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The Journal of Indian Institute of Banking & Finance

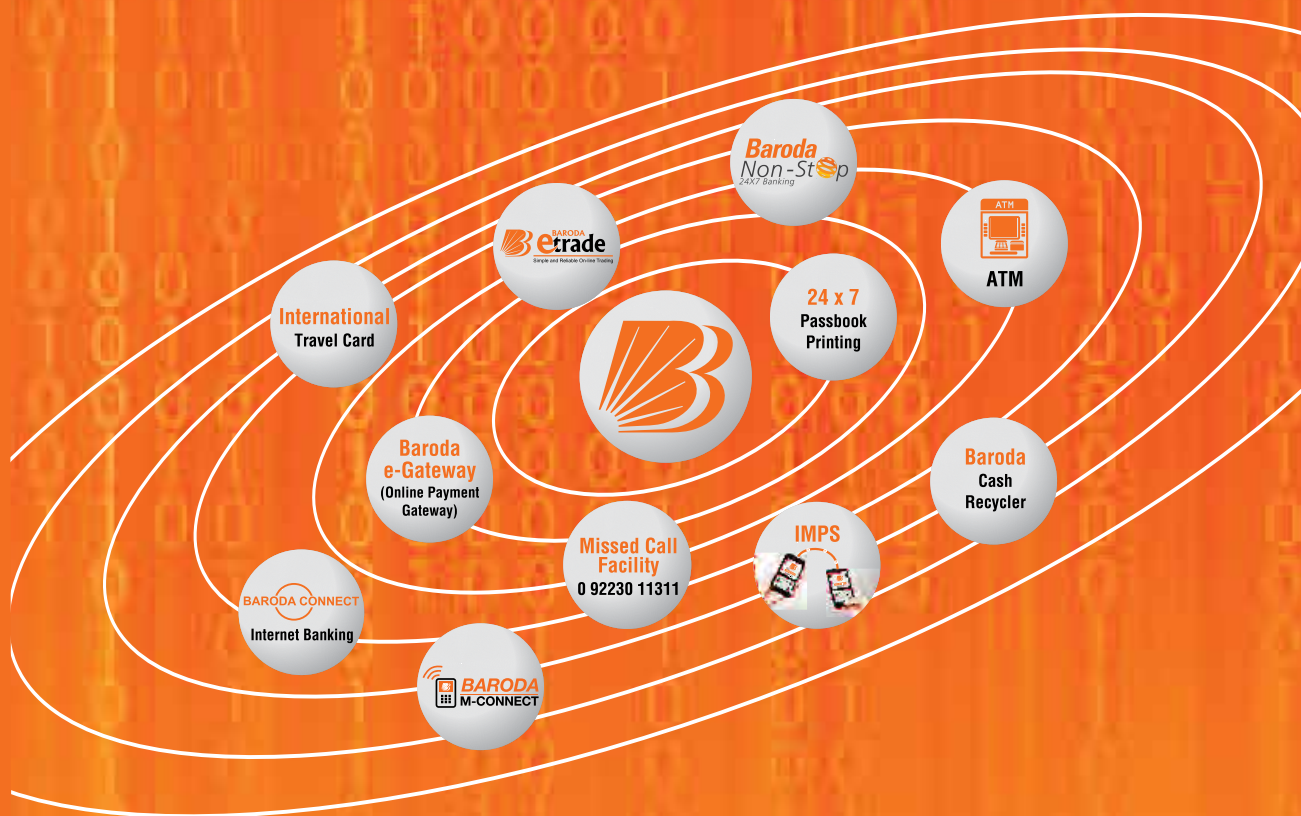
खंड / Vol 87 / अंक / No. 4 अक्टूबर - दिसंबर 2016 October - December 2016

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Bank Quest



Volume 87, Number : 4
October - December 2016
(ISSN 00194921)

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The mission of the Institute is to develop professionally qualified and competent bankers and finance professionals primarily through a process of education, training, examination, consultancy / counselling and continuing professional development programs.

ध्येय

संस्थान का ध्येय मूलतः शिक्षण, प्रशिक्षण, परीक्षा, परामर्शिता और निरंतर विशेषज्ञता को बढ़ाने वाले कार्यक्रमों के द्वारा सुयोग्य और सक्षम बैंकरों तथा वित्त विशेषज्ञों को विकसित करना है ।

Printed by Shri J. N. Misra, **published by** Shri J. N. Misra on behalf of Indian Institute of Banking & Finance, and **printed at** Onlooker Press 16, Sasoon Dock, Colaba, Mumbai-400 005 and **published from** Indian Institute of Banking & Finance, Kohinoor City, Commercial-II, Tower-I, 2nd Floor, Kiro Road, Kurla (W), Mumbai - 400 070. **Editor** Shri J. N. Misra.



Dr. J. N. Misra

Chief Executive Officer,

IIBF, Mumbai

Sir Purshotamdas Thakurdas Memorial Lecture

One of the important activities undertaken by the Institute is conduct of Memorial Lectures viz; the R K Talwar Memorial Lecture and the Sir Purshotamdas Thakurdas Memorial Lecture (PTML). This time, the Sir PTM Lecture was delivered by Mr. R. Gandhi, Deputy Governor, Reserve Bank of India on “Pioneering Best Practices in Banking: India’s Record” on 24th November 2016. The speech of Mr. Gandhi is the first article in this issue.

Articles on Digital Banking

Indian Banking has undergone a metamorphosis over the years. From the traditional brick and mortar branches to Core Banking to Internet Banking to Digital Banking; Indian banking has indeed traversed a long but fruitful path. Earlier, one used to bank with a branch. Today, one banks with a bank.

Many of the banking activities undertaken by individuals / organisations can be done in the comfort of one’s home / within the premises of an office with a few clicks on a mouse or through mobile apps.

Internet banking, other alternate channel banking and digital banking are often used interchangeably. This may not be strictly correct as digital banking occupies a broader canvass with internet banking, other alternate channel banking forming integral parts of digital banking.

The Bank Quest journal of the Institute is generally a theme based publication. As digital banking is the buzzword, we thought it appropriate that there should be an issue which focusses on this emerging trend. The present issue is therefore on “Digital Banking”.

The article on “Digital Banking” authored by Mr. Mrutyunjay Mahapatra, Deputy Managing Director & Chief Information Officer, State Bank of India talks about the digital banking journey of Indian Banks. Some of the digital initiatives of State Bank of India are also covered.

The article on “Becoming a Digital Bank – Issues and Journey” by Mr. S. Mukhopadhyay, former General Manager, State Bank of India narrates on what constitutes digital banking and also walks the reader through the products offered by FinTechs.

The article on “Digital Payment Systems: Death Knell for Cash? An Economic Analysis” by Dr. M. R. Das, Advisor (Consultancy Projects), ICFAI Foundation for Higher Education, gives the structure of Payment Systems in India and states while cash is still the king in India, the digital payment ecosystem needs an urgent boost which calls for meaningful participation by all the players. It concludes by stating that banking should however not be faceless and therefore, branches will still be needed.

The Hindi article on “The importance of Digital Banking in the Changing Financial Environment” has been written by Mr. Deenanath Jha, Chief Manager (Research), SBIICM

Other Articles

Besides the above articles, we carry a feature on legal decisions affecting bankers by Mr M. G. Kulkarni, Deputy Director, IIBF. The topic is on “Whether bank is liable for deficiency in service?”

This issue also carries the summary of a Macro Research Project of 2014-15 by Dr. Arpita Ghosh, Assistant Professor, IIM, Calcutta on “Asset Quality of Banks: Evidence from India” and a review by Mr. S. K. Datta, Faculty, IIBF of a book on “Banking for Beginners” authored by Dr. R. Bhaskaran, Former CEO, IIBF.

We are confident that the articles included in this edition will be of interest to you.

Your valuable suggestions and feedback for improving the contents are welcome.

Dr. J. N. Misra



 **R. Gandhi ***

Pioneering Best Practices in Banking: India's Record

In the post-crisis era, the international thinking on banking and finance stands fundamentally changed. Not only did the crisis shake the confidence of all stakeholders in the international financial system but also compelled the regulators and policy makers to review whether their policy framework was sound enough to prevent the outbreak of another crisis of a similar magnitude. From the global consultations, emerged newer and more refined norms of prudential regulations and supervision that may appear onerous at the present moment but are expected to make the global financial system reasonably resilient in the long term. When all these consultations about reforming the global financial architecture have been on, I have increasingly felt that India has been leading in many of what we now term as the international best practices in banking and finance.

India's lead in economics is, of course, well known and well accepted. Kautilya's Arthashastra written by Chanakya during 300 BC is regarded as a master piece in diplomacy and economic principles. Kautilya describes the primary role of a ruler and regulator as good governance. He alludes to people-centric and particularly the poor-centric policies that would enhance welfare and lead to stability in any country. He emphasises on the role of infrastructure, particularly public investment in roads and transport, as an important responsibility of the ruler and also highlights the role of private enterprise, suggesting a mixed economic framework. When we study the Arthashastra, we are amazed by the vision of Chanakya in laying down the best practices in economic administration that continue to be relevant even 2300 years later!

Coming back to the recent times, I am equally impressed by the sagacity of our policy makers and legislators, who built in certain practices in the functioning of the Reserve Bank and the Indian banking system. We see similar practices being recommended now by the international

standard setting bodies as international best practices. First, the fact that we have had these practices in place has helped us with the crises which have shaken the rest of the world. Secondly, these practices have also made our transition to the contemporary international best practices fairly easier.

Most of the issues that I discuss today relate to banking sector regulation. However, there is another area relating to the banking sector that we cannot overlook when we compare Indian banking practices with the rest of world and that relates to 'financial inclusion'. Stepping beyond the banking sector and looking at other core areas of functioning of the central bank, such as foreign exchange reserves management and payments systems also suggest several home-grown practices which are now being regarded as the international best practices.

Let me begin with prudential regulations.

Statutory liquidity ratio and liquidity coverage ratio

In the wake of the Global Financial Crisis 2007-08, the Basel Committee on Banking Supervision (BCBS) initiated the Liquidity Coverage Ratio (LCR) in an effort to strengthen the liquidity framework of the financial systems of the world. Bank portfolios generally consist of illiquid assets (longer-term loans) that are funded by liabilities (shorter-term borrowings) that must be renewed continuously until the longer-term customer loans are fully repaid. Episodes of uncertainty, however, can cause increases in short-term rates relative to long-term rates, which can translate into a run on and insolvency for financial institutions. To prevent such run on a daily basis, banks need to hold unencumbered, marketable assets that would find buyers at a short notice. A reserve requirement alone may not help enough as a prudential measure for managing liquidity risk; banks world-wide, for lack of incentives to hold up funds in unremunerated reserves, have often resorted

* Deputy Governor, Reserve Bank of India.

to circumventing the statute by veering away from one form of funding to other in an effort to modify the base for calculating the ratio. The extensive use of short term wholesale funding to fund long term assets in the recent crisis being a case in point.

Before the global crisis, USA in particular did not have any concept of liquidity asset ratio requirement from either prudential or monetary control point of view. More recently, liquidity risk management has been manifested in various stress-testing methods as per supervisory guidance. Other developed countries that never had or abolished liquidity asset ratios or traditional reserve requirements so far were Canada, France, Sweden, and New Zealand.

Indian banks, however, have always had in place a liquidity risk management system in the form of the Statutory Liquidity Ratio (SLR). According to Section 24 (2-A) of the Banking Regulation Act, 1949, all Scheduled Commercial Banks in India are required to maintain, a) in cash, or b) in gold valued at a price not exceeding the current market price, or c) in unencumbered approved securities valued at a price as specified by the RBI from time to time an amount of which shall not, at the close of the business on any day, be less than 25 per cent and not exceed 40 per cent of the total of its demand and time liabilities in India as on the last Friday of the second preceding fortnight. Following the amendment of the Banking Regulation Act (1949) in January 2007, the floor rate of 25 per cent for SLR was, of course, removed. However, even as at present, all Scheduled Commercial Banks are required to maintain a uniform SLR of 20.75 per cent of their total demand and time liabilities in India as on the last Friday of the second preceding fortnight.

SLR, although focusses on maintaining a static stock of assets out of a stock of liabilities vis-à-vis LCR's emphasis on pre-empting net cash outflows on an ongoing basis, has always served India well during crises because the RBI allowed banks to utilize the assets therein to draw on LAF and MSF funds. Financial systems across the world now have to modify their lending behaviour to create such buffers of liquid assets. A Quantitative Impact Study by BIS on the implementation of these liquidity ratio norms find that some banks in developed countries, to be able to implement these norms, might have to exit some businesses altogether because their liquid assets get tied up there. The assets categorized as liquid under LCR are by and large the ones that Indian banks have always held for calculation of their SLR requirements.

Indian banks will not find the implementation of LCR as tedious especially because RBI has now allowed Indian banks to include 11 per cent of their SLR securities for the purpose of calculating LCR. Finally, as suggested by stress tests conducted by RBI, the LCR is not a substitute for SLR. It will only add on to the function that SLR was already meant to perform, i.e., to fill the liquidity gap of Indian banks under stress.

Credit Management Techniques

Another area which has drawn the attention of policy makers and standard setting bodies has been the flow of credit in the economy and the resultant risk that can build-up in the system overtime if left unchecked. The basic premise of macro-prudential and micro-prudential policies is early detection of such build-ups and initiation of suitable corrective action. Two types of techniques, i.e., quantitative and qualitative credit controls have been used by the central banks world-wide to achieve their objective of managing flow of credit in the economy. The former or traditional method includes banks rate policy, open market operations and variable reserve ratio. Qualitative also called selective credit control instruments work through regulation of margin requirement, credit rationing, regulation of consumer credit and direct action.

As per the Reserve Bank of India Act, Reserve Bank was constituted to regulate the issue of bank notes and the keeping of reserves with a view to securing monetary stability in India and generally to operate the currency and credit system of the country to its advantage. Thus, the use of credit management techniques to the country's advantage has been enshrined in our Act. Towards this objective Reserve Bank has consistently emphasized on diligent monitoring of the health of loan portfolios of credit institutions and remained pro-active in tightening risk weights and provisioning requirements particularly during rapid credit growth phases. With a view to preventing speculative holding of essential commodities with the help of bank credit and the resultant rise in their prices, Reserve Bank, has issued, from time to time, directives to all commercial banks, stipulating specific restrictions on bank advances against specified sensitive commodities.

The Reserve Bank introduced selective credit control for the first time in May 1956 in the context of multiplication of banks' advances. The continued loss of foreign reserves towards plan financing again forced the Bank to use an additional credit restraint measure viz., 'quota-slab' system, instituted in October 1960. This was in

the form of credit rationing through a price instrument. Under this system, each scheduled bank was assigned a quarterly quota equal to half of the average volume of reserves, which it had to maintain under Section 42(1) of the RBI Act during each week of the preceding year. The quota slab system could be liberalised or tightened as necessary for effective quantitative check on credit expansion. The quota-slab system, where availability of credit was the key control variable, was replaced in 1964 by a scheme of accommodation based on banks' net liquidity ratio (NLR), which was considered to be a less discretionary form of central bank control over the expansion of commercial bank credit than the quota-slab system. The NLR formula envisaged using a variant of the statutory liquidity ratio to regulate the cost of the Bank's loans to scheduled commercial banks.

The credit authorisation scheme as an instrument of credit control was introduced in November 1965 to align credit policies closely with the Five Year Plans. Under the scheme, scheduled commercial banks were required to obtain the Reserve Bank's authorisation before sanctioning any fresh credit of Rs.1 crore or above to any one borrower or any fresh limit which would take the total limits engaged by the borrowers from the entire banking system to Rs.1 crore. This scheme helped in preventing the problem of pre-emption of scarce bank reserves by a few large borrowers and enforcing a measure of financial discipline on them.

As is evident from the above, in the initial phase of scarce credit, Reserve Bank used credit management techniques to ensure efficacious use of credit. In the recent years, credit management measures have been used to discourage excessive risk build-up in a sector. In view of significant rise in bank credit to the commercial real estate sector in conjunction with that in the prices of real estate, risk weights for banks' exposure to commercial real estate were increased from 100 per cent to 125 per cent in July 2005, and further to 150 per cent in May 2006. The risk weights on housing loans extended by banks to individuals, were also increased from 50 to 75 per cent in December 2004. The provisions for standard assets were also revised upwards progressively in November 2005, May 2006 and January 2007, in view of the high credit growth in select sectors. These measures stood us in good stead during the global financial crisis. Thus Reserve Bank in pursuance of the objective outlined in the RBI Act has been diligently monitoring the flow of credit in the economy and taking appropriate steps to ensure that flow of credit is used to the betterment of the economy.

