

THE MINISTRY OF EDUCATION OF THE REPUBLIC OF AZERBAIJAN

AZERBAIJAN STATE UNIVERSITY OF ECONOMICS

INTERNATIONAL CENTER OF GRADUATE EDUCATION

MASTER DISSERTATION

on the topic

“HOW PANDEMIC CHANGED DIGITAL FINANCIAL SERVICES”

Saida Mammadova Nail

BAKU – 2022

**THE MINISTRY OF EDUCATION OF THE REPUBLIC OF AZERBAIJAN
AZERBAIJAN STATE UNIVERSITY OF ECONOMICS
INTERNATIONAL CENTER OF GRADUATE EDUCATION**

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MASTER DISSERTATION

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“HOW PANDEMIC CHANGED DIGITAL FINANCIAL SERVICES”

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Elm andı

Mən, Məmmədova Səidə Nail qızı and içirəm ki, “How Pandemic changed digital financial services” mövzusunda magistr dissertasiyasını elmi əxlaq normalarına və istinad qaydalarına tam riayət etməklə və istifadə etdiyim bütün mənbələri ədəbiyyat siyahısında əks etdirməklə yazmışam.

PANDEMİYA RƏQƏMSAL MALİYYƏ XİDMƏTLƏRİNİ NECƏ DƏYİŞDİ

XÜLASƏ

Tədqiqatın aktualığı: Rəqəmsallaşma proseslərinin inkişaf etdiyi bir dövrdə Covid-19 Pandemiyasının yayılması bu proseslərin sürətlənməsinə gətirib çıxarmışdır. Hər sektorda olduğu kimi, rəqəmsal maliyyə xidmətləri sektorunda da pandemiyanın təsirləri görülməkdədir və bu proses davam edir.

Tədqiqatın məqsəd və vəzifələri: Bu tədqiqatın aparılmasında əsas məqsəd pandemiya dövründə rəqəmsal maliyyə xidmətlərinin necə dəyişməsi, istehlakçıların bu dövrdəki davranışı, pandemiya öncə və sonra sektorda baş verənlərin müqayisəsini aparmaq və gələcək dövr üçün maliyyə xidmətləri təklif edən şirkətlərin hansı addımları atmasının məqsəduyğun olmasını müəyyənləşdirməkdir.

İstifadə olunmuş tədqiqat metodları: Dissertasiya işinin aparılmasında əsasən kəmiyyət metodlarından istifadə olunmuşdur. Müqayisəli təhlil, ümumiləşdirmə metodları vasitəsilə pandemiya dövrü və əvvəlki dövr arasındakı fərqlər müəyyən olunmuş, post-pandemiya dövrü üçün proqnozlar qeyd edilmişdir.

Tədqiqatın informasiya bazası: İnformasiya bazası olaraq daha əvvəl bu mövzuda çap edilmiş kitablar, məqalələr, tədqiqatçıların bu mövzuda yazmış olduğu elmi araşdırmalardan, internet resurslarından, dünya və Azərbaycan üzrə statistik məlumatlardan, habelə Mərkəzi bankın məlumatlarından istifadə edilmişdir.

Tədqiqatın məhdudiyyətləri: Covid-19 Pandemiyasının yeni məhfum olması səbəbiylə pandemiyanın rəqəmsal maliyyə xidmətlərə necə təsir etdiyinin tam aşkar olmaması, bu barədə məlumat bazasının azlığı, xüsusilə inkişaf etməmiş və inkişaf etməkdə olan ölkələr üzrə rəqəmsal xidmətlərin yetəri qədər yayılmaması nəticəsində bu mövzuda aparılmış müşahidələrin azlığı tədqiqatın əsas məhdudiyyətlərindəndir.

Tədqiqatın elmi yeniliyi və praktiki nəticələri: Pandemiyanın son 3 ildə yayılması iqtisadiyyatın bir çox sektorlarına təsirlərinin yeni-yeni müəyyən olunmasının başlıca amillərindəndir. Aparılan tədqiqat nəticəsində müəyyən olunmuşdur ki, uzunmüddətli periodda baxıldığı zaman Covid-19 pandemiyası maliyyə xidmətlərinin rəqəmsallaşmasına müsbət təsir göstərmiş, bu xidmətin istifadəçilərinin sayının artmasına gətirib çıxarmışdır.

Nəticələrin istifadə oluna biləcəyi sahələr: Pandemiyanın maliyyə xidmətlərinə təsirini müəyyənləşdirmək, gələcəkdə bu sektorda olan şirkətlərin fəaliyyətinə müsbət təsirini göstərə bilər.

Açar sözlər: rəqəmsal maliyyə xidmətləri, blokçeyn, Covid-19, kriptovalyuta

HOW PANDEMIC CHANGED DIGITAL FINANCIAL SERVICES

SUMMARY

The actuality of the subject: At the time when digitalization is evolving, the spread of the Covid-19 Pandemic has accelerated these processes. As in any sector, the effects of the pandemic are being felt in the digital financial services sector, and this process continues.

Purpose and tasks of the research: The main purpose of this study is to compare how digital financial services changed during the pandemic, consumer behavior during this period, what happened in the sector before and after the pandemic, and to determine what steps should be taken by companies offering financial services in the future.

Used research methods: Quantitative methods were mainly used in the dissertation. Differences between the pandemic period and the previous period were identified through comparative analysis and generalization methods, and forecasts for the post-pandemic period were determined.

