

Chapter III

CHAPTER III

INTRODUCTION TO DIGITAL BANKING

3.1 BACKGROUND

Today, due to the worldwide competition that exists among financial institutions, obtaining large market share plays a significant role in gaining success. Numerous researchers have identified that market share is a primary measure in determining bank's profitability, Efficiency, growth, as well as survival (Khan, Ahmad, & Chan, 2018). Also, market share is considered as a pointer of a bank's reputation (Dunbar 2000). According to the research by Buzzell et al. (1975), gaining a high market share contributes to create economies of scale, increasing management quality, that in turn leads to an increased return on investment thereby yielding more profit. Therefore, it is very essential to achieve a significant market share, is of greater need for all financial institutions and banks that are wanting to sustain in this competitive environment. Hence to obtain high market share, only weapon, banks can adopt is efficient Digital banking systems.

A bank is a financial intermediary that constructs credit by lending money to a borrower, thereby creating a conforming deposit on the bank's balance sheet. Lending accomplishments can be achieved either directly or indirectly through capital markets. Due to their significance in the financial structure and influence on national economies, banks are highly controlled in most countries. Along with other resolutions intended to safeguard liquidity, banks are generally subject to maintain minimum capital requirements created on an international set of capital morals, popularly called as the Basel Accords.

3.2 HISTORY OF BANKING

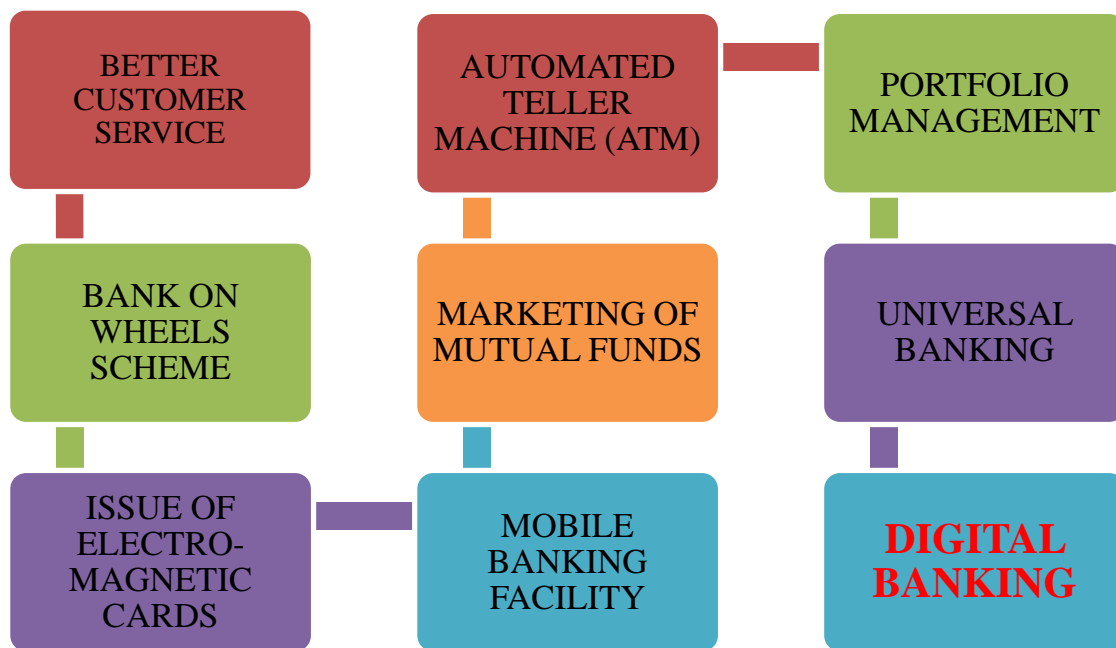
The banking system begins with the banks of merchants in the Prehistoric world, which made grain finances to traders and farmers who carried goods among cities. It began around 2000 BC in Assyria and Babylonia. Later, during the Roman Empire, lenders based on sanctuaries made loans and added two vital innovations: they accepted deposits and transformed money. Also, Researches in Archaeology during this period in India and China shows evidence of money lending action. During 14th century banking industry was dominated by the Peruzzi and Bardi families and established many branches in Europe.

