A Study on Cloud Mobile Banking's Growing Technology

[1]Dr. A. Jafersadhiq
[1]Assistant Professor
[1]Department of Management studies,
[1]Erode Sengunthar Engineering College

Abstract: Cloud computing is emerging technology in future time. Business application has become the greatest market for cloud services. Cloud computing has changed the way of communication between banking and its customers. A large number of banks are now adopting cloud technology to fulfil their needs including less budget, effectiveness business, green Information Technology (IT) business and time saving. This paper provides a beneficial insight into how cloud computing can be effectively used through Mobile- Banking sector.

IndexTerms **- Business effect, Cost, Cloud Computing, Mobile Banking, Security.**

I. INTRODUCTION

"Cloud Computing" is the new way of computing, which is rapidly getting lots of momentum. The word cloud is a metaphor for internet world. The word of "cloud computing" is everywhere, where we can think. Cloud computing means the storing and accessing of data and program on the internet instead of our computer's hard drive. Cloud Computing means is a type of internet which is based on computing.

Cloud computing provides some services in Banking sector as BPaaS, SaaS, PaaS, IaaS. The BPaaS stands for Business Process-as-a-Service use cloud computing in business as in terms, including billing, payroll. The SaaS stands for Software-as-a-Service including accounting, Customer Relationship Management (CRM), and Enterprise Resource Planning (ERP), invoicing now PaaS stands for Platform-as-a-Service is a Fulfil platform for applications, interface and it decrease IT cost & decrease the number of hardware & software and hosting environment.

Now the last one is IaaS stands for Infrastructures-a-Service allows a business to buy those resources as a fully outsourced service that purchasing servers, software's, data center space and network equipment. This paper describes about the use of cloud computing in mobile banking and the challenges and issues in Cloud Mobile Banking (CMB). This paper is organized in different sections. First section explains the introduction of cloud computing and about the services of cloud computing. Second section explains that about the mobile banking and how it is related with cloud computing. Third section explains the deployment models that are used in organization and financial institution. Fourth section explains general architecture of cloud mobile banking. Fifth section contains the benefits of mobile banking through cloud computing. Sixth section explains challenges and issues in cloud mobile banking.

Cloud computing is the future of banking technology. It's just a matter of time before all financial institutions move their technology to the cloud. As banks adapt to market changes and new technology landscapes, cloud computing is playing a major role, providing alternative ways to access to core banking technology.

II. CLOUD COMPUTING CAN HELP FINANCIAL INSTITUTIONS IMPROVE PERFORMANCE IN A NUMBER OF WAYS.

2.1 Cost Savings and Usage-based Billing:

- With cloud computing, financial institutions can turn a large up-front capital expenditure into a smaller, ongoing operational cost. There is no need for heavy investments in new hardware and software. In addition, the unique nature of cloud computing allows financial institutions to pick and choose the services required on a pay-as-you-go basis.

2.2 Busines Continuity:

- With cloud computing, the provider is responsible for managing the technology. Financial firms can gain a higher level of data protection, fault tolerance, and disaster recovery. Cloud computing also provides a high level of redundancy and back-up at lower price than traditional managed solutions.

2.3 Business Agility and Focus:

- The flexibility of cloud-based operating models lets financial institutions experience shorter development cycles for new products. This supports a faster and more efficient response to the needs of banking customers. Since the cloud is available on-demand, less infrastructure investments are required, saving initial set-up time.
- Cloud computing also allows new product development to move forward without capital investment. Cloud computing also allows businesses to move non-critical services to the cloud, including software patches, maintenance, and other computing issues. As a result, firms can focus more on the business of financial services, not IT.

2.4 Green IT:

- Organizations can use cloud computing to transfer their services to a virtual environment that reduces the energy consumption and carbon footprint that comes from setting up a physical infrastructure. It also leads to more efficient utilization of computing power and less idle time.

2.5 Importance:

Undeniably many factors are involved when it comes to Cloud implementation; making a hose of advantages, Cloud makes a big hit in banking segment.

III. BENEFITS

3.1 Reduced costs

No additional investments in management of resources required in banking for carrying data. Cloud makes it easy to invest in required resources by eliminating the cost attached with dedicated hardware and software. ENlight Cloud's Pay-as-you-go model makes out more results with less investment, it also provides shared application services on demand.

3.2 Improved flexibility

In order to sustain in the changing market, it is must to shape technology usage according to the changes and create room in changing demands to sustain in market. Cloud provides this flexibility to survive and respond quickly with customer needs and market changes.