The information base of the research: Previously published books, articles, research papers written by researchers on this topic, Internet resources, statistics on the world and Azerbaijan, as well as data from the Central Bank were used as the information base.

Restrictions of research: Due to the new concept of the Covid-19 pandemic, the lack of a clear picture of how the pandemic affects digital financial services, the lack of a database, and the lack of observations on digital services, especially in underdeveloped and developing countries, are among the main limitations of the study.

The novelty and practical results of investigation: The spread of the pandemic over the past three years is one of the key factors in redefining the impact on many sectors of the economy. The study found that, in the end, the Covid-19 pandemic had a positive impact on the digitalization of financial services, leading to an increase in the number of users of these services.

Scientific-practical significance of results: Determining the impact of the pandemic on financial services could have a positive impact on the performance of companies in the sector in the future.

Keywords: Digital Financial services, blockchain, Covid-19, cryptocurrency

ABBREVIATIONS

ATM	Automated Teller Machine
CRV	Curve Finance
DFS	Digital Financial Services
EMI	Electronic Money Institution
ETF	Exchange-Traded Fund
FSB	Financial Stability Board
QR	Quick Response
NGO	Non-Governmental Organization
WHO	World Health Organization

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INTRODUCTION

Relevance of the research topic: During the last few years, the worldwide spread of Covid-19 pandemic made people use digital financial services more. This Pandemic has leveraged the digital adoption to different level due to social distance practice. Analyzing trends about changes in Fintech services may help us investigate consumer behaviors, the changes that happened in Fintech companies during Pandemic Era, and show assistance in decision making for future plans by digital financial services providers, also users. Thus, the topic of the dissertation is very relevant.

Statement of the problem and learning level: The process of studying the features of thesis reflected in the scientific works of various foreign writers. Research shows that a large number of scientific articles, books and magazines have been published on the subject. All this greatly simplifies the research. The research is based on scientific works of local and foreign experts on the subject, official information published in local and foreign media and information published on other official websites.

Purposes and objectives of the research: The purpose of this study is to interpret, evaluate or analyze the problem related to the impact of Covid 19, which has spread to the world since 2019, on digital financial services.

In this thesis, the concept of digital financial service, digitalization in the financial technology sector, and the effect of the pandemic on digitalization were investigated. To achieve the objectives of this thesis, the following tasks were determined:

1. Examining the changes in the use of digital financial services during Pandemic;
2. Investigating consumer behaviors and Fintech companies' activity;

3. To make a forecast for the future by analyzing secondary data.

Object and subject of the research: Analysis of Digital Financial users before and after Covid-19 Pandemic, changes in the application level of technology on Fintech services, the trends of mobile banking, online payment, insuretech, robo-advisory, impact level of artificial intelligence on Fintechs, blockchain technology transformation are main objects of this paper. Object of the research is its implications on the society and the economy.

Research methods: In this research, mixed research methods were used, the qualitative method helped to determine how pandemic affected the growth of Fintech companies, and the quantitative method investigated the relationship between FinTech's' performance and usage of these services by the world during Covid-19. As a qualitative research method, the historical method was applied which involves studying, understanding, and interpreting past events regarding Covid-19 and Fintech services. The purpose of this method was to reach insights or conclusions about Covid-19 and digital finance. The comparative analysis method was used as a type of quantitative method, which offered us assistance to observe the trends of the digital financial services in this period, the characteristics of the post-Covid world, and the main differences between these two.

Research database: The theoretical and methodological basis of the research is based on scientific works of local and foreign experts, economists and scientists on the concept Digital financial services during Pandemic and internet resources and other similar scientific sources.

Research limitations: The absence of a clear image of how the Covid-19 epidemic affects digital financial services, the lack of a database, and the lack of observations on digital services, especially in undeveloped and emerging nations, are among the study's primary limitations.

Scientific novelty of the research: One of the important considerations in redefining the impact on numerous sectors of the economy is the pandemic's spreading during the last three years. The study discovered that the Covid-19 epidemic had a long-term positive impact on the digitalization of financial services, resulting in an increase in the number of users.

Scientific and practical significance of the results: Determining the pandemic's impact on financial services could have a significant future impact on the success of companies in the sector. This study also can be used for future researchs on this topic.

CHAPTER I. FUTURE OF FINANCE: DIGITAL FINANCIAL SERVICES (DFS)

1.1. Theoretical aspects of Fintech. The history of financial technology

Although the use of technology in making financial services more effective is not a new practice, there has been a significant increase in the rate of use recently. The fact that FinTech applications are fast, flexible and personal increases their preference. The finance sector, which is considered the largest sector in the world, gains opportunities in terms of growth and innovation, especially with mobile technology. Constantly changing customer expectations and preferences are also effective in this dynamic structure of the sector, which tends to change.

In particular, emerging technologies such as artificial intelligence, machine learning and usage capacity, the internet and blockchain are reshaping the service spectrum of financial companies.

The definition of FinTech in the Oxford dictionary is “computer programs and other technologies used to provide and support banking and financial services”. Although FinTech brings to mind only financial technologies in the first place, the concept actually encompasses much more in the name of innovation and growth (<https://monei.com/blog/fintech-vs-traditional-banks/>, 2021).

FinTech also refers to companies that combine technology with innovative business models that will make the financial services industry more accessible and easier or even turn it upside down. In other words, FinTech is a set of technological developments that bring innovations to the financial sector in terms of applications, business models, products and processes.