Perhaps the most famous Italian banks were the Medici bank, which is established by Giovanni Medici in the year 1397. The oldest bank still operating is headquartered in Siena, Italy, named Monte dei Paschi di Siena, which has been functioning continually since the year 1472. That is followed by Berenberg Bank of Hamburg which began its operations during the year 1590.

The evolution of banking sector began from northern Italy and passed on to Europe and thereafter a numerous significant developments took place in the area of Amsterdam during 17th century and in the city of London during the 18th century. In Germany, banking dynasties such as Fugger, Welser and Berenberg also played a main role. But, the financial global crisis during the 2007–2008 resulted in many bank failures, including some of the world's leading banks, and provoked much argument about banking reforms and regulation.

The functions of banks in India has significantly changed a lot after the implementation of economic reforms in 1991. These changes occurred due to LPG, i.e. Liberalization, Privatization and Globalization policies being followed by Government of India

FIGURE 3.1 SHOWING THE CHANGING ROLES OF BANKS IN INDIA



Source : Computed Data

Since then, most traditional and outdated concepts, policies, practices, procedures and methods of banking have changed rapidly. Even now a lot of importance is given to their rural customers. They are even keenly ready to help them and serve regularly the banking needs of country-side India under many schemes of financial inclusion. The changing role of banks in India can be glimpsed in points depicted in the **Picture 3.1**.

3.3 INDIAN BANKING SYSTEM

THREE PHASES OF INDIAN BANKING SYSTEM

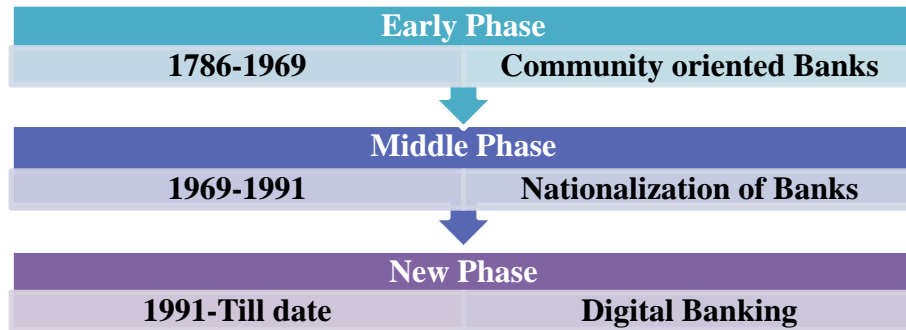
Without a sound and effective banking system, it is difficult for any country to have a healthy economy. The banking system of India should not only be hassle free but it should also be able to encounter new challenges posed by the innovation and technology and any other external and internal environmental factors. For the past three decades, India's banking system has numerous outstanding accomplishments to its credit. The most remarkable is its extensive reach among its rural population and it is no longer limited to only metropolitans or cosmopolitans' areas in India. In fact, Indian banking system has stretched even the remote corners of the country. This is one of the foremost reasons of India's growth.

The government's regular economic policies for Indian banks since 1969 has paid rich contribution with the nationalisation of 14 major private banks operating in India.

Before few years, an account holder had to wait for hours at the bank counters for availing banking operations that includes getting a draft or for withdrawing his own money. But today the scenario has changed. Gone are the days when the most efficient bank transacted money from one branch to other in two or three days. But, in today's scenario, it is as simple as instant messaging or dial a pizza. In today's digitalized world, Money has become the order of the day. The first bank in India began its functions in the year 1786. The journey of Banking system of India can be divided into three different phases.

They are as mentioned below:

FIGURE 3.2 PHASES OF INDIAN BANKING SYSTEM



Source : Computed Data

PHASE I

In the year 1786, Common Bank of India was established. Then came the Bank of Bengal and Bank of Hindustan. During the year 1806, bank of Bengal was established by East India Company and it is followed by the establishment of bank of Bombay and Bank of Madras during the year 1840 and 1843 respectively as independent unit that was named as Presidency Banks of India. These three banks were amalgamated in the year 1921 that resulted in formation of imperial Bank of India that constitutes private shareholders banks by European's shareholders.

