# CLOUD COMPUTING IN BANKING: OVERVIEW AND BENIFITS

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***Abstract:*** This study has been overview and benefits of cloud computing in banking .Cloud computing are the next stage in evolution of the internet network. Cloud computing is provides more than a service sitting in some remote data center. its a set of approaches that can help organization quickly, effectively add and subtract resources in almost real time .The cloud is as much about the business model as it is about technology. Companies clearly understand that technology is at the heart of how they operate their businesses. Business executives have long been frustrated with the complexities of getting their computing needs met quickly and cost effectively.

***Index Terms*** **– Cloud computing, Banking, Benefits, Network.**

## I. INTRODUCTION

Cloud computing is a complete new technology. he "cloud" is a set of different types of hardware and software that work collectively to deliver many aspects of computing to the end-user as an online service. Cloud Computing is the use of hardware and software to deliver a service over a network (typically the Internet). With cloud computing, users can access files and use applications from any device that can access the Internet. Cloud computing can help financial institutions improve performance in a number of ways. 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 is the next stage in evolution of the internet network. Cloud computing is provides more than a service sitting in some remote data center. its a set of approaches that can help organization quickly, effectively add and subtract resources in almost real time .The cloud is as much about the business model as it is about technology. Companies clearly understand that technology is at the heart of how they operate their businesses. Business executives have long been frustrated with the complexities of getting their computing needs met quickly and cost effectively. Cloud computing has started to become mainstream because these business executives have forced the issue into the forefront. Cloud environment itself requires a strong foundation of best practices in software development, software architecture, and service management foundations. This strong foundation is especially important because most organizations combine public and private cloud services.


(http://shabnamdhar.com/tech/four-trends-cloud-computing)

**Defining the Cloud:**

In an October, 2009 presentation titled " effectively and securely using the cloud computing paradigm" by peter mell and tim Grance of the national institute of standards and technology (NIST) information technology laboratory , cloud computing is defined as follows.

"Cloud computing is a model for enabling convenient, on-demand network access to a shared pool of configurable are reliable computing resources ( e.g., networks, servers', storage, applications, services ) that can be rapidly provisioned and released with minimal consumer management effort or service provider interaction."

## II. OBJECTIVE AND METHODOLOGY:

The main objective of the paper is to understand the overview of the cloud computing in banking. and advantages of the cloud computing in banking & evaluate the models of cloud computing . The paper is based on the secondary information collected from published books, journals and reports, websites .

## III.CLOUD COMPUTING BENEFITS

Cloud computation must operate within physical boundary parameters. The cloud offers the ability to provide massive amounts of computing power and storage, but these quantities are not infinite. Therefore, cloud users might have to fit their applications into one set of resource usage categories defined by the cloud provider. Cloud computational resources can be scaled up and down on demand and paid for on a metered usage basis. This ability provides tremendous advantages for clients in that they do not have to maintain internal computing systems designed for peak loads that may occurs only a small percentage of the time.

The major benefits of cloud computing can be summarized as follows:

- Means to rapidly from operating in a capital expenditure environment to an operational expenditure environment.
- Ability to rapidly deploy innovative business and research applications in a cost-effective manner.
- Use of virtualization to detach business services from the underlying execution infrastructure.
- Disaster recovery and business continuity capabilities are intrinsic in the cloud paradigm.
- Ability of the cloud provider to apply security safeguards more effectively and efficiently in a centralized environment.
- Ability to select among a variety of cloud suppliers that provide reliable salable services, metered billing, and advanced development resources.
- Scalable infrastructure that can rapidly provision and de-allocate substantial resources on an as-needed basis.

The major benefits of the cloud paradigm can be distilled to its inherent flexibility and resiliency, the potential for reducing costs, availability of very large amounts of centralized data storage, means to rapidly deploy computing resources, and scalability.

**Flexibility and Resiliency**

A major benefit of cloud computing is the flexibility that is provided by the following:

- Freedom from concerns about updating servers
- Freedom from having to install software patches
- Automated provisioning of new services and technologies
- Acquiring increased resources on an as-needed basis
- Ability to focus on innovation instead of maintenance details
- Device independence

**Reduced costs**

The cloud paradigm, in general, is a basis for cost savings because capability and resources can be paid for incrementally without the need for large investments in computing infrastructure. This model is especially true for adding storage costs for large database applications. Therefore, capital costs are reduced and replaced by manageable, scalable operating expenses

**The cloud offers large amount of data storage**

Resources than are normally available in local, corporate computing systems. In addition, the cloud storage resources that are used can be decreased or increased as desired with corresponding operating cost adjustments. This centralization of storage infrastructure results in cost efficiencies in utilities, real estate, and trained personnel. Also, data protections are much easier to implement and monitor in a centralized system than on large numbers of computing platforms that might be widely distributed geographically in different parts of an organization.

