

An Empirical Study of Cloud Banking and its convergence in emerging Digital economy

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Abstract

Indian banking sector witnesses multiples channels of technological advancements. In this state of art techno driven era cloud banking is a valuable liberation channel. A pragmatic attempt is made in this research paper on the growth prospects and challenges for cloud banking in India and related concerns for the regulators. Technological developments have brought about a mixture of changes in the approach in varied products and services are rendered to clients by banks. Banks through cloud technology networking all branches and has given rise to more competent banking channels with more customized Automated Teller Machines, Cloud Banking, mobile banking and phone banking. Cloud banking a revolutionary feature in the banking sector, has witnessed an unmatched development in recent years. Cloud technology has emerged as a novel

way of rendering financial services to clients. Customers are comfortable towards much user friendly banking through cloud technology. Banking through is based on Internet platform, which is used as a channel to offer various financial services. Cloud banking has expelled popularity in banking services and their clients because it is cost-effective, promotes anytime anywhere banking, facilitates the expansion of customer base through increased geographical reach and helps to serve millions of customers at the same time. Clouds baking as become a preferable choice to customers, as they would use multiple channels of banking depending upon their need and urgency.

Keywords: - Banking Systems, Cloud Banking, Technology, Regulators, Security, Operational Efficiency

Full Paper

Cloud banking operates in internet platform and it escort a menace to privacy of client transactions, data security and account information. Operation of banking in cloud technology at public domain faces numerous challenges which influence towards earning, reputation, security and future prospects of bank functioning. Fraudulent and privacy violation are two major concerns of cloud technology in banking operations for regulators perspective. Cloud banking needs a much advanced technical architecture for reliability of transaction and bank management should ensure for these aspects. Introduction of new services without adequate appraisal and trial run may lead to major destruction of functioning in banks. Cloud banking involves a series of legal formalities and regulations. Misconception of applicable laws may lead to operations hurdles. Since cloud banking is a recent phenomenon pertaining laws are in evolving phase. Information inadequacy about threats involved, rights and obligations etc, dispute success of transaction in cloud banking.

Challenges in Emergence and Operation of Cloud Banking

Risk related to operational and safety aspects are major concern of application of internet in cloud technology banking transactions. Ethical hackers target for data reliability, system malfunction, unauthorized entrée, privacy violation, deceptive transactions and erroneous processing of transactions. Phishing, a common threat for cloud banking technology, results due to negligence of employees, hacking and deviation from the set service standards. Automation risk is a consequence of wrong selection in technology, scarce internal organize systems, use of obsolete technology, inappropriate system architecture, use of single authentication for access, misuse of system and technical information by service providers. This hurdles transactional convenience for the clients and may result in discontinuation of service preferences

Credibility of Cloud Banking

Creditability towards banking services is a pivotal element of attraction towards selection of a service provider. This

enables the goodwill building and brings in more clients for the banks. Cloud banking technology should enable all convenience to clients without compromising service standards. Service standards are challenged by technical problems such as network issues, delay in updation of transaction details, lack of simplicity, security inadequacy, double counting of transaction and menace of hackers. Spam mails as become a common threat and clients who receive such mails are tempted to open them. It leads a forged website of the banks and clients started input their details which paves way for larger risk. Consolidating all these threats, it creates a major hurdle in the functioning of the overall cloud banking.

Strategic challenges for Cloud Banking

Cloud banking involves all transactions through online which is misused for money laundering to a greater extent. Virtual or internet only are more susceptible to risks like money laundering, as inference of online transactions or payments is more challenging and difficult compared to traditional banking. Bank authorities become more compliance for these issues.

Cloud banking is a universal practice of banking operation in today's world. Due to its cross border operational facilitates customers from different parts of the world are attracted and finding it easy to avail transaction from bank of their choice. Every country will have unique regulatory authorities to monitor their banking operations in their country. Violation and non-conformity of regulations of other countries may lead to much risk for the banks as well as the customers. This kind of risk is common in nature only when bank have customer spread over many parts of the world.

