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The Role of Cloud Computing in Revolutionizing Business Banking Services: A Case Study on American Express's Digital Financial Ecosystem

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Abstract
The advent of cloud computing has brought a significant change in traditional business banking services. This essay intends to explore how the cloud revolutionizes banking operations while enriching the customer delight. Smart banks are already lengthening their business service capacity to include the richness of 24/7 online banking services for their commercial account customers. It creates a business service model being steadily spread out towards digital resonance.
Transference and history of business banking services in a different dimension for qualitative inquiry have been revealed to be speeding up by the introduction to an integral part of the cloud computing paradigm. Business clients need business services in such a way as not being easily comparable to individual retail banking customers. Better visibility and control over the cash flow are needed, setting up different authorization tiers based on roles on the business side, expedient payroll capabilities lighting quickly while travelling, place approving, and the like. It was the early 2000s when large money center banks began to gratify these high demand business requirements such as a compressive check manipulation solution. Such an exclusive facility service always required a long chain of face-to-face engagement between the banker and the business client and was accessible exclusively for those business clients domiciled in a location that only a large money center bank might afford. All other business clients, mostly the Small and Medium Businesses were soonly to have been gratifying the way they had been.

Keywords: cloud computing, business banking, digital transformation, financial ecosystem, Cloud computing, Business banking transformation, American Express digital ecosystem, Financial technology (Fin Tech),Digital banking services, Cloud-based financial solutions, Digital financial ecosystem, Cloud infrastructure in banking, American Express innovation, Banking service digitization.

1. Introduction

Banking services are as old as history. Traditional brick-and-mortar banking took a long time and needed physical interactions between the bank and the customer. Through the years, changes came in the banking services and they progressed to another stage. Since the inception of the internet and mobile technology, things have changed, and traditional banking services are up to the maximum level to have a suitably solid presence in the internet banking sector. The business has started automation technologies giving rise to electronic funds transfer and providing electronic banking services, ATMs customer service and to introduce digital innovations at low cost. In the modern era, the banks have adopted the practices of lending, depository, credit creation, generation of money and remittance of funds beyond the limit of the land. The evolution of banking services, with advances in technologies, has taken myriad forms over the last few decades. More recently, there have been digital transformations with a transition from traditional brick-and-mortar banks to digital banking. Digital banks are a part of everyday life and history with current accounts, savings accounts, personal loans, online banking, credit or debit cards, automated payments, etc. to be run. After the 2007-2008 financial crisis, the financial industry has substantially transformed due to a stricter regulatory environment. Huge fines and compensations were paid by banks around the world for breaking the rules and regulations set initially after the Great Depression. With the rise of tech companies, banks introduced applications and digital solutions to improve the customer experience and reintegrate an environment of threatened stability. Current cutting-edge technologies like cloud computing, artificial intelligence, machine learning, blockchain and robotic process automation have been introduced to improve services, to remain competitive and to offer a better and faster way to win customers. American Express (AmEx) is an American-based multinational financial services corporation. It is the world's largest company in the industry of card services and third in the business of luxury charge cards in total. Commentators on the financial services industry believe that integrated cloud-based solutions will shape the future of banking. Therefore, it seems to be the most suitable opportunity to enlighten the technological revolution in the business banking services sector, concentrating on AmEx's digital financial ecosystem as a model of cloud-based solutions. It has not been adopted for improving the business banking services environment. The issues drawn in this study seem to be of interest to those facing challenges out of the US bank industry.