**Reduced Time to Deployment**

In a competitive environment where rapid evaluation and development of new approaches is critical offers the means to use powerful computational resources in a short time frame and large amounts of storage without requiring sizeable initial investment in hardware, software, and personnel. This rapid provisioning can be accomplished at relatively small cost and offers the client access to advanced technologies that are constantly being required by the cloud provider. Improved delivery of services obtained by rapid cloud provisioning improves time to market and growth.

**Scalability**

Cloud computing provides the means, within limits, for a client to rapidly provision computational resources to meet increase or decreases in demand. In many instances, organizations require large amounts of storage capacity for critical data, and this need can be accommodated by the cloud provider. This approach provides an alternative to inefficient in-house systems that have to be designed for peak load but run at only partial capacity most of the time. Cloud scalability provides for remote optimization so that computing resources are organized for maximum cost-benefit.

**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.

**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.

**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.

**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.

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## IV.CHOOSING THE RIGHT MODEL

### Cloud Service Models:

Cloud computing architecture is still evolving, and will continue to evolve and change for a long time. As we begin to make sense of the various vendors' rush to brand everything as "cloud computing," it's important to try to weed out the purely marketing-related acronyms and concepts. The goal of this section is to describe the cloud concepts and terminology that appear to be able to stand the test of time. Then, later in this section, we'll examine the benefits of adopting these concepts, and how organizations are restructuring their information models to compete and thrive.

**Business Process-as-a-Service (BPaaS**).

The cloud is used for standard business processes such as billing, payroll, or human resources. BPaaS combines all the other service models with process expertise**.** Simply stated, software as a services (Saas) solutions deliver software applications over the web. A SaaS provider deploys software to the user on demand, commonly through a licensing model. The provider may host the application on its own server infrastructure or use another vendor's hardware.

**Software-as-a-Service (SaaS).**

A cloud service provider houses the business software and related data, and users access the software and data via their web browser. Types of software that can be delivered this way include accounting, customer relationship management, enterprise resource planning, invoicing, human resource management, content management, and service desk management.

Platform-as-a-Service (PaaS). A cloud service provider offers a complete platform for application, interface, and database development, storage, and testing. This allows businesses to streamline the development, maintenance and support of custom applications, lowering IT costs and minimizing the need for hardware, software, and hosting environments. PaaS is similar to SaaS, but the service is an entire application development environment, not just the use of an application. PaaS solutions differ from SaaS solutions in that they provide a cloud-hosted virtual development platform accessible via a web browser.

PaaS solutions providers deliver both the computing platform and the solution stack. This greatly accelerates development and deployment of software applications.

Infrastructure-as-a-Service (IaaS). Rather than purchasing servers, software, data center space or network equipment, this cloud model allows businesses to buy those resources as a fully outsourced service.

### Cloud Deployment Models

These deployment models are technically functionally unrelated to each of the delivery models-that is, any of the delivery models can exists in any of the deployment scenarios, although a specific delivery/deployment model pairing may be more common than others(e.g., SaaS/public) Additionally, based upon the usage of the cloud by an organization and its relationship to the enterprise as a whole, these cloud deployment models are often referred to as external and internal clouds, each of these models, however, must share the fundamental tenets of cloud computing:

- Each deployment models employs Internet-connected devices.
- Each model provides for dynamic scaling of virtual resources.
- Users of each model commonly don't have control over the technology being used.

There are three ways service providers most commonly deploy clouds:

**Private clouds.** The cloud infrastructure is operated solely for a specific company. It may be managed by the company or a third party and may exist on or off the premises. This is the most secure of all cloud options.

**Public clouds.** The cloud infrastructure is made available to the general public or a large industry group and is owned by an organization that sells cloud services.

**Hybrid clouds**. The cloud infrastructure is composed of two or more clouds (private or public) that remain unique entities but are linked in order to provide services.

