

USAGE OF CLOUD COMPUTING IN BANKING SYSTEM

¹ Mrs. Poornima.s,² Dr.Jaganathan .A

¹ Assistant Professor,² HOD & Assistant Professor

¹ Bharathiar University Arts and Science College- Gudalur

Abstract : The banking industry is facing unprecedented changes. Control is now in the hands of the customer, rather than the bank. Customers are driving new business models. Their use of technology—in addition to changes in social and household dynamics—is driving business transformation. Banks need to react to this new customer-driven environment with innovation in business models, operations and IT. Cloud computing is known as on-demand computing and one of the latest developments in the IT industry. It provides the full scalability, reliability, high performance and relatively low cost feasible solution as compared to dedicated infrastructures

Security of Cloud computing is a sub-domain of network security, computer security and information security. This paper presents the role to improve cloud security and how cloud computing is impacting the financial services industry and what that management need to focus on when developing a strategy for their organization's adoption of cloud computing.

IndexTerms- : cloud computing, IT Industries ,security, Business Model

I. INTRODUCTION

- (i) Cloud computing is used by most banks, but not commonly for core services, mainly due to risk concerns
- (ii) Moving core services to the cloud could help banks focus on their primary mission and save money, but it comes with significant challenges
- (iii) Smaller banks will lead the transition of core services to the cloud as they are positioned to make the largest relative gains

Cloud computing is computing that uses data stored on an external server, accessed via the Internet. It's defined as ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction. ¹ It is an evolutionary result of the improvements in digital networks and computing speed over the last decades. Banks are already widely using cloud computing for non-core and non-critical uses, such as human resources, e-mail, customer analytics, customer relationship management, and development and testing (88% of surveyed EU-based financial institutions were already using cloud based services by June 2015), ² while a few smaller banks either have transferred or are in the process of transferring entire core services (treasury, payments, retail banking, enterprise data etc.) to the cloud (U.S.- based Independence Bancshares, Tunisia-based Zitouna Bank, U.K.-based My Community Bank, and Australia's ME Bank, for example). This brief looks into the relationship between banks and technology; presents an overview of the cloud model; outlines the model's benefits, costs and risks; discusses risk management strategies; and predicts what the near future holds for cloud computing in banking

"Globally, ninety percent of financial services clients surveyed I believe they need to transform from the status quo for future profitability"

1.2 About Cloud Computing

Cloud computing is expected to be one of the fastestgrowing technologies in the coming years. Business applications will be the largest market for cloud services spending, with a gradual transition from on premise to cloudbased services especially for general business applications like customer relationship management (CRM) and enterprise resource planning (ERP). Banks are expected to enter the cloud computing arena cautiously, with no single cloud services delivery model being a silver bullet for best meeting their demanding business needs.

Cloud computing can help financial institutions improve performance in a number of ways

(i) **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.

(ii) **Business 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.

(iii) **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.

(iv) 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.

1.3 Benefits/Value of Cloud Computing

Faced with rising costs of technology and hardware used, banks increasingly to cloud computing as a means of improving efficiency will lead to their look. Banks can charge without adding to the scale of their work in human resources, hardware and software increase. Cloud computing delivers computing power as a virtual service a product which benefits, software and computers and other devices as a utility on a shared network. Since the hardware and software are available on request, the user is only allowed to pay for the massive investment needed to set up there. But with cloud banks have increased their scale and will reduce costs. According to experts, if there is a national service provider, which can be in terms of security, performance, privacy and trust, and a bank customer data to these servers have a strong SLA, increase service quality and diversify services Bank, strongly reinforces the bank's competitive advantage. According to research done, the index is following the results of the implementation of this technology in the context of their bank

1.4 Costs and potential risks

Transitioning from a traditional to a cloud computing environment entails switching costs that can be very high. For example, a dedicated workforce would need to be established to prepare, manage and execute the switching to the cloud, with the task of possibly replacing applications that are not compatible with the cloud providers' platform with new ones. Other switching costs include the network bandwidth needed for moving the data, any upload or download fees charged by the cloud provider,¹¹ as well as any potential costs related to moving the data from one cloud provider to another. Booz Allen Hamilton has conducted sensitivity analysis based on multiple models of migration to the cloud, finding that the length of the cloud migration is one of the most influential factors driving economic benefits. The longer the migration schedule, the lower the benefits, which underscores the need to plan, budget and implement the transition in detail and with precision— something that is not always easy to do

