EMERGING TRENDS AND CHALLENGES OF CLOUD BANKING SYSTEM

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ABSTRACT *:* As one of the main foundations of our economic systems, the banking system is a highly regulated environment. Every step a bank takes is always under close scrutiny since (fundamental) changes could have deep consequences on the overall economy. Nevertheless, banking is changing. And this change is increasing its speed, mostly due to information technologies such as the block chain, which is already disrupting value chains and business models in the financial sector. In fact, right now Financial Technology, or Fintech, is one of the fields for entrepreneurship, with start-ups and banks creating new products, services, and business models.The result is a highly valuable research paper for any Fintech entrepreneur, innovator, finance professional or banker.

***IndexTerms* - Component, formatting,style,styling,insert.**

I. INTRODUCTION

Digital banking refers to the digital technologies that now banks are providing instead of traditional banking. The objective of digital banking is to provide a standard as well as comfortable online and mobile banking services by integrating their digital technologies. Now, for getting your balance update, fund transfer, to deposit or withdraw cash, for passbook update you need not to visit your branch. For each query, there is a machine-like CDM (Cash deposit machine), Passbook machine, ATM etc. Digital banking is not only for customers but also for bankers, they are using CSM (cash sorting machine) for cash-counting, Digital lamps for cheque verification, enhanced software's for calculations and data storage, they use different software's to update their all inventories of bank-like cheque books, account-opening kit, debit-credit cards, locker details etc.

Internet banking, Mobile banking, Wallet banking, Customer Service, Digital Cash, ATM, SMS Services and IVR calling are some of the examples of digital banking that we use in day to day life.

Banks should ideally look at becoming customer owners of the complete digital marketplace. In such a scenario, the digitalized banks would control and assure the customer experience eliminating the need for the customer to interact with other service providers. API-based banking can enable this from a system perspective. To own the complete customer experience, orchestration of end-to- end customer experience at each stage of the relationship becomes crucial approaches in digitalization.

Important advances in infrastructure, especially digital identity that can be linked to bank accounts, have provided an opportunity to reduce the cost of customer on-boarding and ongoing compliance. This enables financial institutions to reach hundreds of millions of new customers. These advances in regulation and infrastructure are paving the way for increased provision of financial services from both traditional and non- traditional providers.

II. REVIEW OF LITERATURE

According to the Cisco Global Cloud Index, global cloud computing traffic will increase 12-fold from 130 extra bytes to reach a total of 1.6 zettabytes annually by 2015. Cloud is the fastest growing component of data center traffic, growing to more than 33 per cent of the total by 2015.

According to Gartner, by 2015, low-cost cloud services will cannibalize up to 15 per cent of top outsourcing players' revenue, and more than 20 per cent of large IT outsourcers who do not invest enough in industrialization and value-added services, will disappear through M&A's.

2.1 OBJECTIVES OF THE STUDY

- To know improvement of banking industry systems in India.
- To know study the awareness and trend of cloud banking system.
- To study the challenges and suggestions of cloud banking system.

2.2 METHODOLOGY

The data used in the paper is mainly from the secondary sources. The data has been collected from secondary sources like research papers, books, articles, and economic survey reports.

III. EMERGING TRENDS OF CLOUD BANKING SYSTEM

The banking sector is undergoing a period of major upheaval and restoring customer confidence, badly shaken during the financial crisis, has emerged as a key priority. More assertive customers are increasingly demanding higher quality of service and ease of use from their banks. The importance of technology in enabling the banking sector to deal with changing customer demands, improve operational efficiency, and enhance regulatory compliance is increasingly recognized by banks across the globe.

The following global technology trends which are expected to drive an increased investment in technology:

- ✓ Increased focus on next-generation remote banking solutions
- ✓ Drive towards core banking platform replacement
- ✓ Increased role of business intelligence and analytics in transaction monitoring
- ✓ Increased focus on enterprise payments hubs in payments processing

3.1. Focus on Next-Generation Remote Banking Solutions

The rapid rise in internet services and the increasing propensity of young consumers to use internet and mobile applications for carrying out transactions has made next- generation remote banking solutions a key priority area for banks.

Cloud computing and virtualization are other technologies which are seen as potential tools for lowering infrastructure, maintenance, and energy costs. Improved security, greater reliability, enhanced flexibility and functionality, and increased economies of scale are some other potential benefits which banks feel can be derived by harnessing remote banking solutions.

3.2. Drive towards Core Banking Platform Replacement

Maintenance of legacy systems still occupies a large part of most banks' IT budget. For example, in 2010, nearly 79% of the IT budget of the banking sector was spent on maintenance projects9. Reliance on legacy systems has resulted in most institutions suffering from poor data consistency, low data quality, and limited visibility of data across the enterprise which in turn have led to regulatory, compliance, and customer management issues.

3.3. Increased Role of Business Intelligence and Analytics in Transaction Monitoring

The transaction history of a customer contains valuable information about their purchasing and investment preferences. Though this transaction-related data is available with banks at an individual customer level, lack of appropriate business intelligence (BI) and data analytics capabilities has resulted in a less than optimal use of this data in providing customized rewards, products, and investment solutions to customers.

3.3.1 Mobile cloud

The concept of Bring Your Own Device' (BYOD) will continue to gain momentum, as more organizations understand the benefits like cost savings and increased employee productivity. With more businesses becoming mobile, there will be a move towards cloud as organizations begin to shift IT assets from their own data centers to the cloud. As they to adopt the cloud, enterprises will begin to host at least parts of their data on the cloud, even mission-critical workloads.