The history of financial services. The origins of financial technologies, which have caused devastating changes and innovations in the financial sector in recent years, date back to 1866. In those years, when the first communication between North

America and Europe was realized with the Trans-Atlantic transmission cable, the communication time between the two continents decreased from ten days (i.e., the transmission of a message by ship) to 17 hours (with the telegraph infrastructure), but it was also called FinTech 1.0. It paved the way for the start of the accepted period and the improvement of related financial services and the emergence of new ones (Leong A., Sung A., 2018: p.74-75). Financial technologies, which have continuously developed over the years since the first important development that allowed the development of financial services and technologies, have developed much faster than in previous periods in the last ten years.

It is possible to say that today's technological developments have increased the scope and impact of Fintech if we look at the technological development of the financial sector in the historical process. Especially since the 1970s, the effects of technologies that cause creative destruction in the increase in the importance of the global financial system are quite high. Financial technologies, which have changed and developed significantly with the change in technology in the period from 1866 to the present, have been classified in different phases by accepting the important events and changes as milestones. These phases are called FinTech 1.0, FinTech 2.0, FinTech 3.0. Relevant stages are classified in the table below:

Table 1: Classification of Fintech eras

Range	1866–1967	1968–2008	2009–Present	
Era	FinTech 1.0	FinTech 2.0	FinTech 3.0	FinTech 3.5
Geography	Developed world	Global	Developed world	Developing world
Key players	Infrastructure	Banks	Startups	
Shift origin	Globalization	Technology	2008 Financial crisis	Market reform

Source: Arner D.W., Barberis J.N., Buckley R.P., “The Evolution of Fintech: “A new post-crisis paradigm (2015)” & “Fintech and Regtech in a nutshell, and the future in a sandbox (2017)”

The relationship between technology and finance dates back to the end of the 19th century. Telegraph, the transatlantic cable, steamships, and railways stand out as the technological innovations of that period. These technological opportunities have enabled the development of a financial relationship network between countries. After the first telegraph began to be used in 1838, the innovation considered as the beginning of the FinTech 1.0 era is the introduction of the transatlantic cable in 1866. Thus, an infrastructure system that goes beyond the borders of the countries has been established. Describing the technology-finance relationship, J.M. Keynes (1920: p.9) defined this period in his book “The Economic Consequences of the Peace” as follows:

“London residents can order many products in the world in the amount they see fit over the phone while sipping their morning tea in their beds and can wait for the deliveries of these products at home. At the same time, he can take advantage of the wealth of startups anywhere in the world and share them without difficulty”.

FinTech 1.0 process, which continued with the use of credit cards in 1950, was replaced by FinTech 2.0 with the use of the first ATM (Automated Teller Machine) in 1967.

This new era, which started with ATM, has developed with online banking activities and financial services have become more digital and global. As an important indicator of this, the stock market crash in 1987 known as "Black Monday" can be taken into consideration. Because with this event, it has been seen how much the financial markets have become integrated through technology. The stock market crash in the USA also affected the world in general. FinTech companies in financial markets that have become digital and global in this period; started to offer different financial services such as transfer, payment, investment management, and leasing. As Bill Gates stated in 1994, the view that "banking is important, not banks" began to materialize, and while the volume of financial services increased, the number of bank branches decreased. As an indicator of this situation, while the assets of banks in the USA have increased from

\$ 3.7 trillion to \$ 17.4 trillion since the 90s; their numbers decreased from 10453 to less than 5000. In other words, the US has had fewer but larger banks.

It can be said that the concept of FinTech has transformed into today's structure with the Global Financial Crisis. However, the profitability and competitiveness of banks suffered as a result of the Global Financial Crisis. The post-crisis regulations, on the one hand, increased compliance costs, on the other hand, restricted loans. As a reflection of this situation, FinTech initiatives, which can also be considered a challenge to traditional banking services, are attracting attention as they reach the segments outside the system directly and at a low cost.

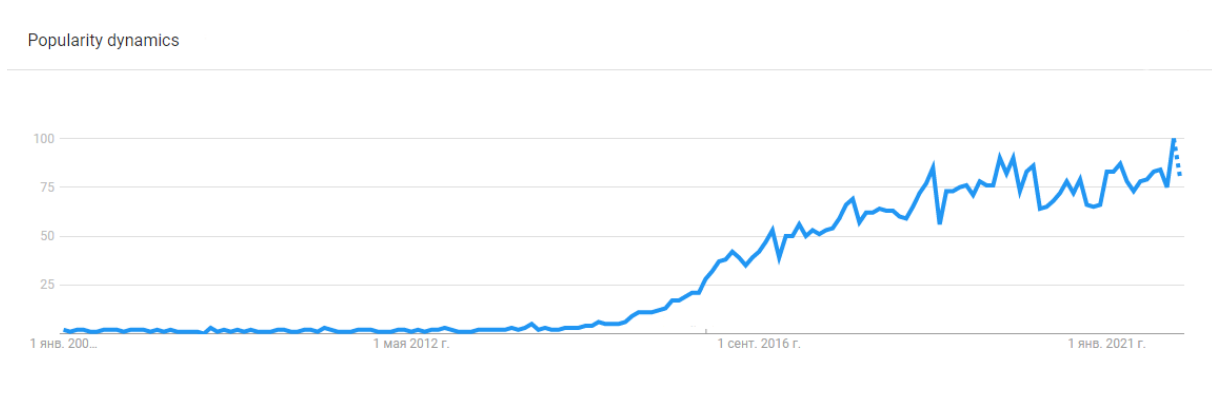
The FinTech 3.0 era has been shaped by the rapid transformation and growth of companies providing technological services. So much so that these companies have very quickly reached the position of "too small to be ignored", "too big to be ignored" and finally "too big to fail". This process, which was triggered by the Global Financial Crisis in the Western world, is based on slightly different dynamics in the Eastern world. Especially in Africa and Asia, the development of FinTech companies has led to the countries' pursuit of economic development. Due to this difference, developments in developing countries and emerging market economies are called FinTech 3.5 period in the literature. In addition, depending on the changes in the way of doing business in recent years, the technologies applied in the sector, and the new generation services developed based on these technologies, the door has been opened in a period that can be called Fintech 3.5. The widespread use of mobile devices among the young population, the existence of unused market opportunities, the lack of physical banking infrastructure, consumers who value convenience over trust, lower levels of competition, and weaker data protection requirements have been effective in the emergence of this new era in a shorter time.