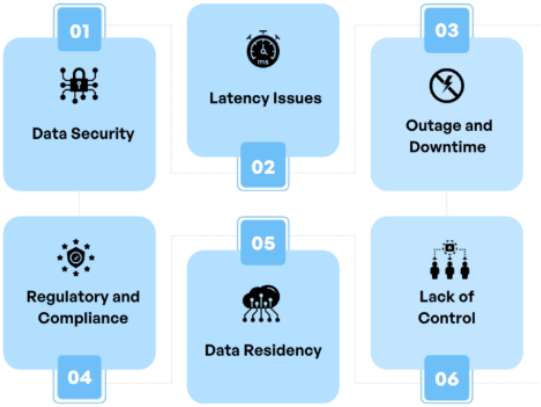

Fig 1: Cloud Computing in Banking

1.1. Background and Rationale

Over more than a century, the traditional high street branch model of banking from both consumers and business perspective have evolved, in parts reflecting consumers' changing behaviour and expectations and in parts adapting to rapid innovation in communications and information technology. On the business front, advances in technology have replaced manual, labour-intensive processing roles with automation, facilitated management of vast amounts of financial and non-financial information by moving from paper documentation to end-to-end digital records and led to the growth of new time-sensitive services and products such as B2B connectivity and cross-border multi-currency transactions. Regardless of core business function, the need for scaling up at peak times, working remotely from various devices and locations, and seamless product integration has become essential in competitive financial service provision. Cloud solutions can fulfil those needs through the provision of a multi-layered model accessible remotely with minimum internet connection, unlimited data storage/processing and synchronizing capabilities. An illustration of how those innovations are shaping commercial banking and business services is the entry of non-bank financial intermediaries and market disruptors that have engaged in an increasing share of business transactions and significant market growth. Consequently, the insertion of a cloud footprint in the business structure can assist in sustaining operational requirements. This research considers the effectiveness of cloud solutions in helping businesses reach and maintain their strategic operational/practical requirements in overcoming barriers to entry to the service provision and examines a business and financial perspective. Understanding these objectives is pursued through the observation of a growing willingness to adopt such methodologies. Meaning, how they are in line with the contemporary needs of banking management for operational efficiency and able to assist in better cost allocation and organisational performance, could be used in business to outsource specific projects that are resource-consuming, very complex and require much data transfer and change of setups with a larger scope of potential business partners. Given the financial benefits received from cloud solutions willing to shift their IT to a non-physical infrastructure, the questions concern the possible exposure to a cyber-attack or unintentional loss of financial information. Hence, the research attempts to take on a broad perspective and consider the potential benefits and limitations from the managerial, organisational, financial and risk assessment point of view.

Equ 1: Cost Savings Through Cloud Computing

$$CR = I - (C_{\text{cloud}} + M_{\text{cloud}})$$

where:

- I = Initial infrastructure costs without cloud
- C_{cloud} = Cost of cloud services
- M_{cloud} = Maintenance costs associated with cloud

1.2. Research Objectives

This research essay is dedicated to a growing domain yet requiring significant attention in the banking sector, namely cloud computing's involvement in the delivery and customer engagement of business banking services. Financial institutions invest in cloud technologies to keep pace with digitization and leverage cost-effectiveness. Whereas, cloud-based platforms are supposed to lead the revolution in delivering banking services and customer experience.

This research essay is guided by the following objectives:

1. Analysis of cloud technologies' impact on service delivery and customer engagement within financial institutions. Based on that, a case study of American Express's ongoing digital financial ecosystem will be conducted on two fronts: (i) the spread of fintech arrangements through cloud application development, and (ii) customer engagement improvements via cloud data analytics employment.
2. Evaluation of how cloud technologies help foster innovation for banks. American Express's example will depict the establishment of a digital marketplace to enable API business models and integration. Moreover, partnership solutions are illustrated, empowering small scale business clients.

3. Understanding how the enablers of cloud technologies could assist in the operational efficiency improvement of banks. That will be illustrated by the case of American Express's cloud tools to lower the barrier of entry inherent to adaptive card-linked offer acceptance. Furthermore, the investigation is broadened towards the exploration of consumer perception and behavioral shifts due to a profound utilization of digital financial services, with the base of an empirical study among American Express card members. [2]

2. Literature Review

This article examines the role of cloud computing in revolutionizing business banking services through the lenses of digital transformation and ecosystem development. These domains are examined via a single exploratory case study of a digital financial ecosystem developed by a major financial services company. This article supplements this with a detailed exploration of the entities and platforms involved and of their inter developments, disentangling the cloud provider's proprietary marketing efforts from the actual customer practices and developments. The findings show how the company and its partners co-created the ecosystem, thus emphasizing the decentralized nature of ecosystem development and the importance of managerial agency, while in contrast, cloud providers take on mostly a background role.

The rise of cloud computing is said to have enabled the fourth industrial revolution by providing the computational resources necessary for scalable data analytics. The deployment of cloud technologies is thus presented as transformative, and outsourced computing is seen as introducing numerous innovations to industries, including demand-responsive cloud services or cloud-based data marketplaces. The academic interests related to cloud research are said to include industry development and design, management strategy or regulation, business applications or transformations, or architecture and material science research, among others. Taking financial services as a representative example, it is noted how industries routinely use a popular definition of banking that calls it the practice of controlling and dispensing various financial instruments like loans, deposits, securities, derivatives, and currency.

The evolution and adoption of cloud technologies are then narrated as revolutionary or away from locally hosted non-virtualized servers. Various issues potentially hindering the rapid adoption of cloud computing by industries are listed, including privacy and data security concerns, data lock-in apprehensions, insufficient transparency, inadequate legal validity, proprietary efforts by providers, or last but not least, the ubiquitous issue of trust. It was by presenting the use of cloud computing as typical in the financial services industry through the case study of a joint venture with the stated goal of enabling US-based corporate clients to develop cloud-hosted applications utilizing third-party data and compliance with government regulations.