Concerns and Regulatory Challenges for Cloud Banking

General risks include risks like credit and liquidity risk. Credit risk may be a result of the non fulfillment of payment obligations by third parties such as merchants, billers, etc, in case of electronic bill payments. Liquidity risks arise from a bank's in ability to meet its obligations when they become due without incurring unacceptable losses, even though the bank may ultimately be able to meet its obligations. The above discussed risks may lead to many issues and concerns for the

regulators. The issues and concerns for regulators can be classified under three headlines namely legal, regulatory and supervisory issues. One of the primary concerns for the regulators with regard to the Cloud banking is applicability of the law. The issue is to determine whether the law of area where access to internet has been made will be applicable of the law of the area where transaction has finally been done will be applicable.

Emergence of Cloud Banking in Global Scenario

Cloud banking is cost effective when compared to the traditional banking in terms of the reach and human capital employed. The growing risks in the Cloud banking are forcing the banks to invest heavily in technology. This, in turn, is increasing the cost of the banks. Considerable cost is involved in setting up of payment gateways, system and technology up gradation, devising

Secure authentication systems and payments to third party service providers. Banks that do not invest sufficiently face the danger of losing customers to their peers. High technology cost can effect the profitability of banks. The regulators face the challenge

of ensuring profitability of banks as secured banking for customers while laying guidelines for technology requirements and authentication systems. Cloud banking has evolved over the recent years as effective delivery channel of the banks. Countries across the world have witnessed a rise in the penetration levels of Cloud banking. Scandinavian countries like Sweden and Finland are way ahead of other countries in terms of internet preparation. In India, the reserve bank of India has issued guidelines on Cloud banking. It suggests various security measures to be adopted by the banks while delivering products through internet. It has specified the architecture to be used and the need for regular updation of system architecture in accordance with latest developments in technology. It has suggested the use of firewalls, audit trails, proper back up facilities, customer education and proper authentication system, among many other security measures. As per the RBI guidelines, issued in 2001, only those banks that are licensed and supervised in India and which have a physical presence in India will be permitted to offer Cloud banking products to residents of India. The RBI has established Institute for

Development and Research in Banking and Technology (IDRBT) for the development and research in banking technology. It has appointed IDRBT CA as Certifying Authority to issue certificates to the banks and financial institutions for RBI's public key infrastructure enabled applications. RBI has allowed banks to provide Cloud banking services without prior approval from it. It however, requires banks to comply with some conditions, including approval of Cloud banking policy by respective bank boards, ensuring compatibility of Cloud banking Policy with their information technology and security policies, proper procedures with respect to Know your customer requirements and adopting measures to cover operational risks. Bank in India are permitted to offer Internet based foreign exchange services in addition to local currency products. Bank are allowed to offer internet on certain conditions, including compliance with Federal Emergency Management Agency (FEMA) regulations in respect of cross border transactions, taking responsibility for data security and segregation of data related to Indian operations

Transactional Convergence through Cloud Banking

All these advantages have promoted the growth of Cloud banking across the world. At the same time, there are several risks that are inherent in this kind of banking. The highly unregulated internet makes banking vulnerable to various types of risks. The risks involved pose a threat not only to the bankers but also to the customers. Therefore, the role of the regulator becomes significant in protecting the interest of the customers and the banks. When the Internet is used as medium to facilitate banking it poses a threat to the privacy of individual transactions, security of the data and account information. At the same time, there is a possibility of theft as well. As Cloud banking operates in public domain, it poses various types of risks for the banks which in turn can affect their earnings, reputation, security and future prospects of banks. It also poses threat of fraud and privacy violation to the customers. From a regulatory perspective, risks involved in Cloud banking can be categorized as follows : Transaction risk is one of the most prominent forms of risks related to Cloud banking. It is a threat to the

earning of the bank and can be caused by the lapses in data integrity, system malfunction, unauthorized access, privacy violation, fraudulent transactions and erroneous processing of transactions. It can also be result of the negligence of the employees, hacking and deviation from the set service standards. Phishing is one of the common threats involved in Cloud banking.