Regulation of Non - banking financial sector

The idea that shadow banking should be regulated is of recent origin in most of the countries and has found credence in the aftermath of the global financial crisis when the role of shadow banks was brought in sharp focus. However, in India, the scheme of regulation of non-banking financial companies (NBFCs) originated in mid-sixties when sudden upsurge in deposit mobilisation by Non-Banking Companies was noticed. The provisions of Chapter III B of the Reserve Bank of India Act, 1934, which regulated the deposit acceptance activities of Non-Banking Companies has been in existence since mid-sixties. The focus of regulation was to ensure that the segment serves as an adjunct to banking system and also provides an indirect protection to the depositors. The objective of this legislative frame work was to regulate the deposit acceptance activities of NBFCs. As per the provisions of this framework, the Reserve Bank was empowered to regulate or prohibit issue of prospectus or advertisement soliciting deposit, collect information on deposits and to give directions on matters relating to receipt of deposits. For violation of directions, RBI could issue orders prohibiting erring companies from accepting further deposits. The legislative intent and the focus were thus mainly to moderate the resource mobilisation exercise by way of deposits by NBFCs and thereby providing indirect protection to the depositors by linking the quantum of deposit to their Net Owned Funds (NOF). The focus continued to be the same till early 90s. Over a period of time, especially during late 80s and early 90s, NBFCs penetrated into the main stream of financial sector and established themselves as complements of banking industry. In light of this, an Ordinance was promulgated by the Government in January 1997, effecting comprehensive changes in the provisions of RBI Act. Over the period the regulation for the NBFCs has been modified and made in conformity with the banks. Thus, because of history of regulatory best practices, shadow banking has not posed any problem for the financial sector in India.

Sector Specific Refinance Facilities

One of the most important features of the global financial crisis was the aggravation of the problem of bank liquidity, credit market crisis, and to put it simply, the lack of money. This was addressed through various measures undertaken by the central banks to widen access to central bank financing. Objective of the refinance facility by central bank is to provide further comfort on liquidity and to impart flexibility in liquidity

management to banks. Refinancing operations were undertaken by most of the central banks to ensure credit flow to the real economy. Some central banks undertook specific measures to ensure smooth flow of credit to exporters, small businesses and entrepreneurs.

Reserve Bank has been following several sector-specific refinance facilities. These have been reviewed from time to time based on the evolving macroeconomic and market conditions. Under Section 17(3A) of the Reserve Bank of India Act 1934, RBI first introduced the scheme of export financing in 1967 which was intended to make short-term working capital finance available to exporters at internationally comparable interest rates. The ECR scheme has been reviewed from time to time based on the stance of monetary policy. It has been merged with the system level liquidity provision with effect from the fortnight beginning on February 7, 2015.

In response to recent global crisis, a special refinance facility was introduced under Section 17(3B) of the Reserve Bank of India Act, 1934 under which all SCBs (excluding RRBs) were provided refinance from the Reserve Bank equivalent to up to 1.0 per cent of each bank's NDTL as on October 24, 2008 at the LAF repo rate up to a maximum period of 90 days. Banks were encouraged to use this facility for the purpose of extending finance to micro and small enterprises. The eligible limit of the ECR facility for scheduled banks (excluding RRBs) was also increased from 15 per cent to 50 per cent of the outstanding export credit eligible for refinance at the prevailing repo rate under the LAF. In order to provide liquidity support to housing, export and MSE sectors, the Reserve Bank also provided refinance facility to the National Housing Bank (NHB), Export and Import Bank (EXIM Bank) and Small Industries Development Bank of India (SIDBI).

Now, in place of Reserve Bank, financial institutions such as National Bank for Agriculture and Rural Development (NABARD), SIDBI, and NHB, extend refinance to banks as well as non-banking financial institutions. MUDRA Bank, new institution for development of micro units is refinancing through State level institutions, and delivering loans to NBFCs, MFIs, Rural Banks, District Banks, Nationalized Banks, Private Banks, Primary Lending Institutions and other intermediaries.

Financial Inclusion

The concept of "financial inclusion" gained global attention during the 2000s through its link with the achievement of the Millennium Development Goals (MDGs) set by the

United Nations (UN). The Reserve Bank of India has however been undertaking various initiatives over the last five decades to help the underprivileged participate in the country's economic development.

On April 2012, India became the first BRIC member to join CGAP, the policy research centre housed at the World Bank dedicated to improving financial access for the world's poor. An analysis done in a 2015 RBI committee report on financial inclusion finds that access to finance is, on average, 0.14-0.16 percentage points higher in India compared with its EMDE peers. These facts uphold India's position as a pioneer and an innovator for many years for a range of financial access initiatives.

Globally, about 38 per cent of the adult population has no or very limited access to formal financial services. This makes a strong case for poor households to penetrate the boundary of formal finance. Loans or savings can help them to accelerate consumption, absorb unforeseen shocks such as health-related issues, make households investment in durable goods, home improvements or school fees (Collins et al., 2009). Indian policy makers have always emphasized the significance of inclusive finance. Our policies like the nationalization of banks, priority sector lending, setting up of Regional Rural Banks and encouragement to co-operatives date back to 1960s and 1970s underlining the fact that inclusive finance was always a national priority. The "Financial Inclusion Policy introduced by the Reserve Bank of India in the year 2005 helped launch a 100 per cent financial inclusion drive.

In doing this, India stands out as one of the few EMDEs for which the government has a documented financial inclusion strategy that contains specific commitments. As per the 2016 Brookings Financial and Digital Inclusion Project Report on Advancing Equitable Financial Ecosystems, countries like Philippines, Peru and Colombia have only now formalized their commitments towards financial inclusion and a big part of the recent progress in financial inclusion in these countries is due to this formal setting of inclusion targets. Countries like USA have begun to recognize the impediments to using financial services in the form of expensive minimum balance requirements and high fees (e.g., for cashing checks). Increasing consideration is now being given to the promotion of an inclusive financial ecosystem by development of regulations to limit the costs associated with access to credit among low-income populations in the U.S.

The launch of the Pradhan Mantri Jan DhanYojana (PMJDY) program in 2014, one of the world's largest financial inclusion initiatives to date that promotes no-frills accounts, is one prominent example of India's national-level commitment to advancing financial inclusion.

Foreign Exchange Reserves Management

Official foreign exchange reserves are maintained in any country in order to achieve a set of objectives such as support and maintain confidence in the monetary and exchange rate policies, limit external vulnerabilities by maintaining foreign currency liquidity to absorb shocks during times of crisis, to provide a level of confidence to markets, demonstrate the backing of domestic currency by external assets and meeting its foreign exchange needs and external debt obligations.

However, the design of investment portfolios varies widely across countries, reflecting essentially the exposure to liquidity, currency, interest rate and counterparty credit risks and the scope of active management thereof. Portfolio design takes into account a host of factors such as exchange rate regime adopted by the country, the extent of openness of the economy, the size of the external sector in a country's GDP and integration of financial markets.

India has been frontrunner in terms of international best practices in the management of foreign exchange reserves. According to latest International Monetary Fund (IMF) guidelines, reserve management should seek to ensure that (1) adequate foreign exchange reserves are available for meeting a defined range of objectives; (2) liquidity, market, credit, legal, settlement, custodial, and operational risks are controlled in a prudent manner; and (3) subject to liquidity and other risk constraints, reasonable risk-adjusted returns are generated over the medium to long term on the funds invested. The broad objectives of reserve management in India runs on similar lines. While liquidity and safety constitute the twin objectives of reserve management in India, return optimisation is kept in view within this framework. It can be found even in the Preamble of the Reserve Bank of India (RBI) Act 1934, 'to use the currency system to the country's advantage and with a view to securing monetary stability'. Here monetary stability may be interpreted as internal as well as external stability, implying stable exchange rate as one of the overall objectives of the reserve management policy. While internal stability implies that reserve management cannot be isolated from domestic macroeconomic

stability and economic growth, the phrase 'to use the currency system to the country's advantage' implies that maximum gains for the country as a whole or the economy in general, could be derived in the process of reserve management .

The Reserve Bank of India Act, 1934 provides the overarching legal framework for deployment of reserves in different foreign currency assets (FCA) and gold within the broad parameters of currencies, instruments, issuers and counterparties. The relevant provisions are contained in Section 17 and 33 of the Act. The investment universe for FCA comprises deposits with other central banks, the Bank for International Settlements (BIS) and overseas branches of commercial banks, debt securities issued by sovereigns / sovereign – guaranteed with residual maturity not exceeding 10 years and any other instruments or institutions as approved by the Central Board of the Reserve Bank. Thus the parameters and boundaries for managing the credit risk and liquidity risk of the foreign exchange reserve assets have been delineated in the law itself, that too long years before.

Payment System

A robust payment system is an essential element of financial inclusion. As per various recent Global Payments Reports, India stands among the select few countries who have already undertaken about 50 per cent of the journey towards modernizing and digitizing its payment infrastructure.

The Reserve Bank has been at the forefront in adoption of technology and modernising payment systems. In adoption of certain technologies and safeguards we have been ahead of many countries world-wide, including even advanced countries. Two Factor Authentication for the 'card not present' transaction, while making payments was the first of its kind in the world. In the same vein, introduction of National Unified Unstructured Supplementary Services Data (USSD) platform for providing an interoperable USSD based mobile banking system is an important innovation in payment technologies as it links all telcos and all major banks. Similarly, Unified Payments Interface (UPI) eliminates the need of adding payee details such as bank name, branch, IFSC code and full name of the recipient while making payments and requires only to create a Virtual Payment Address (VPA) to send and receive payments. It leverages on trends such as increasing smartphone adoption and mobile-app usage, Indian language interfaces and increasing access to internet. These are further examples of adoption of frontier technologies to

improve the choice set of consumers and are significant step towards moving into a cashless economy. Many other countries are showing interest in these technologies and trying to emulate.

Bharat Bill Payment System (BBPS) seeks to integrate bill payments for various utility services which are repetitive in nature and bring interoperability in bill payments eco-system bringing both banks and non-banks under its fold. It will provide the convenience of anytime, anywhere, any bill payment facility to the users. Similarly, setting up of the Trade Receivables Discounting System (TReDS) platform is another initiative which will facilitate the discounting of both invoices as well as bills of exchange, is another example of adoption of modern payments systems to bring about faster financing of MSMEs and improve their liquidity conditions.

Payment System Vision Document 2016-18 further aims at 'less-cash society' with reduction in the share of

paper-based clearing instruments, consistent growth in individual segments of retail electronic payment systems, viz., NEFT, IMPS, card transactions and mobile banking, increase in the registered customer base for mobile banking, significant growth in acceptance infrastructure and accelerated use of Aadhaar in payment systems.

Conclusion

To sum up, Reserve Bank has been pioneering several policies which have now been termed as international best practices by the standard setting bodies. I have briefly talked about some of these but this list is not exhaustive. Some of these policies when initiated by Reserve Bank were termed too conservative or were taken as over-regulation by the central bank. However the far-sightedness of our policy makers ensured that Reserve Bank followed the prudent path howsoever less trodden.



Indian Institute of Banking & Finance Macro Research Proposals for the year 2016-17

Under the Macro Research scheme, the Institute invites proposals from research scholars from universities, colleges and banks to take up research in identified areas.

Topics for Macro Research:

The Institute encourages empirical research in which the researchers can test their hypothesis through data (primary/secondary) from which lessons can be drawn for the industry (banking & finance) as a whole. In this regard, the Institute invites Macro Research Proposals for year 2016-17 on the following topics. (See important clause on copyrights below¹)

1. Big Data Analytics: Role in designing financial products
2. Disruptive Technologies: Changing paradigm of banking
3. New Government Policies/Programmes & Financial Inclusion – Impact Study
4. Growth of NBFCs : Issues, Challenges & Opportunities
5. Outsourcing in banks – Scope & Impact
6. Stressed Account Management
7. Marketing of Financial Services
8. Financing of Infrastructure Projects: Trends, Policies & Challenges

The last date for submission of the proposal is 31st January 2017. For details regarding participation kindly visit www.iibf.org.in

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 **Mrutyunjay Mahapatra***

Digital Banking

Introduction:

What is a Digital Bank? This question needs addressing before we analyze whether we are ready to experience a Digital Bank holistically. The subject digital is very loosely spoken and understood interchangeably as IT enabled, mobility driven, analytic social media based and so on. Digital undoubtedly is driven by technology but a Digital Bank is definitely much more than these individual pieces. The current in thing is bottom up customer experience driven Banking products and services.

In this fast changing digital world, where the definition of digital itself is changing frequently, it is instructive to analyze the scenario. In doing so let me take the readers through a historic perspective as well as a few case studies from SBI to understand the status of the digital journey of the Indian Banking sector.

IT journey defines digitization of the banking sector

Information Technology initiatives of banks in India primarily started with back office computerization in the eighties by SBI and full branch computerization in the 1990s along with networked programs like ATMs and Internet Banking rolled out by SBI. With the adoption of Core Banking Solutions (CBS), automation of branch processes and centralization of operations, the predominance of IT in Banks gained further momentum.

During the last couple of decades, most of the banks have undergone the transformation to technology-driven organizations. Moving from a manual, scale-constrained environment to a global presence with automated systems and processes, it is difficult to imagine today the scenario before, when even a simple deposit or withdrawal of cash required a long wait to get over.

Banks in India are undergoing a significant transformation phase of technology advancements & its adaptations. They are now constantly aspiring to

enhance customer experience, improve efficiencies with adaptation of leaner and cost-effective operations and drive revenue by increasing the depth as well as the spread of customer engagement. Banking industry is slowly shifting from the traditional transaction efficient banking towards relationship anchored banking with emphasis on digitally reimaged products and services.

IT has now been leading as well as assisting the banking industry to roll-out products and services to the nook and corner of the world real, and virtual. It is also simultaneously dealing with the challenges, the new world and economy poses. Envisaging the expectations of new generation of Customers and designing products to compete with non-banking entities providing similar facilities is one of the very important challenges for IT.

In the last few years, IT has enabled banks in meeting high expectations of the customers who are more demanding and techno-savvy as compared to their earlier-days counterparts. They demand instant, anytime and anywhere banking facilities. Additionally, IT has been providing solutions to banks to take care of its accounting and back office requirements in shorter time and in a precise manner than ever, thus reducing loss of productivity and enabling front line staff to serve the customer more efficiently.

Many banks have modernized their services with the induction of new generation computer and electronic infrastructure. The electronics revolution has made it possible to provide ease and flexibility in banking operations for the benefit of the customer. The e-banking services like Credit Cards/Debit Cards, ATM, Electronic Funds Transfer, Mobile Banking, Internet Banking etc have enabled customers and banks to say good-bye to old systems of huge account registers and large paper based transactions and branch visit based banking.

Overall, the way banks nowadays are delivering services to their customers is changing. However, technology comes at a cost, implementing all these technological

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initiatives have been expensive though rewarding. We are now at a time when we have to deal with challenges in choice of appropriate technology, dealing simultaneously with legacy and modern parts of the IT and change management. Also the new skills in IT like mobile, cloud management and new coding practices related to security have to be integrated.

Digital Journey of Indian Banks

Digital Banking in India has in general followed the change in the Indian banking landscape from the entry of private players to increased regulatory surveillance to changing customer channels to implementing technology. All these changes have pushed the banking system to become more efficient, agile and resilient. Further with the changing banking landscape which includes newer entrants, the digital imperative is looming large.

Digitalization of banking operations is a transformational change impacting the business models of the banks operating in India and elsewhere. The digitalization efforts of banks in India are getting facilitated by improvements in eco system and favorable demographics. The government has a focus on digital India and intends to move towards a cashless economy. It has plans to provide universal access to mobile connectivity, information for all, and public internet access programs. The government is also focused on promoting e-governance. All these initiative are expected to boost the digitalization efforts across sectors.

As a result of the general trend towards digitalization, several industries including banks face disruptions from tech-savvy firms. In the banking sector, legacy banks have started to see competition from new players not only from banking but also from other technology-focused industries like telecom and retail. Licenses for full or partial banking have been granted to telecom companies, security market entities, postal service provider, bottom of pyramid players, payment service providers, technology companies, and NBFCs. As many of these players who are starting fresh could start their business on a digital platform, the traditional banks are being forced to bring in digital change.

As at this moment, major digital initiatives are being seen in the payment space, with wallets and multiple varieties of e-payments coming in. Similarly cloud computing, mobile and web banking, deployment of analytics as integral part of customer interaction is also seeing excellent momentum.

Banks like SBI are leading the pack by making futuristic investments in technology infrastructure, product development and innovation.

