“CLOUD BASED INFRASTRUCTURE FOR BANKING!”

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Abstract:

Cloud computing is the advanced tool for information technology that set aside individual or organization to make the most of the internet for patter into forceful hardware and software programs and tools. Cloud computing is turned into the banking sector new a days, because the public utilization of banking transaction is increased day by day. Cloud banking given the most reasonable money transfer with safety transactions. Time reduction also one of the main factor for the fast growth of cloud computing in banking sector. In this study cloud computing in banking has been analyzed in detailed manner with respect of the scope of cloud banking, advantages of cloud banking, disadvantages of cloud banking and comparison of cloud banking with traditional banking. Finally this study provides that there is growth of cloud banking gives many benefits at the same time limitations also. Beyond the limitations all is continuously using the cloud banking[1].

Key words:

banking, scope, Indonesian cloud, Technology, Finance, security[2].

Introduction :

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. 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), 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 [3] .

1.1. Importance of the study

One of the most widely growing phenomenon on the internet Cloud computing a revolutionary concept that is being considered by many banks and financial industries. The interesting concept of Cloud computing involves several computers that are connected to the internet or through any other real time communication network. This concept allows for a program to run on all of the connected computers simultaneously. With Cloud computing large banks as well as many other financial industries can expect many enormous benefits. Here are some of the great benefits of Cloud computing for banks and financial industries [4]

1.2. Statement of the problem :

By providing near-unlimited hardware and software resources on an off-the-peg, pay-as-you-go basis over the internet, cloud computing drives down costs, enables innovation and creates the flexibility to respond to change. Traditionally banks were reluctant to embrace such technologies, especially on security grounds. There are other challenges too, such as regulation and the potential complexity involved in managing many different suppliers spread all over the world. But the past year has seen them taking a closer look as they start to fully understand the benefits it can bring and in response to growing use of the cloud by clients. Most companies believe it will play a central role in their future strategies, according to a survey from IBM. They are also demanding greater connectivity with their banks, a process eased by the cloud's use of standard technologies. The EC is also waking up to the possibilities. In a recent policy paper, the EC's European Cloud Partnership spelt out the need to tackle issues around data, privacy security and legal differences across national boundaries. Its vision is to create a secure environment in which private and public sector organisations can use, buy and sell cloud services [5] .

1.3. Objective of the study

The main objective of the study is to given the detailed information regarding the cloud computing in banking[6].

2. Cloud Banking

2.1 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. The spiralling costs of deploying and maintaining complex in-house legacy systems, along with the need to keep up with consumer expectations, are leading banks to increasingly demand innovative, flexible and cost-effective deployment models for their banking solutions

2.1.1 Temenos Cloud

With Temenos, you have the option to access our banking solutions via the cloud rather than installing in house. Cloud offers a scalable, manageable technology model that reduces IT hardware, maintenance and development costs. This in turn gives you the agility and flexibility to embrace new markets, new services and new channels, in line with consumer needs.

2.1.2 Cloud delivery model

Temenos banking solutions are also available via a cloud‐based delivery model. Cloud offers a scalable,

manageable technology model that reduces IT hardware, maintenance and development costs, which makes it the ideal deployment choice for a Model Bank. New entrant banks are not generally burdened by complicated IT systems, and do not wish to be. By deploying core banking in the cloud, start-up banks are able to remain customer and market focused, while entrusting

♣ Established banks looking for innovative ways to increase return on equity and renew their focus on the customer proposition

♣ New entrant banks and banks in emerging markets that wish to move fast without the burden of complicated IT systems

♣ Microfinance institutions looking for cost-effective

♣ solutions that help them speed up the real economic benefit they deliver

♣ Credit unions looking for the same standard of technology as banks, but without the complexity, enabling them to focus on their members and service [7] .

