

# The Crucial Challenges Faced By the Banking Sector on Adopting Cloud Computing

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## **ABSTRACT:**

In the modern era, cloud computing is being used widely and is very popular in the banking sectors. Cloud computing allows the banks to store the data and also provides better support to the customers and creates an opportunity for the bankers to connect with their users directly. With the help of the internet many services like storing, managing and accessing the information has become more easier to bankers and customers. The main aim of the paper is to have a general analysis on the concept of cloud banking and the major challenges faced by the banking sector on adopting cloud computing. This paper will provide great benefits for researchers, educators, students, etc by providing a clear view and deep understanding on the concept of cloud banking and its common challenges. This article suggests that banks which use cloud computing face challenges like security & privacy issues, regulation & compliance issues, network problems, control issues and vulnerability. So depending on this review, researchers and scholars in this field can have a clear view to set their attitude towards suitable future research studies and methodologies which in turn will contribute to the related accumulated knowledge in the field.

**KEY WORDS:** cloud computing, security issues, regulation and compliance issues, vulnerability.

## **I. INTRODUCTION:**

Cloud Computing is the process through which the data are stored in an external server. This software allows the banks and financial institutions to secure the data and also to provide better support to the customers. In short, cloud storage is a new technology for storing the data over the internet. Cloud Computing creates an opportunity for bankers to connect with the users directly. This eases the relations with the customers anywhere and anytime. With the help of cloud computing, many services like storing, managing, accessing the information have become easier to bankers and customers.

Cloud computing is an easy technique to deploy and integrate all the services of the bank which decreases the time and effort of the user. The evolution of cloud computing enables the banks to focus more on consumer-centric model and digitalizing the trading and wealth. Eg: Amazon web services, Google virtual cloud, etc.

The role of technology has become more vital to the banking sector in the modern era. In this context, cloud computing is an emerging trend that is becoming very popular in banking sector. This is due to the fact that it provides various benefits to the banks like online storage of data, etc. Although cloud computing is a merit to the banking sector, it suffers

from various issues. The factors like security issues, control issues, etc are some of the crucial challenges to the banking sector. This in turn may trigger some other problems to the banks that use cloud computing. So it is essential that these issues need to be checked on before it becomes a major threat to the banking sectors using cloud computing.

## **II. THE MAJOR CHALLENGES OF CLOUD COMPUTING IN THE BANKING SECTOR:**

### **1) Security:**

Every bank needs to keep the data of their consumers and other vital information in a safe and secured manner. This is because, it is always vulnerable to security breach.

E.g.: IBM found that the average data breach cost a company incurs is around \$145 to \$154 thousand dollars for each compromised account.

This one example is enough to say that despite the fact that the security provided by cloud bankers are tight, there is always a chance for security breach. This is because technological development progresses in geometric progression which paves for new form of security breach.

### **2) Service Availability:**

A recent report suggests that cloud systems are vulnerable to being crashed like Amazon. This system crash occurs due to some factors like shutdown, etc which in turn makes the cloud service disappear which finally results in the user not being able to find that service temporarily.

Although the cloud service provider also known as CSP provides promise on infinite scalability for the customer, it cannot be fulfilled as at present. Millions of users are now migrating to cloud computing which may ultimately result in the system being subject to temporary crashes.

So these facts imply that the system of a bank using cloud is also vulnerable of being crashed. Although the crash may be temporary, it may result in issues like heavy losses for the banks, loss of data, etc.

### **3) Reduced Autonomy:**

When banks are using cloud computing for their banking functions, they have to be dependent on the cloud service providers in case they need any data of a customer or the data of the financial reports, etc. This reduces the autonomy of the banker and makes him/her dependent on the cloud service provider.

Eg: In a bank which uses cloud computing, suppose the banker needs data on a particular customer's loan settlement data, he has to be dependent on the cloud service provider.

The above example implies that when a bank is using cloud computing, it partially reduces its autonomy of action as it is dependent on the cloud service provider for some of the data stored in the cloud.

### **4) Regulatory Compliance:**

Many banking regulators require that functional data for banking customers stay within the home country. Certain compliance regulators demand that data should not be intermixed with other data, as in shared servers and databases. This implies that the banks should keep in mind where their data resides in the cloud.

This poses as one of the major challenges in cloud banking as the bankers find it nearly impossible to detect exactly where their data resides in the cloud. This is due to the fact that all the data in the cloud co-exist with one another. Hence this may also pose as one of the major challenge to the banking sector.

### **5) Loss of Data:**

Cloud is typically in a shared environment where numerous data co-exist with one another. So there prevails a risk of data loss. The end-to-end encryption ensures that the data sent from device/server is reached to the other one without any loss of data. The best example for this is Whatsapp which has end-to-end encryption.

But the major issue to be considered is that, whether the encryption is available in all stages and whether these encryption schemes are designed and tested by professionals. Due to this, the bankers are hesitant to adopt to cloud computing, since a loss of data may lead to catastrophic problems to the bank.

### **6. Limited Flexibility:**

Bankers who adopt the system of cloud computing suffer from limited flexibility. This is because when a banker is dependent on the cloud for all their data, their scope for making vital decisions will be hindered. This reduces their flexibility on things like decision making process, etc.

So, this serves as one of the issues because of which the banking sectors are hesitant to adopt cloud computing. Moreover, only when the banks have high flexibility, they can carry on their activities more efficiently and effectively.

### **7. Cyber Crimes:**

In a technologically progressing world, it's a common fact that the cyber crimes are progressing as well. This includes hacking, virus uploading, etc. These cyber crimes pose as a major threat to all the sectors. Although there are lots of ways to detect/prevent them, it is nearly impossible to eradicate them completely.

Because of this problem, the bankers are highly hesitant to switch over from traditional service providers to cloud computing service providers, as the loss of data or loss of money through hacking the bank's server/cloud server is not impossible and if occurred may lead to heavy burden to the bank.

### **8. Data Recovery:**

Whenever any loss of data occurs, it is vital that the data lost must be fully

recovered. So this raises a question that whether the cloud service provider can fully/completely restore the lost data or not?. This issue can also be one of the reasons as to why the banks are hesitant to adopt cloud computing.

#### **9. Suggestions:**

- The banks could use Hybrid cloud for its activities and transactions
- The use of certain protocols for authentication is a good way to be more secured
- The use of firewalls and such programmes minimize the chances of unauthorized access, hacking problems, etc.
- Compiling and storing the banking data exclusively on a separate cloud server reduces the chances for loss of data.
  - Having separate back-up data stored on a separate cloud server also reduces the chance of data loss and is helpful even to recover the data when it has been accidentally deleted or erased
  - The use of honey pot is very much useful in detecting the unauthorized access of data.
  - The banks before getting or buying a cloud service should check on the reputation of the specific cloud service organization.
  - Having a frequent check on the data stored reduces the chances of data loss and other problems.

#### **CONCLUSION:**

This article suggests that the use of cloud computing in the banking sector suffers from various challenges. These challenges such as reduced flexibility, network crashes, threat of cyber crimes, etc have to be properly considered before adopting to a cloud service provider. Moreover cloud computing is beneficial to the banking sector but in order to reduce these issues, the bankers and the service providers have to do frequent checks on the data stored so as to be certain on their availability and accuracy.

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