3.3 Auto scalability

On demand cloud services enables the scaling of resources as per requirement. Resources can scale up and down according to the requirements. eNlight Cloud is the world's first auto-scalable smart cloud that makes out this in most efficient way to provide with maximum benefits to the customers.

3.4 Improved operational efficiency and Business agility

Cloud enabled increased centralized management of data and reduced complexities allied with changes and increase in data. It facilitates with maximum scope for the future technological evolution in business, being flexible. eNlight cloud for Banking provides a maximum productivity of Banking operations. Businesses can focus more on services than on IT with Cloud adoption, this will make a ground for Business agility with improved operational efficiencies.

3.5 Efficient client service

Cloud will ease the activities related to banking for clients, customized and efficient solutions can be provided with faster access. Clients can leverage centralized approach with cloud that would disable the loophole of technologies for banks and clients, transactions will be made smoother and risk free.

3.6 Business Continuity

Cloud computing services will make it possible to gain higher securities in data critical sector like BFSI, providing Disaster recovery solutions and complete fault tolerant system. It will facilitate the high level of redundancy in lower prices than it is provided with traditional dedicated Disaster Recovery services.

Cloud will make a new hype in coming years in Banking and other financial sectors. You could checkout this info graphics on BFSI vertical's evolution with cloud to know the current BFSI inclination towards Cloud.

IV. CLOUD INFRASTRUCTURE:

The cloud is the main storage in this system so a perfect infrastructure has to be developed. Virtual storage has to be placed because the infrastructure has to be developed for the banking system and there should more security has to be provided and applications information are to be updated regularly by the automation process and application are to be merged with the cloud system.

4.1 MOBILE BANKING:

Mobile Banking using cloud computing can be explained as a way whereby the bank customers communicate with a bank by a mobile device and use a cloud computing as growing technology for instance, mobile phone with internet or PDA (Personal Digital Assistant).

Mobile Banking is used by smart phone and other devices such as tablets to perform online banking tasks including knowing account balance, transferring payments, and funds between two accounts and locating an ATM (Automated Teller Machine).

Mobile banking started in India in 2002, and back then, transactions were carried out through SMS. Once a customer has downloaded the mobile banking app on their smartphone, banking transactions can be carried out as per their convenience.

In 2008, ICICI Bank was the first bank to launch mobile banking in India. In the last two decades, mobile banking has evolved from being mere SMS-based support service – wherein you get updates about your transactions – to a full-fledged banking service. Thanks to wireless application protocol/WAP-supported smartphones, now a customer can avail of almost all those services that he could once get only when physically present at the branch. Technically, all bank transactions that involve accessing credit/debit through a mobile device (phone or handheld tablet) are considered as mobile-banking transactions.

These services, currently offered by 97 banks in India, are available to mobile customers irrespective of their mobile network or service provider. A customer may simply register with their respective bank and download a specific application on their smartphone. Licensed banks with the provision of core banking solutions (CBS) are permitted to offer mobile-banking services to their customers after obtaining necessary permissions from the Department of Payments and Settlement Systems, Reserve Bank of India.

As of now, only rupee-based services within India are allowed; cross-border transfers of any kind are prohibite Mobile Banking for Children RBI, in May 2014, allowed banks to let minors above the age of 10 years open and operate bank accounts independently. The minors can open a savings, fixed or recurring bank deposit account. These accounts also offer debit card and cheque book facility. Some banks like State Bank of India and ICICI Bank even offer mobile-banking services to these accounts.

4.1.1 Benefits

a. Works across all GSM mobile handsets. No application installation is required on the mobile handset; the service also has an interactive menu
b. Round-the-clock availability (functional even on holidays)
c. Provides a variety of banking and value-added service
d. GPRS is not required; works only on voice connectivity
e. Additional channel for banking and a key catalyst for spreading financial-inclusion reach
f. No additional charges while roaming

4.2 DEPLOYMENT MODEL:

Cloud Computing has three ways to provide services, the most commonly deployment clouds are:

A. Private Cloud:

This cloud infrastructure is operated privately for a specific department or company. It may be managed by company or a third party and may exist or prevail on or off the premises. It is more secure than all cloud options.

B. **Public Cloud** This cloud infrastructure is made available to the common public or a large industry group and is governed by a company that sells cloud services.

C. **Hybrid cloud** This cloud infrastructure is made up of private and public clouds that remain sole entities but are associated in order to administer services

4.3 ARCHITECTURE OF CMB (CLOUD MOBILE BANKING):

The general architecture of CMB (cloud mobile banking) is shown in figure 1. Mobile devices are connected to the mobile operators via base station including access point or satellite that control the connections and functional interfaces between the mobile devices and mobile network operator.