In 1865, Allahabad Bank was established. Punjab National Bank Ltd. was established in 1894 for the first time exclusively by Indians with headquarters located at Lahore. Between the years 1885 and 1913, Bank of India, Bank of Mysore, Bank of Baroda, Central Bank of India, Canara Bank and Indian Bank were set up. Reserve Bank of India which is the Central Bank of India was established in the year 1935.

Initially, the growth was very slow and banks also experienced periodic failures between the years 1913 and 1948. There were approximately 1100 banks that have operated, and most of them were small. Reserve Bank of India which is the Central Banking Authority, was vested with extensive power for the supervising banking activities in India.

During initial years, public has lesser confidence over the banks that resulted in slow mobilization of deposits. Public felt that, the savings bank functions provided by the Postal department was comparatively safer than Banks. Moreover, maximum funds were given only to traders.

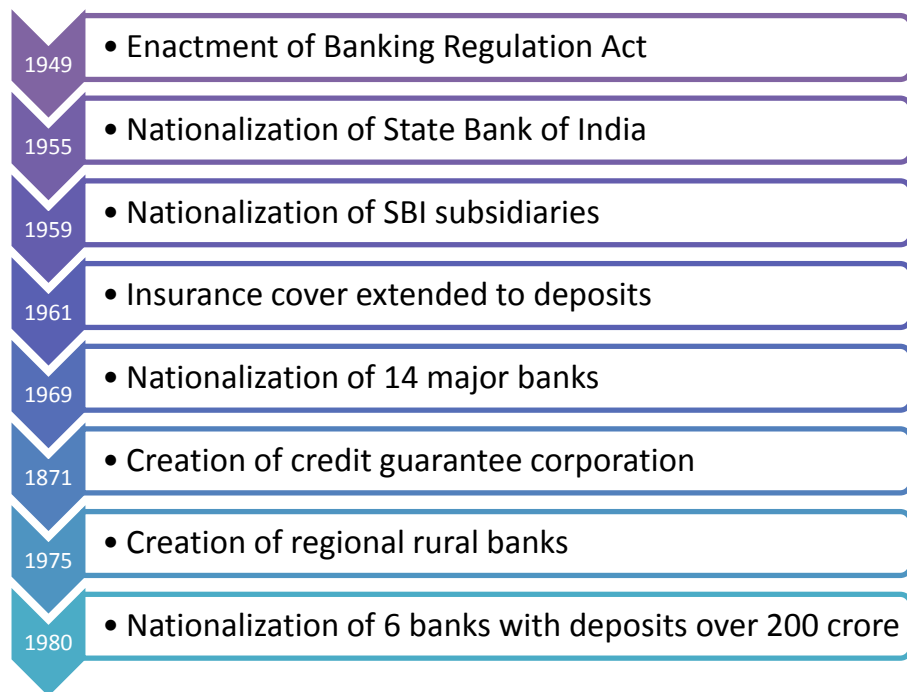
PHASE II

Government has made many significant decisions in Indian Banking Sector Reforms after independence. In 1955, Government of India nationalized Imperial Bank of India with extensive banking operations and facilities on a large scale especially concentrating in rural and semi urban areas. It constructed State Bank of India to act as the principal bank of RBI and to handle banking activities of the central and State Governments all over the country. Seven subsidiary banks of State Bank of India were nationalized on 19th July, 1959. In 1969, major process of nationalization was carried out by the efforts of then Prime Minister of India, Mrs. Indira Gandhi. During this tenure, 14 major Indian commercial banks in the country were nationalized.

Second phase of nationalization in Indian Banking Sector was carried out in 1980 with addition of six more banks. It has brought 80% of the banking segment in India under Government ownership.

Government of India has taken numerous steps to Regulate Banking Institutions across the country.

FIGURE 3.3 REGULATIONS IN INDIAN BANKING SYSTEM



Source : Computed Data

After nationalization of banks, deposits and advances increased to 800% in public sector banks. This developed implicit faith by public on banking system in the sunshine of Government ownership. This led to the development of immense confidence about the sustainability of these banking institutions.

PHASE III

This phase has introduced many innovative products and facilities in the banking sector. To facilitate liberalization in banking sector, a committee was setup under the leadership of Shri. M. Narasimham in the year 1991 that has resulted in many changes in the banking reforms.

