

Adoption of Digital and Cloud Technologies in Financial Industry during Covid-19 Pandemic

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Abstract – With consumer behavior rapidly changing during the Covid-19 pandemic, financial services quickly realized that digitization is no longer an optional strategy or an experiment. With lockdowns in place across the globe, consumer preferences quickly shifted from in-store and in-person transactions to online shopping, digital banking, mobile payments. This left banks with no choice but to migrate their legacy infrastructure into the Cloud and adopt digital technologies to provide customers their preferred digital banking options. This paper will discuss what consumer behavior shifts occurred during the pandemic and how banks responded to these behavior shifts.

1. INTRODUCTION

During the Covid-19 pandemic, we saw a dramatic shift in consumer behaviors. With lockdowns in place across the globe, consumer preferences quickly shifted from in-store and in-person transactions to online shopping, digital banking, mobile payments, and the use of various video conferencing tools like Zoom, hangouts, etc., for work. This shift in consumer behaviors forced companies to build new digital capabilities that required a significant overhaul of their technology infrastructure and adoption of Digital and Cloud technologies. Executives of companies focused on adopting these technologies that can effectively help them achieve their business goals during the pandemic. For some, this was not a massive shift; for others, especially companies with legacy technologies & infrastructure faced the challenge of remodeling the technological infrastructure on the Cloud while ensuring an appropriate level of security.

Along with other industries, financial institutions were not immune to these consumer behavior shifts; instead, they were at the forefront of this transition. Traditional banking has already been disrupted by tech-focused financial institutions called Fintechs. With pandemic, banks faced an uphill battle to migrate their legacy infrastructure into Cloud and digital technologies to provide customers their preferred choice of banking and compete with Fintechs.

2. OVERVIEW OF BANKING, TECHNOLOGY & PANDEMIC

Let's look at the fundamental concepts used in this paper.

2.1. Traditional Banks vs. Fintechs:

In the past decade, we have seen tremendous advancement in digital technologies. This disrupted the ways businesses and individuals perform financial activities. A new wave of technology-enabled firms offering financial services used this opportunity to develop alternative platforms for financial activities. These firms are called Fintechs, and they operate in various traditional banking spaces, including mobile payments, digital currencies, peer-to-peer lending, marketplace lending, etc. FinTechs usually focus on mobile functionality, big data, accessibility, agility, cloud computing, contextuality, personalization, and convenience. Traditional banks have been slow to react to the fintech revolution due to their heavy dependency on monolithic platforms and legacy infrastructure.

2.2. Digital & Cloud Transformation:

Cloud transformation is the process of moving an organization's platforms/data from on-premise servers to servers hosted on public/private Cloud. Migrating to cloud-based infrastructure brings significant efficiency, speed, scalability, ability to use modern technologies, and faster reaction to government regulations for a company.

Forbes says, "Digital transformation in banking is a cultural, organizational, and operational change through technologies." Digital transformation helps banks to provide digital customer services over the internet using the web or mobile capabilities. It helps banks develop new offerings, process automation, customer experience, data integration, organizational flexibility, and sales.

Together, these transformations help banks eliminate manual labor, digitize the customer experience, transactions settlements, etc., increase productivity, lower operational cost, and effective teamwork.

2.3. Covid-19 Pandemic:

WHO describes COVID-19 as "An acute respiratory infection caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)." It was first identified in Wuhan City, Hubei Province, China, in December 2019. Since then, it has spread to many countries worldwide, with the World Health Organization declaring a pandemic status. At the beginning of the COVID-19 outbreak, there was no knowledge about the nature of the pathogen, rate

of spread, and clinical progression of the disease. The lockdown strategy, characterized by intense restrictions on the general population, was the solution available to prevent the spread of the virus. The lockdown and work-from-home fundamentally changed consumer behaviors, resulting in organizations adopting new strategies.

3. Analysis of Shift in Consumer Behavior During Pandemic and Bank's Response

Financial services have been slower than other sectors to migrate to Cloud despite the potential. Along with Fintechs, few banks were early adaptors of Cloud and digital technologies. Due to complexities built over time, most banks find it difficult to modernize their legacy on-premises applications. However, pre-pandemic consumer behaviors and loyalty towards their banks that have provided service for years were slow to change. However, with the Covid-19 and its impact, customer behaviors and preferred interactions have changed significantly; there is a significant uptick in the use of digital services, and it is here to stay. A survey by Kearney shows that 63% increased digital usage by consumers.