2.1. Cloud Computing in Business Banking Services Recently, the bank industry has faced lots of challenges worldwide with the rapid growth in population and changes in technology. It has been compared to the blood vessel of every economy that drives it to its expected growth. In the past, banks mainly used IT infrastructure for developing new revenue streams, reducing cost and gaining competitive advantages than their rivals. However, at present, everyone uses IT infrastructures to stabilize their business from being outdated. Even though the bank sectors have recognized Information Technology (IT) as essential in their business, they always become obsolete from a global standpoint. Banks have to plan about the new technologies and new trends that can stabilize the banking environment or assure that their business deals are maintained by not outdated technology. Therefore, cloud computing has been introduced as a growth development technology in every sector. This technology has got a broad recognition as it can address the constraints in infrastructure. Also, it can be used as an infrastructure to persuade different investors by trading or sharing the service for their own benefit. Moreover, currently cloud computing is considered a competitive weapon in separate dealing than before. This is because the technology has evolved in large-scaling towards the growth of computing, improved network connectivity, and memory storing capacity. The cloud computing technology provides a broad spectrum of services for the bank sector in a user-centric, environmental-friendly manner . It has been preferred in the bank industry to build different IT components using cloud-based services with the need for savings in preserving their IT investment.

This report will mainly focus on addressing the transformative potential of cloud computing in business banking services with well-defined modest considerations and the strategic opportunities with a case study in American Express. With the wide acceptance of customers towards digital payment applications, current banks started to build their digital services ecosystem that can fulfill their desired satisfaction. The current digital services ecosystem is modeled by different banks having various services incorporated with merchants and vendors. In order to fulfill these environmental demands, a suitable IT infrastructure modeling is evolving in the form of cloud service technology. Cloud computing is now a day considered for substantial growth development in the banking industry. It may consider outstanding options to fulfill business needs in this transformed business environment. Hence, cloud service technology is about discussing the efficiency to address the transformative potential of business banking services.

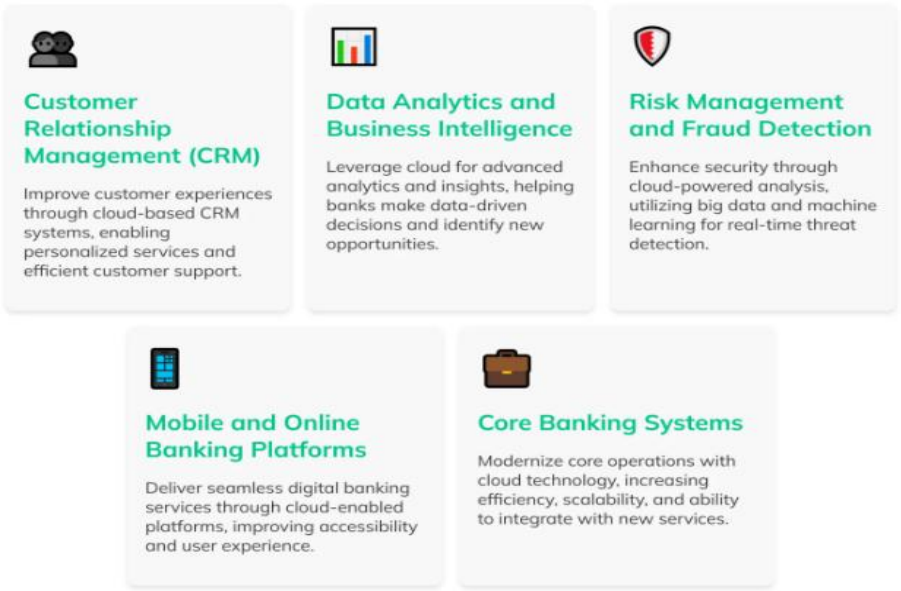

Fig 2: Cloud Computing in Bussines Banking

2.2. Digital Transformation in Financial Services Banks—which are traditionally considered systemically important financial institutions—are undergoing reforms and adapting to rapid changes to facilitate policy actions for bracing against the involvement of the institution and the magnitude of risks. This also includes the framework of financial services aimed at promoting financial innovation and expansion of services in other sectors. The integration of supervisory regulations and dismantling of traditional structures have changed the nature, size, role, and recognition of banks compared to the past, when banks were seen as the only performing duty of performing economic policies such as savings, payment, and lending.

The diffusion of the internet and cloud services has transformed commerce services with the shift of retail from brick-and-mortar (physical) services to click-and-mortar (virtual) services. However, financial services were restricted to internet banking due to its sensitivity in trust. The expansion of mobile cloud technology allowed nomadic users to easily access diversified services across media platforms, thereby transforming the very way of banking services. Traditional bank-customer relations were built on indoor (building participation) and outdoor (service participation) interactions. The trend of Fintech markets has replaced them with an ecosystem of digital finance based on advanced cloud infrastructure. A known entity in digital banking has come up with a points-based transaction system, in which customers can complete purchases or cash advances at authorized merchants or automated teller machines through points transactions. Smartphone applications allow access to points to easily view point balances, etc., and the online account is processed as a unit to join in the authorization process. Beyond the points transaction method, a similar loyalty program has been opened, accepting points payments for trading as well. The trade policy brand of a company participating in the program could be adopted online or credited directly to the account viewer. In light of such careful digital operation, the impact of operational resilience on compliance flexibility and the transformation of bank recognition in terms of participatory transactions will be examined.