Digital Banking Initiatives at SBI

In SBI, we take pride in the relationships with customers, both individual and corporate, which we have nurtured over the past 200 years. We have constantly reinvented and reimaged ourselves as new technologies have emerged, and as winds of economic change have swept across the global financial landscape - keeping the customers' needs in forefront of all our efforts.

As part of our digital journey we are fine tuning our processes, developing and hiring key talent, and putting in place comprehensive technology solutions to deliver a truly delightful customer experience across multiple touch points. The digital roadmap is anchored on product innovation and service delivery.

Our digital foray is based on four key pillars, namely, Social Networks, Mobility, Analytics, Cloud (SMAC) and IoT. All these technologies form the core of Digital Banking concept which are being applied to each one of the bank's functions for creating value. However, developing a digital agenda and driving a digitally centered transformation, especially in large organizations is a complex task. We have understood that this requires an unusually high level of coordination of cross-bank initiatives spanning prioritization, resource allocation, and collaboration in execution. Additionally, in-house build & IT capabilities shall be crucial & critical. For these all our digital initiatives today are driven on a strong discipline of Project Management, which collaboratively works with business and external partners.

SBI today is the largest IT spender amongst Banks in the country. At the same time our IT spends are Capex and strategy oriented and we are ready to spend provided there is a value-add and the expenditure fits in the larger scheme of things. At the same time, de-cluttering the IT stack is an important part of the digital road map and we are also looking at this as an opportunity to remove some activities that are not adding value to the organization and to replace them with more appropriate ones. This has been especially beneficial as we are dealing with some complicated processes that involved various departments. It has helped us streamline our work flow and save time and effort.

Most banks are currently in the early stages of developing the capabilities and culture of digitally

native organizations. While the banking industry has historically sought to maintain a customer-focused relationship, the needs and wants of today's customers are very different from those of even a decade ago. At the same time, the Banks offerings in the digital space have to simultaneously cater to varying requirements of different customer groups and one solution cannot fit all.

In SBI, Data management and analytics is being used extensively for analyzing customer preferences and go towards insight driven marketing strategies for creating a value proposition for the customer and creating a win-win situation for both parties.

Today for us in SBI, Omni-channel and digital is the rule. We understand that most of the transactions can be done from their homes and customers need not visit the bank branch for anything. Technology has also changed the accounting and management system of all banks. And it is now bringing a complete paradigm shift in the functioning of banks and delivery of banking services. Multiple channels of interactions such as the internet, mobile, tablets are gradually taking customers away from traditional channels such as branches and ATMs. In SBI, more than 75% of transactions are now done in non-branch channels. Even in the branch, the presence of technology and use of new digital channels is at a very high level.

In SBI, we understand that digital technologies increase a bank's connectivity—not just with customers but also with employees and suppliers. Most of these technologies are now being adopted in some way or other at SBI, which extends from online interactivity and payment solutions to mobile functionality and opportunities to boost bank brands in social media.

Understanding that the customers prefer transactions to be done on the move, loans to be approved just before finalizing purchase of goods, SBI has now started offering pre-approved loans with different online retailer's platform. Customers expect Bank to offer solutions, which is seamlessly available that too across a wide variety of channels. We are accordingly using our leading social media presence to offer banking services across these platforms.

Digital draws on big data and advanced analytics to extend and refine decision-making. Specifically, trained professionals have been brought together and collaborations have been entered into with IIMs for Analytics at SBI. These are helping us to get better grip on high tech areas like model generation for a host of

activities. Data management and analytics is now being used extensively for analyzing customer preferences and go for insight driven marketing strategies for creating a value proposition for the customer and creating a win-win situation for both bank and customers.

We have implemented new generation and open source utilities like Hadoop for more efficient use of the technology at hand and to come out with more customized and targeted solutions keeping in mind the degree of digitization required. We are also exploring ways to deploy these tactics in various other core banking areas like sales, product design, pricing and thus designing a set of truly amazing customer experiences.

Another way of creating value through digital is by enabling straight-through processing—that is, automating and digitizing a number of repetitive, low-value, and low-risk processes.

In our digital journey we know that Quick wins shall have to coexist with big long term wins to sustain the digital experience and investments. Thus upgradation of existing processes of service delivery like Self Service Kiosks, Cash Deposit Machines are being implemented to substitute for services which required customers to visit Branches. Use of E-mail, missed call banking and profile based banking are being done to improve Customer self- service and the bank to respond more quickly to certain needs or help requests. Extensive use of Mobile Apps is also being done.

We are using live banking advisor at select SBI InTouch Branches which enables the Customers to interact with our product specialists. This channel also has features of instant sanction of certain loan products.

Data churning helps us to assess and design our offering to target specific customer, keeping in mind specific products for our not so tech-savvy customers as well.

Ability to deploy solutions in quick time is essential in the digital world to sustain competitive edge. We have deployed dedicated teams looking after our self-hosted private cloud which is getting scaled and bench marked very frequently. Thus IT Infra in the digital world is geared to provide IaaS (Infrastructure as a Service) to internal departments and verticals inside the bank.

To be able to provide facility unique identifiers to Customer for performing a lot of activities is an area which we are presently investing a lot to get the more correct grasp of the requirements which our Customer base may feel.

We are also in process of implementing Customer Relationship Management (CRM) for managing customer relationships in a better manner with more sophisticated data gathering tools. CRM as a concept is much more a human function than a technology implementation. It is not a product or a service, it is an overall business strategy that enables organizations to effectively manage relationships with their customers. CRM initiatives usually seek to fulfill several objectives. One of the objectives is to get closer to the customer by utilizing the data "hidden" in scattered enterprise databases. Examining and analyzing the data can turn raw data into valuable information about customer's needs. By predicting customer needs in advance, businesses can then market the right products to the right segments at the right time through the right delivery channels.

Other CRM objectives include increased cross-selling possibilities, better lead management, better customer response and improved customer loyalty. We are now on the threshold of implementing a unified CRM system for the State Bank group, inclusive of all the associates, subsidiaries and joint ventures, to establish a cross sell and cross service platform that meets our customers' needs at any time, on any channel.

The proposed CRM System at State Bank will yield the following benefits

Integration of experiences across customer touch-points.

- Improve efficiency and effectiveness in providing customer service.
- Customization of products and services.
- Personalized individual marketing messages.
- Enhanced ability to target profitable customers.

Thus SBI's digital journey has been based on comprehensive assessment of the various dependencies, strategies and the overall assessment of the optimal solutions

Challenges in managing the digital technologies

With all the benefits that banks have derived or likely to derive from digital transformation, a few challenges also exist. Digital adoption is facing pressure from both external and internal forces which can be categorized broadly under four main heads: Technology Infrastructure, Regulatory, Process and People. These challenges are pushing banks to constantly modify their digital strategy.

The groundbreaking re-definition of the payments space, explosion of technology-driven wealth management or strong emergence of online peer-to-peer lending solutions are all breaching the areas which were formerly banking strongholds. The nimble footedness of the new players could be a big challenge to the existing players

Non-bank attackers, ranging from large telecommunications companies to small and nimble technology players, are defining the standards for digital banking. They have a high pace of innovation and pose a unique question to banks to innovate at lightning speed while meeting regulatory norms. To compete with the tech giants and challengers, Banks require that their employees have strong technology skillsets, which currently is a challenge.

Way forward

At State Bank of India, we have always emphasized upon the quality of service we deliver, and our processes have invariably been customer focusing. That's why the concept of being 'customer centric' is not new to us. The digital age has enabled us to enhance the customer experience dimension, to supplement the service elements.

Today we have the largest retail customer base of any bank in the world. At over 300 million customers, a number equivalent to the entire population of the United States. We operate out of over 17,000 branches spread over all the states of India, and across Metro, Urban, Rural and Semi-urban population clusters. We also have a large Foreign Office network spread over dozens of countries across five continents. We service every possible financial services product either directly, or through one of our subsidiary organizations – from traditional deposit and lending services, to transaction processing and cash management, from capital markets to insurance and credits cards. All of this represents a huge challenge in terms of scale and complexity.

Digitalization shall continue to be perceived both as an opportunity as well as a challenge. For banks, execution will be key in the future. This is a playing field where the winner shall be decided based upon path breaking innovation, flexibility to adapt and successful implementation of ideas.

Banks are expected to re-define their digital roadmap and overcome the silos created by various channels, such as mobile, data analytics, cloud etc. into a 'consolidated digital plan.' They are supposed to ensure a consistent experience across all channels while

directing customers to their channels of choice. To implement customer-centric technology and operational platforms to support a coordinated channel strategy. Cultivating a customer-first culture throughout the bank is a priority.

Following shall be the continuing strategy for all Banks including SBI in taking and embedding the digital journey.

- **Adoption of new/ redefined core banking platforms-** The time is now for banks to replace legacy core banking platforms. Aging, nonintegrated legacy banking systems are becoming a liability, as maintenance costs rise and customers demand real-time access to information and services. Develop a technology strategy and roadmap that integrate the core banking platform with emerging mobile channels.
- **Upgrading or replacing online and mobile banking solutions** It should evaluate those digital banking providers that have architectures that support traditional and mobile browsers, as well as native and hybrid mobile technologies. Embracing mobile technology and incorporating social media into the marketing strategies. Deploy the right planning and support functions to facilitate successful execution of initiatives.
- **Bank Payment Hub-** Some banks are implementing bank payment hubs (BPHs) as a means of updating clunky legacy infrastructure. A BPH brings together different elements of banks' payment systems, enabling the better-management of payment flows and improving flexibility, thereby allowing banks to respond more easily and quickly to changing demands and market conditions.
- **New security frameworks for combating fraud and cyber security-** Information, digital transactions and smart devices continue to proliferate at an extraordinary rate. This also opens up potential loopholes that can be exploited for various kinds of fraud.
- **Data governance and management** will acquire the Centre stage of information strategy formulation for the facilitation of both internal as well as external regulatory information needs with appropriate standards of data quality. Standardized regulatory tools in the industry supported by a strong data governance structure will become a norm in the industry.

- **IT Governance** in the Indian banking industry has to assume the importance it deserves to seize the emerging opportunities as well as to manage the challenges. The responsibility in this regard should range from setting the IT strategy to reviewing the performance of the IT function and organization for suitable direction.

Conclusion

From India's perspective, a mix of growing adoption of smartphone and internet penetration, greater access to banking services, and a focus on facilitating seamless transactions through electronic payments will drive a truly inclusive 'Digital India' which will transform the livelihoods of crores of customers and small businesses.

Banks in India have executed digital initiatives in a fragmented manner and in silos from their peers abroad. Now since the banking sector in India is getting competitive with payments and small bank licenses, it will bring the unbanked masses under the ambit of formal banking to a higher degree and also expedite financial inclusion. The newer players and the banks have to complement each other's efforts for achieving quicker and effective digitization.

Going forward, banks are expected to collaborate instead of compete with the challengers; integrate and realign all their processes and systems; and automate their processes and push their customers towards more self-servicing, intuitive and robotic channels.

Digitization also means of fostering innovation across products and business models as well. If banks are to continue engaging with their customers and deliver a 21st century banking experience, it has become necessary that they make efforts to leverage the current offerings of IoT (Internet of Things) which is an advanced adaptation of cloud computing.

Banks and fintech startups need each other- 'Fintegration'. Identifying and engaging with start-ups/ companies at an early stage has significant benefits for a large company, not just in monetary terms but also in being able to guide the product/ concept design to best suit their own use-case. Companies who may not have the ability & bandwidth to scout for innovation independently can easily collaborate or partner with these start-ups.

As many leading companies have also managed to minimize innovations costs & associated risks by outsourcing innovation, Banks in India too should look out for the latest & most innovative technologies

emerging & then figure out which could be leveraged to derive the maximum synergy.

In other words, the digital is a journey and no one, let alone Banks can claim to be completely there. Preparedness and continuous innovation is the key and Banks are in for a long haul and have to release new offerings on a continuous basis. Look at the annexure for some of the latest digital offerings from SBI.

Annexure

SOME OF SBI's LATEST DIGITAL INITIATIVES

Leveraging on the popularity of Facebook and Twitter, State Bank of India (SBI) has launched 'SBI Mingle', allowing its customers access various banking services via these social platforms. Using SBI Mingle, our customers can do a host of banking services on their preferred social platform (i.e. Facebook or Twitter) at their own convenience. Our customers can register for this service through a simple one time process using either their account number or their ATM/Debit Card details. Upon completing the registration process they can do balance enquiry of their accounts and obtain a mini statement. They can also transfer money - both within the Bank as well as outside the Bank, request for chequebook, stop cheque, register for mobile banking, internet banking, SMS alerts. We are providing the facility to Block ATM/Debit Cards through this application.

Going forward we are also considering to provide some exciting features on this application like Pay for a Friend, Split and Share etc. We would also be using this application to interact with our customers and take their feedback to include more services on this platform in future.

Being a leader in banking innovations, we are the first bank in the country to introduce a gamut of services like **SBI Scribe Application**, **SBI Wearable Banking Device**, **SBI Digi-Voucher** - use of digital vouchers at branches, **Video Statement** - providing interactive & animated statements, Digital Cash Management system and many more.

We have launched **SBI-SCRIBE APPLICATION** which is a device which provides an innovative Digical (Digital + Physical) solution that enables Data Digitization at source. Solution that enables non-digital data (handwritten text) to be converted into digital data (system readable) using a number of digital technologies. Further, post validation of data by branch officer on desktop or tablet, the data would be moved into CBS and images into the DMS (Document Management

Server) and signature repository.

SBI Wearable Banking is a companion application for State Bank Anywhere (Retail) which has been developed for wearable devices (Android and Apple watches). On installation of the updated version of the SB Anywhere application the companion app will automatically get installed in the paired watch. Customers need to perform a one-time registration process which is to be initiated from the State Bank Wear app from the wearable device. Customer will complete the registration by setting an mPIN on their SB Anywhere application on phone. Thereafter, the customer will have to use the mPIN to access the app on the wearable device.

Going further, we have also embarked upon a journey of transforming our villages into cash less eco-system, by adopting them as SBI DIGITAL VILLAGES. The project aims at transforming the selected villages into safe, healthy and vibrant digital centres. The Bank has formally launched this initiative in 21 villages on the occasion of State Bank Day, which have moved on to the digital platform. SBI plans to bring 100 villages under this initiative across the country by the end of FY 17.

In addition, the Bank is implementing various corporate social responsibility activities like Swachh Bharat activities, solar lighting, digital lessons in schools, etc. Several activities are undertaken for ensuring 100% financial inclusion with focus on migration to AnyTime Channels through State Bank Buddy, PoS, ATMs, Micro ATMs, Mobile Banking, Internet Banking, etc. Credit needs are also addressed.

Apart from it, SBI has recently partnered with Flipkart to provide overdraft facility to pre-qualified set of customers for transacting on the e-commerce platform involving a minimum purchase of Rs 5,000.

Through all these offerings, our aim is to ultimately provide a uniform and delightful customer experience across diverse touch points. This will yield us significant benefits – in terms of greater customer satisfaction, higher referral business, greater customer engagement, and higher retention rates.

The role of Customer experience as a key business driver as well documented. A Bain study has found that a customer is 4 times more likely to defect to a competitor if the problem is service-related than price- or product-related.





Becoming a Digital Bank - Issues and Journey

 **S. Mukhopadhyay***

Banking operations moved from manual to computerised over phases with progress of technology and adoption of computerised operations in business. New functionalities and services have spread around riding over various electronic means and devices - mainframes and mobile phones, printers or e-mails, POS devices or smartchip cards, internet or ATMs. All of these platforms and devices are electronic, use computers or embedded microprocessors. We term this as 'electronic banking'. These days another term 'digital banking' is used at times, interchangeably, with 'electronic banking'. In this write up, we take a look at the issue of what, as per the current industry thought, constitutes 'digital banking' and if it is somewhat different from 'electronic banking' or is the same.

A strict definition of the term 'digital banking' is, so to say, not uniquely in vogue, though industry experts and evangelists have described their expectations and ideas on these. In sum, we may consider that when electronic versions of manual services are built for different distinct pieces of services, then may be, we are providing electronic service of banking for that piece, like cash dispensation, money transfer, etc. All or some service may be computerised at a particular time, and the overall activities step by step follow the erstwhile manual workflow, albeit over electronic channels. For 'digital banking', something more is expected, in that, the business flow and services delivered may not necessarily follow the manual workflow, but, may leverage the natural process flow and strengths of computer operations.