1.5 Literature review

Cloud computing requires an infrastructure and facilities that are currently operating in the country's infrastructure is largely in the making. Therefore, the development planned in the context of providing telecommunications and broadband and fixed speed limits and unlimited data transfer, in accordance with the country enjoying the technology of cloud computing for business advantage required. Bank to gain market share and customer service that has the speed and accuracy of their selection criteria, they need to refocus on the methods and models used in order to change it or invent review new approaches. In the meantime, such as lack of flexibility and agility in existing systems due to the high volume of information, confidentiality of data, computational and processing needs as well as the high cost of change or development of information technology, includes the problems facing the industry. With regard to this topic, cloud computing technology is having features such as "flexibility," "scalability" and "high availability" and "cost-effectiveness" of many activists using its IT Banking industry focused.

1.6 Implementation of cloud computing technology under banking system

As many banks' branches run under one central bank with same financial transactions, withdraw and deposit etc., even if with same transaction we run individual banking system. So there will be central cloud server where all the computing (s/w and h/w) resources will be there where each end user can communicate through API and perform the appropriate operation. The T24 on Windows Azure offering is based on a software-as-a-service model (SaaS). This model allows financial institutions of all sizes and locations to quickly take full advantage of the rich functionality of T24, without having to manage and invest upfront capital in a complex on-premise deployment. And because T24 is offered as a pre-configured model bank, the solution can not only be rolled out quickly, but it requires very little customization.

1.7 Challenges to cloud

Although cloud computing is not a new concept for banks, this sector has been slow in adopting the technology. The key concerns are that such deployment models could lead to an environment sprawl and a lack of control in terms of change management. This can further lead to security risks, reliability issues and a lack of effective business continuity planning. A lack of core application solutions has delayed the process further. From the public cloud standpoint, the issues are around regulation, location, liability and recoverability in the cloud. These are some of the reasons that have slowed down the adoption and deployment of cloud computing and rather led most banks to start building mini 'private' infrastructure clouds.

The five main challenges of the banking cloud:

- (i) Security and compliance: maintain at all times the security of data. Banks need to demand stringent safety measures from suppliers and ensure new applications meet the latest and most rigorous security standards. Service Level Agreements (SLAs) are a must.
- (ii) Reliability: ensure that applications and data are always available in the event of a natural disaster or an unpredictable event. Banks need to have stringent SLAs in place, complete with guarantees, end-game scenarios and remedies if a provider fails to meet service levels.
- (iii) Cloud management: achieving visibility and measuring performance are harder to do, especially if, as seems likely, large banks will source cloud services from several providers and to use them for both internal – or private – and external, or public, services. This could result in a bank having to handle multiple security systems, and the need to ensure all parts of their business can communicate with each other and where necessary with clients. Increased use of various technology infrastructures and a mix of different cloud environments internally and externally mean banks will need to develop fully-fledged cloud management platforms. They will be a necessity to ensure banks can fully realise the cost savings and flexibility benefits of cloud computing.

(iv) Interoperability: banks will need to ensure data and applications can be moved across cloud environments from a number of providers. They should look to develop a single interface and management layer that can work across different platforms internally and externally.

(v) Regulation: the rules governing the cloud vary from country to country. Many countries' data protection laws impose constraints on where data is kept, limiting take-up. This is why the EC's move to regulate the cloud is welcome.

CONCLUSION

Trust and security have prevented businesses from fully accepting cloud platforms. To protect clouds, providers must first secure virtualized datacenter resources, uphold user privacy, and preserve data integrity. Financial services organizations are starting to use cloud computing technologies in a number of areas, in particular for mobile applications, innovation testing and micro-banking. The banks need to know that this is all about 'business model transformation' and to achieve business agility for the next level of growth. The key is to ensure that each bank starts working on a cloud reference architecture, which will define its winning strategy.

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