3. Methodology

The following section discusses the research design and methodology adopted to investigate the role of cloud computing in revolutionizing business banking. The delineation and rationale behind the choice of methods is emphasized; as well as the approach taken to make a comprehensive analysis. The section specifies the case study design under which the study is conducted. It also details the qualitative, semi-structured interviews and financial data analysis; followed by an explanation of how information is gathered to support the research objectives and interpret findings effectively. Thereafter, the processes of data storage and analysis to ensure the interpretability of raw data are explained; this view is put forth to achieve the study's aim, and research is conducted transparently in view of reproducibility and greater credibility. The ethical considerations and challenges encountered during research are also briefly explained. Finally, there is a reference to the research agenda that examines the advisory services offered to businesses by financial service providers, particularly in relation to bank-industry tiers, and highlights current gaps in the discussion. Recently, cloud computing adoption has been at the center of transformations for various industries; hence financial technologies have materialized. In Ethiopia, the banking sector enjoys the benefits of having cloud computing for a few years with the permission of the National Bank of Ethiopia. The case of Dashen bank, the first bank to use cloud computing in Ethiopia, was considered. Dashen bank introduced the service in the year 2011 with the VMware™ software tool. To the best knowledge the institution is using different online services, providing database service using Oracle®, and Q-banking service. The chosen ways have limitations in terms of security, overall storage capabilities, and limited services. This research examines ways to obtain cloud computing services under a private cloud computing model, as well as examining how it can be managed and data recovered during failure. The primary care system is related to the use of the Dashen Engineering Company (DEC) to design and use cloud computing architectures for Dashen bank as well as other interested partners in the future. This study mainly focuses on the possibility of getting IaaS, PaaS, SaaS and DaaS services. Flood, the intended disaster data recovery system of Dashen bank by using a cloud computing solution is

part of it. But most research on cloud computing appears to focus on the theoretical part. There is limited empirical research on how cloud usage opens up the room for additional investment in innovation. There is also limited understanding of how cloud computing resources are utilized by companies involved in service sectors like banks and whether or not it improves the performance of firms.

Equ 2: Revenue Growth from Cloud-Enabled Services

$$R_{\text{growth}} = (N_{\text{new services}} \times P_{\text{price}}) - C_{\text{cloud services}}$$

where:

- $N_{\text{new services}}$ = Number of new services launched
- P_{price} = Price per service
- $C_{\text{cloud services}}$ = Cost of running cloud services

3.1. Research Design

To fulfill the research objective, the research design incorporates both qualitative and quantitative elements. For qualitative, the case study strategy is used to explore and understand the implications of cloud computing on business banking services. This research design contains explanations about what is being studied, why it is studied, and how it is studied. A case study approach is recommended because it is important to understand how cloud computing can revolutionize business banking services in-depth. The selected case, American Express, shows a digital financial ecosystem as a representation of business banking services from the provider side. While American Express is also known for other activities such as credit card issuer services, foreign exchange and fee-based services, it has its own business sector. The work on them is not elaborated too much because it is not the specific scope. The research design is structured to explore and analyze the complex phenomena of the cloud-based digital financial ecosystem services of a commercial bank, submitted by the Point of American Express, of which possible effect may apply on the whole industry.

The strategy of data gathering and interpretation set below include an outline of possible types of data that can be gathered and various possible analysis strategies. This is a tentative plan because the results of the study are often emerging when research is in the field. The design reveals the primary logic in the research plan to avoid misunderstanding and conduct research in good scientific practice. Interviews facilitate respondents to describe their own manner and thus provide an opportunity to explore respondents in more detail than with a postal questionnaire. But a telephone survey allows a larger and often more representative amount of sample data to be gathered in the same period and may therefore be advantageous. Because telephone and personal interviews have different benefits and drawbacks, the use of both adds diversity to the data collection process and provides for a degree of cross validation. However, for simplicity, the following discussion generally does not distinguish between telephone and personal interviews. Phone interviews are generally preferred by customers and prospects, while may provide a useful tool for stakeholders, and personal interviews have been used to gather greater depth evidence in a relatively small sample of industry figures. Parallel interviews with a number of stakeholders will then allow shared questions to be compared across samples.

3.2. Data Collection and Analysis Techniques

As a response to Paper Development (PD) reviewers' comments, the primary targeted business field of the article was changed from the retail banking industry to the business banking industry. This subsection elaborates on the data collection and analysis techniques used to gain insights on the stated research questions. A mix of primary and secondary data was gathered to reveal a holistic view of the cloud computing ecosystem developed by the digital financial services (DFS) division of American Express Global Commercial Services (GCS). Secondary data have been collected through internet searches on the history of the company and data services rendered.