2.2 Scope of Cloud Computing on Banking & FinTech

Cloud computing creates an opportunity for bankers to connect with their users directly. Digital services maintain the customer relations anywhere and anytime through cloud computing. With the help of the internet, many services like storing, managing and accessing the information have become easier for both the bankers and the consumers. Cloud computing is an easy technique to deploy and integrate with all the services of the bank system which decreases the time and effort of the user. The evolution of cloud computing enabled the banks to focus more on the customer-centric model and digitalizing the trading & wealth. Cloud computing creates a multi-channel relationship with technology partners with IT service delivery. The ability to outsource the delivery of banking technology as a cloud-based service means new entrant banks have access to a highly secure, always-on, industry-leading core banking technology, without the need for significant internal IT resources and expensive infrastructure of their own.

the customers at every aspect of the service. It helps in storing, backup and recovering huge data of the company. Not only the storing of the data, various other services like delivering the software, transferring the data, Updating and recovering of data is very easy through cloud computing technology. Cloud computing also increases the turnover of the banks by integrating cost-effective cloud solutions. The banking industry needs to address the ever-growing data input demands. There is a need to explore the systems that do not rely on like-system migration so that infrastructure can be modified without any disruption. Banks have been slow in adopting cloud computing as there are apprehensions regarding reliability, regulatory and security risks. But slowly, cloud computing is changing the way consumers interact with banks. FinTech maintains the substantial growth and sustains the growth constantly, courtesy cloud technology. FinTech reduces the CAPEX and OPEX budgets, increase the service portfolio and the user experience. The most important aspect of cloud computing is reducing the risk factors related to the data center and its infrastructure. The confidential data will be completely secured. It also helps in risk analysis of the business so that the main focus will be on business rather than securing the crucial information.

Some of the big names in the FinTech cloud computing sector are:

1. Amazon Web Services
2. Google Virtual Cloud
3. Microsoft Azure
4. Aliyun
5. IBM Bluemix

2.2.1 Applications of Cloud Technology in Banking & FinTech

♣ Cloud computing increases the efficiency in the industry. Usage of cloud technology is an added advantage in banking and finance sector. Digitalizing the services will allow the banks and financial institutions to build up an infrastructure to provide the best and appropriate service to the customers.

♣ Data centers generally go through many attacks from the hackers which corrupt and led to the loss of very crucial information in the bank. Such attacks can be eliminated by authenticating the data centers which are very easy through cloud computing. Every data stored is safe with hybrid cloud computing technology.

♣ Amazon web services and Microsoft's Azure are cloud providers who provide hybrid cloud computing servers to the companies. Getting the hybrid cloud computing servers provides end-end protection to the information stored in the cloud. Cloud computing ensures Confidentiality, Integrity, and Availability of the information over the internet.

♣ Cloud computing ensures secure transactions and smooth customer experience in banks. Hosting over the internet with the help of web apps ensures better speed and service to the users.

♣ Payment Gateways, digital wallets, online fund transfer, and secure online payments are among the best examples of the cloud computing service. Cloud ensures the secure and unified customer experience. Updating the payments is quite very easy through cloud computing.

♣ Enterprise Resource Planning (ERP) and Customer Relationship (CRM) software are the most popular software of cloud computing. This software's allows the banks and financial institutions to secure the data and also provide the better support to the customers. This software also enables the remote accessing of the information by the users.

Other few cloud computing services in the financial sectors are:

♣ Insurance Data Exchange Cloud Service

♣Financial Services Revenue Management and Billing Cloud Service

♣ Insurance Revenue Management and Billing Cloud Service

♣ Financial Services Lending and Leasing Cloud Service

♣ Banking Cloud Service

♣ Health Insurance Value-Based Payment Cloud Service

2.2.2 Importance of cloud banking

2.2.2.1 Economical

With Cloud computing, unnecessary capital expenditures as well as large upfront costs of the infrastructure can be avoided as banks and financial industries can focus on all of the important businesses and projects. The Cloud computing system does not require banks and financial industries to purchase budget shortening hardware.

2.2.2.2 Improved Manageability

With the help of Cloud computing, banks and large financial industries can make rapid adjustments to their resources for all the unpredictable and fluctuating business requests as well as quickly have their applications uploaded online in no time due to the vastly improved management of Cloud computing that does not require much maintenance.

2.2.2.3 Resiliency

The systems present in the Cloud computing are extremely useful for banks and financial industries due the ability of creating a wide enough enterprise availability that is greatly helpful for the continuity of a business venture which is an important part for banks and financial industries.

2.2.2.4 Scalability

Large acquisitions and mergers are very frequent in the banks and the financial industries which is why easy integrations as well as good scalability are important. The Cloud computing, works as a very affordable concept that can scale the IT operations according to the needs of the company.

2.2.2.5 Accessibility

With Cloud computing the limitations of client server environments are not applied as accessing data and applications from any other computer is achievable anytime, everywhere.