The above tells a little in concrete terms. We gather an impression that after enabling 'electronic banking', a little more is to get done, to move it up to what is understood to be 'digital banking'. In terms of jobs involved, making an electronic bank into a digital bank

involves more in the vision, the ways of handling and organising issues and solutions and also, realising them in the system. Digital bank may be a few steps above an electronic bank in terms of computerisation of processes and their integration, but mostly, the philosophy and structuring of systems and solutions will mark the 'extra' dimension of 'digital'. A little detailed discussion may give us a feel of this.

It may be useful to look at the thoughts found on related industry fora. One of the leading evangelists in the area holds that, a digital bank is one that is 'built with a vision to reach out to customers through digital augmentation on a 'consistent enterprise wide digital core', accessible 'internally and externally through a strata of access layers'. This in practice will mean that, a customer touching a bank's presence as a service in any platform - ATM or Social Media like Facebook, branch or Internet service, physical or digital - will reach the same uniform enterprise wide digital core and can have the same service at appropriate time in his/her desired platform. The service may be by a combination of many background processes run by bank without customer's involvement in between. The other expectations are that a 'digital bank' should have 'innate knowledge of the customer' by leveraging the data to enable 'predictive, proactive' service as the winning differentiator. Finally, the human resource for a digital bank would be that the boardroom would think in digital terms, and functionaries (of business verticals) will be able to think, plan and articulate based on digital capabilities and possibilities of serving customer needs.¹

We see that the concept of a digital bank starts from a much higher plane than considering IT to be a service department for 'digitising' services and transactions. Of course, these expectations involve management philosophy and competence levels and therefore

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cannot be identified as distinct IT deliverables in terms of hardware, software only.

Now, is this distinction important? Or, what purpose such an approach will serve? To understand this, we have to look at how our systems are getting developed and what alternatives are appearing on the scene and even disrupting the scene. While we may take this up in a later section, let us just consider how we developed banking software. The bankers with their detailed procedural and accounting knowledge of banking, first document the processes or explain them to computer software experts who go through them and come up with Application Software, and another set of computer experts set up hardware and routine processes. As all bankers are not comfortable in IT and the programmers do not know banking, developments go through few rounds of iterations, and we then get the solutions. For a digital organisation, the business manager (say banker) is expected to know the IT world reasonably well and can think and articulate much better to build up the service. In case of the organisation being more advanced as a digital organisation – the functionaries are IT experts and start understanding the services to be provided, without any legacy thoughts, and may build up the basic service as a more efficient one, and may knock off a few processes that the business people thought of, though were not of much value. This may result in a new, powerful service that may get a wide acceptance or even if not, suggest a better approach at times. As for an example of such a thing actually happening, it will be sufficient to consider that, despite banks being all around, Google or PayTM and other companies are seen to be easily capturing electronic wallet customers in large numbers. This is definitely because customers find some compelling value in that. The companies Google or PayTM cited above are only for example and there are many organisations like that – their products are called Fintech products and they are loosely referred as FinTech companies that provide financial services. The FinTechs are increasingly occupying business space in financial services like payments and remittances and stored value cards or wallets often, posing strong challenge to banks. It is held that Fintechs have focussed small portfolio, platform or products and at times their product or process operations seem lightweight and simpler so that some people may like it. At times, such products address a specific gap in the market. We shall look at this later again.

As we go back to our discussion, we note here that, products by technology based organisations, foraying into financial markets, derive their strengths partially from the fact that the people behind planning them think in technology derived mindsets and out of technology heavy knowledge base. The resulting products and services often carve out reasonable space in the market and compete with bank products strongly. The thought behind formulating the solution and the granularity of the offerings are important for users, and will be important to address to enrich the banks' digital journey.

As to the expert views on what constitutes digital banking, a different way of seeing it is encountered from some quarters. This view holds that use of digital technologies is increasing exponentially and people are adopting them easily. This changes the interaction and communication habits of people. These affect the expectations and comfort levels of people significantly. If somebody can interact with friends in Facebook and look up train timings in internet and book train tickets at the same time on the same Tablet or mobile phone sitting in his drawing room, he/she will be comfortable in sending a remittance or opening a term deposit with a bank in the same set up and operational ease. Now banks have to fit-in in this usage expectations to remain relevant, and that will involve bank presence in various platforms the present day society uses- say for example - from POS devices to social media; the banking applications need be comfortably interfacing in these platforms, and operations would have to be simple but secure. This is not a single task or single step process but a progressive one, as use of computerised media, platforms and activities are continuously spreading into new areas. The banking applications will need to adapt to this pattern continuously and rather 'fit in' to this digital life space of people. The specific tasks for this will keep changing depending on where we have reached. We shall see some evolving changes and consider their impact on banking. However, we understand from this that having the banking system on Corebanking, having all the offices or touchpoints networked, or having internet banking and ATM services available - do not complete the task but are only the beginning foundation stones in the digital journey. A bank gets progressively more and more 'digitalised' by adding digital servicing capacities in keeping with customer behavioural trends. This and the granular functional details will decide customer convenience and earn preference. This will mean that product design and workflow details will have

to take care of customer convenience, expectations and patterns of transactional behaviour, apart from product features, underlying accounting and application security.²

Another line of thought is that digital banking will necessarily be customer initiated, on customer preferred platform, seamless, straight-through, error-free, and provide utility to customer and operational comfort, lower cost, finish transactions fast, and provide enhanced services (for example – if a customer checks a proposed loan EMI, it may be useful for him to cast this in some financial planner to help assess impact of the loan on his/her cash flow etc, so that a suitable level of EMI can be examined meaningfully. Any banking application providing such a pop-up or built-in extension will be of more utility and relevance for a customer).

As we may see, a pinpointed definition of digital banking actually eludes here, but we get the feel. We may say that equipping a bank with fully computerised operations is the base of electronic banking, upon which qualitative and service content-wise alignment to customers' behaviours and expectations is the journey to digitalising the bank, and on reasonable alignment, the bank may be counted as a digital bank. Incidentally, these varieties in understandings also have a root in the basic starting point - we started from a universal bank in the back of our mind. There are special purpose banks or Fintechs now, who may be called a digital bank or financial service organisation. They are, so to say, 'narrow' banks / Fintechs as they may have one technical delivery channel only (say, mobile phone based and only providing remittance and wallet, and nothing else) and few products – compared to multiproduct, multichannel set-up of a standard commercial bank in India. Obviously, for a standard universal bank, the call for digitalisation is more complex. Another observation, as a corollary, will be that, banks being a regulated and reliable entity, each and every customer preference may not be possible to be supported, and a digital bank may not be able to serve every felt need of a customer. Floating a Special Purpose Vehicle that may serve as a narrow bank/ may be an option at times, like a cellphone / POS borne cash-in/ cash-out service by a roving agent at customer locations in remote villages – here customer preference for time slots or delivery platform may not be pragmatic, and bank has to decide to pick up one suitable option.

After considering a few dimensions of what exactly makes a bank a digital bank, it is interesting to see what all in the build-up of a digital bank changes compared to a standard electronic bank. This is at several planes.

The strong proponents of digital banking in the industry suggest that digital is not a project to take up and finish, among many others. Rather digital is the environment and so, banks need rethink and reorient, build upon digital platforms in a way most synergistic to digital technologies, and not by adding a digital layer on top of all existing layers of operations delivery. This may involve major overhaul of systems, processes and employee functional environment, content and skill requirement. To own and start such a journey, visions and decision making imperatives suggest that the board level should have champions and planners knowledgeable in digital environment trends and happenings.

Products, services and platforms planning follow next. For a normal universal bank that we find most around us, the product and delivery areas are to be enhanced and expanded over the existing ones as all strata of customers will continue to be requiring service. However value additions to existing products are necessary, particularly to cut down delays in crediting money transfers to recipients of funds transfer, issuing final receipts or reference numbers of transactions, settlements, etc. The user experience (UX as told by the new generation) in terms of on-screen operational navigation, and speed are important as also the interface with platforms and systems frequented by the new generation.

One other area where way of working will differ is the development and deployment of software. All banking software come on a base 'core banking', on which organisation specific product, functionalities, parameters etc., are built on. Actually this is a permanent feature, no bank can expect to put in place a fixed set of software and go on operating, because, many frequent changes in rules, competitive products, customer demands keep coming all the time.

The classical model for development and deployment will be in stages of understanding needs, software addition /modification, testing, checking and ultimately deploying the changed / additional pieces of software on top of what is going on. There are many developmental models depending on how it is done. Classical model was 'Waterfall' for example, and similar other models

are also there. Under this model, changes are conceptualised step-wise, end of each step leads to start of the next. While the end-state requirement is known, it is considered to be best done in steps depending on how the blocks of process flow and hardware are organised. Normally, a stable system runs on a set of software and then users or business side lets know the new needs for additions, changes, discontinuation, etc. then IT side will understand this from them through discussions and finalised written documents on the requirement. So, under this model or similar models, there will be many iterative stages, much effort is spent on documentation, and, in case, later it is found that some realities were not correctly understood earlier, there will be repeat of previous stages so that a long time is required for any changes to be implemented. Now under the digital banking edge, these may not be preferable because, changes are desired to be implemented quickly, and there are many tools to help developing and recording concepts and documents. Currently 'Rapid' or 'Agile' methods of developments are preferred. Under these approaches, instead of many written iterations of documentation, discussions, face to face interactions, developments immediately and showing prototype or changed screens or functions in parallel and gaining approvals, etc. are done. The developer and the business side analyst or product owner representative may spend longer time together, have more discussions and hands on work may happen along with less paperwork, shorter development cycles, splitting jobs and developing different parts parallelly, can all happen. Earlier, a bunch of changes were put together and released or 'applied' on top of the present set, according to decided release cycles – often monthly, or even quarterly. This ensured stability of operational features of the system, but caused huge delay for any changes required in the system functionalities by the business side. Under the Agile or Rapid methods, the deployments are not necessarily bunched for a month-end or quarter-end release. It can be daily or weekly. There are constructs, tools, and approaches to help such agile developments that are used by the software people now.

Another area of required change is surfacing slowly as we move more and more into an integrated digital mode. This is about servicing and maintenance of many platforms of many ages. Actually this problem is much less in India compared to the Western countries where the computerisation started much earlier. We may have

old COBOL programmes, old mainframes, multiple Operating Systems and Servers, and interfaces stage-wise between them. We may have a 1990 mainframe at the centre, and mobile phone based internet operations at the outermost layer. Servicing, maintaining and suitably amending, utilising the older hardware and software can become challenges due to lack of availability of expertise. Present day technologies give us the powers of providing many virtual workstations or even servers very quickly, but the related expertise is necessary. Often therefore, the older hardware platforms demanding much higher manual and command level management, can get retired and new set up obtained in virtual format may be from a 'cloud' for cost and manageability ease. This will again call for marginal changes in software and operational controls. Operators and users need be suitably trained as also much work may get moved out to providers - slimming down in-house work, but creating dependence, that need be necessarily managed. The more new and advanced the systems become, the more versatile tools get working in IT; these will demand native IT experts rather than IT-trained bankers who majorly handle IT in banks today. This trend will only accentuate, and banks will be requiring to hone in-house capacities to manage third party providers effectively, the providers being tech savvy. This is not a new call, but with digital functionalities being more of a core need now, this calls for reasonable knowledge improvement on the bank's side, may be by absorbing core technical cadre or a different service provider only for managing the outsourced tech-services.

The last piece of difference will be in the need of harbouring some more knowledge resources in the bank. These will not be in the banking or technology domains. As we have noted earlier, digital banking seeks to have an innate view of customer based on customer data as real-time as possible. For this to happen, Data Mining, Business Intelligence, Analytics, and handling Big Data are required. Many banks are already having Data Mines, Data Marts, etc. but the knowledge and vision as to how to organise these, what data to keep in what order, what models and variables are important for the Analytics, etc., decide the value derived from use of these. For this, knowledge in these fields are important, which are not normally in the domain of bankers or hardware experts or software developers. Quite a number of banks in India are therefore started recruiting experts in these areas. Expertise of Data Scientists who can identify patterns and trends - out of huge volumes of data, also will slowly

become important. These knowledge based manpower will be quite helpful if the quality of digital services are to be of value to both customer and banks, as also, even for bank management to assess the effectiveness of the efforts taken by the bank in this field.

There are more interesting items around a bank in its joining the Digital league, in the environment. Let us look at some of them. As of now, competition from banks and non-banks (the Fintechs, say) in unexplored areas or even previously banked areas pose serious disruption in the market and the banks need to face them and continue to remain relevant in the market. Who are such players and what are such products or areas? Actually the crowd is growing, but for our purpose we shall only mention a very few important ones. These new players or products or concepts are catching attention of people for financial services, and banks need to decide to join the space, or join hands with these players, or build up viable alternatives which may not be so easy. Let us look at a few Fintechs: -

FinTechs

Fintech denotes new applications, processes, and models in the financial services industry. The area of involvement can be payments, financing, providing information and matching, advisory, planning, modelling, etc. The transaction space can be B2B, B2C, C2C, C2B, any of them. The business domains can be banking, insurance, payment services, advisory, etc.

There are a huge number of players now. To name a few, without any specific order of parameters, we mention -

Adyen - a Dutch company founded in 2006, is a Fintech, providing payment services over laptops, mobiles and stores. Its valuation now is \$2.3 Billion. It handles payments related to FaceBook, Netflix, Spotify and a few global social media services.

Transfer Wise - a British firm, valued above \$ 1 Billion, provide peer-to-peer money transfer across countries and currencies at costs. Currency Cloud is another such firm – doing it for business organisations – annual transfers above \$ 15 Billion. Both charge lesser than banks, transfer money faster than them.

Nutmeg is a British start-up, regulated by UK's Financial Conduct Authority, and provides online investment service. They are going to employ 'Robo' financial advisors online.

iZettle in Sweden (and Square in US) are servicing payment processing at small shops / companies who are their clients, but do not accept debit/credit card payments to trim costs. They provide a card reader to the client company, that can plug into a PC/tablet/phone and then the payments can be processed from these mobile devices by the client.

WorldRemit, a British company provides remittances over mobile phones to bank accounts or mobile wallets across the globe faster and cheaper than banks. The mobile number itself will be the account number into which money can be sent. The recipient has to encash the received remittance from affiliates of this service.

Funding Circle - provides and manages a platform for peer-to-peer lending. Investors and small /medium business needing funding can be matched and funding by the investors co-ordinated to facilitate peer-to-peer lending. Even British Business Bank is on board as an investor here along with thousands of small investors.

Zopa is also another such lending product.

Kabbage – takes funding from bigger banks (and also investor funds) and provide loans to SMEs in matter of hours.

Lenddo - Alternative credit scoring service using social media

Ripple – Payment system using Distributed Ledger Technology. (evolving).

Coming to India, we have the names like –

PayTM – provides e-commerce, payments with banks, payments through wallet

Freecharge – mobile payments thru wallets, mobile recharge

Mobikwik – mobile payments (wallet)

Bankbazar.com – online marketplace to look for loans and insurance products from their respective players

Lendingkart – Online lending platform for SMEs

PolicyBazaar- Online lending – SMEs

Vistaar Finance – Online lending – SME

Capital Float - online lending – working capital – SMEs (interest 16-19%)

IFMR Holdings – Financial Inclusion – (of the nature of refinancing through its lending wings to entities for onward lending to ultimate customers)

MSwipe – Merchant Acquirer , mobile POS solution provider

Citrus Pay – Mobile payments; Payment Gateway.

The above names are only a few of hundreds of them operating in countries and some across many countries. The most pertinent observation is that they are operating in the payment and lending space by snatching away the same from banks. They have observed some gaps in the fin-service space and built specific focussed solution for the same and carved out the related market. This suggests that the banks' electronic services are not complete, convenient or advantageous enough and these products have actually considered customer convenience and pain-points better than the banks. These Fintechs are providing disrupting products and services in the market, and the usual banking business turf and product suits are getting seriously challenged. This is the pointer that tells that the banks have, despite computerising and providing electronic banking, not yet fully fit into the digital servicing needs and acceptability of customers. The more they can do by improving the operational details, the product details, the business process and approval methods, the more it may be considered that they are moving up as a digital bank in tandem with digital services and usage maturity of the society. It is being observed that Fintechs re-imagining banking are doing a good job that gets preferred in the society over banks' services. In a December 2015 survey by 'Smart Money People', it was found that customer satisfaction on Fintechs' services scored more than that of corresponding banks' services. This suggests us that there are inefficiencies in the bank models or processes that must be addressed to gain back market , and failing that , banks need to partner with Fintechs to mature on their journey to sustain as digital banks.

In terms of technology , as we observe above, the solutions available in the market span over a wide spectrum of financial activities , like - Mobile based payments, card based payments (contact card, contactless NFC card, mobiles with NFC add-on working as card / POS), loans, peer to peer loans (this will include crowd-funding) with reasonable operational accounting and co-ordination load at the Fintech's system, etc.