The financial system of India has shown a great deal of elasticity. As other East Asian Countries suffered, India has been protected from all crisis triggered by external macro-economic shock. This is possible due to the reasons that include comfortable exchange rate management, High foreign reserves, the convertible capital account, and limited foreign exchange exposure of banks and their customers.

3.4 STRUCTURE OF ORGANISED INDIAN BANKING SYSTEM

RESERVE BANK OF INDIA (RBI)

The India had no central bank prior to the formation of the RBI by Indian central Government. The RBI is the highest financial and banking authority of the country and controls all the banking operations in India. It is called as the Reserve Bank since it safeguards all the reserves of all Indian commercial banks.

COMMERCIAL BANKS

Commercial banks mobilize savings in the form of deposits from general public and make those funds available to large, medium as well as small industrial trading units mainly to meet working capital requirements and supports business operations in all possible aspects. The public sector banks play a dominant role in Indian commercial banking operations. The organized banking system in India can be classified as given below:

SCHEDULED AND NON-SCHEDULED BANKS

The scheduled banks are those banks which are established in the second schedule of the RBI Act, 1934. Paid-up capital and reserves of these banks should have an aggregate value of minimum Rs. 5 lakhs. These banks must have to satisfy the rules and regulations of RBI that their operations are functioned in the interest and favour of their depositors. At present, there exist only three such banks among the entire country.

Banks often does businesses of delivering the products and services only through physical mode in case of traditional method. Thereafter, the scenario of the banking sector has changed with the evolution of digital, rapid technological inventions, globalization, liberalizations and financial deregulations, and consolidation of the financial services (Jeevan, 2000; Mia *et al.*, 2007). Due to this, many financial businesses are forced to convert their traditional modes of operations. Hence the banks indeed are without exception to convert into the abovementioned. Due to this change, competition has increased among the financial services sector (Thornton & White, 2001). Banks started believing that maintenance of branches in association with managing human resources proved to increase in the form of overhead costs. Thus, to eliminate the amount spend on network branches banks started invest in product differentiation, developing strategies to gain competitive advantage thereby bringing down the expenses (Daniel, 1999).

3.5 DIGITAL BANKING - A NEW MEDIUM

Electronic banking popularly called as digital banking or electronic banking is the next-generation system of banking that provides a numerous range of banking products and services to the customers that requires no physical presence at the bank premises. With the invention of Digital technology and advent of numerous security tools of electronic commerce, the penetration of digital banking has increased in most of the developing countries that includes India.

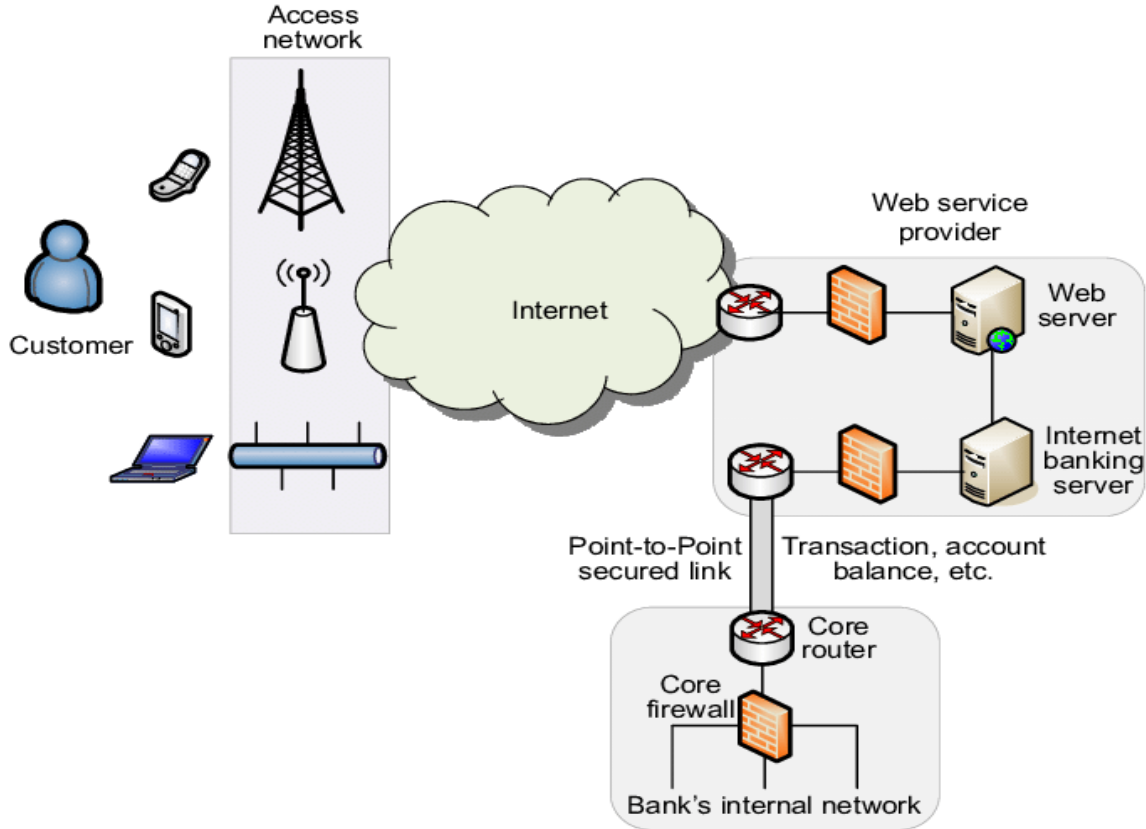
Internet is a huge network of individual devices and computer networks that are connected to communicate with each others using the same communication protocol called TCP (Transmission Control Protocol) and IP (Internet Protocol). When more than two devices are connected then a network is created. By connecting two or more networks inter-network or Digital is created.