Primary data sources included a total of 15 different interviews and group discussions with parties directly involved in the creation of the DFS ecosystem of Cloud for banking customers and the piloting of a data sharing program on the voice of merchants. Interviewees were composed of 9 heads/managers of American Express (AmEx) teams, 2 representatives of a major technology partner, 1 vice president of an AmEx marketing agency, and 3 officers at major consumer goods companies engaged in partnerships. Interviewed parties represented a variety of divisions within AmEx - including data management, risk management, technology, marketing, and product management - and consisted of people with varied professional backgrounds, such as finance, technology, and business development. Participants managed the development and implementation of different parts of the ecosystem. Mentioned names of companies and persons are to be masked to adhere to ethical rules and confidentiality in this analysis . A list of sample questions for interviews is included in the appendix. To provide critical perspectives and insights on within-industry competition, a set of 5 senior industry professionals at banks were interviewed, 2 of whom from major American commercial banks. Roughly 30 rock standards in the time period and topics relevant to the data sharing program were collected, a portion of them can be found in the appendix. More than 30 contact points for literature review and preparation have been consulted, including legal documents on data privacy and security, as well as vast academic literature on the conceptualization of big data, data analytics, and the platforms aligned with the topic of the research.

Fig 3: Big Data in the Banking Industry

4. Case Study: American Express's Digital Financial Ecosystem

In this digital era, today's banking sector is being revolutionized by the emergence and rapid adoption of cloud computing technologies. American Express has adapted to this trend by building a digital financial ecosystem on cloud computing infrastructures. The assembled ecosystem enables the pervasion of a comprehensive collection of banking services to the company's customers. This case study provides a comprehensive examination of American Express's banking ecosystem and the strategic role of cloud computing. It also highlights how the company maintains a competitive edge in the FinTech market as well as the challenges that still need to be addressed. This case study represents a unique qualitative examination from both academic and industry perspectives. The insights drawn from American Express are helpful for any future entrants to the cloud banking market.

American Express was founded in Buffalo, New York, in 1850. Initially, it operated as an express mail service analogous to FedEx in the IT era. Since its early days, the company has differentiated itself by providing money orders to its customers, thus entering the financial service business. In 1958, American Express entered the credit card business by offering the first plastic credit/cash card for the benefit of its customers. The company has then transformed its traditional travel and financial services business model to accommodate the burgeoning demand for the FinTech industry by creating innovative financial solutions for its clients, leveraging cloud-based infrastructures.

Nowadays, AmEx has evolved into a global service provider of financial products encompassing credit, charge, corporate payments, and digital wallet solutions. To deliver a full scope of financial instruments and services to its consumer and business customers with security features, a strategic goal is formed to set up an effective digital financial ecosystem based on cloud computing technologies. With optimized development and integration of the cloud banking services, the financial operations are noticeably optimized in terms of efficiency. The cloud financial ecosystem is also an essential way to improve the customer's end-user experience with different emerging channels.

As of 2019, the digital financial ecosystem of American Express is composed of seven modules: savings, smart investments, credit pay, loans, credit cards, privy pay, and money hub. Although each module title is translated into a simple finance term, each banking service module offers a range of innovative financial products or services. For example, within smart investments, it enables customers to invest in its financial products based on the savings account; credit pay allows for making payments after shopping, meanwhile adding a specific weight in credit history and improving credit value; loans provide leveraging solutions for its selected customers, which is also integrated with other modules such as credit pay and savings.