In terms of regulations – most countries have helped with accommodating regulations with progressively lesser restrictions on these activities. We are aware of the mobile, card and Aadhar based payment eco-system in India.

Banks are partnering with these niche technology companies for technology. The way forward seems to be to keep informed, open up, partner, manage changes, co-operate, co-ordinate, think ahead.

As to innovation and pioneering ideas, an observation in the industry is, banks being heavily regulated normally do not stretch the boundaries of risk-prudence and compliance so easily. However non-financial companies are often seen to stretch out in these areas, push the boundaries and claim for more space from the Government, regulators, etc, and, often the society and Government, accommodate them, may be in steps, progressively. So, there is a positive effect of the techies and non-bankers pushing the boundaries of digital banking, for the whole society. We take just two examples in the financial domain that bypassed the banking system but in good use, or going to spread wide :-

M-Pesa - M-Pesa is a celebrated and vastly used cellphone based money transfer system in Kenya, by Vodafone subsidiary . Vodafone had more than 83% of all cellphone network in Kenya, and the user base was huge covering the whole country. Under this, they put franchisees (small outlets) where people come to remit to another Vodafone cell number. De-facto the money deposited is converted to talk time, credited to the recipient phone number. Messages are sent by Vodafone to both. The recipient phone owner presents his/her cell and message details to his/her local franchisee, who technically converts the talktime to money ('redeem' the talktime) and pays the recipient cash, if asked. In fact, the money equivalent favouring the recipient phone can be kept there (Vodafone server remotely), and seen by a message query, and the recipient can transfer money similarly out of this, say to a shopkeeper for goods purchased. This is a widespread talktime treated as money wallet , provided by a Telco. The franchisees deposited some security money to Vodafone which were all put in a trust account in a bank in Kenya by Vodafone. People's floating money originally had no money equivalent deposit in a

bank, neither a bank wallet was involved. However the society and Government supported it, and presently this is the biggest remittance system in the country, carrying a sizeable part of the GDP of the country on it. The model has been emulated in other countries after local regulatory controls and corresponding changes etc., including in India.

The interesting observation is - a widespread telephone network with its speed and reach, a less widespread banking network, social situations discouraging carrying much cash, a background system of telephone numbers, talktimes, could, with minimum tinkering and very low additional cost – lead to a very popular product people were eager to use and pay for. The synergies of this telephone system cannot be matched by banks and bank controlled risk management was not the starting phase considerations. This out-of-the-box plan to garner more income and more customers for a Telco contributed very significantly to the money movement possibilities of the country benefiting the welfare of a large population. However, this illustrates how conceptualisation and use of a market gap and opportunity can be leveraged. Banks, if they display the same agility, can devise new products pushing the borders of what is existing.

Now in our country banks look to the strengths of this arrangement (others have emulated this here), to be partnered to provide the remittance reach for Financial Inclusion. In our country big Telcos started their Mobile Money Transfer systems under some controls and supervision regime for the last few years. Incidentally banks' BC based remittances are also there on POS and mobiles. There was a big learning for all banks in this globally, and the best way for banks has been to partner such Telco products, with control by the regulator.

Bitcoin and Block Chain

Bitcoin is software created crypto currency having money's equivalent maintained in a few secured systems globally, and after many experiments seem to have stabilised from its earlier image of underworld money to use in society. It is still in nascent phase , compared to money. One can pay by bitcoins to another user having a bitcoin stored value account. This is going to have a huge impact in the sense many transactions can go out of banking systems, GDP computations and economic planning of countries ,etc. Banks need to decide and act as to how to handle this .

Block Chain is a further more nascent product , a

distributed ledger technology , where monetary or equivalent exchanges can get recorded in distributed databases securely and can be further used from there. No operating system is around and countries have , including India, signalled for looking into its gainful use in the economy. Once this gets operational, payment and settlements can be faster, and outside banking systems , including for cross-border payments.

The combination of the two above has a potential to render banks redundant , and therefore these two disruptive technologies need be partnered and internalised subject to acceptable risk management, for a digital bank to survive and continue to remain digital.

One option to bypass the heavyweight banking legacy and deliver digital service may be to open a new bank with narrow objectives of a few services operating on a few platforms, like mobile phone based payments, money transfers and shopping from say, the comfort of a social media online environment or a separate environment of the banking service itself, as desired by customers. There are a few banks like that already (Fidor Bank, Moven Bank, Simple Bank, Number26, etc.), with limited products, services and platforms. One may please look up in the net for information on these banks.

We have seen that banks are to provide electronic banking as a baseline, hone and improve strengths in digital technology graduate to become a digital bank. This may be a perpetual journey keeping in tandem with technology absorption and preference of the society, in the country and globally.

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Digital Payment Systems: Death Knell for Cash? A Behavioural Economics Analysis

 **Dr. Manas Ranjan Das ***

Contextualization

Starting from the seminal work by King and Levine (1993) to Rajan and Zingales (2004), the consensus is that financial development promotes growth. As the core part of the financial system, banks do this basically through 'financial intermediation', thereby becoming transaction-intensive business units. A robust and efficient payment system serves as the bedrock for smooth execution of financial transactions. Conversely, an inefficient and unsound payment system can trigger panic among the economic agents, especially the retail participants - the major building block in a financial system - that may precipitate in bank runs, thus imperiling financial stability and economic growth, but more significantly, the public confidence in the banking system, sometimes irretrievably. Therefore, banks are considered 'special'.

World-wide, the payment systems are dominated by banks, although non-banks have recently entered the turf, rather exuberantly, with the advent of the Digital Payment Systems (DPS). Over time, volumes and values of transactions have multiplied astronomically. Simultaneously, inventions and innovations in technology have facilitated banks to meet the humongous demand for faster, accurate, cost-effective, hassle-free and fraud-proof modes of transactions, worldwide. Universally, banks are adopting the digital technology with tremendous zeal and agility. In this context, a Massachusetts Institute of Technology (MIT) paper (2016) characterizes a bank's functions as "mathematical and technological in nature" which are "well suited to be digitized".

The evolutionary trajectory of the modern payments systems includes introduction of: (a) plastic (credit) cards (mid-1960s), (b) ATMs (late-1960s to early-1970s), (c) telephone banking (1980s), (d) point-of-sale (POS) debit services (1985) and (e) Web-based services (1990s). The recent developments include usage of portable

devices such as cellular phones, smartphones and tablets, besides digital currencies like Bitcoin. Mobile banking (m-banking), the latest flavour, was pioneered collaboratively by Paybox, a German company, and Deutsche Bank in 1990. m-banking services, which initially focused on the advanced European economies, gradually forayed into the developing economies, with Kenya becoming the pioneer in 2007 (M-Pesa).

Digital banking is evidenced to have benefitted the users, banks and ultimately the overall financial sector (e.g., money transfer and Financial Inclusion) and economy in several prominent ways. However, risks abound too.

Recent Trends

World Scene

According to a Capgemini-BNP Paribas report (2016), in 2014, the number of global non-cash transactions stood at over 387 billion - CAGR of over 8% during 2010-14. The shares of the developing and mature economies were in the ratio of 30:70. However, notably, the developing region grew at a much faster clip (nearly 17% CAGR) than the mature ones (5%). Within the developing economies, the emerging Asia posted the highest growth (almost 24%). Even among the mature economies, the Asia-Pacific outgrew Europe and North America each.

The country-wise distribution of non-cash transactions revealed that although the top 10 countries - USA, Euro Zone, Brazil, China, the UK, S. Korea, Japan, Canada, Russia and Australia - together commanded nearly 85% of the total number of non-cash transactions, their combined share increased only 14 bps during 2013-14. Conversely, the combined share of the bottom 90 countries declined 14 bps and their transactions grew at 7.9%, over 117 bps lower than the top 10. Within the top 10 countries, the US and Eurozone combined dominated with half of the total number of transactions, but between 2013 and 2014, their share fell solid 200 bps.

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In stark contrast, China improved its share by whopping 157 bps and in addition, experienced a growth of over 47% during 2013-14 buttressed by its strong economic growth, rapid Financial Inclusion and increased number of service providers. China was followed by Russia whose share swelled 40 bps and growth increased over 29%, during 2013-14. India, which did not figure in the top 10, witnessed a growth of 13.4%, although it complemented China to escalate the region's growth.

During 2015, the volume of global non-cash transactions is estimated to have grown by 10.1% to reach 426.3 billion with the emerging Asia powering the growth.

Indian Scene

RBI has spearheaded the modernization of the Indian payment system gradually, but steadily and comprehensively, through its various Vision Documents since 2005. The Vision Documents for 2012-15 and 2018 emphasized on "electronic payment systems for ushering in a less-cash society in India". Besides the legislation of the Payment and Settlement Systems Act, 2007 and introduction of several electronic modes

of payments such as ATM (1987), Electronic Clearing Service (ECS) (1990s), Real Time Gross Settlement (RTGS) (2004), National Electronic Funds Transfer (NEFT) (2005), m-banking (2008), Immediate Payment Service (IMPS) (2010), RuPay card (2012), Aadhaar Enabled Payment System (2016) and Unified Payment Interface (2016), 2 institutions, namely, the Clearing Corporation of India Limited (2001) and the National Payments Corporation of India (2009) have emerged as the backbone of the payment systems.

The Paper

In this paper, cash and currency are used synonymously and referred to paper currency (excluding coins) held with public - one of the constituents of Narrow Money (M_1) or Broad Money (M_3) - unless otherwise mentioned. All the data used in the subsequent discussions are sourced from the RBI database unless otherwise mentioned. During the half century (1965-66 to 2015-16), currency with public expanded at a CAGR of 13.35%, with much of the growth sprouting during the latter half, i.e., 1990-91 to 2015-16 (14.59%) compared to 1965-66 to 1989-90 (12.03%).

A snapshot of the present structure of the payment system in India is presented in Table 1.

Table 1: Structure of Payment System in India, 2015-16

Paper Clearing (7.1%, 4.0%)	Electronic (92.9%, 96.0%)	
	Bulk (0.7%, 89.9%)	Retail (92.3%, 6.1%)
1. Cheque Truncation System (CTS)	1. RTGS (0.6%, 50.5%)	1. ECS (20.2%, 4.5%)
2. MICR Clearing	i. Customer Transactions	i. ECS DR
a) RBI Centres	ii. Interbank Transactions	ii. ECS CR (includes NECS)
b) Other Centres	iii. Interbank Clearing	iii. EFT/NEFT
3. Non-MICR Clearing	2. CCIL Operated Systems (0.02%, 39.4%)	iv. IMPS
	i. CBLO	v. National Automated Clearing House (NACH)
	ii. Government Securities Clearing	2. Cards (64.7%, 1.4%)
	a) Outright	i. Credit Cards@
	b) Repo	ii. Debit Cards@
	iii. Foreign Exchange Clearing	3. Prepaid Payment Instruments (PPIs) (4.8%, 0.02%)
		i. m-Wallet
		ii. PPI Cards*
		iii. Paper Vouchers
		4. Mobile Banking (2.5%, 0.2%)
Total Transactions: Volume = 15,516 million. Value = INR 2,050,117 billion.		

MICR – Magnetic Ink Character Recognition. CBLO – Collateralized Borrowing and Lending Obligation. Figures in brackets give shares in the total transactions in the payment system – the first by volume and the second by value. @Usage at ATMs and POS. *45 banks and around 47 non-banks currently operate in this segment.

Retail DPS Performance

Table 2 depicts the progress of the retail DPS by different modes of transactions for 2011-12 and 2015-16.

Table 2: Indian Retail DPS – 2011-12 to 2015-16

(Volume in million and Value in INR billion)

Mode	2011-12		2015-16		CAGR	
	Volume	Value	Volume	Value	Volume	Value
Retail Electronic Clearing						
ECS	286.2	2,671.70	263.8	2,710.90	-2.00%	0.40%
NEFT	226.1	17,903.50	1,252.90	83,273.10	53.40%	46.90%
IMPS	0.1	0.4	220.8	1,622.30	603.80%	688.30%
NACH	86.5	214.8	1,404.10	3,801.80	302.90%	320.70%
Cards Transactions						
Credit Cards	322.2	978.7	791.7	2,437.00	25.20%	25.60%
Debit Cards	5,409.50	14,532.00	9,247.00	26,960.60	14.30%	16.70%
Pre-Paid Instruments						
m-Wallet	32.7	10	604	205.8	164.30%	9.30%
PPI Cards	33.8	49.6	143.5	253.8	62.00%	4.90%
Paper Vouchers	0.5	19.6	0.6	28	5.00%	1.10%
m-Banking						
	25.6	18.2	389.5	4,040.90	97.60%	286.00%

Note: Data on PPI and NACH shown under 2011-12 relate to 2012-13 and 2013-14 respectively and the respective CAGRs computed since then.

The relatively *de novo* modes like IMPS, NACH and m-banking posted excellent pick-up over the years in terms of both volume and value, m-wallet and PPI cards revealed very good volume performance indicating mass appeal.

The relatively old modes reflected sluggishness to some extent. In the cards segment, although credit cards grew at faster rates than debit cards, in terms of absolute number of transactions and values, the latter surpassed the former indicating greater usage.

During 2011-12 to 2015-16, the volume of ATM and POS transactions posted CAGRs of 24.4% and 19.1% respectively. There was a dramatic change in the penetration (i.e., volume or value of usage at ATM or POS/total volume or value of usage at ATM and POS combined) of debit cards at POS – between 2011-12 and 2015-16, it jumped 737 and 252 bps in terms of volume and value, respectively. Contrastingly, the penetration of credit cards by volume fell marginally and by value increased just 11 bps. This implied increasing popularity of debit cards at POS terminals reflecting the people economizing their expenditure and banks' endeavour to popularize debit cards.

Statement of the Research Problem

Thus, it can be said that the future payment system will be increasingly digital, and therefore, it is being debated whether, along with increased digitization of the financial intermediation function, would make banking 'faceless' or economy 'cashless'. Bill Gates once said, "We need banking but we don't need banks anymore." Can we say the same about cash? This is precisely the research problem that this paper investigates, especially in the Indian context.

Will Cash Be Dead?

A Behavioral Economics Analysis

India is the largest producer and consumer of currency notes, next only to China. Currency continues to be the dominant means of payment with the total value of banknotes in circulation placed at INR 16,419 billion as at March-end 2016 - CAGR of 14.6% between 2001-02 and 2015-16. Three denominations, i.e., 1,000, 500 and 20 posted exceedingly high CAGRs at 37.7%, 19.0% and 14.2% respectively relative to the other denominations.

In this section, it is argued that India has a long way to go before digital payments move up substantially to push down the cash-use. Our argument derives from:

- A. Cross-country evidences
- B. Weak trade-off between cash and digital modes hitherto
- C. Strengthening, instead of diminishing, of the constellation of factors that have been traditionally responsible for high cash-use and
- D. Simultaneously, unlikelihood of the technological impeters fading soon.

We discuss these below.

A. Cross-country Evidences

Europe

There have been several studies on the effect of non-cash payment instruments on the currency demand in the EU countries at different periods of time. For the sake of brevity, the findings are summarized here. The impact varied as per the country, central banks' regulatory stance, citizens' economic habits and behaviour, transaction sizes, types of goods and services purchased, place of spending and development status of the card or electronic payments infrastructure. Conclusion – yes, currency-use declined, but not below certain levels.

USA

The availability of alternative payment methods, *inter alia*, did influence the currency-use of for transactions (Roseman 2010). Williams (2012) observed that despite having electronic transaction means, during the late-2008 banking system crisis, many Americans got

scared of losing their savings and trusted hard cash, preferably in high denomination notes (HDNs). Even after the crisis ended in 2009, the upsurge continued unabated owing to low interest rate. He further argued that not only the events in the US but also those in other countries, e.g., Europe's financial crisis affected the US currency demand.

New Zealand

Vincenzo, *et al.* (1997) attributed the unexpected increase in currency demand in New Zealand, despite strong electronic retail payment systems, to ATMs making cash accessible to the public on 24-hour basis. Boaden and Langwasser (2009) attributed the decline in the transaction demand for cash over most of the 2000 decade to greater use of debit and credit cards. The 2007-09 crisis also resulted in increased demand for cash as a store of value in HDN, which, however, returned to normal levels shortly after the government announced the Retail Deposit Guarantee Scheme.