Mobile users request and send information such as ID and location are transmitted to the central processors that are connected to servers providing mobile network Mobiles and financial sectors like banks, both are connected to Internet Service Providers (ISPs). ISP provides internet connections to the world community.

Subscribers and banks request are delivered to a cloud through the internet. In cloud, the cloud controllers process the request to provide mobile user and banks with the corresponding cloud services. Mobile user can take the banking facility from cloud computing as corresponding bank details are residing on data centers of cloud computing

4.4 BENIFITS/USE OF CLOUD COMPUTING IN MOBILE BANKING:

Banking customers can get lots of benefits by using cloud computing in mobile banking. Some of these are as follows

Utilization of Time:

We can use Mobile Banking through cloud computing 24*7 hours so it is very convenient and most easy and a great choice for operates financial services for most mobile phone owners in rural areas cause everywhere is cloud.

Increase Adaptability Using cloud computing:

Banks will enjoy upgrade adaptability ratios and operating leverage. Using cloud computing technology and business operations can be much more effectively aligned, the cloud gives to mobile banking a golden opportunity to decline complexity.

Decrease Invest Amount:

Using cloud computing banks will not have been investing large amount to purchase software, hardware and related work force. Bank customers will easily be updating their accounts using all mobile devices at anywhere. Pay-on-demand model means they invest only for those software and hardware that they need.

Security Comparison Mobile banking is more secure than online and internet banking. Accessing our bank's mobile website or using our bank's mobile applications to access our account is much more secure than conducting traditional online banking on computer or laptop

Come together two clients Cloud computing easies the banking transaction related to payments between sellers and buyers through mobile device

V. CHALLENGES AND ISSUES:

5.1 Compliance, production and security:

A big challenge of mobile banking in future is security of data and all times the security is maintaining. Banks need to some more demands stringently safety amount from suppliers and ensure new application meet the new and security standards.

5.2 Achievement or Performance:

The major issue in achievement of Cloud Mobile Banking (CMB) can be for few intensive transaction-oriented and another data intensive application and software's in which cloud computing be allowed the lack capable performance. Here also, people who are long distance from cloud providers and mobile devices may experience high latency problems and delay.

5.3 Authority:

A number of IT sectors, departments and wings are concerned cause cloud computing providers have a complete authority of the platforms. Cloud computing providers frequently don't design platforms for specific departments and their work practices.

5.4 Transmission cost:

Mobile banking using cloud computing, banks can save money on software, hardware and manpower; however, they could incur higher network transmission charges. Transmission charges may be low for internet based smaller bank mobile application, which are not data accelerated but could extremely grow for data intensive mobile applications.

5.5 Loyalty:

Mobile banking through cloud computing still doesn't always action full of the clock loyalty. There was cover where cloud mobile banking services suffered few time outages in the present days and future days to expect more cloud computing providers well-established standards and best usage.

VI. CONCLUSION:

Continuously increasing the advancement of cloud computing within the mobile's banking technology is providing many features between mobile users and bank customers. In this paper, the use of cloud computing in mobile banking is explained. By mobile banking we can easily transact our pay roll, bills, fund transfer and payments. Usage of cloud computing in mobile banking in different countries is shown in low to high order.

Mobile banking using cloud computing has more benefits for the banking customers. Along with the benefits, some challenges are also present to fight and some issues are also available in cloud mobile banking. Various security measures including cryptography and authenticity can be added to cloud mobile banking process.

REFERENCES:

[1] V. Krishna Reddy, B. Thirumala Rao, Dr. L.S.S. Reddy and P. Sai Kiran, Research Issues in Cloud Computing, Global Journal of Computer Science and Technology, Vol. 11 No. 11 July 2011

[2] Krishna Chaitanya.Y, BhavaniShankar.Y, Kali Rama Krishna.VandVSrinivasa Rao, Study of security issues in Cloud Computing, International Journal of Computer Science and Technology ,Vol. 2, No. 3, Sept 2011

[3] Aderemi A. Atayero, OluwaseyiFeyisetan , Security Issues in Cloud Computing: The Potentials of Homomorphic Encryption, Journal of Emerging Trends in Computing and Information Sciences, Vol. 2, No. 10, October 2011

[4] S. Subashini and V. Kavitha ,A survey on security issues in service delivery models of cloud computing., Journal of Network and Computer Applications, Vol. 34, No. 1, Jul, 2010

[5] Danish Jamil, Hassan Zaki, Security Issues In Cloud Computing And Countermeasures, International Journal of Engineering Science and Technology, Vol. 3 No. 4, pp. 2672- 2676, April 2011