2.2.2.6 Security

The Cloud computing system provides a very high level of data protection, especially for sensitive data that includes customer information. The data is kept in a centralized data storage that can only be accessed through strict authentication methods. The security of data is of top priority for Cloud computing, which is why it is beneficial for banks and the financial industry [8] .

3.Cloud computing Models

Cloud computing promises to improve banking institutions by providing them with a variety of software to select from. The entire cloud architecture is aimed at providing the users with high bandwidth, allowing users to have uninterrupted access to data and applications, on-demand agile network with possibility to move quickly and efficiently between servers or even between clouds and most importantly network security.

The first option is using the software as a service that helps develop banking institutions. Through this software, the micro banking institutions can easily access the internet-hosted software services using the browser instead of relying on traditional applications that have been stored in their server or computer. Depending on software as a service, the application host is responsible for maintaining and controlling the application comprising software settings and updates. This software package has been revered and it has become very popular and fashionable recently for various reasons. For example, it is engaging to the clients because of its shifts in cumbrance and value both the hardware and software package preparation and how it is maintained from the perspective of the client to the seller. SaaS is conjointly offering numerous benefits to the seller. In fact, WHO has recently developed and maintained this application on their platform and have permitted the customer use option of their applications. The second option is infrastructure as a service which means that the banking institution can buy or rent the disk space and computers from an internet service provider. This will enable them to access information over the internet or private network. The provider maintains the physical computer hardware such as memory, CPU processing, network connectivity, and data storage. Examples of this software include Windows Azure. This is regarded as a fashion for delivering Cloud Computing through an infrastructure-like servers, storage, network associate degrees operative systems and as associate degree-on demand service [7]. It prevents the clients for shopping for the servers, datacenters, and software or network instrumentation,

rather they can only buy various resources like sometimes an extremely outsourced service on demand.

The last option is the platform as a service that will enable the banking institution to rent operating systems, hardware, network capacity, and storage provided by infrastructure as a service and the corresponding software application and servers environments. Platform as a service offers banks top-notch control over their technical aspects of the computing setup and customize to suit their needs. However, this must be done or applied in the package development environments. PaaS is similarly printed to be a computing platform that allows the establishment of web applications faster and easily and while not the quality of buying and maintenance of the package and infrastructure at a lower end [6]. It is also regarded as analogous to SaaS only that, instead of being package delivered over the web, it is a platform for the creation of the package, delivered over the web [9].

4.Different types of cloud deployments

In contrast to the models discussed above, which define how services are offered via the cloud, these different cloud deployment types have to do with where the cloud servers are and who manages them.

The most common cloud deployments are Private cloud: A private cloud is a server, data center, or distributed network wholly dedicated to one organization. Public cloud: A public cloud is a service run by an external vendor that may include servers in one or multiple data centers. Unlike a private cloud, public clouds are shared by multiple organizations. Using virtual machines, individual servers may be shared by different companies, a situation that is called "multitenancy" because multiple tenants are renting server space within the same server. Hybrid cloud: hybrid cloud deployments combine public and private clouds and may even include on-premises legacy servers. An organization may use their private cloud for some services and their public cloud for others, or they may use the public cloud as backup for their private cloud. Multi-cloud: multi-cloud is a type of cloud deployment that involves using multiple public clouds. In other words, an organization with a multi-cloud deployment rents virtual servers and services from several external vendors to continue the analogy used above, this is like leasing several adjacent plots of land from different landlords. Multi-cloud deployments can also be hybrid cloud, and vice versa[10].

5.Factors influencing the adoption of cloud computing in banks

From a different perspective, the shift to adopt cloud computing technology in the banking institution is influenced by various factors. The first factor is a classification of information sensitivity in the banking system. Banks have the freedom to select the kind of system suitable for them depending on the data the institution will be processing as permitted by the government regulations and data security necessities. As a result, the banking organization must ensure that the cloud computing they will decide on meets all the qualifications . For instance, the United States carefully evaluates their outsourcing procedures and ensure that the banks apply them strictly. The second factor is the competitive advantages and differentiation capacities availed by Cloud Computing. For this, the bank will decide on the choice of computing for the organization depending on the level of competition existing in the industry. As a

result, the organization will consider cloud computing an effective alternative to turn to outdo the competitors successfully. Similarly, if there is a need for the bank to differentiate its products, in-house development is more preferred by the institution owing to its swiftness in marketing its expectations[11].