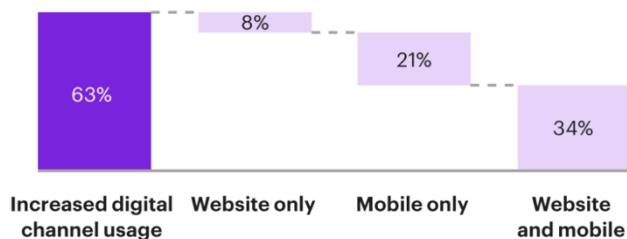


Fig. 1: Increase in Digital Usage by Consumers During Covid-19 Pandemic

With the pandemic's start, most C-suite executives had no choice but to lead their companies to digitize most parts of their business, especially customer-facing ones. To succeed in this new environment, they need to move to digital technologies by ensuring that their digital channels compete with technology-forward banks and Fintechs.

3.1. A shift in Consumer Behavior During Covid-19 Pandemic:

The COVID-19 pandemic saw a dramatic shift in consumer behaviors. IDC did a consumer survey during the pandemic that highlighted key changes in consumer behaviors :

- During the pandemic, 58% of consumers in the United States stopped visiting physical branches; this placed an enormous burden on the call center and digital channels.
- Payment processed through in-store channels declined as retailers were forced to shut their

doors. Consumers quickly turned to online/digital payments. Real-time payments became a thing.

- Credit needs increased for small and medium-sized enterprises (SMEs) significantly affected by the pandemic.
- Rise of app-based / in-home service offerings. Pandemic also saw a significant rise in consumer spending on app-based offerings such as Netflix and in-home services such as Peleton Fitness. As work from home became

Accenture also surveyed banking customers to understand how their consumer habits changed pre and post-pandemic. There was an 18% increase in app-based banking; it's the most-used channel for interaction.

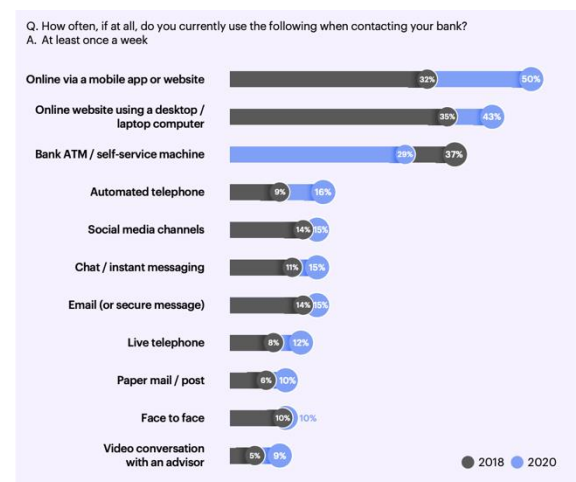


Fig. 2: Shift in Consumer banking interaction

The world also saw customers gravitating towards the Omnichannel experience. An omnichannel strategy within a bank refers to the bank's ability to allow consumers to navigate between multiple interactive channels and personal touchpoints before deciding on a specific product or service. Customers should fulfill their banking needs at any time and on any connected device. Such experience requires significant investments in digital and Cloud infrastructure.

Changes in consumer behavior during COVID-19 are also widely studied among scholars. The changing orientation of consumers towards online shopping was highlighted in the study Hashem and Tareq [1]. They argued that the inconvenience of going out of the house for shopping had motivated consumers to turn online, leading to the development of technological applications. Following the same line of research on consumer behavior in India during the pandemic, Kamble and Rakshit [2] found that rapid online payments and online banking adoption took place during the COVID19 crisis. Nearly 43% of Indians have used digital payment methods during the Covid-19 crisis. According to these authors, contactless payments

became a norm as restrictions were imposed. A shift was also noticed by Mills et al.[3] with the rise in mobile phone-based entertainment apps such as Netflix, Peacock, etc. They argued that various platforms and applications that required online subscriptions emerged, which led to banks facing a demand for effective support of digital transactions from these apps. Kiernan and Emily [4] mentioned the rise of peer-to-peer payments during the Covid-19 pandemic. They are perceived as convenient ways of payment, and access to funds is immediate.

With the pandemic, consumers are looking for faster, secure, and convenient ways to transact as they abandon the habit of carrying physical money or writing checks.