Other Countries

Bagnall, Bounie, *et al.* (2014) measured consumers' cash-use in 7 countries, namely, Canada (2009), Australia (2010), Austria, France, Germany and the Netherlands (2011) and the US (2012) [Bracket indicates the survey year]. They found cross-country differences in the level of cash-use. Cash had not disappeared as a payment instrument, especially for low-value transactions. The cash-use was strongly correlated with transaction size, demographics and POS characteristics such as merchant card acceptance and venue.

Table 3 provides a glimpse of cash-use in India vis-à-vis a few other countries.

Table 3: Currency in Circulation: Cross-country Comparison (2015)

Country	Total (USD billion)	Per Inhabitant (USD)	As Ratio of GDP	As Ratio of Narrow Money
Australia	55.28↓	2,319.9↓	4.64%↑	23.53%↑
Brazil	57.75↓	282.4↓	3.82%↑	67.43%↑
Canada	58.78↓	1,640.8↓	4.08%↑	9.78%↓
India	250.80↑	195.5↑	12.25%↑	67.68%↑
India's Position	4th	14th	2nd	1st
Japan	856.55↓	6,738.6↓	20.66%↑	15.96%↑
Korea	73.92↑	1,460.3↑	5.56%↑	12.23%↑

Country	Total (USD billion)	Per Inhabitant (USD)	As Ratio of GDP	As Ratio of Narrow Money
Russia	117.05↓	799.5↑	10.56%↓	51.47%↓
Singapore	27.18↑	4,910.9↑	9.55%↑	23.95%↑
South Africa	6.15↓	113.4↓	2.39%↓	6.71%↓
Sweden	8.59↓	872.2↓	1.73%↓	3.17%↓
Switzerland	76.31↑	9,213.5↑	11.76%↑	13.58%↑
Turkey	36.06↑	458.0↑	5.37%↑	33.65%↓
UK	103.09↑	1,583.3↑	3.72%↑	4.38%*↓
USA	1,424.92↑	4,441.1↑	7.90%↑	45.28%↓
Euro Area	1,210.42~	3,570.8~	10.63%	16.77%↓

*Relates to 2014. ↑ and ↓ denote the general trend of the variable over 5 years. ~ indicates uneven trend. Source: Bank for International Settlements Database.

Currency in circulation in India was relatively very high compared to the size of its economy. Similarly, it constituted a very high proportion of narrow money. Currency per inhabitant was low due to large population base coupled with high income inequality. Even in terms of total value, it was the 4th largest among the 15 countries, preceded by such large economies like USA, Euro area and Japan.

B. Cash and Digital Modes: Weak Trade-Off

The following metrics are used to compute the extent of

substitution of cash by digital modes:

- Currency-use per unit value of transactions done through digital modes (Table 4)
- Average amount per transaction in digital mode (Table 4) and
- YOY elasticity of replacement of cash with digital transaction.

The results are discussed below.

Table 4: Currency-use per Digital Transaction Value and Average Value per Digital Transaction

Modes	Currency-use per Digital Transaction Value (INR billion)			Average Value per Digital Transaction (INR)		
	2011-12	2015-16	CAGR	2011-12	2015-16	CAGR
Retail Electronic Clearing						
ECS	0.42	0.78	16.90%	9,334	10,278	2.40%
NEFT	0.06	0.03	-20.10%	79,184	66,465	-4.30%
IMPS	2,662.71	1.31	-85.10%	4,667	7,347	12.00%
NACH	4.88	0.56	-66.20%	2,483	2,708	2.20%
Cards						
Credit Cards	1.14	0.87	-6.60%	3,038	3,078	0.30%
Debit Cards	0.08	0.08	0.50%	2,686	2,916	2.10%
Pre-Paid Instruments						
m-Wallet	117.28	10.29	-55.60%	306	341	3.60%
PPI Cards	23.66	8.35	-29.30%	1,470	1,769	6.40%
Paper Vouchers	59.9	75.77	8.20%	40,439	49,784	7.20%
Mobile Banking						
	61.45	0.52	-69.60%	712	10,375	95.40%

Note: Data on PPI and NACH shown under 2011-12 relate to 2012-13 and 2013-14 respectively and the respective CAGRs computed since then.

Highlights

- All the *de novo* digital modes of transactions were successful in substituting for cash-use to various extents (except Paper Vouchers).
- Within the cards segment, while credit cards reflected some success, debit cards remained stagnant. NEFT was successful to a modest extent.
- Average amount per transaction remained not only low but also grew weakly in respect of all the *de novo* modes, and even in the cards segment.
- YOY rate of substitution of cash by digital mode did not throw any favourable evidence and lacked any distinct trend.
- m-banking is hardly crystallized as evidenced by the fact that during March 2016 (latest available), out of 65 banks only 5 (1 PSB and 4 new private) accounted for 83.5% and 91.3% of the total transactions in volume and value terms respectively. Further, the average amount per transaction was INR 11,577 (Low – INR 169 and High – INR 52,831).
- Thus, it can be concluded that the digital modes did substitute cash-use for transaction purposes, but the impact was yet to acquire sufficient width and depth. This view is indirectly supported by the fact that RBI still finds the benchmark ratio of 93% of currency in circulation for estimating currency holding by households, which was introduced way back in 1985-86, as robust.

C. Pro-cash Factors

Let us investigate the factors that have been responsible for high cash-use in India, thus retarding the progress of digital modes. It is argued in this paper that in addition to the macroeconomic factors such as GDP growth, inflation and interest rate, it is the behavioural and psychological factors, in conjunction with the completely elastic supply of currency in adjusting to its demand, that overwhelmingly influence the magnitude and frequency of both volume and value of cash-use across the country (Vasudevan and Menon 2003). These influencers are grouped as: (a) Perennial, (b) Seasonal and (c) Random.

Perennial Influencers

- High incidence of financial exclusion - 53% of adults without a bank account – (World Bank Findex Survey 2014).
- Year-round marriages and festivals involving considerable cash dealing - wedding industry estimated at INR 1,426 billion, annual growth rate - 20-25%.
- Hefty donations, predominantly in the form of cash and jewellery, at temples.
- Highly active unofficial money remittance channels, both within and outside the country - 57% of remittances from abroad through unofficial channels – (PwC-ASSOCHAM 2015).
- Dominant unorganized sector dealing predominantly in cash.
- Gargantuan “shadow economy” necessitating cash-use at several stages of its mutation - estimated at over 20% of economic output (World Bank 2010).
- Huge unemployed youth resulting in greater volume of cash-use, albeit in small denominations.
- Finally, traditional mindset to hold and show off cash as a determinant of socio-economic status and power, mistakenly though.

Over time, some segments/activities that have permanently remained cash-intensive are: (a) Entertainment industry, (b) Real estate, (c) Transport industry (railways and roadways), (d) Pre-paid mobile (monthly recharging estimated at INR 121.20 billion during Q4 2016 – YOY growth 28.5%), (e) Healthcare and (f) Daily conveyance (public and own).

Some of segments that have recently evolved and have potential to push up cash-use include (a) Cash-on-Delivery-dominant e-commerce and (b) expanding market for used or refurbished products, especially vehicles.

Seasonal Influencers

- During April-June – wheat procurement receipts. During October-March - festivals, rice procurement receipts and increased agro-based industrial activities (Bhattacharya and Joshi 2000).

- May-June - peak tourism season entailing cash transactions from beginning to end, especially on shopping. This is besides the foreign tourists who spend in local currency.
- Q4 surge in cash for reserving admissions for children in schools and admissions in summer coaching classes.
- Engagement of casual labourers for construction and house renovation activities spreading over winter through summer who are paid in cash.
- Migrant workers travelling home in summer carrying cash.
- Offices, both public and private, hastening up their expenditure in Q4 with a view to fully utilizing the funds allocated to them for the financial year.
- Indian Premier League, held towards the financial year-end, with huge 'black' money involved in matches as well as betting.

Random Influencers

- In highly cash-intensive Indian elections, not only the political parties but also the government turns out to be a big spender to conduct the elections. The issue had emerged prominently towards March-end 2016 attracting the attention of the then RBI Governor as also the Chief Election Commissioner. Our independently arrived results, which are also in line with the RBI conclusions,¹ confirm that the elections push up the cash position in the economy in a very big way, and with leads and lags.
- Peaking of the drought situation in 2015-16, which brewed for the preceding 2 years affected over a quarter of the population, led to (a) increased spending by farmers on water, adopting drought-resistant techniques and raising drought-resistant crops, (b) villagers selling their household assets and migrating to other areas and (c) increased remittance from their friends/relatives working in urban areas.
- Drastic fall in YOY remittances inflows to India in 2015 (by USD 1,479 million) and by another USD 3,460 million in 2016 (estimated) (World Bank

October 2016) meant that the recipient families drew from their NRI accounts to maintain livelihood and make contractual payments.

- Cash-intensive national-level government-sponsored social programmes, launched 2014 onwards (e.g., Swachch Bharat Abhiyan)
- Expected increase in income from the 7th Pay Commission and one-rank-one-pension awards might have spiked the current expenditure a part of which could be in cash.

D. Technology-related Impeders

- Low Connectivity standards – in the World Economic Forum's Infrastructure and Digital Content Readiness Index (2016), India with a score of 2.7/7.0 occupies 115/143 position.
- High cost of acceptance infrastructure, and low transaction volumes and ticket sizes at smaller merchants hampering the viability for banks.
- Still low penetration of smart phones – below 30% of total mobile phones (statista 2016).
- Lack of speedy local innovation.

Cash to Digital: The Rationale

- High cost of cash-use. India's cost of cash is 1.7% of GDP (2015) which is much above that for many developed economies such as Australia (0.8%) (2008), Sweden (0.5%), Denmark (1.0%) and Hungary (1.1%) (The latter 3 relate to 2009) (VISA 2016). A significant part of the cost of cash-use is borne by the households, and small and micro enterprises.
- Reining in the large and unstoppable 'shadow' economy, let alone its elimination. Quantitatively speaking, the foregone tax revenues from the 'shadow' economy are estimated at 3.2% of GDP (ibid).
- Swiftly replacing cash transfers of government benefits to the poor with digital transfers is inescapable, as the former has led to waste of taxpayer's money. This will help accelerate the attainment of complete Financial Inclusion.

* ¹RBI, Annual Report 2015-16, Box 11.3

- Millennials' revealed preference for digital modes, despite the technological risks, as revealed by a recent 12-country joint study by Public Affairs and Microsoft.
- Finally, in a globalized economy, no country can afford to remain isolated from any positive global movement such as the digital revolution. Therefore, 'The Better Than Cash Alliance', a partnership of governments, companies and international organizations based at the United Nations, has been constituted with a view to fast-tracking the transition from cash to digital payments to reduce poverty and drive inclusive growth.

Policy Issues

A 3-pronged strategy is suggested to enhance and embolden the impact of DPS on cash-use. These are: (a) Push strategy, (b) Pull strategy and (c) Ground preparation Strategy.

Push strategy aims at motivating the people to minimize their cash transactions and avail of the services provided by banks for non-cash transactions.

In this direction, the first, but the most vital, step is to expand the outreach of the Financial Inclusion efforts with utmost priority and sincerity - a point which Rogoff (2016) also mentions - because an account, irrespective of balance therein, entitles its holder to avail of banking products/services. For this, bankers need to sow the seeds of confidence in the minds of the financially excluded by 'visiting', rather than 'calling', them at branches.

Since opening an account is necessary but not sufficient for effective Financial Inclusion, it must be backed by financial literacy efforts, which in turn necessitates that people have some level of basic education. Financial training sessions can be effective if practical lessons, instead of "classroom-based pedagogy" are imparted.

Secondly, there must be disincentives for cash transactions beyond a stipulated limit determined realistically by factoring in, for example, inflation levels and income distribution. Further, instead of being a strait-jacket, the limit should vary as seasonal cash demand and broadly specified categories of products/services.

Thirdly, currency hoarding should be declared as a criminal offence and severe punishments – both fiscal and legal - meted out to the offenders instead of cajoling them through various kinds of quasi-amnesty schemes. This will help put a lid on 'crony capitalism' too. Currency serves an economic purpose, provided it is used for legal, productive purposes. At all times and all places, indulgence in illegal activities by the hoarders has damaged the socio-economic fabric (Anderson 1977 and Goodhart 1989) in the European context, and (Gutmann 1977, Bowsher 1980 and Rogoff 2016) in the US context. There have been suggestions for demonetization of HDNs (e.g. Rogoff 2016), but such a step would have several awkward consequences including political, economic (e.g. negative interest rate) and emotional and therefore, should be the last resort. However, recently, the Government of India (GOI) demonetized HDNs, comprising INR 500 and 1000 notes, which was in sync with Rogoff's suggestion, but while Rogoff talks of replacing HDNs with Low Denomination Notes, GOI opted for 'remonetization' - replacing the demonetized INR 500 notes with new ones and introducing INR 2000 notes, albeit with high security features, in the place of INR 1000 notes.

Normally, high tax rates, coupled with claustrophobic restrictions, at times, even on legal activities, lead to currency hoarding by many. Therefore, the government has to relax the tax rates and the procedures. Moreover, domestic opportunities need to be created to stimulate people to invest within the country. While the Goods and Services Tax is a step in right direction, similar metamorphic changes are needed in the direct taxes sphere in sync with the changing economic environment.

Fourth, electoral reforms (including reducing the government's cash expenditures for conducting elections), stipulating caps on extravagant expenditure on marriages and socio-religious functions and strictly enforcing those, and stricter enforcement of anti-betting measures in respect of sports and similar events are essential to curb excessive cash-use.

Finally, a safe and sound banking system facilitates people's trust and confidence in banks and motivates them to transact through banks.

Pull strategy aims at incentivizing people to make increasing use of DPS.

First, it is imperative for the banking system to institute payment mechanisms which can meet the expectations of the users in terms of speed, accuracy, cost-effectiveness, simplicity and integrity of the transactions. However, the major considerations for banks include: (a) cost of acquisition and maintenance of the systems, (b) scalability, interoperability and adaptability of the systems, and (c) last but not least, cost of or resilience against technological obsolescence, which is of critical importance in the face of rapidly advancing technology with Artificial Intelligence and robotics descending on the DPS turf. All these require massive capital investments on a regular basis by banks. Banks will therefore have to explore:

- a. Mutual sharing of the payment systems, as was done when ATMs were introduced or
- b. Collaboration with financially sound and technologically resilient FinTech companies or
- c. Hiving off their payment systems to separate subsidiaries and subsequently, corporatizing these suitably.

Privatization of critical sub-disciplines of DPS is *prima facie* ruled out due to inherent risks.

Digital banking is far beyond double-entry ledger-keeping. Hence, next to machines, manpower requirements need to receive attention. DPS would necessitate specialized skills. Besides high calibre IT professionals, banks would require costing professionals, data scientists, data analytics professionals, behavioural economists, technology risk managers and cyber law experts. Therefore, banks have to tilt their HR policies in favour of 'recruiting and retaining' such specialized staff, for whom opportunities outside, especially post-experience, would be quite lucrative. Some banks have moved in this direction.

Third, customers' transactions data are 'crown jewels' for banks and hence, ensuring their security is vital in digital banking. There have to be tight policies and laws against data security breaches and those must be enforced strictly, timely and transparently. This

necessitates a cultural change in the attitude towards financial security issues not only in the banking system but also in the country as a whole. Customers' grievances need to be resolved expeditiously with provision of adequate compensation. Insurance against cyber frauds could be thought of, as existing for card loss/theft. Of course, customers must remain vigilant and report the unauthorized transactions in their accounts to banks immediately.

Fourth, today, there are disincentives for card-use or internet transactions in the form of service fee. Similarly, there are 'conditional' charges for withdrawals from ATMs. These barriers should be minimized over time, if not eliminated.

Fifth, digital banking is fraught with several technological risks which are exacerbated by "hacktivism". The Indian banks are increasingly being targeted by malwares or hackers (e.g. the ATM episode in September-October 2016). Technology risks along with fraud risks have emerged as a big challenge for the operational risk managers. Highlighting this, a recent McKinsey document (2016) prescribes 6 principles to manage the "ghost in the machine" which include:

- Adopting a 'business-first' approach - what could be the impact of a threat on the business if adequate security measures are not instituted.
- Coordinating across the sub-disciplines of IT-risk management.
- Closing the gaps in the 3 lines of defence, which include (a) both the business and the IT function that enables it, (b) Blurring of lines between Chief Information Security Officer and Chief Information Officer and (c) Blurring in sub-disciplines.
- Integrating technology-risk management with enterprise risk management and the operational-risk team.
- Changing the performance incentives for IT Managers.
- Investing in specialized talent.

One of the 7 "level-one" operational risk categories in Basel II is "business disruption and systems failure."

Banks have to be extra prudent while providing for technology risks as also wise while dealing with cyber frauds, especially the disclosure part so that depositors' runs are precluded.