Along with the dizzying developments in technology and communication tools in the new period, the quality and diversity of financial services offered are increasing day

by day. It is undeniable that global and national entrepreneurship, and in particular the financial technology ecosystem, contributed to the emergence of this situation. The fast, effective, flexible, efficient and consumer-friendly approaches of startups that produce products and services based on financial technologies add a new dimension to the world of finance and change the current way of doing business. Furthermore, the social distancing rules that we have to follow due to the Covid-19 pandemic are also triggering factors for the increase of digital financial services. Staying at home, doing banking, payment, and finance-related operations without leaving our houses became more important, safe, fast, and easier for people.

We can take into the number of searches for word Fintech on Internet as another indicator of the interest in the Fintech ecosystem around the world. In this context, Graph 1 depicts the number of monthly Google searches for the term FinTech from 2008 to 2021. As we can see from the graph, there has been an upward trend, particularly since 2014. It has been observed that increase in interest coincides with years when the amount of investment made globally increased rapidly and consumers began to adopt more FinTech services.

Graph 1: Number of searches for the word Fintech on the Internet.



Source: <https://trends.google.com/trends/explore?q=fintech>

The parties of Fintech ecosystem. Although there are many parties in the ecosystem where financial technologies take place, these parties can be classified in the same way in almost every country. However, the level of development of the ecosystem

in which these parties are involved varies from country to country. In recent years, many successful fintech startups have emerged from countries where the entrepreneurial ecosystem has developed and investments in Fintechs have increased. For this reason, the harmony of each of the parties listed below and the climate they create are very important in the development of this ecosystem.

Government, which are the most authoritative organs in the regulation and supervision of financial markets, are the most important players in the financial technology ecosystem with the laws, regulations, control mechanisms, grants, incentives and supports they provide. Governments should first ensure that the entrepreneurial ecosystem necessary for the emergence of new business ideas and initiatives is developed and the number of new generation enterprises is increased. Then, they should implement the regulations and facilitating practices necessary for the development of each sub-sector, such as financial technologies, with sector-based supports and practices. Thus, they can contribute to the proliferation of successful companies operating on a national and international scale, which reveal innovations and innovative business models that emerged with the effect of digitalization.

Financial Institutions and Organizations; refers to traditional banks, participation banks, insurance companies and intermediary institutions and organizations, which are the most important actors of the financial system. These listed institutions and organizations are institutional structures that make up the financial system, are large in nature, move slowly, work within the framework of certain principles, act according to certain laws and, are trusted. However, after the 2008 global financial crisis, the trust in such structures was shaken and the need for more supervision with new measures and rules emerged. In addition, they contributed to the production, support and dissemination of financial technologies by collaborating with other actors in the ecosystem, such as startups, by restructuring a large part of them thanks to the change

in the way of doing business with the crisis, the new regulations introduced, the expectations of their customers and, technology.

Big Tech Companies: They are the most important facilitators that ensure the emergence of new technologies, investments in infrastructure and the use of these technologies by large masses. When these companies are examined, it is observed that advanced technology companies producing smart devices, telecommunication companies providing access to the internet and communication tools, electronic commerce giants, companies developing software and mobile applications and social media companies come to the fore. The services offered by such companies significantly contribute to the development and dissemination of financial technologies. In fact, in recent years, such giant technology companies have started to offer financial services to their users and compete with both traditional financial institutions and new generation institutions and organizations that produce financial technology.

Startups; Innovative initiatives that offer flexible solutions to customers, are innovative and have the capacity to grow rapidly. The most basic feature that distinguishes such enterprises from traditional enterprises is their scalability capacity. Startups' products and services are generally technologically dependent and innovative. Such startups are known as fintech (financial technology companies), insuretech (insurance technologies), regtech (regulation technologies), wealthtech (wealth technologies). In the last ten years, there has been a significant increase in the number and the number of investments made in such startups in the world.

Investors; Startups at their early stages are unable to obtain funds from the traditional financial system due to the high risks, venture capital companies, corporate venture capital companies, and crowdfunding platforms that such ventures will finance are very important for the development of the ecosystem. There are many startups that have been successful as a result of the investments made by individual and institutional investors in the listed structures. For this reason, increasing the number of such

investors and the amount of investment is very important for the development of the ecosystem.