3.2. Adoption of Cloud & Digital Technologies by Banks to Meet Consumer Demands :

With the shift in consumer behavior, banks had no choice but to completely change their technology and operation processes, acquire products or services, train employees and adopt new behaviors. Even before the pandemic, some forward-thinking banks saw millennials' affinity towards digital technologies and had already started migrating processes to more open environments using open APIs, Cloud, microservices, containers, and agile development methods. These banks and Fintechs pivot quickly during pandemics and offer consumers a superior digital experience. Others struggled to meet demands. Fintechs, already on Cloud, gained rapid market share as consumers turned to them for digital banking, real-time payments, and lending. A survey by EY clearly shows fintech gaining consumer share market during the pandemic.

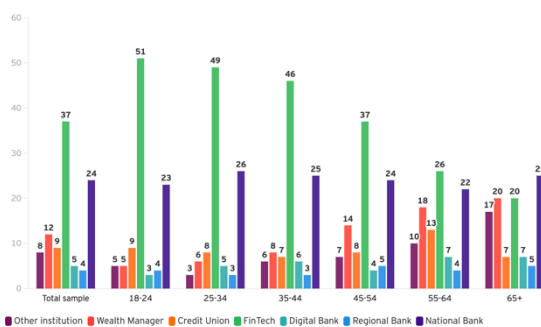


Fig. 3 Fintechs saw rapid growth in customer shares

The pandemic accelerated banks' digital transformation, especially digital transactions, to replace physical interactions between consumers and banks. As banks navigated the pandemic, it became evident that consumers' preference for digital interaction is here to stay even in the post-Covid-19 world. A study by the cornerstone advisor shows a rapid increase in digital transformation strategy spending by banks when compared to year pre-pandemic years.

When did your institution launch its digital transformation strategy?

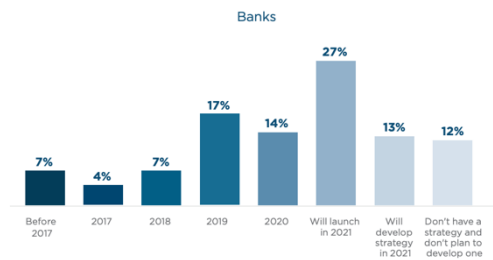


Fig. 4: Digital & Cloud Strategy Adoption

Due to various shifts in consumer behaviors, banks experienced the following challenges :

- Digital channels were stressed as customers relied more on online and mobile banking to interact with the bank. Banks that were not on Cloud found it challenging to scale up their infrastructure rapidly.
- Contact center functionality, technology, security, and workforce optimization all strained the bank's ability to maintain a good customer experience as customers required answers to complex questions stemming from the pandemic.
- Banks that didn't have a strong digital fraud detection model suffered losses; as real-time online payments grew, so did fraud
- Online Lending became an important line of business for banks, especially for small business loans. Most banks limped with less-than-ideal lending solutions for digital lending platforms.

Banks responded to these challenges through accelerated digital innovation, from rolling out contactless real-time payments to moving away from branches to online banking to digitizing the loan process. Banks lagging in digital adoption pre-pandemic did improvised corner-cutting, jury-rigged solutions, and regulatory forbearance, but much of these innovations will be sticky well beyond the pandemic.

A study by cornerstone advisors showed heavy investing in Cloud Computing and APIs by banks compared to the pre-pandemic years.

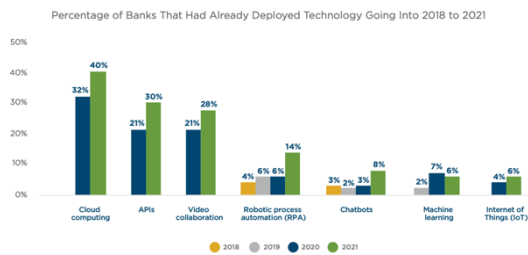


Fig. 4 Banks saw rapid investments in Cloud and APIs

4. CONCLUSIONS

If we've learned anything, COVID-19 will further drive the adoption of digital technologies, which means banks should also accelerate digital transformation in kind. Leveraging technologies like open APIs, microservices, and flexible deployment models can help banks overcome some critical challenges discussed earlier that the pandemic had exposed.

As the world comes out of pandemics, we will continue to see innovations and customer experiences developed using digital and Cloud technologies. The following trends will continue :

- Move all-in on Cloud and digital technologies – Banks that took the shortcut to survive the pandemic will not invest in overhauling their technology infrastructure
- Maturing digital technology that is more commoditized and accessible – Banks that already started their digital journey before the pandemic will continue to invest and mature digital capabilities
- Personalized customer experience – banks will continue to innovate in this space and provide customers with personalized products and services.

5. References

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