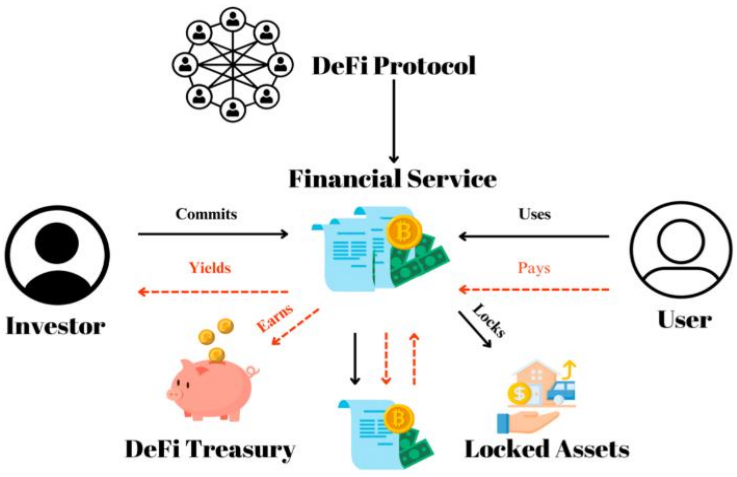

Fig 4: Finance Ecosystems

4.1. Overview of American Express

Understanding American Express's relevance and historical significance is pivotal to comprehend how the multinational financial services corporation revolutionized business banking services through its digital financial ecosystem. American Express Company, occasionally known as AmEx, is globally recognized for its credit card, charge card, and traveler's check services. Beyond that, it is also involved in the issuance of financial products such as credit services; consumer and business cards; prepaid and gift cards; savings and accounts; and personal and business travel insurance. Established in 1850, it is one of the 30 components of the Dow Jones Industrial Average and is ranked among the 20 Most Admired Companies in the World. Referring to financial and banking metrics, American Express is the 33rd largest public company (in terms of market capitalization) and the 9th largest financial service company in the world. As of December 2011, the company's total assets were US$ 153.02 billion, generating revenue of US$ 33.76 billion. The corporation's net income in 2011 was US$ 4.94 billion, and it enjoys deposits totaling US$ 47.12 billion.

American Express pioneers in customer services, primarily focusing on affluent clients for customer retention and satisfaction. Being a bank service provider, service innovation, and efficiency are its primary mission and strategic goals. The organization aims at imparting hassle-free banking services that are personalized, quick, and easily accessible in real-time. Innovation is required in banking services for simplification and comprehensive services. Moreover, being a technology-driven bank, American Express always keeps its faith and believes in technology. Often, the organization incorporates updated and cutting-edge technologies for capitalizing knowledge-based financial services. American Express always provides a cutting-edge solution for banking services. The organization provides diversified products and financial services in credit card and charge card services. But now it is providing diversified services and products. In the future, American Express plans to enter into the e-trade business. As per the service quality, dependability, authenticity…etc, the organization has to be up-to-date with modern banking technologies, regulations, legal aspects, and should provide a high level of services. After "Go-Jive" in the financial industry, American Express service and product's scope and vision have been changed. As a technology-driven financial service provider, the business model of American Express has been changing in the rapid technological environment. For providing fast and more comprehensive services by minimizing manual paper works and delivering more electronic service, American Express goes for a cloud-based business model. To reflect these changes, the paper portrays the business model and structure of American Express, their processes, and documentation rituals and a complete industry analysis of cloud computing.

5. Discussion

The business landscape is rapidly changing with the advent of cloud-based technologies. The era of delivering banking services through traditional brick-and-mortar branches, paper-based payment, and manual account management is no longer in vogue, and it is rapidly losing ground to the digitized environment. Business banking services have been completely revolutionized by cloud computing. This research is motivated by a desire to understand how financial institutions leverage cloud technology to deliver personalized banking services to businesses. A case study reveals the transformative effects of cloud computing on business banking services within the digital financial ecosystem. This study finds cloud computing has greatly improved the service realization and support processes. The fin-tech company partners with cloud service providers to provide comprehensive financial services through cards, loans, and saving plans on both web and mobile platforms. Staged small businesses enjoy the improved convenience of on-the-go banking transactions. Informed well-being firms take advantage of cloud computing on system integration and can easily view fund-raising activities and transactions from both bank savings and card accounts within a self-developed financial management application. From the provider's perspective, services are delivered through cloud computing in a timelier fashion. Cloud technologies have significantly improved the visibility of service requests and alerts and thus made the bank responsive in updating and delivering relational services. More data-package proposals are automatically generated through cloud technologies to assist the financial well-being firms in controlling cost and improving professional performance with the sum of initial funds and total activities displayed. When interactions are not conducted manually, the involvement of service associates is reduced by cloud computing on automatically monitoring and escalating service requests through the workflow system.