6.Positive impacts of cloud computing on banks

Cloud computing has continued to gain popularity as it acts as a catalyst through which banks and financial institutions can rely on transforming the features of their monetary services and tailoring them according to the customers' needs. As banks continue to adopt cloud technology, it becomes essential to propel the institutions towards a positive future. One of Cloud technology's paramount importance to banks and financial institutions is that it creates no need to develop an up-front investment in infrastructure such as software licenses and does not attract the risk of unused licenses. Similarly, cloud technology does not demand investment in hardware components and other associated maintenance services. Therefore, capital expenditure that would have been spent in meeting these qualifications is turned into operational cost, thus enabling the institutions to achieve their goals. The consumers of cloud technology are only needed to use the number of IT resources they initially need and will only be required for the volume of technology they have used.

The second impact of cloud computing on banks and financial institutions includes that cloud computing facilitates fast and easy scaling of the computing resources required to sustain the organization's cloud operations. Cloud technology also plays a crucial role in diminishing ongoing operating, upgrades, and maintenance costs through the utility model. This payback is often described as an instant outcome of the technology. Scaling the technology up and down network capacity, hardware, and cost based on demand can be expensive for large-scale financial institutions because they deal in a wide range of data. Therefore, cloud computing enables banks to easily add or eliminate resources at a fine grain along with a lead time of few minutes instead of several weeks as they wait for the matching of resources to workload closer. Peaks mainly influence this demand for cloud technology resources. The process of waiting can end up attracting a lot of complications for the organization in determining the definite number of servers that an institution requires to execute its tasks without disruption or experiencing data breaches. In most situations, the response regarding the organization's needs is usually based on the cost-benefit analysis. However, with the concept of cloud computing, organizations should forget all about the investigation because the technology offers them a flexible solution for the consistent change in IT resources demand.

Another impact of cloud computing is that it has increased in availability compared to other in-house solutions by intensifying the accessibility of Virtual Machine, which strengthens the ability of the organization to create a customized environment above the physical infrastructures. Cloud technology enables organizations to access a wide variety of numerous applications and attributes. One of them is Software as a service, a virtualization technique fully exploited when employing the cloud computing model. This is an indication that software applications can be easily accessed via the web interface. The significance is that this application portfolio is getting more dynamic concerning the transformations

of the banks as a way of meeting consumer behaviour change. Through cloud computing, applications can be quickly deleted or added to the firm's portfolio within a short period. Nevertheless, cloud computing attracts minimal maintenance costs because it acts as the primary catalyst for innovation. Cloud computing is becoming more affordable and more universal, thus creating the opportunity for innovation to continue to grow to new heights.

Besides, cloud computing comes with high data security, thus eliminating the thought of losing valuable data to hackers, which can be drastic to the bank and the customers. In the long run, data breaches tend to be costly, racking up in millions and dollars, thus increasing the opportunity that the institution that has been rigged will be expelled from the market as customers will lose faith in them [5]. while data breach threats are on the rise owing to numerous advancements in technology providing hackers with immense techniques to crack organizations' passwords, cloud computing is paving a long-lasting solution to these problems to hinder hackers from tampering with important information. Cloud computing ensures that the bank has access to an up-to-date customer-centered platform strengthened by complicated password combinations to protect banking data.

Cloud computing has strengthened collaborations where partnership in a cloud environment gives a firm the capability to share and communicate frequently and efficiently outside the old techniques. Cloud computing can provide all workers, sub-contractors and third parties access to all the files, primarily if the banks work in various locations. There is a possibility of choosing a cloud computing model that seems too easy for the banks to share their archives with their advisers. On the contrary, cloud technology is providing banks with improved efficiency in their operations. The financial services provided by these organizations are aided by cloud technology to streamline all the processes using enhanced efficiency. Both sellers and buyers are connected in the payment procedures on a communal application. This is very necessary because it improves the speed of transactions and tracking of data becomes simple. Besides this, cloud computing helps in the continuity of the business since it can assist the financial services firms and banks with fault tolerance, data protection, and recovery from disasters for financial companies. Data Mining is used for extracting potentially useful information from raw data. The implementation of data mining [20] techniques through Cloud computing will allow the users to retrieve meaningful information from virtually integrated data warehouse that reduces the costs of infrastructure and storage