Institutions and Organizations Supporting Startups; The most important institutions that support startups are pre-incubation centers, incubation centers, pre-acceleration and acceleration programs established by universities, corporate companies in the private sector or non-governmental organizations. Such programs, in particular, select seed and early-stage startups according to a certain criterion and include them in their programs and make a great contribution to the development of business ideas and products of startups. In addition, they mediate the meeting of the two parties by bringing startups and investors together with some of the organizations they have done. There is a direct correlation between the increase in such structures and the increase in the number of successful enterprises.

Traditional financial institutions, banks, have incubation centers and acceleration programs. In these centers, enterprises that produce products and services based on financial technologies are accepted, and business ideas are developed, technical, legal, etc. in the areas they need. Contributions are made to the provision of training on these issues and to finding financial support.

Customers and Users; are the most important party that benefits from financial products and services and mediates the emergence of such services. In the financial technology sector, corporate companies and public institutions are among the customers, as well as individual users. The wishes, needs and behavior patterns of individual users are the most important actors in the emergence and development of the fintech field. In addition, the number of startups that cooperate with corporate companies and public institutions and thus offer many products and services is increasing day by day. For this reason, all parties in the ecosystem can actually contribute to the growth of the ecosystem by supporting each other and developing cooperation.

1.2. Main differences between traditional finance services and digital financial services

At a time of a digital revolution, digital financial services rival traditional financial services. The financial industry has altered comprehensively as a result of the rise of fintech firms. In the world where everything is constantly changing, it is expected that the use of traditional financial services will decrease and digital financial services will become more popular. Although the use of digital financial services is increasing, it is estimated that traditional financial services will be used for a long time.

If we had asked an audience 50 years ago how many people had a mobile phone, we would probably have seen that only a small fraction of these people owned a mobile phone. Now the answer to this question is very obvious. If we ask such a question, the answer “yes” we will get will probably be over 80%. Just think about how far technology has progressed and how widespread it has become in only 50 years. As technology has developed, it has also affected many sectors of the economy. The most important of these is the financial services sector. The most popular and most used financial service sector is the banking sector. Banking services are most common and almost are used by everyone all over the world, and continue to be used more day by day.

Applying for a banking license can be very extensive and requires regulatory compliance and a lot of capital, which can be very difficult to raise, especially for small businesses and startups.

There are mentioned the differences between traditional financial services and digital financial services in the below:

Transaction Speed: Customers can quickly handle the transactions they want to perform. It also uses innovative methods to speed up the time-consuming credit evaluation process.

Convenience: It allows you to perform many banking activities with an application on your phone. In this way, you can manage your financial situation and follow the changes in your account. These are the differences between digital financial services and traditional financial services. When it comes to banking with traditional financial services, the customer spends time and money going to the bank, using additional time to stand in line. At the same time, the customer who does not want to leave the house in accordance with the social distance rules during the pandemic can easily benefit from digital financial services. The customer, who does not have to spend time going to the bank, can use his spare time for another activity with the benefit of using the digital service.

For someone who does not follow technological developments, getting to know the applications and taking quick action may not result in positive results. The absence of a physical financial institution branch is another disadvantage. For a person who prefers to personally visit the branch of the financial institution for a complex or long-term transaction, this service will not be a suitable choice.

Table 2: Main differences between traditional banks/neo bank/challenger bank/ EMI

	Physical Asset	Banking License	Products and Services
Traditional Banks	✓	✓	All banking products and services portfolio
Neo banks	✗	✗	All banking products and services portfolio
Challenger Banks	✓	✓	All banking products and services portfolio*
EMI	✓	✗	Payment transactions and money transfers

Source: <https://www.pocklington-trust.org.uk/student-support/university/getting-finance-ready-for-university/banking-traditional-vs-challenger-bank/>

*If Neo bank is supported by a traditional or other licensed financial institution

Electronic money institution. There are also “Electronic money institutions” which mean institutions that can issue and use e-money. Understanding the difference between traditional banks, neo banks, challenger banks, and EMI may not seem so simple at first. The Main differences are summarized the in the Table 2 to understand how they differ from each other.

Some banks see their digital competitors as a threat, while others see them as an opportunity to increase profits by gaining access to their back office.

Especially in the pandemic process, we have seen that the digitalization of financial services is one of the most important issues in such cases. In these times when people prefer to stay at home, it is normal to increase the use of digital services. The increase in the use of digital services will also increase the competition between companies that provide traditional financial services and companies that provide digital financial services.

1.3 Digital Transformation in financial services

Nowadays, with the effect of digitalization, the impact of changes in different sectors on other sectors is increasing rapidly. Especially big technology companies with millions of users want to provide their users with basic services as well as other services from different sectors through their own channels. For example, social media giants offer services offered in different sectors such as advertising, electronic commerce and financial services to their users through their own units or companies. Facebook, the first platform that comes to mind when social media is mentioned, has started to implement the service of sending or receiving money through its own applications such as WhatsApp and Messenger in some countries. In the next few years, it is expected that similar applications implemented by different platforms in all countries of the world will become widespread. In the current century, developments in the fields of information, communication and technology have caused the concept of digitalization

to be heard more frequently. Since its emergence, digitalization has become the driving force of change and transformation in many sectors. In this context, digital transformation and digital technologies have led to a radical change in the field of economy, as in every field, and the emergence of new concepts such as digital economy, new economy, and information economy. In this process of change, which we call digitalization in general usage has led to the emergence of disruptive innovations that radically change the way of doing business in almost every sector, first in the economies of developed and developing countries, and then in the economies of the least developed countries. Like all other sectors, the finance sector has been greatly affected by this process and has opened its doors to the emergence of new generation services based on digitalization and the structures that provide these services.