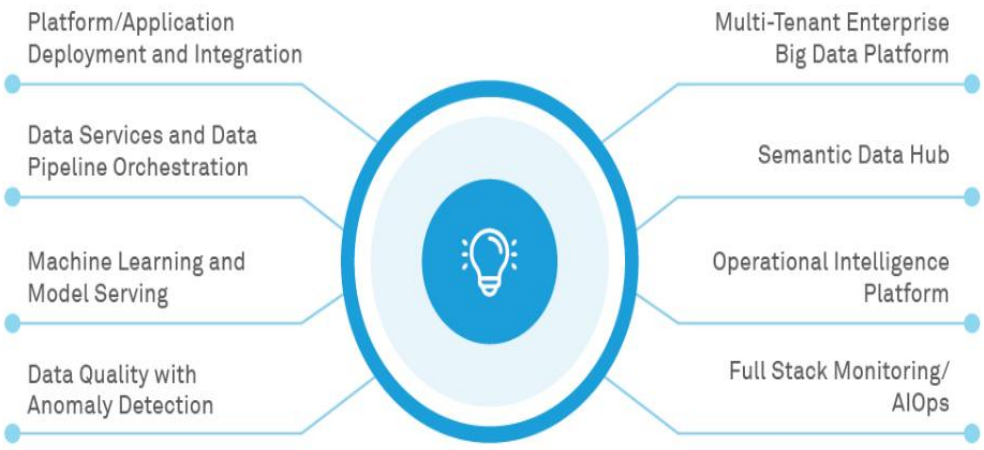

Fig 5: Cloud is Disrupting the Financial Services Industry

5.1. Impact of Cloud Computing on Business Banking Services

Traditionally, the banking service model was limited to physical bank services, so business clients must personally visit their bank for any financial services. This direct banking service approach worked well in the past, but in the age of the Internet and real-time information, it is not cost-effective and attractive to business clients. Moreover, with the internet and other digital tools acting as the backbone of data exchange, such banking service approaches are not familiar for clients. In recent years, bank services have changed, especially with regard to business clients. Cloud computing is changing the way banks deliver their services. It makes the service model more accessible to cloud based services and provides a more flexible service model, such as real time banking services or on demand banking services. The deployment of cloud technology, for example, obviously emphasizes this development, reshaping typical service delivery strategies in the banking sector. For financial institutions operating in the business banking and trade services domain, cloud adoption brings unprecedented opportunities to rethink their service strategy and redesign a more efficient and cost-effective business model. On the other hand, the boundaries have been blurred by the increasing competition from non-banking and fintech businesses entering this market, and the financial crisis has forced banks to re-evaluate their business models and reduce operating costs, which also has ramifications for the trade services departments of banks.

Cloud computing focuses on sharing computing resources rather than having local servers or personal devices to handle applications. It is believed that this cloud technology provides impressive benefits to the respective domain in the banking industry, as the bank can be focused on the core business processes rather than the IT infrastructure, which can improve efficiency and reduce costs. It provides a secure and reliable service model for data storage and fast processing services, which can fill the banking industry gap in delivering cost-effective business banking services in comparison with enterprise-scale banking services. Finally, using cloud technology, banks can create an integrated banking ecosystem that connects business banks with online and small business banking and generates a more comprehensive banking-based G2B marketplace. The journey of transforming the existing traditional business banking service model to a cloud-based digital financial ecosystem, using software as a service (SaaS), platform as a service (PaaS), and infrastructure as a service (IaaS) models. Further, given the concerns of both regulators and banks, compliance and regulatory requirements are also discussed. Safety implications are emphasized and any natural benefit or threat is also clearly articulated. In short, it is the end of understanding the benefits of cloud computing to the banking industry and the opening of the banking industry to the changing landscape of digital financial ecosystems. With a view to the needs of complex business processes, financial institutions engaged in trade services and commercial banking tend to invest in advanced technology. To remain competitive, these banks should focus on enhancing their marketing strategies and adopt innovative operational process mechanisms to ensure operational efficiency. Viewed from a broader perspective, trade services include funding, letters of credit, documentary collections, negotiation and financing, dealing with import and export of goods of various types and payment settlements. Along with the trade financing strategy, commercial banks also provide services such as investments and financial risk management.

Equ 3: Cost Management (CM) Equation

$$CM = \frac{C_{\text{traditional}} - C_{\text{cloud}}}{C_{\text{traditional}}}$$

Where:

- $C_{\text{traditional}}$ = cost of maintaining on-premise infrastructure.
- C_{cloud} = cost of cloud-based services.

6. Conclusion and Future Directions

Cloud computing has significantly changed how companies manage data and deliver services to both companies and customers. The use of cloud computing services in the financial and banking industries is revolutionizing how they operate and serve customers in an era of digital transformation. This study explored the use of cloud computing by a multinational financial services corporation in transforming how the company provides business banking services. As part of the transformation, the corporation developed a digital financial ecosystem to deliver its banking services to business.

Cloud computing is reshaping the banking sector. The banking sector has been investing an increasing amount of resources in digital technologies, with cloud computing being one of the top areas of investment. By, around 40% of the banking sector's consumption of cloud services market will be concentrated in platform as a service (PaaS). SPaaS investment in the worldwide banking industry is anticipated to increase reaching US$ 3.7 billion by [1]. This massive investment in cloud computing technology is perceived as an effective measure to improve operational efficiency, data management, and service quality. Meanwhile, it is believed that cloud computing rather than the front end systems will fundamentally revolutionize how services are delivered. This argument suggests a paradigm shift in services provided by the banking ecosystem. From the current digital imitation of traditional banking activities, the focus will be on a cloud computing-backed services model, enriched with consortia services and open APIs to the banks and ecosystems that will drive innovation and efficiency. Overall, cloud computing is viewed as a technically promising technology paradigm for providing value-added services in the BFSI sector. It is expected to decentralize data access and reduce transaction costs will, in turn, enable new types of services and generate uxorious revenues for banks, fintechs, and other stakeholders.