Technology Architecture of Cloud Banking

Technology Risk is caused by wrong choice of technology, inadequate internal control systems, use of obsolete technology, improper system architecture, use of single authentication for access, misuse of system and technical information by third party service providers. This, in turn, may result in transactions and security risk. Reputational risk leads to the loss of credibility and goodwill among the customers. It is caused due to the banker's inability to meet service standards. There may be a difficulty in accessing the account information due to regular network related problems with the website, delay in updating transaction information, lack of simplicity, security infringements, duplicate transactions and threat of hacking. One of the common

threats in the recent times has been the advent of spam mails. If the customer clicks on the link, he or she can see a fake website of a bank to update their account information. All these threats are capable of posing a threat to the entire system rather than a single bank. Cloud banking involves various technical aspects. Lack of knowledge about various technical aspects can result in inaccurate assessments and decisions by the bank management. Launch of new products without proper appraisal of the implications can cause strategic losses to the banks.

Legal Ambiance of Cloud Banking

A legal risk is the result of a breach of or non-adherence to the prescribed rules and regulations. It can also result from a wrong interpretation of the applicable laws. Cloud banking is a recent phenomenon and the laws related to various aspects of the Cloud banking are still in an evolving phase. Lack of adequate information among customers about the risks involved, rights and obligations can result in disputed transactions causing legal risks. One of the major benefits of the Cloud banking is that

the transactions can be carried out online. However, the same can be misused for undesirable activities through money laundering. Virtual or internet only are more vulnerable to risks like money laundering, as deduction of online transactions or payments is more complex and difficult compared to traditional banking. It can lead to legal and compliance issues of banks. Cloud banking is universal in nature. It can attract customers from different parts of the world. Each country will obviously have a different set of rules, procedures, and guidelines. Violation of and non-conformity to the rules of other countries can lead to legal and other risks. However, this risk will only come up in case banks allow prospective customers from other countries to open accounts in their banks. General risks include risks like credit and liquidity risk. Credit risk may be a result of the non fulfillment of payment obligations by third parties such as merchants, billers, etc, in case of electronic bill payments. Liquidity risks arises from a bank's in ability to meet its obligations when they become due without incurring unacceptable losses, even though the bank may ultimately be able to meet its obligations. The above discussed concerns

may lead to many issues and concerns for the regulators. The issues and concerns for regulators can be classified under three headlines namely legal, regulatory and supervisory issues. One of the primary concerns for the regulators with regard to the Cloud banking is applicability of the law. The issue is to determine whether the law of area where access to internet has been made will be applicable of the law of the area where transaction has finally been done will be applicable. Another issue of concern for the regulators is the legality of the electronic contract between customers and the bank. The contract will be enforceable in countries where electronic contracts are valid as per applicable laws.

Conclusion

Advancement in technology has resulted in the rise of multiple channels of banking. Cloud banking has evolved as an effective delivery channel. It is emphasized on risks involved in banking on the net and the issues of concerns for the regulators.

Technological advancements have brought about various changes in the way in which various products and services are delivered to the customers by the banks. Banks have been at the forefront in harnessing technology. Technology has resulted in the computerization of the bank branches and has given rise to electronic banking channels like Automated Teller Machines, Cloud Banking, mobile banking and phone banking. Of these, Cloud Banking, relatively a new feature in the banking sector, has witnessed a phenomenal growth in the recent years. It has emerged as a novel way of providing financial services to the customers. Customers are now feeling comfortable and at the same time convenient while banking through internet. Cloud banking is the result of Internet, which is used as a medium to offer various financial services. The banking sector has recognized the potential of the internet as a medium to offer various banking products and services. Cloud banking has gained popularity among various banks and their customers because it is cost-effective, promotes anytime anywhere banking, facilitates the expansion of customer base through increased geographical reach and helps to serve

millions of customers at the same time. It also adds to the choice of customers, as they would prefer to use multiple channels of banking depending upon their need and urgency. Cloud Banking, a technological advancement has paved the way for the extensive development of banks throughout the world. Besides numerous advantages of the cloud banking there are various risks associated in the operational efficiency of the banking transactions. At the inception stage banking system was functioning so lethargic and much of unregulated phenomenon. Due to casual functioning risk associated with banking transactions was major concern for not only the banks but also its customers. It gives a threat to most customers in regard to security of transactions. The role of regulators of cloud banking becomes predominant in safeguarding interest of customers and banks.

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