The concept that best summarizes the change in the financial sector with digitalization is the concept of FinTech (financial technologies). In addition to the impact of digitalization, the most important developments that highlighted the concept of FinTech and made it important among the parties in the sector were mobile devices and mobile applications that facilitate internet use and access to the internet. With the increase in the internet infrastructure and the number of mobile device users, consumers have become more in demand for personalized, entertaining, fast and user-friendly financial services that they can access easily and without time limits. Under the relevant headings below, digitalization, which can be considered the beginning of the process, and financial technology concepts that enable the emergence of new generation services based on digitalization are discussed in detail.

Digitization can be defined as the process of transferring various forms of information (text, sound, image, sound, data, etc.) to digital media in a way that can be read by any computer. In another definition, it is expressed as the process of economic, cultural and sociological changes and restructuring of life through technological developments and the internet. The first use of the concept of digitalization as a term

was used as “digitalization of society” in an article published in the North American Review in 1971.

While digitalization forces companies operating in almost every sector to develop or change their traditional ways of doing business, at the same time, the organizational structure of this sector and companies and their relations with their customers have been greatly affected by this change. In particular, the use of the Internet to reach wider audiences, the prevalence of mobile devices and the increase in smartphone ownership have contributed significantly to the increase in digitalized services and the proliferation of digital-based business models.

The concept of digitalization, which appears in various forms, affects many aspects of people's lives to different extents. In particular, the digital revolution has had significant effects on finance, as well as on other sectors, among other things. Along with digitalization, many innovations in financial technologies and new structures that reveal these innovations have emerged.

In addition to social media companies, giant e-commerce sites such as Amazon, Alibaba, and E-Bay, which operate on a global scale, have also started to use their own payment systems or logistics service units in recent years. These listed developments necessitated the increase of competition in the financial technology sector and the creation of products and services that center users in order to stay ahead of the increasing competitors. With the rapid spread of technology among individual users, the way of doing business in the financial sector has started to change and the competition in the sector has increased with the inclusion of new players in the sector. Today, no bank customer wants to go to the bank to receive or send money and to deal with time-consuming tasks such as waiting in line or preparing the printed documents requested by the banks, instead of using the internet or mobile banking applications or the mobile application they use while chatting with their friends, with a phone number 24/7. They prefer to send/receive money from each other without limitation. Financial

technology initiatives, which have an important role in the sector and shape the sector with their innovative ideas, aim to offer unique solutions or products to the needs of users, taking into account this change and what users want. Voice assistants, which are currently used extensively in the industry, password-free logins to applications, services that offer bi-metric solutions such as fingerprint or face recognition can be listed as just a few of the services offered by such initiatives. Such new technologies used have encouraged banks, which are the most important players of the financial sector, to invest in digital banking by directing them to these areas. Banks are now investing more in technologies that human resources will use effectively, rather than in human resources. Thanks to these technologies, the need for the number of people working in banks has decreased and they have provided a cost advantage in an area that is one of the most important expense items.

Especially after the 2008 global financial crisis, the loss of trust in the traditional financial system has been a turning point in digitalization for the financial sector, which is in search of alternatives. Thus, artificial intelligence, the internet of things, blockchain, big data and cloud technology, which are the most important technologies of the 21st century, have taken their place in the finance sector as well as in many other sectors, causing a significant change in the way of service. Developments in financial technologies, on the other hand, are handled in different periods according to the way they emerge or the technology used. Under the relevant title below, the historical development of financial technologies and how they were used in different periods are explained.

Technologies That Transform Financial Services. Developments in financial technologies have directly affected the way in which financial services are performed and their diversity. The ecosystem that has developed with the addition of new technologies to the technologies used in the previous period from 1866 to the present is developing more rapidly, especially with the technologies that have been used after

2008. Today, the most important technologies used in the creation of financial services are listed below. These;

- Internet and internet tools technologies
- Mobile device technologies
- Artificial intelligence
- Blockchain
- Cloud technology
- Machine learning
- Chatbot
- Biometric technologies
- Software and other new generation technologies

As a result of the digital revolution, various habits and behaviors in the professional world, have changed significantly. Together with smartphones and internet technology offers benefits to customers and financial institutions.

Previously, people were reluctant to switch to the digital world, so the effects of digital transformation were not felt very strongly. As people and organizations continue to take advantage of digital transformation, the importance of financial technologies has also begun to be recognized. Regulators and customer demands have resulted in faster, more advanced financial applications and systems. Sales staff and field staff square measure currently sceptered with smartphones and alternative moveable devices wherever info may be viewed simply. several monetary service suppliers have embraced digital transformation. However, several corporations have taken the approach of observation developments so set to take a position in digitization.

This rapid transition has posed a huge challenge for IT teams, as they face the responsibility of managing the huge number of applications and devices on their networks while they struggle with visibility into who is doing what and when.

According to a recent Riverbed study, nearly half (44%) of financial decision-makers said that slow-moving and outdated technology was affecting their business, while financial institutions needed to act quickly and deploy new technology to support it.