3.3.2 Hybrid Cloud

Given their varied security concerns, adoption of hybrid cloud' model will see an uptick since it provides the advantage of reducing the infrastructure cost, in addition to protecting and controlling mission-critical workloads. Enterprises might not settle on a single cloud model, instead will use multiple cloud technologies spread among multiple deployment environments. The challenge for enterprise IT will be to develop plans for implementing a management framework that can span all cloud environments in use.

3.3.3 New business models

The year will drive the financial implications of enterprise adoption of pay-as-you-go pricing. Businesses are considering buying services on-demand rather than purchasing physical hardware, software licenses and maintenance contracts. More and more businesses will move towards paying for X-as-a-service type solutions on-demand within their own data center or that of a provider, indicating a trend towards business models that favor OPEX. Infrastructure as a service cloud provider are battling in a price war that has seen 29 price reductions by the four major providers during the past 14 months, a trend industry analyst expects to continue. The need to move to the cloud for many would not be technology, but the economics of running application workloads.

IV. CHALLENGES OF CLOUD BANKING SYSTEM

Like any other large-scale platform, design and development of a cloud computing platform comes with its own challenges in different dimensions. With current matured cloud service providers most of the risks can be mitigated; however, the following are the key challenges.

4.1. Data Residency Requirements

Most central banks (including the RBI) require that core system banking data needs to physically reside within the geography. Because of this requirement, the choice of cloud computing platforms can be limited. However, some applications which handle non-core banking data such as CRM, HR, and others can still be placed on remote cloud services without data residency issues.

4.2. Cloud Compatibility and Availability of Services

Another key challenge faced by the banking industry is the compatibility of applications for cloud computing or options for porting them onto the cloud. The percentage of legacy applications is significant in the financial industry when compared to other industries. Moreover, these applications in most cases have been customized to a greater extent which makes moving from in-house legacy applications to a cloud-based offering difficult.

4.3. Network Latency

Business process availability is key for smooth operations. Using a cloud-based model, networking adds another dimension of complexity for business availability. There are mechanisms to address this such as redundant Multi-Protocol Label Switching (MPLS) networks from multiple service providers; however, performance and availability remain a challenge. In India, banks are required to operate in rural and semi- urban environments as per RBI guidelines, and network latency can be an inhibitor in such areas.

4.4. Data Privacy

Data privacy and security is another challenging aspect which hinders the migration of banks onto the public cloud. Banks capture, store, and process private financial details and demographic information on their customers. Regulations require that banks Know Your Customer (KYC) in on-boarding new customers. In order to comply with these requirements banks, need to maintain copies of KYC documents, which could be personal identification documents such as passport information or some other personal identification information.

4.5. Storage Issues

Data storage management becomes a critical issue as data, especially finance-related, will be residing in the provider's cloud. Consumers should be able to scale data storage on an as-needed basis, restrict physical location of the data at rest (database, tapes) to handle issues of data sovereignty, ensure that proper processes for data purging and disposing of data storage hardware are followed, and administer access controls for their data.

4.. Efficient SLAs

Creating standard contracts and SLAs where expectations are clearly enumerated from both sides is crucial for cloud adoption. For example, banks including Commonwealth Bank of Australia, Bank of America, and Deutsche Bank were part of an alliance (Enterprise Cloud Leadership Council) to create some standards to compare apples with apples when buying cloud services.

4.7. Change Management Issues

Infrastructure utilization may be 10% on average, but when the bank needs 100% usage, it is critical that it is available, secure, and resilient. Consequently, banks have a reluctance to downsize their internal resources. Each choice around cloud computing effectively means "decommissioning" a portion of the IT and process stack, ranging from business capabilities to infrastructure. The human capital perspective may also be critical, since cloud service providers will not welcome any significant transfer of staff that would affect their business model.

4.7. Legal and Compliance

There are various risks monitored and managed by banks including operational (or transaction) risk, legal/compliance risk, strategic risk, reputation risk, and credit risk. The risk management, compliance, and liability reduction principles that apply to FIs' technology services activities across the board logically also apply with equal force to FIs' cloud computing activities.

4.8. Governance

Another category of challenges in adopting cloud computing arises from governance. Whereas in on- premises computing, governance is limited to the enterprise, in cloud computing, some governance issues remain with the enterprise, while others have to be managed by the cloud service provider. An example would be change control and upgrades to system infrastructure and software, which affect the customer, but which will involve governance decisions from the cloud service provider.

V. CONCLUSION

There are a few other initiatives in India that relate to cloud usage by the banking sector. These include a study and report undertaken by the Institute for Development and Research in Banking Technology (IDRBT), a report put forth by the IEEE on cloud usage for emerging markets, and an Indian state data center initiative.

The IEEE document, IDRBT Community Cloud for Indian Banks describes a pilot approach to providing community clouds for Indian banks.

5.1 The G-Cloud consists of:

- A series of framework agreements with suppliers, from which public sector organizations can call off services without needing to run a full tender or competition procurement process
- An online store – the "Cloud Store" – that allows public sector bodies to search for services that are covered by the G-Cloud frameworks
- The contractual issues in the cloud services can relate to ownership of IP, unilateral contract termination, vendor lock-in, fixing liability, and obligations of cloud service providers, exit clause, etc.

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