Sixth, the regulation of DPS has emerged as a complex issue worldwide, as the regulators can neither be too strict as that would stifle competition and innovation, especially in a rapidly transforming digital environment, nor too lenient as that would stoke the risk of undesirable transactions. The issues related to Anti-Money Laundering and Know Your Customer need to be taken care of. Further, when transactions are becoming increasingly borderless, regulators will have to take into account different cross-border laws and practices and seek global cooperation. In view of the above considerations, regulations have to be dynamic and focused on larger issues rather than becoming microscopic, e.g., regulating pricing of digital services which should be left to banks. It also calls for cooperation between banks and the regulator, with the greater role lying with the latter. Regulators should firmly and quickly deal with unethical practices, mis-selling, etc., employed for garnering higher market share (e.g. 2016 Wells Fargo scandal in the US).

Ground Preparation strategy envisages bigger role for the government in allocating the natural resources to the service providers such as spectrum, land and electricity in time, competitively and incontrovertibly. Similarly, the regulator needs to allot licences to the aspiring players fast without compromising on viability and soundness issues. Some of the recent steps taken by RBI such as allowing Payment Banks, establishment of Acceptance Development Fund and review of guidelines for PPIs augur well for fostering orderly development of DPS.

Concluding Remarks

From the international perspective, cash is evidently still the king, despite the eagle of DPS spreading its wings far and wide. As many analysts paraphrase Mark Twain, reports of death of cash are "exaggerated."

From the Indian perspective, the Banking Commission in India (1972) had opined that savings in the form of currency makes it socially infructuous, idle or wasteful. Refuting this as a "totally fallacious view", Gupta (1972)

argued that currency demand by public provided the cheapest (voluntary) method of real-resource mobilization. Today, in India, the 'king' still reigns supreme and judged against the persistent pro-cash attitudinal influencers, any speculation as to the early demise of the 'king', howsoever vociferous it may be, is pure fantasy.

At the same time, the digital payment ecosystem needs urgent boost, which calls for meaningful participation by the payment service providers, i.e., banks and non-banks, regulators, technology providers, consumers, and last but not least, the government. Otherwise, India will be a chaser, rather than a frontrunner, in digital banking.

In promoting digital technology in general and digital banking in particular, special attention needs to be accorded the potential employment effects as well as safe disposal of e-wastes to prevent adverse ecological effects.

Banking is a 'human-plus' business and it should not and cannot be allowed to be faceless, and therefore, branches are and will be still needed.

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बदलते वित्तीय परिवेश में डिजिटल बैंकिंग का महत्व

दीनानाथ झा*

बैंको ने हाल ही वर्षों में ग्राहक सेवा को बेहतर बनाने के लिये सूचना तकनीक को उच्च प्राथमिकता दी है और इस क्षेत्र में भारी निवेश किया है, कर्मचारियों को प्रशिक्षित किया है और वैकल्पिक बैंकिंग सुविधाओं का तेजी से विस्तार किया है। इसके सुखद परिणाम भी देखने को मिले हैं। अब ग्राहक सीबीएस के कारण कहीं भी, कभी भी बैंकिंग सुविधा का लाभ उठा रहे हैं। एटीएम, इंटरनेट बैंकिंग, मोबाइल बैंकिंग, मोबाइल वॉलेट, टैब बैंकिंग, इत्यादि ने बैंकिंग को सहज और आसान बना दिया है। इसके कारण ग्राहक सुविधा में भारी बढ़ोत्तरी हुई है और उनके समय और पैसे की बचत हो रही है।

फिर भी, बैंकिंग व्यवस्था दो प्रमुख चुनौतियों का सामना कर रही है। पहली- देश की एक बड़ी आबादी आज भी मूलभूत बैंकिंग सुविधाओं से वंचित है, उसके पास बैंक खाता नहीं है और वह अपनी जमा, ऋण तथा अन्य बैंकिंग आवश्यकताओं को पूरा करने के लिए गैर बैंकिंग व्यवस्था पर आश्रित है, जहां उसका जबरदस्त शोषण होता है। यह उनकी गरीबी और आर्थिक पिछड़ेपन का एक प्रमुख कारण है। उन्हें लगता है कि औपचारिक बैंकिंग व्यवस्था उनकी पहुँच से दूर है, अतः उनके पास गैर बैंकिंग व्यवस्था पर निर्भर होने के सिवाय दूसरा कोई उपाय नहीं है।

दूसरी देश की एक बहुत बड़ी आबादी आज भी बैंकिंग के वैकल्पिक साधनों का इस्तेमाल नहीं कर रही है। इन साधनों का उपयोग वह इसलिए नहीं कर पा रही है, क्योंकि या तो इन साधनों तक उसकी पहुँच नहीं है या वे इनकी सुरक्षा को

लेकर पूरी तरह आश्वस्त नहीं हैं। उदाहरण के तौर पर, मोबाइल बैंकिंग, बैंकिंग का एक बेहद आसान और सस्ता विकल्प होने के बावजूद ग्राहकों में अपेक्षित तौर पर लोकप्रिय नहीं हो पाया है।

लेकिन, हाल ही में सरकार द्वारा उठाये गये कई कदमों से इस स्थिति में बदलाव देखने को मिल रहा है। एक साल पहले आरंभ की गयी प्रधानमंत्री जन धन योजना के तहत अब तक 19.52 करोड़ खाते खोले गये हैं। शुरुआत में इनमें से सिर्फ 20% खाते समुचित रूप से संचालित थे, अब इनमें से 60% खाते समुचित रूप से संचालित हो रहे हैं।

यह एक बहुत बड़ी सफलता है। इन खातों में 27695 करोड़ रुपये जमा हैं, जो न सिर्फ बैंकों की जमा राशि में भारी वृद्धि को दर्शाते हैं, बल्कि ये उनकी लाभप्रदता को भी बढ़ाने में महत्वपूर्ण भूमिका निभा रहे हैं। प्रधानमंत्री जीवन सुरक्षा योजना के तहत 9.24 करोड़ रुपये और प्रधानमंत्री जीवन ज्योति बीमा योजना के तहत 2.92 करोड़ लोगों को पॉलिसी जारी की गयी है। लेकिन, अभी भी बहुत कुछ किये जाने की जरूरत है। डिजिटल बैंकिंग इस क्षेत्र में अहम भूमिका निभा सकती है।

डिजिटल बैंकिंग

डिजिटल बैंकिंग ग्राहकों को कहीं भी और कभी भी बैंकिंग की सुविधा उपलब्ध कराती है, इससे उनकी ऊर्जा, समय और पैसे की बचत होती है। एटीएम, इंटरनेट बैंकिंग और मोबाइल बैंकिंग, टैब बैंकिंग, फोन बैंकिंग, ई-कॉर्नर, Pos मशीन, सेल्फ सर्विस किओस्क, कैश रिसायकलर, इत्यादि डिजिटल बैंकिंग

* मुख्य प्रबंधक (अनुसंधान), भारतीय स्टेट बैंक

के माध्यम हैं। कई बैंक अपनी सभी नई शाखाओं को ई-लॉबी के साथ खोल रहे हैं, जहां ग्राहक अपना सारा ट्रांजैक्शन स्वयं कर सकते हैं।

हाल ही के वर्षों में लैपटॉप, स्मार्टफोन की संख्या में तेजी से हुई वृद्धि और ई-कॉमर्स ट्रांजैक्शन्स की संख्या में तीव्र वृद्धि के कारण डिजिटल बैंकिंग में तेज प्रगति हुई है। डिजिटल बैंकिंग से ग्राहकों की मुख्यतः चार अपेक्षाएँ हैं:

क) मूलभूत सेवाओं में गुणवत्ता

ख) वित्तीय उत्पादों में गुणवत्ता

ग) ब्रांड रेप्यूटेशन

घ) अच्छी ग्राहक सेवा

(मेकेंजी रिपोर्ट मार्च 2015 डिजिटल बैंकिंग इन एशिया: वॉट कस्टमर्स रियली वॉन्ट)

बैंक भी अधिकाधिक सेवाओं को डिजिटल बैंकिंग के माध्यम से ग्राहकों को उपलब्ध करा रहे हैं, ताकि ग्राहक सुविधा बेहतर हो और शाखाओं से अधिकाधिक कार्यों को बैंकिंग के वैकल्पिक साधनों पर स्थानांतरित किया जा सके। डिजिटल बैंकिंग के माध्यम से निम्नलिखित ट्रांजैक्शन किए जा सकते हैं:

- नकदी जमा
- कैश निकासी
- चेक जमा करना
- राशि अंतरण
- बिल भुगतान
- ड्राफ्ट जारी करना / भुगतान
- सावधि जमा / भुगतान
- बैंकर्स चेक जारी / भुगतान मोबाइल टॉप अप
- त्वरित खाता खोलना

- ऋण के लिए आवेदन
- खाते में आधार नंबर को अंकित करना
- नेफ्ट / आरटीजीएस
- ऑनलाइन बीमा
- ऑनलाइन म्यूचुअल फंड
- सलाह संबंधी सेवा, इत्यादि

इकॉनॉमिक टाइम्स की हाल की रिपोर्ट के मुताबिक पिछले साल देश के प्रमुख बैंकों में डिजिटल बैंकिंग से होने वाले ट्रांजैक्शन्स की संख्या पारंपारिक बैंकिंग चैनलों से होनेवाले ट्रांजैक्शन्स के मुकाबले दुगुनी थी। इसीलिए बैंक डिजिटल बैंकिंग में जबर्दस्त निवेश कर रहे हैं।

(इकॉनॉमिक टाइम्स 19.12.2015)

चुनौतियां

डिजिटल बैंकिंग ने जहाँ एक ओर लोगों की जिंदगी बेहद आसान और सरल बना दी है, वहीं दूसरी ओर सुरक्षा संबंधी कुछ शंकाओं के कारण काफी ग्राहक डिजिटल प्लेटफॉर्म पूरी तरह से अपनाने में संकोच कर रहे हैं। बैंकों के सामने यह एक बड़ी चुनौती है कि ऐसे ग्राहकों को बिना किसी संकोच के डिजिटल प्लेटफॉर्म के इस्तेमाल के लिए कैसे आश्वस्त किया जाए। इसके लिए उन्होंने अपनी रणनीति में भी कुछ परिवर्तन किये हैं। एक ओर जहाँ वे अपने डिजिटल प्लेटफॉर्म को लगातार मजबूत कर रहे हैं, वहीं दूसरी ओर वे ग्राहकों को भी ट्रांजैक्शन्स के समय क्या करना चाहिए और क्या नहीं करना चाहिए, इसके लिए भी जागरूक कर रहे हैं, जैसे:

- एटीएम पिन किसी के साथ शेयर न करें
- एटीएम पिन कहीं भी न लिखें
- एटीएम में पिन अंकित करते वक्त यह सुनिश्चित करें कि कोई देख न रहा हो
- एटीएम कार्ड खोने की अवस्था में बैंक को तुरंत सूचित करें

- अपना एटीएम कार्ड इस्तेमाल के लिए किसी दूसरे को न दें
- कम्प्यूटर / लैपटाप इत्यादि को एंटीवायरस के द्वारा सुरक्षित रखें
- साइबर कैफे में इंटरनेट बैंकिंग ट्रांजैक्शन्स न करें
- पासवर्ड जटिल बनायें ताकि आसानी से कोई उसका अनुमान न लगा सके
- पासवर्ड को अक्सर बदलते रहें
- मोबाइल में कोई भी आईडी / पासवर्ड स्टोर न करें

फोन या सोशल मीडिया पर अपनी व्यक्तिगत जानकारी या बैंक संबंधी जानकारी न दें

- बैंक खाते में अपना मोबाइल नंबर अवश्य दर्ज कराएं ताकि आपके खाते में होने वाली हर जमा-निकासी की सूचना एसएमएस अलर्ट के द्वारा आपको तुरंत मिलती रहे
- अपने पते में होने वाले किसी भी परिवर्तन से बैंक को तुरंत सूचित करें, ताकि बैंक से आनेवाला एटीएम कार्ड, पिन, चेकबुक, पत्र, इत्यादि किसी गलत हाथ में न पड़े।

डिजिटल बैंकिंग को लोकप्रिय बनाने के कदम

डिजिटल बैंकिंग और वित्तीय साक्षरता, वित्तीय समावेशन को सफल बनाने के लिए आवश्यक हैं। इस क्षेत्र में बैंको में आपसी सहयोग की भी जरूरत है, ताकि वित्तीय साक्षरता के स्तर में सुधार किया जा सके। देश में ब्रॉडबैंड कनेक्टिविटी में सुधार, खासकर गांवों और दूर-दराज क्षेत्रों में होने से डिजिटल बैंकिंग के विस्तार को बल मिलेगा। साथ ही बैंकों और मोबाइल कंपनियों के बीच बढ़ रहे सहयोग से भी अधिकाधिक मोबाइलधारकों को डिजिटल बैंकिंग की ओर आकर्षित करने में मदद मिलेगी।

1 सितंबर, 2015 को आरबीआई द्वारा जारी दिशानिर्देशों के अनुसार सभी नए कार्ड 2 फैक्टर अथेंटीकेशन के अनुरूप ही

जारी किए जाएंगे। सभी नए कार्ड ईएमवी चिप और पिन बेस्ड होंगे। आरबीआई ने 2000 तक के भुगतान पर पिन न इस्तेमाल करने की छूट दे रखी है, इससे त्वरित लेनदेन में सहायता मिलेगी। इससे डिजिटल बैंकिंग को काफी बढ़ावा मिलेगा। आधार भी डिजिटल बैंकिंग को बढ़ाने में अहम भूमिका निभा रहा है। ई-केवाईसी से न सिर्फ नया खाता खोलना बेहद आसान हो गया है, बल्कि इससे कई तरह की संभावित धोखाधड़ी को रोकने में भी मदद मिलती है।

(इकनॉमिक टाइम्स 24.8.2015)

निष्कर्ष

‘डिजिटल इंडिया’ भारत सरकार का सपना है। देश के सर्वांगीण विकास के लिए यह आवश्यक ही नहीं, अपरिहार्य है। ऐसे सपने को साकार करने में बैंकों का अप्रतिम योगदान हो सकता है, क्योंकि वे देश की अर्थव्यवस्था की रीढ़ हैं। यह महत्वपूर्ण शुरुआत है। इसके माध्यम से सरकार सभी विभागों की कार्यप्रणाली को और अधिक कुशल तथा पारदर्शी बनाना चाहती है। इसका उद्देश्य जनता को सभी सेवाएं आसानी से उपलब्ध कराना, अर्थव्यवस्था को नकदी-रहित बनाना और भ्रष्टाचार पर अंकुश लगाना है। सरकार चाहती है कि नकदी का स्थान इलेक्ट्रॉनिक चैनल के माध्यम से किए जाने वाले लेन-देन लें।

डिजिटल इंडिया को सफल बनाने में डिजिटल बैंकिंग की अहम भूमिका है। डिजिटल बैंकिंग के माध्यम से न सिर्फ हम अधिकाधिक ग्राहकों को अपने साथ जोड़ सकते हैं और उन्हें सर्वोत्तम सेवा दे सकते हैं, बल्कि वित्तीय समावेशन के लक्ष्यों को पूरा कर सकते हैं और अपनी लाभप्रदता में भी तीव्र वृद्धि कर सकते हैं।





Legal Decisions Affecting Bankers

 **M.G. Kulkarni***

1. Mohinderjeet Singh Sethi, Chandigarh
2. Dr. Prof. Rajmohini Sethi, Chandigarh Petitioners
v/s

1 HDFC Bank & Anr.

Through its Managing Director,
Mumbai.

2. The Branch Manager, HDFC Bank,
Chandigarh Respondents
National Consumer Disputes Redressal Commission,
New Delhi

Date of Order : 7th March, 2016.

Issue:

Whether, Bank is liable for deficiency in Service?

Facts:

Mr. Mohinderjeet Singh Sethi, and Dr. Prof. Rajmohini Sethi are husband and wife (herein after Sethis/Complainants/Petitioner/s). Mr. Sethi is a customer/consumer of HDFC Bank, Chandigarh (hereinafter Bank). The complainants had planned to visit Thailand and Singapore. They requested the bank for issue of Credit Card so that they can take care of financial needs abroad. But, the Bank informed them that the process for issue of credit card would take 2-3 days and instead offered that it could issue a Debit Card. The Bank, for the said purpose, requested them to open a new account. The Bank also informed them that they can withdraw the money to the extent of credit balance in the said account. Based on the said confirmation, Mrs. Sethi opened joint account having deposited a sum of

₹1,50,000/- into the said account. The Bank then issued them a Debit Card against the said account and assured them that they can transact with the said card in foreign countries without any difficulty.