Financial institutions are currently seeking a hybrid model that needs to create a new working environment that bridges the gap between the pre-pandemic and post-pandemic world. Nevertheless, this model should be able to provide the flexibility and agility that the workforce has expected during the past year.

Whether it is a hybrid working model or a full return to the office, it can be predicted that employees will return to a physical office environment to a certain extent in the coming months. But once a hybrid model comes into play, SaaS applications, collaboration tools, and the ability to avoid performance issues and have full visibility into the network will play a critical role in enabling this transition.

Now both employees and customers demand a consumer-level experience from financial service providers. Complex, slow, or problematic collaboration tools and applications are no longer acceptable options due to their severe impact on employee and customer experience. It is critical for businesses to adopt a technology that provides holistic visibility into their networks. With the information obtained in the remote or office working system, IT teams can identify the problems that occur and take action for a solution.

The most important thing the past year has taught banks and financial institutions is that having the right technology to support their workforce and customer base is critical to success. But it's not enough to have the right SaaS or collaboration solutions, they also need to work effectively. By adopting tools that not only increase network visibility and performance but also maximize application performance, financial institutions can feel confident that they can maintain employee productivity and continue to innovate and grow. Whatever the next year brings, financial institutions can

thrive while keeping their businesses afloat by putting SaaS at the center (<https://www.financedigest.com/digital-transformation-for-the-world-of-finance-the-rise-in-collaboration-tools-and-saas-applications.html> , 2020).

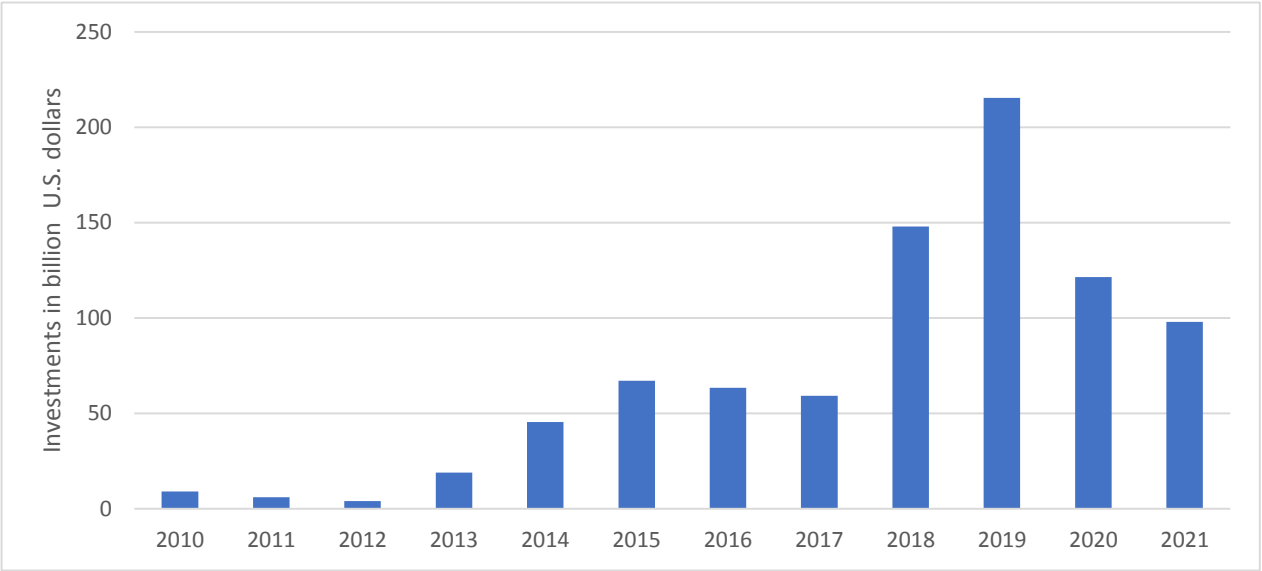
In general, the most important factors causing the digitalization of the financial services sector have been financial technology initiatives that have led to the emergence of more creative, innovative and disruptive products and services as a result of the increase in the use of technology in the financial services sector. The developments that make the financial technology producing startups stand out can be listed as the new regulations implemented after the global financial crisis, the rapidly developing new generation technologies, the widespread use of the internet and mobile devices, and the reshaped customer demands and needs along with this process. The increase in demand for digital financial services after the spread of the Covid -19 pandemic, the superiority of digital services by people, led to the development of companies working in the digital finance sector, further accelerating the digitalization process.

The number of investments made in fintechs around the world increased by 220% between 2015 and 2019, reaching 67.1 million dollars at the end of 2015 and 215.4 million dollars in 2019. The graph below shows the statistics of investments made in fintechs around the world between 2010-2021. As can be seen from the graph, it is clear that as a result of the spread of the Covid-19 Pandemic throughout the world in 2019, the investments made in the fintech sector have hit their highest level ever. The reason for this is the development of the digital finance sector as a result of the increase in the demand for digital financial services, and the increase in the interest of the investors in this sector.

In the development of financial technologies, investments made in startups operating in this field, developing new generation technologies and the increase in the number of startups, as well as the widespread use of the internet and mobile devices have been very effective. According to the report prepared by Statista, while the number

of internet users around the world was 4199.2 million in 2018, this figure became 4833.53 million in 2020. The rapidly increasing use of mobile devices and the increase in internet access in recent years have led to a rapid increase in financial services and payments made over the internet. As can be seen, the increase in users' access to the Internet has increased the number and amount of transactions made over the Internet to a great extent.