Technology made human lives easier in all aspects for the today's societies (Rust & Oliver, 1994). Most importantly, technology has become a primary element in improving the quality of business processes in general as well as digital banking services in particular (Joseph & Stone, 2003). Digital banking service completely rely on the mutual exchange of information that happens between customers and bankers using technological developments in place of physical interaction (Darwish & Lakhtaria, 2011).

3.6 DIGITAL BANKING – BASIC STRUCTURE AND TOPOLOGY

In the current scenario of technology, it has become easier to connect and communicate with uncountable computers operating at different zones over Internet. This has become possible since they operate with same communication protocol, viz., Transmission Control Protocol or Digital Protocol. It is defined as the set of rules that programs how computers must communicate and interact with each other. So, in order to connect Digital, one should have an account and connection in a host computer which has been set up by any one of the Digital Service Providers viz., Airtel, Jio, etc. These accounts can either be Serial Line Internet Protocol or Point to Point Protocol account. It allows creating temporary Internet protocol sessions with the host computer, thereby permitting the other computer to join with the Digital and directly set up communication and interaction with any other computers over the Internet. Such type of connections permits the client networks to act as a remote terminal, but also, they can be able to process whatever programs and procedures that are available on the Digital web. Also, several programs can be run simultaneously with respective to the limitations of speed as well as memory of the client system and connection of modem. Internet protocol also uses a unique addressing technology through which identification of any computer on the web is possible.

FIGURE 3.4 STRUCTURE AND TOPOLOGY OF DIGITAL BANKING



Source: IBEF Report, 2018

SECURITY

Most important reasons for internet to become an electronic medium is due its openness and independency. It is a common domain where there are no restrictions on accessibility to a limit the user adheres to all technical and non-technical parameters. Thus, it has contributed to concerns over the issues regarding the privacy and transfer of securing data and information. These alarms are common to all networks including protected user group networks. Nevertheless, the risk dimensions of Digital banking over the common platform are high whereas the control and security measures are comparatively fewer.

The primary security issues are listed below,

Authentication

- Assurance of identity of the person in a contract

Authorization

- Party doing a transaction is authorized to do so

Privacy

- Privacy or confidentiality of data, information relating to any deal,

Data integrity

- assurance that the data has not been altered

Non-repudiation

- Customer to the agreement that can not deny its origination about the communication

Source : Computed Data

3.7 INDIAN SCENARIO

3.7.1 THE ENTRY OF INDIAN BANKS INTO DIGITAL BANKING

Digital banking acts as a medium in delivering wide range of banking products and services to the customers. And also, it acts as the strategic tool for continuous business development. In recent years Digital banking has gained extensive acceptance nationally as well as internationally. In India it is spreading faster, after number of banks started adopting the digital technology. It can be said that India is in threshold level in the banking revolution have unveiled net banking system adopted earlier.

