioration of service quality, anytime / anywhere banking, focussed product delivery, cross-selling opportunities, multi-channel touch points and so on. Moreover, services like virtual banking, e-Lounges, digital pod, shops, pharmacy etc should enter into Indian banking system. In the new millennium, the internet-based way of doing business has certainly changed many industries and has influenced many customers and businesses and has created a competitive landscape. The digital economy has changed the shapes of whole set of industries and markets and has already had a great impact on consumers and is all set to have a very exciting future. In the technological world, e-Business / e-Commerce is no longer an alternative but an imperative. Banks will have to move towards more simplification of their go-to-customer models and embrace technologies from mobility and social to cloud and big data. There is no simple prescription and almost no such thing as an established e-Business model for Banks and banks have to evolve models from time to time.

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