Moreover, cloud computing incurs lower prices compared with traditional solutions. Nevertheless, agility and transformation are on the list. This involves the financial administrations experiencing shorter development cycles for the novel products via the supple cloud-based operating replicas. The associated technology ropes the quicker and more efficient replies to the requirements of the latest banking customers [5]. It helps the firm shift non-critical facilities, including software patches, maintenance, and other computing matters. This aids the financial companies to concentrate more on business growth and expansion. Also, the flexibility of the work practices allows the employees to be flexible, especially in their work practices. For instance, increase the capacity to access data from homesteads, on public holidays, or even through the commute to and from the job. If there is a need to access the data

while off-site, it is possible to connect to the virtual office faster and straightforwardly. Finally, is the access to automatic updates. The necessities can be involved in the service fee. The system will often be updated with modern technology depending on the cloud computing service provided. The current date versions of software can be included and the advancements to servers and computer dispensation power[12].

7.Negative impacts of cloud computing

Despite the various aids of cloud computing knowledge, most financial institutions are still not able to adopt it. Some of the challenges that are barriers to the banks from implementing it are data and security privacy. Sensitive information is contained in the bank data and keeping it safe from a cyber-breach is a must for all banking sectors. There is no exception regardless of the technology; security has to be tight and remains an issue. The security breaches occurrences are inventible but avoidable [2]. Also, regulatory and compliance are considered where all banks are authorized to comply with strict standards. A lot of the banking regulators need the client's financial information situated in the same nation. Specific compliance guidelines need treasured data not to be mixed with the other data on the database or shared servers. The Data Cloud [14] allows organizations to unify and connect to a single copy of all of their data with ease. The result is an ecosystem of thousands of businesses and organizations connecting to not only their own data, but also connecting to each other by effortlessly sharing and consuming shared data and data services. Lastly, there is no complete control of severe firms' submissions, and data is an essential concern for financial organizations. If a third-party handles cloud service providers, they might lessen the ability to be supple and elegant. Therefore, not having control of an enormous volume of data dissuades organizations from moving to the cloud[13].

8.Comparison of cloud banking and traditional banking

It's news we've heard before: online banks are the way of the future. Online banks seem to have it all: relatively high interest rates, stellar customer service, low fees, and the added bonus of 24/7 access to your finances with the click of a button. Still, online banking isn't for everyone, and the line between the two is becoming blurred as more banks ramp up their web presence to compete. To help you decide, we tapped Richard Barrington, a senior financial analyst at MoneyRates.com, to break down the pros and cons of keeping your cash in a traditional versus online bank

8.1 Security

This is one issue that scares many people away from taking their banking online, but Barrington said it shouldn't. Even traditional banks have all your financial information stored in a big data center that could be vulnerable to hackers. "Data theft is a very real risk these days, but, unfortunately, as a consumer, it doesn’t come down to whether you choose to bank online," he said. If you choose an online bank backed by the FDIC, you'll be covered for losses up to $250,000 just like any other bank customer (use the FDIC's Bank Find tool to be sure). And, of course, remember to avoid doing any online banking on a public or shared WiFi connection, since that's when your information can be most easily intercepted.

8.2 Fees

Online banks are friendlier to smaller depositors because they typically

require lower monthly balances. Barrington said traditional banks require an average of about $4,700 to be kept in your savings account without charging you a nominal monthly maintenance fee. For online banks, that number is much lower at $350. In addition, online banks are about twice as likely to offer free checking, he said. "I think (online banking) is a really good option for younger customers — the fees as a whole are lower, the balance requirements are also lower, and young people as a rule are more comfortable with technology," Barrington said.

8.3 ATMs

Banking is all about getting cash when you need it, and Barrington said people should look at the locations of a bank's ATMs before they open an account. "You want to make sure you choose a bank where the geographic footprint of their ATM network is similar to your regular movements," Barrington said. Traditional banks, like Chase and Bank of America, have ATMs all over in many major cities. Online banks, like Simple, often have agreements with ATM networks like Allpoint for surcharge‐free withdrawals. And most others offer to reimburse customers up to a certain sum for using out-of-network ATMs.

8.4 Deposits

Web-based banks offer a few different options to deposit physical checks. You can always mail them in, but most online banks also offer "e deposits" in which you can take a picture of the front and back of each check and upload it to your account for deposit. A lot of people still would rather deposit a check with a teller than a text message, but the option's out there. "People are for the most part checking their balances online, getting information online, but when it comes to depositing a check, they'd much rather hand it to a teller," Barrington said.