At Bangkok, Sethis made some purchases and offered to make payment through Debit Card. However, Sethis were shocked to learn that the card was not operational. They immediately contacted the Bank Manager, Chandigarh and informed about problem and the ordeal they went through. Bank Manager informed them that due to minor discrepancy in date of birth of Mrs. Sethi, the card must have encountered problem; which is being rectified. Even then, the card could not go operational.

Complainants 1 & 2 managed to reach Thailand and remained there for 10 days and they had confirmed return journey tickets for 16.10.2016. They tried to use the Debit Card again but in-vain. As Complainants had no money, they could not go back to the hotel. They had a harrowing time without money and were compelled to stay at their son's friend's house with greatest difficulty.

On 16.10.2016, when Sethis went to Airport for their return journey with Thai Airways; they were told that the flight would be available only on 17.10.2016, since the Thai Airways did not arrive on that day. Sethis, without any option requested the competent authorities to transfer them to any other Air line as they did not have money to purchase new tickets. They were accordingly accommodated and transferred to Singapore Air lines. The journey became a torture and they suffered physical and mental harassment. The Bank Manager was aware of all the circumstances. Sethis on return, filed Consumer Complaint against Bank before District Consumer Disputes Redressal Forum (District Forum), Chandigarh, claiming a sum of ₹ 30 Lakhs as Compensation for deficiency in service.

* Deputy Director, Indian Institute of Banking & Finance.

Bank denied all the allegations of Complainants. Although, Bank admitted issue of Debit Card in favour of Sethis but maintained that the Debit Card and Cheques could be used only after 5-7 working days provided there was complete compliance. District Forum, granted a sum of ₹ 50,000/- as compensation with interest @ 12%. Sethis, however, not being satisfied with quantum of compensation granted by the District Forum; filed an Appeal before State Consumer Disputes Redressal Commission (State Commission) interalia, seeking enhancement in the Compensation so awarded by the District Forum. State Commission dismissed their Appeal and upheld the Compensation granted by District Forum. Aggrieved by the dismissal of their Appeal, Sethis filed Revision Petition before National Consumer Disputes Redressal Commission (National Commission) New Delhi.

Before the National Commission, Bank in its arguments maintained that complainant's papers were not complete. The date of birth of wife of the complainant was not verified. The documents filed by complainant No.2 wife, were different where there were two different dates.

Observations and Decisions:

Bank did not produce any rules/law to show that the Debit Card and Cheques could be used only after 5-7 working days on the complete compliance of the

requirements. It is difficult to understand why did the Bank issue debit card to a person, who was going abroad and was depending upon it. Bank was aware of the fact that the Indians were trapped in a foreign land. Despite the fact that Bank has a bounden duty to attend to those stranded abroad; failed to swing into action for 10 days. The Bank committed gross mistake without acting immediately to come to the rescue of its customers. The conduct of the bank exposes apathy on its part and they were negligent. The approach of the bank is lackadaisical and no efforts whatsoever made to help the complainants despite being put to notice. The reputation of country was also at stake. The bank should realize that how difficult it is at an unknown place without financial support. The Bank failed in its duties qua an Indian trapped in a foreign country.

The complainants undergone harassment and were put to mental agony and the compensation of ₹ 50,000/- awarded by the District Forum is just peanuts.

National commission allowed the Revision Petition of Sethis and set aside the order of District Forum and State Commission. National Commission, enhanced the amount of compensation from ₹ 50,000/- to Rs. 5 Lakhs and on failure, Bank has to pay interest @ 12% p.a. till realization. The Bank is at liberty to take action against its Manager and at-least ₹ 50,000/- be deducted from his salary, out of the said compensation.



Bank Quest Articles - Honorarium for the Contributors

S.No.	Particulars	Honorarium Payable
1	Invited Articles	Rs. 7000
2	Walk-in Articles	Rs. 4000
3	Book Review	Rs. 1000
4	Legal Decisions Affecting Bankers	Rs. 1000

Summary of Macro Research Project

Title of the Macro Research Project: Asset Quality of Banks: Evidence from India

Researcher: Dr. Arpita Ghosh, Assistant Professor (Finance & Control Group),
Indian Institute of Management, Calcutta.

Year of study: 2014 -15.

Summary of all the findings in the study

At the outset of the study, specific research questions were sought to be addressed. In this section all the findings from the study are sought to be summarized and put together.

The **first question was:** Whether Public Sector Banks (PSBs) always bear the higher burden of NPAs than their private sector counterparts. The analysis showed that NPAs in PSBs were statistically and significantly different from those in private sector banks. NPA burden was actually lighter for PSBs compared to their private sector counterparts both in pre-crisis and crisis years. It became heavier only in post-crisis years. So, one can say that NPA experience of banks do vary depending upon their bank-group but PSBs not necessarily always bear a higher burden.

The **second question** related to whether factors driving NPAs in PSBs were different from those driving NPAs in Private Sector Banks. The effect of some factors were similar while that of various other factors were different. At overall bank level for the entire period of study, there is support found for the argument that better the quality of management, lesser would be the NPAs. Operational efficiency was found to have worsening effect and revenue efficiency, however, was found to have favourable influence on NPAs of PSBs. None of these variables were significant for private sector banks. So, one can say that lax credit appraisals and monitoring in PSBs due to poor management quality has led to their higher NPAs.

Overall, factors which were found to drive NPAs for both PSBs and Private Sector Banks when the entire period is covered, included Return on Assets (*ROA*), foreign borrowings, Credit- Deposit Ratio. Capital Adequacy ratio was not found to affect NPAs of either. It suggests

that the moral hazard hypothesis of going for higher loans when capital is small is not validated for Indian banks.

A high cost of borrowings was found to be able to explain higher NPAs in PSBs both during the post-crisis and pre-crisis phases, as well as, for the overall period but the same did not hold true for private sector banks in any of the phases or overall period. Larger size was found to lower NPAs for private sector banks particularly in pre-crisis period. Size, however, did not have any effect on NPAs in PSBs in any of the periods. A high Credit Deposit Ratio can account for lower NPAs for PSBs during pre-crisis period but not so for private sector banks. Advances to sensitive sector have actually helped bring down the NPAs for PSBs during pre-crisis period probably due to over-cautiousness brought in by Reserve Bank of India (RBI) through its restrictions.

The **third question** was about the possible impact of secured loans and priority sector lending on NPAs. At overall bank level, priority sector lending did influence NPAs but secured lending did not. However, when the sample was decomposed into PSBs and private sector banks, secured lending was found to lead to higher NPAs only for PSBs. The argument of priority sector directed lending worsening loan portfolio of PSBs did not hold true though, it was found to worsen the loans of private sector banks.

Listed banks did not demonstrate an NPA behavior different from unlisted banks and the factors driving the NPAs were also similar in line with the previous findings for all banks.

The **fourth question** was about the effect of Macroeconomic factors on NPAs. Factors like Gross Domestic Production (GDP) slowdown, fall in stock prices, increase in interest rates and fall in debt creating inflows

were, indeed, found to have played a very important role towards generating higher NPAs for banks during the study period. However, bank specific variables put together could explain the variation in NPAs better than macro-economic variables (expressed in higher overall R square in the model capturing bank level factors).

The **fifth question** on corporate governance was taken up in a separate chapter (Chapter IV). The results at the overall bank level show that ownership by 'foreign institutional investors', 'average percentage of meetings attended by the directors' and 'Board Size' did play a significant role in bringing down the level of NPAs in banks. Percentage of independent Directors was, however, found to have an unexpected positive co-efficient though at 10% level of significance. Block-holders average holdings and CEO-Chairman duality were not found to have any influence on NPA levels. On breaking the sample into PSBs and Private Banks, however, reflects that board size helped reduce NPAs for PSBs while FIIs help reduce NPAs for private banks. Analysis based on pre-crisis and post-crisis phases also brought forward some insightful results. Foreign institutional investors played a very significant, governance role in bringing the NPA levels down for all bank groups in both the pre-crisis or post-crisis periods.

Block-holders, effectively the government ownership had a favourable role in PSBs in keeping the NPAs low during the post-crisis phase. NPAs in private sector banks, however, did not go up due to ownership concentration in either of the periods. But, block holders on the other hand help keep NPAs under check for old private banks. Diligence of directors expressed in their

attendance had some role in reducing NPAs in PSBs during pre-crisis, but, during post-crisis a similar role was assumed by independence of directors instead. CEO-Chairman duality led to increase in NPA levels for PSBs during pre-crisis phase and increase in NPAs for old private sector banks in both the phases. So, banks should avoid such duality in order to bring better governance.

The **sixth question** on effectiveness of recovery channels. Reduction of NPAs was found to experience weakness in post-crisis years particularly for PSBs. The reductions were dominated by write-offs and restructurings. NPA recovery through channels like Lok Adalats, DRTs, & SARFAESI were examined for a decade. Lok Adalats were the most popular recovery mechanism in terms of number of cases. The use of all the three mechanisms increased significantly in post-crisis years versus pre-crisis years, in terms of number of cases involved' in the recovery process. However, if one looks at the amount recovered, SARFAESI is found to have played the most important role by helping banks recover a sum of ₹ 276 billion during pre-crisis years (2005 to 2008) which increased significantly to a sum of ₹ 646 billion during 2009 to 2013. NPAs recovered as a percentage of amount involved' was higher in pre-crisis years than in the post-crisis years. The effectiveness of recovery declined significantly for all the three mechanisms. In the post crisis years, SARFAESI was found to be most effective mechanism among all the three alternatives available for recovering NPAs.



BANK QUEST THEMES FOR NEXT ISSUES

The themes for next issues of "Bank Quest" are identified as:

- January-March, 2017: Business Analytics
- April-June, 2017: Challenges in Infrastructure financing

Name of the Book : Banking for Beginners

Author: Dr. R. Bhaskaran

Publisher: Books Emporium, Andheri (East), Mumbai

Pages: 188

Price: ₹ 200/- (November 2016 Edition)

Reviewed by: Mr. S. K. Datta, Joint Director, IIBF, former Chief General Manager of Bank of India.

Banking, today, is in a state of flux. While on the one hand, Banking is making deep inroads into the interiors of the country in the form of enhanced Financial Inclusion, on the other hand, in order to cater to the expanding canvas, new types of banks are making entry. Since the last two years, RBI has licensed two Universal Banks, 11 Payment Banks and 10 Small Finance Banks. Furthermore, recently, licensing has been made available on-the-tap.

The net result of the above developments is that the coming days are going to witness more intensive banking activity, with various types of Banks being manned by a huge complement of personnel.

Whilst Banking in India itself is evolving rapidly, so is the profile of the staff manning Bank branches. The major part of new employees joining Banks is still at the entry level and these are persons who come in from fairly unrelated academic backgrounds like engineering, etc. They could also be from related backgrounds, like Commerce or Management graduates, but they would be lacking a feel of what ground-level Banking is really all about.

Consequently, new recruits need exposure to authentic and reading relevant material on banking – theory & practice - and for this, there are few books which serve the purpose. "Banking for Beginners" written by Dr R. Bhaskaran fills just that gap.

The book is well structured, with readers being transported from basics of banking to more complex areas like credit, investment and payment systems. The book is authored in an easy flowing style, without complicated jargon. Nevertheless, it brings out the concepts

and fundamental principles involved. The language is not technical and will, therefore, attract the target reader to pick up the book and go through it. A lot of thought has gone into organisation of the book and all relevant aspects which a new recruit in Banking needs to know – deposits, advances, AML / KYC, loans and advances, etc. - are dealt with without going into more complex concepts of restructuring, capital structuring, etc. Some important operational aspects like precautions to be taken whilst new opening accounts are also covered in a lucid manner. A good initiative that has been taken is that there is a chapter on the structure and profile of Balance Sheets and P&L Accounts of Banks, something that is not contained in similar books.

Although the book stays clear of legalistic language, it does cover areas with legal implications like cheques, security documents, etc.

The vast experience of Dr. Bhaskaran, both in operational banking as well as in Banking Academics (being ex-CEO of Indian Institute of Banking & Finance) is apparent in the composition and pitch of the book.

The book "Banking for Beginners" will prove to be valuable for fledgling Bankers and they will be able to grasp the nuances of Banking in a reader-friendly manner. A knowledgeable Banker is, after all, an asset to his / her organisation.



Bank Quest Articles - Guidelines For Contributors

Contributing articles to the Bank Quest : (English/Hindi)

Articles submitted to the Bank Quest should be original contributions by the author/s. Articles will only be considered for publication if they have not been published, or accepted for publication elsewhere.

Articles should be sent to:

The Editor: Bank Quest

Indian Institute of Banking & Finance,

Kohinoor City, Commercial-II, Tower-1, 2nd Floor,
Kiroli Rd., Kurla (W), Mumbai - 400 070, INDIA.

Objectives:

The primary objective of Bank Quest is to present the theory, practice, analysis, views and research findings on issues / developments, which have relevance for current and future of banking and finance industry. The aim is to provide a platform for Continuing Professional Development (CPD) of the members.

Vetting of manuscripts:

Every article submitted to the Bank Quest is first reviewed by the Editor for general suitability. The article may then be vetted by a subject matter expert. Based on the expert's recommendation, the Editor decides whether the article should be accepted as it is, modified or rejected. The modifications suggested, if any, by the expert will be conveyed to the author for incorporation in case the article is considered for selection. The author should modify the article and re-submit the same for the final decision of the Editor. **The Editor has the discretion to vary this procedure.**

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Authors should carefully note the following before submitting any articles:

1) Word length:

Articles should generally be around 5000 words in length.

2) Title:

A title of, preferably, ten words or less should be provided.

3) Autobiographical note and photograph:

A brief autobiographical note should be supplied including full name, designation, name of organization, telephone and fax numbers, and

e-mail address (if any), or last position held, in case of retired persons. Passport size photograph should also be sent along with the submission.

4) Format:

The article, should be submitted in MS Word, Times New Roman, Font Size 12 with 1½ line spacing. A soft copy of the article should be sent by e-mail to publications@iibf.org.in

5) Figures, charts and diagrams:

Essential figures, charts and diagrams should be referred to as 'Figures' and they should be numbered consecutively using Arabic numerals. Each figure should have brief title. Diagrams should be kept as simple as possible. In the text, the position of the figure should be shown by indicating on a separate line with the words: 'Insert figure 1'.

6) Tables:

Use of tables, wherever essential, should be printed or typed on a separate sheet of paper and numbered consecutively using Arabic numerals (e.g. Table-1) and contain a brief title. In the body of the article, the position of the table should be indicated on a separate line with the words 'Insert Table 1'.

7) Picture / photos/ illustrations:

The reproduction of any photos, illustration or drawings will be at the Editor's discretion. Sources should be explicitly acknowledged by way of footnote, all computer-generated printouts should be clear and sharp, and should not be folded.

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Words to be emphasised should be limited in number and italicised. Capital letters should be used only at the start of the sentences or for proper names.

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- | | | |
|---------------------------------------|---|---|
| 1. Place of Publication | : | Mumbai |
| 2. Periodicity of Publication | : | Quarterly |
| 3. Publisher's Name | : | Dr. Jibendu Narayan Misra |
| Nationality | : | Indian |
| Address | : | Indian Institute of Banking & Finance
Kohinoor City, Commercial-II, Tower-1, Kirol Road, Kurla (W),
Mumbai-400 070. |
| 4. Editor's Name | : | Dr. Jibendu Narayan Misra |
| Nationality | : | Indian |
| Address | : | Indian Institute of Banking & Finance
Kohinoor City, Commercial-II, Tower-1, Kirol Road, Kurla (W),
Mumbai-400 070. |
| 5. Name of Printing Press | : | Onlooker Press, 16 Sasoon Dock, Colaba Mumbai - 400 005. |
| 6. The name and Address of the Owners | : | Indian Institute of Banking & Finance
Kohinoor City, Commercial-II, Tower-1, Kirol Road, Kurla (W),
Mumbai-400 070. |

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31.03.2016

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Signature of Publisher

Bank Quest (Quarterly Journal of IIBF)

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Frequency: 4 Issues in a Year
(January-March, April-June, July-September and October-December)

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Off LBS Marg, Kiroli Road, Kurla (W), Mumbai – 400070

The publication of the advertisement in Bank Quest is on the sole discretion of the Institute.

The advertisement should reach in the beginning of every quarter i.e. 15th January, 15th April, 15th July and 15th October for publishing in that particular quarter.

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- Step 3: Change to your preferred secure PIN
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- Step 6: View Balance, Get Mini Statement, Transfer Funds 24x7 anywhere



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