According to the statistics published by Reserve Bank of India in 2021, the total digital wallet transactions in India has increased enormously and nearly doubled to Rs.253.2 crore in the year May 2021 which is Rs.124.3 crore in the previous year February 2020, Also, digital wallet transactions increased much higher from Rs.2,836 crore in the year February 2020 to Rs.11,080 crore in the year May 2020. The year 2020 FIS PACE pulse statistics reveals 93 percent of respondents preferred using mobile wallets to make their payments. Young and senior Gen Y customers are found to be the most active in making mobile wallet payments.

3.8 THE FUTURE SCENARIO

Compared to foreign banks, Digital banking among Indian banks still have a long way to go. To reach greater heights in adopting information technology, banks must have sufficient number of customers who opt for digital banking as well as banks must have such infrastructure to facilitate it. Users are worried about the safety parameters, even though the banks provide multiple security options like, branch connection encryption, automatic sign-offs, firewalls, random pop-ups, line encryption, digital certificates and disaster recovery sites. One important parameter is the public key infrastructure offered by Certification Authority operates in India but no banks possess it which is the disadvantage.

Usually, an agreement is made by the bank with the customers for the usage of the Digital banking services. Through this method, personal data about the customers in the applications forms are maintained by the banks that are offering the digital banking services. Most of the times, the agreement details are one-sided, so that the banks are having the absolute rights to amend or to supplement any of the terms and conditions mentioned at any time. Therefore, due to these reasons domestic customers for whom the other options that includes viz., personal contact, tele banking, ATMs, etc. are available, they are often reluctant to opt the Digital banking services channels that offered by Indian commercial banks. In general customers treat Digital Banking, as an additional method of delivery channel. Therefore, it is only being appealed as a value-added service to domestic customers. In case of non-resident Indians, it is found to be expensive as well as time consuming process to access the bank accounts in India. Hence, they find net banking to be more convenient and highly useful.

In general, internet is in the common cloud whereby geographical boundaries are eliminated. Cybercrimes and hacking are therefore very difficult and highly challenging to identify and control. In order to facilitate Digital banking services, it is mandatory that the banks are supported with good legal infrastructure. Government of India has introduced the Information Technology Bill, October 2000. Under Section 72 of Information Technology Act, 2000 banks are obligated to confidentiality against any disclosure of any of the electronic records, registers, communication and information, except for any important purposes. And any violation of these rules is to be treated as a criminal offence.

Notification for the appointment of dignitaries to certify the customer's digital signatures to ensure confidentiality of data, is likely to be issued in the near future by RBI. However, the legal issues relating to digital banking services are being debated every now and then, it is expected that some measures will be taken by RBI in the near future.

Definitely, certain technological developments have created a conducive infrastructure for digital banking to grow heights. For example, Digital usage by individuals is expected to increase with inexpensive bandwidth price. The Department of Telecommunications (DoT) under Government of Indian Ministry, is trying to make available additional bandwidth to be cheaper, with the expected outcome that internet access among the common individuals in public domain will be much faster in the near future. This strategy by the Government of India is expected to give a massive growth for technological developments especially to Digital banking for banks operating in India.

One of the recent developments in the area of Digital banking is the development of payment gateway by the ICICI bank and Global Tele System, that will enable their customers to transfer funds to other banks and payment of bills. Fund transfer can be done through credit cards or debit cards as well as cheques, with the central payment system facilitating the online transactions. In this digital era, banks started showing their interest in these recent developments, that will enhance inter-bank funds transfers and also other e-commerce transactions. Thereby, the banks will play an important role in the world of e-commerce thus acting as an intermediary between the buyers and the sellers through the entire payment process.

3.9 TYPES OF RISKS ASSOCIATED WITH DIGITAL BANKING

Important reason for the faster spread of digital banking is cost effective and simple delivery channel in providing wide range of banking services when compared with other delivery channels. But still, Digital banking is not only a blessing to the banking industry. Along with cost reduction benefits, digital banking services are also associated with risks. Banking industry around the world are worried about it. Regulators and supervisors are continuously emphasizing on banking systems that provide high security of data and to eliminate risks. Only solution banks have is to rely on technological advancements to control risks associated with digital banking. Due to the fast changes in information

systems, there is no end point to the types of risks and the measures to control over it. Both the scenario evolves continuously. The following are the common set of risks associated with Digital banking services.