### Cloud Operating Models

The third aspect of choosing the right cloud services delivery model is determining the appropriate operating model for the required mix of resources and assets. We have identified three operating models for cloud services:

Staff augmentation. Financial firms can gain cloud expertise by hiring people with the right skill sets from service vendors. The additional staff can be housed in the firm's existing offshore captive center. This operating model allows for flexibility and lets firms choose the best resource for each specific requirement.

Virtual captives. Virtual captives have a dedicated pool of resources or centers to help with cloud operations and meet demand. This operating model is a good alternative to a complete outsourcing approach.
Outsourcing vendors. This approach uses offshore centers, facilities, and people from a third party vendor to handle cloud operations. The model combines resources and investments to cater to cloud services for multiple banks

As long as we're looking at the SPI framework, let's also take a quick peek at a couple of alternative deployment models, one that is based on SPI and extends it, the other a completely different view of the cloud computing architecture.
The Linthicum Model
David Linthicum, editor-in-chief of SYS-CON's virtualization journal (http://virtualizationjournal.com), is the proponent of a cloud computing model that enhances the SPI framework's maturity though the use of what he calls "stacks." He sees 10 major categories, or pattern, of computing technology:

- Storage as a service database.
- Database as a service.
- Information as a service
- Process as a service.
- Application as a service.
- Platform as a service.
- Integration as a service.
- Security as a service.
- Management/Government as a service
- Testing as a service

**The Jericho Cloud cube Model**

In January 2004, an IT security association of companies, vendors, government groups, and academics "dedicated to advancing secure business in a global open-network environment" formed the Jericho Forum(www.jerchoforum.org), under the auspices of the open group. Originally created to address network de-parameterization (the erosion of the network perimeter), the forum has tackled the problem of securing business transactions through the internet.

In Feb 2009, they delivered a practical framework geared toward creating right coloration-oriented architecture.

The Jericho Cloud Cube Model describes the model for cloud computing as having four "dimensions":

- Internal (I)/External (E)
- Proprietary (P)/Open (O)
- Perimeterized (Per)/De-perimeterized (D-p) Architectures
- Insourced/outsourced.

**V.CONCLUSION**

Distributed computing, imagined as the cutting edge engineering of IT Enterprise is an all the rage nowadays. The manner in which cloud has been overwhelming the IT advertise, a noteworthy move towards the cloud can be normal in the coming years. Distributed computing offers genuine advantages to organizations looking for a focused edge in the present economy. Numerous more suppliers are moving into this territory, and the opposition is driving costs even lower. Alluring estimating, the capacity to free up staff for different obligations, and the capacity to pay for ―as needed‖ administrations will keep on driving more organizations to consider distributed computing. Portable distributed computing is relied upon to rise as one of the greatest market for cloud specialist organizations and cloud engineers .

**REFERENCES**


1) https://trai.gov.in/sites/default/files/201609090247056456299CCICI_0.pdf
2) file:///C:/Users/BABY/Downloads/brochure.pdf
3) https://www.researchgate.net/publication/264435521_Survey_Paper_on_Cloud_Computing
4) http://www.engpaper.com/cloud-computing-research-paper-20.htm
5) http://www.ijfcc.org/papers/95-F0048.pdf
6) http://www.iosrjournals.org/iosr-jce/papers/Vol8-Issue1/C0811422.pdf
7) https://ieeexplore.ieee.org/xpl/mostRecentIssue.jsp?punumber=6245519
8) http://airccse.org/journal/nsa/6114nsa03.pdf
9) hhttps://www.researchgate.net/publication/273321920_Benefits_of_Cloud_for_Banking_Sectorttps://www.ijcsits.org/papers/Vol1no22011/13vol1no2.pdf
10) https://www.stakd.io/single-post/2017/09/15/Cloud-Banks-Vs-Traditional-Banks%E2%80%94What-Millennials-Really-Want
11) https://www.capgemini.com/wp-content/uploads/2017/07/Cloud_Computing_in_Banking.pdf
12) Ronald l.krutz and Russell dean vines "Clous security A comprehensive guide to secure cloud computing"2016 Gopaljee enterprises.
13) Judith Hurwitz, Robin Bloor, Marcia kaufman and Fern Halper " cloud computing for dummies a wiley brand" 2016 Gopaljee enterprises.