8.5 Interest rates

Online banks typically have better interest rates than traditional banks because they don't need to take any funds to operate brick-and-mortar buildings. In a recent MoneyRates.com study, online banks were found to have about six times higher interest rates than the nationwide average. Some of the best were found at Ally Bank, American Express Bank and Sallie Mae Bank.

8.6 Customer service

If you like to deal with the people managing your money via email or over the phone, go digital. If you'd rather have someone to talk things through with face-to-face, stick with a regular bank. Nearly all banks also have call centers and online message centers as well. Online banks are rarely, if ever, "closed." But if you'd rather use a traditional bank to complete your transactions or get questions answered in person, you'll need to visit your bank during normal business hours and make sure it's not a bank holiday.

8.7 Personal preference

Having a personal relationship with a banker can be a big benefit for people, especially those who like getting new products or services pitched to them or getting in-person financial advice. But keep in mind that banks have been closing physical branches left and right to cut costs, even installing ATMs that allow tellers to answer questions via web cam. "As time goes on, the comfort level will grow more and more," Barrington said. "If the technology can prove itself, people will use the technology."

8.8 The bottom line

If you're comfortable with technology and don't feel like you need face time with the people handling your cash, keeping your savings in an online bank is a great option. You'll see your money grow faster than with a big bank, and you'll pay less in fees. As far as checking accounts go, online and traditional banks are pretty much neck in

neck. "I think the common denominator is that online banking is cheaper for banks to provide because they're not supporting a physical branch and people to staff that branch," Barrington said. "Even banks that offer both are likely to offer you higher rates and lower fees if choose online options" [14] .

9.Conclusion

Cloud computing lets people use the internet to tap into hardware, software and a range of related services on demand from powerful computers usually based in remote locations. Cloud computing can help meet all these challenges. There are few areas of transaction banking it does not touch from cash management, trade and supply chain finance to payments, mobile banking and business analytics. The key to competitive advantage will lie in the know-how brought to bear on behalf of clients. All this momentum is building at a time when banks are under increasing pressure to use their IT budgets more efficiently, while competition from non-bank payments providers is much tougher and the need to serve clients better is becoming more acute. But it is not a technological Valhalla there are disadvantages too. Cloud computing means banks will not have to invest heavily in dedicated hardware, software and related manpower. The cloud gives banks the ability to respond quickly to changing market, customer and technological needs. They can scale up and scale down technology according to requirement. The ability to respond quickly will be an important competitive edge. Banks will enjoy improved efficiency ratios and operating leverage. The standardization inherent in the cloud could makes it easier to integrate new technologies and applications in the future. Because technology and business operations can be much more closely aligned, the cloud gives banks a golden opportunity to drive out complexity [15] .

References

1.https://www.bbvaresearch.com/wp□content/uploads/2016/04/Cloud_Banking_or_Banking_in_the_Clouds1.pdf

2.https://www.globalbankingandfinance.com/the-benefits-of□cloud-computing-for-the-banking-financial-industry/

3.https://www.bankingtech.com/2014/07/six-reasons-why□cloud-computing-will-transform-the-way-banks-serve□clients-and-the-five-hurdles-to-overcome/

4. https://www.temenos.com/en/servicessupport/services/cloud -banking

5. https://www.stoodnt.com/blog/cloud-computing-banking□fintech/

6.https://www.businessinsider.in/Heres-Why-Online-Banks□Are-Better-Than-Traditional□Banks/articleshow/21132954.cms

7. P. Jansi Rani., Muthusamy A.(2018): 'Impact of Demonetization on Private Life Insurance Companies in India.' IJSRR 2018, 7(3), 2178-2186.

8. Tiwari, S., Bharadwaj, S., and Joshi, S. (2021). A Study of Impact of Cloud Computing and Artificial Intelligence on Banking Services, Profitability and Operational Benefits. Turkish Journal of Computer and Mathematics Education (TURCOMAT), 12(6), 1617-1627.

9. Kaya, F., Van Den Berg, M., Wieringa, R., and Makkes, M. (2020, June). The Banking Industry Underestimates Costs of Cloud Migrations. In 2020 IEEE 22nd Conference on Business Informatics (CBI) (Vol. 1, pp. 300-309). IEEE.

10. Rieger, P., Gewald, H., and Schumacher, B. (2013). Cloud-computing in banking influential factors, benefits and risks from a decision maker's perspective.