- Operational risks
- Security risks
- Reputational risks
- Legal risks
- Money laundering risks
- Cross-border risks
- Strategic risks
- Other risks

Operational risk

Operational risk popularly called as transactional risk is the most common type of risk associated with digital banking services. It includes compromise in data integrity, inaccuracy in processing the transactions, difficulties in maintain data privacy and confidentiality, non-enforceability of agreements and other contracts, preventing unauthorized access to bank's systems including transactions etc. These risks are generally due to design weaknesses, poor system implementation and monitoring of technologies. Besides these technological inadequacies, human factors also contribute to operational risks. These factors include negligence by customers as well as employees, fraudulent activities of hackers and banking employees etc.

Security risk

Internet is a network operates in public domain that facilitates continuous flow of data and information that has unrestricted access. Banks adopt the medium of internet for all financial transactions. Hence, it is most important to have secured technology and system to build a proper infrastructure that facilitates secured transactions. Security risk often occurs due to unauthorized access of bank's information that includes like accounting

systems, portfolio management systems, risk management systems, etc. Breach of security may contribute financial losses to the bank. Other security related risks include infringing customer privacy, loss of banks reputation, and its legal implications. Hence, controlling the accessing rights are of primary importance to any banks. This process of controlling the unauthorized access is highly complex since it is available in public digital domain and an authorized access can happen from any source and also from anywhere around the world with or without illegal intention. These attackers can be the hackers, corrupt vendors, displeased banking employees and also pure thrill seekers. Thus is therefore, mandatory for all banks that provide digital banking services to critically evaluate all associated integrated systems to have secured access control measures.

Reputational risk

Reputational risk means earning opinion from public citizens in a negative manner and that may end up in significant loss for banks either loosing customer or by diminishing returns. Common public as well as banking customers lose their confidence due to the banks inability to perform critical functions to important not maintaining banking-customer relationship. The reason behind this may be due to banks its own action or third-party action. Failure to satisfy customers expectation, deficiencies in systems, inadequacy in providing information to banking customers, imparting knowledge to customers regarding banking procedures, communication network issues, breach of security may result in loosing banks reputation thereby increasing risk.

Legal risk

Legal risk arises due to non-compliance with rules and regulations, not following the prescribed legal standards and not establishing the legal rights and customers obligations. Violation from any of these may results in increasing legal risk. In this digital era, rights and obligations are uncertain and sometimes it is also ambiguous in nature. Legal risk also arises due to uncertainty in validating some agreements that are formulated using electronic medium, laws related to disclosing customers data and securing the privacy of the customers. If customers are not well informed about legal guidelines, they will not take good precautions while availing digital banking services that leads to disputed transactions between bank and customers, unnecessary legal suits against the bank or any other

regulatory measures. Without analysing the legal procedures, banks may enthusiastically links its digital banking services with other applications that are available in internet thereby increasing its legal risk. Giving proper authorisation or forming any certification authority will help to reduce such kinds of risks.

Money laundering risk

In this digital era, it is difficult for any bank to impart traditional method, for identifying and preventing illegal and criminal activities by hackers or other unauthorised persons. In some systems of e-payments, money laundering regulations are in appropriate. Thereby, banks by themselves expose to increased money laundering risk. This is resulting in non-compliance with banking KYC 'Know Your Customer' norms. To eliminate this, banks are in need to create customer identification and other screening techniques, developing auditing trials, organising compliance audits periodically, framing new policies and procedures to identify and eliminate suspicious digital transactions.

Cross border risks

The significant reason for imparting Digital banking services is the need that has aroused due to cross border businesses. By nature, digital banking services are designed to facilitate and eliminate geographic barriers between bank and customers. Thereby, banking sector can be extended beyond the countries geographic borders. But this also results in cross border risks. There is a possibility that in few countries there are ambiguities in legal requirements and other compliance measures. These undefined and unclear norms may lead to face legal risks associated with non-compliance of various nations rules and regulations that includes consumer data protection norms, transactions record maintenance norms and other reporting standards, rules regarding safeguarding privacy and money laundering.