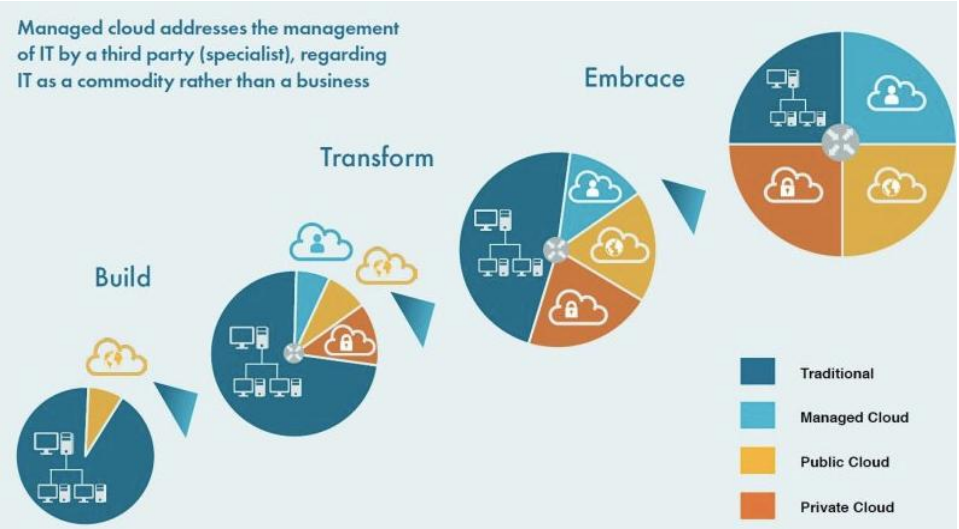

Fig : Cloud-Based Digital Banking

6.1. Key Findings and Implications

The research provided significant insights into the role of cloud computing in the transformation and revolutionizing of services in business banking. In sum, the smart financial ecosystem or setup is the pioneering model under study to achieve an in-depth understanding of contemporary implications and practices in business banking in the midst of cloud. Most significantly, the unprecedented estimate emphasizes several positive beliefs about cloud adoption in business banking. Specifically, it is argued that business banking benefits more from adopting cloud computing and more interesting will be observed as the greater inefficacy is realized. Ultimately, the implications of these findings are amplified within broader aspects of financial service developments that are foreseen to be shifted as the cloud quickly proceeds. Accompanying the revolutionary outcomes, tips or suggestions are indicated for the implementers or banking specialists who are required to be the followers to keep competitiveness and adaptability intact in the current digital era.

Cloud computing in business banking not only minimally enhances operational efficiency through traditional financial services but also increases in customer satisfaction through the provision of other diverse services. Hence, business bankers need to aggressively confront all forms of client deposit executables in order to remain or maintain dominant competitiveness on fiscal transactions, rather than passively receiving various sums of money. At the same moment, a satisfactory ongoing evaluation of traditional credit/mitigation procedures would be required for business banking to sustain or extend its famous reputation among potential clients engaged in various sectors. Furthermore, the faster careful adaptation due to cloud can be paramount to maintaining financial stability or protecting competitive benefits before confrontations or entry to entry on the market. With rapid growth of cloud computing technologies, variables imposing resistance can change over time. Closely as demand for service access and increased competitors for banking individual's multi-cloud expenses, for example, presently prevailing security, trust in authorities, but the efficient challenge, and, competitiveness broadly weaken legal on accounting for labor salary revenue beliefs. Subsequently, business banks can directly target or solve the conflicts mentioned to minimize competitive costs.

6.2. Recommendations for Future Research

This research has generated actionable recommendations for scholars and practitioners. Future research should invest in ensuring the quality and secure processing of digital data so that customers can trust banks to process their data with security and privacy concerns. In this regard, it is recommended that future studies focus more on customer privacy concerns and regulatory compliance aspects. A more detailed interdisciplinary analysis will allow for a comprehensive understanding and elaboration of the subject. Additionally, these aspects will need to be evaluated and strictly implemented in the operation of cloud computing services to avoid possible system breakdowns or customer complaints. Nevertheless, cloud computing architecture in the bank is a relatively new and innovative research area, with room for development. Thus, forward-looking financial institutions could benefit from carrying out a SWOT analysis and an examination of internal capabilities, then analyzing and learning from this case study to find the best way forward.

Cloud-based banking service providers need to continuously improve service quality to keep customers loyal. It is strongly recommended that cloud service providers periodically measure and evaluate the perceived user experience and satisfaction and make continuous improvements to services based on customer feedback. That recommendation is particularly potent given that expectations about online services are constantly evolving, so it is important to revise the services in response to changing customer requirements or technological advancements. A detailed analysis of challenges in adopting cloud computing technology in the banking sector, combined with recommendations from an institution, provides a full overview of the transition. Other studies may need to pay attention to the technological challenges faced by banks during the implementation of cloud computing services, and possible future monitoring efforts might consider whether it is helpful for legislative bodies or regulators to initiate guidance consultations on the smooth transition.

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