Strategic Risk

Strategic risks are risks that are associated with introduction of a new digital product or digital banking services. Notch of this strategic risk depends on the measures that are taken precautional by banks to address various issues that may arise. This includes a proper business plan, sufficient resources both financially and non-financial to facilitate the plan, analysing credibility of outsourced vendors, comparing the usage and availability

of technology etc. To eliminate such risks, banks must conduct proper survey among experts from various fields, so that goals can be formulated and performance can be well monitored. Also, availability of financial resources needs to be analysed, provisions for staff, proper training, adequate insurance coverage need to be governed. Besides this, regular periodic valuations of introducing new technologies and Suitable consideration regarding the costs for technological up gradation are mandatory.

Other risks

Other categories of risks include traditional risks such as interest rate risk, banking credit risk, liquidity management risk and market size risk. These risks also exist in Digital banking services. The dimensions of these risks depend on nature of digital banking account, usage of electronic channels and absence of geographical limits. Their practical implications depend on magnitude of banks and its supervisors than the legal, operational risks and reputational risks. Especially for banks operating at a larger scale, that specially operates in digital banking, these risks are substantial.

3.10 LEGAL FRAMEWORK INVOLVED IN DIGITAL BANKING

The legal constitution for Indian banking sector is provided by a set of governing principles in the form of enactments that includes

- Reserve Bank of India Act, 1934
- Banking Regulations Act, 1949
- Foreign Exchange Management Act, 1999

In India, no organization can operate as a bank without getting license from the central bank of India which is RBI, under Banking Regulations Act, 1949. All the rules and supervisory regulations are prescribed in this banking regulation act and all banks operating in India must adhere to it. Accepting of deposits from customers by a non-bank institution requires regulatory and supervisory provisions under Reserve Bank of India Act 1934. It is clear from Foreign Exchange Management Act 1999, that no resident of India can lend or borrow or open an account that operates foreign currency from a

non-resident or non-resident banks except certain situations that are prescribed in Foreign Exchange Management Act. Besides these acts, functions of banks are also influenced by number of principles that governs trade and commerce, that includes

- Indian Contract Act, 1872
- Negotiable Instruments Act, 1881
- Indian Evidence Act, 1872

Legal Mechanisms- Digital Banking

RBI's authority to issue a license under Section 22 of the Banking Regulation Act (BR Act) to a banking company is upfront, an additional step is mandatory for providing a licensing management for Digital Banking that permits the banks to provide digital banking services in addition to their core financial business. Hence, the legal engineering for the license involves the following:

A Digital business bank license and Digital Consumer bank license under Section 22 is essential for enablers and business restrictions as described.

A central government of India notifying that Non-Financial Banking is complementary to core financial business of Digital Business Banks and Digital Consumer Banks.

3.11 GOVERNMENT INITIATIVES

Prime Minister Modi opened 75th Digital Banking Units as a big step towards 'ease of living'. Finance Minister Nirmala Sitharaman announced that 75th DBUs would be set up to ensure that the benefits of digital banking reach every nook and corner of our country in the 75th year of Independence. It will simplify the banking procedure by providing a secure banking system.

As many as 11 public sector banks, 12 private sector banks, and one small finance bank have established brick-and-mortar Digital Banking Unit outlets across the country that operates 24*7. Digital Banking Units will provide digital banking facilities like, opening savings accounts through eKYC/video KYC, balance-checking, printing the

passbooks, transfer of funds, investment in fixed deposits, loan applications, stopping payment instructions for cheques, applying for credit/debit cards, viewing statement of account, paying taxes/ bills, and making nominations.

DIGITAL BANKING UNITS: TAKING THE LEAD

There are 4 DBUs in each of these states

- Karnataka, Rajasthan, Tamil Nadu, Uttar Pradesh, Odisha

There are 3 DBUs in each of these states

- Kerala, Madhya Pradesh, Gujarat, Maharashtra, Punjab, Sikkim, Telangana

SERVICES OFFERED

Financial services to be provided by the Digital Banking Units include savings, credit, investment and insurance. On the credit delivery front, the Digital Banking Units will provide end-to-end digital processing of small ticket retail, and MSME loans, starting from online applications to disbursals. And also they will provide services related to certain government-sponsored schemes. There are two modes of services they are:

- Self-service (24X7 and 365 days basis)
- Assisted