Graph 2: The total value of investments into fintech companies worldwide from 2010 to 1st half 2021



Source: <https://www.statista.com/statistics/719385/investments-into-fintech-companies-globally/>

Thanks to the added value fintechs add to their users, the practicality of their services, price and cost advantages, more service options, diversification and speed in services, personalized experience and solutions, ease of decision-making and investment, chatbot technology, robo-advisory services in asset and portfolio management, especially in the coming years, users It will cause them to be preferred more by people and their names to be heard more in the financial sector. Considering the increasing importance and effectiveness of financial technology companies, it is seen that there are a limited number of studies in the literature that deal with fintechs in-depth and with different aspects.

CHAPTER II. COVID-19 IMPACT ON FINTECH INDUSTRY

2.1 Opportunities and challenges faced by Fintech companies during pandemic

In the Pandemic era, the process where both the society and the economy are transforming, financial services have also entered into a close relationship with technology. Financial Technologies started to offer financial services much faster, more flexible and in a way that covers the majority of the society than the traditional banking system in this period. On the other hand, since Fintechs are still not settled on a solid foundation, they also contain various risks and uncertainties. For example, it is discussed that it may cause some problems in terms of price and financial stability, as it may harm the effectiveness of financial intermediaries and central banks.

In the coming years, in parallel with the development of technology, Fintechs are expected to play a more active role in our daily lives. Issues such as the goal of creating a cashless society and the evolution of banking to provide technology-oriented services by breaking away from its traditional structure became more common during the Covid-19 Pandemic. Therefore, Fintechs, whose importance has been increasing in the last decade, stand out as a subject that should be followed closely with the possible positive and negative effects they bring. For a possible scenario, positive effects such as systematizing technological solutions and integrating FinTech companies into the established financial system seem likely. On the other hand, it also contains various threats to the system. The more established Fintechs will mean more intense relationships with the traditional banking sector and consumers. This might create a fragile structure for possible cyber-crimes.

A wide variety of scenarios regarding the possible repercussions of FinTechs in the Pandemic era is currently under discussion. However, in this study, possible positive reflections of FinTechs: their contribution to tax revenues, low transaction costs, financial inclusion and depth will be evaluated.

a) Increase in Tax Revenues: When viewed from a technology perspective

with FinTech initiatives, it seems like country borders are less important now. When looked at by regulatory institutions, initiatives such as FinTech are closely followed. This is especially important for international initiatives, protection of customer data and taxation. It is expected that FinTechs will provide flexible, solution-oriented and fast service to individuals who have not developed a relationship with the traditional banking system or who have been out of the system, thus reducing informality and increasing the tax revenues of countries.

b) The key to the tax system is to identify taxpayers trying to avoid tax. On the other hand, the rapid development of virtual currencies and the FinTech industry remains outside this taxation system until today. However, this growth rate reveals their importance for the tax system. With the development and use of financial technologies, it will be easier to track and record transactions. Since more information will be provided about how people use their resources, it is expected to enable more advanced tax applications. In summary, we can say that it will become more difficult to hide things in the world (Peat J., Kelly O., Broby D., 2017: p.5). This is expected to have a possible positive effect on the state's tax revenues.

c) Low Transaction Costs: A significant part of the need for financial intermediary institutions is based on the asymmetric information problem, which is the market failure, and high transaction costs. Financial transactions can be complex and costly and require special knowledge for the transactions to be performed. Because FinTechs often provide online, fast and flexible services, they are more advantageous than traditional banks in terms of transaction costs (He D., Leckow R., Haksar V., et al., 2017: p.13-15). In addition, developments were observed in internet protocols for cryptocurrencies in Western countries. It is said that this allows for low transaction costs and cheap international transfers. Companies like Apple and Google have been involved in mobile payment transactions with apps like "Apple Pay" and "Google Pay". In the East, giant companies of the internet industry such as Baidu, Alibaba and Tencent started to offer banking and insurance services. These innovations in financial services

not only develop the sector but also provide innovative and easily adaptable services with low transaction costs to those who do not have a bank account and are far from traditional banking services. However, it is also stated that these advantages provided by FinTechs can harm the importance of financial intermediary institutions' assets today.

d) Increase in Financial Inclusion and Depth: First, in the literature, the concept of financial depth is defined as the Money Supply/GDP ratio and the increase in the diversity of financial instruments in the financial system. Financial inclusivity, on the other hand, refers to the access of wider financial service options for all segments of society. Therefore, another possible positive effect of FinTechs and consumers' interaction is expected in terms of FinTechs' inclusion and depth in financial markets.

The development of internet technology on a global scale has significant effects on financial inclusion. With these developments, those who do not have a bank account and have been away from traditional banking services will be able to access financial services from many parts of the world thanks to mobile and other smart devices. Financial innovations are on the rise as technological developments enable a better understanding of customer preferences and consumption habits. Understanding the underlying motivation in people's purchasing decisions and learning how they become informed is critical in any business process. Cognitive analytics is considered important in that it helps financial service providers reach those who do not have a bank account and who have been away from traditional banking services, and enable them to identify, understand and overcome their psychological biases. With this progress, it is expected that the people who have been excluded from the system will adapt to financial services and financial inclusion will increase. With the reduction of obstacles in front of technological developments and the ease of access to technology for all segments, more personalized and more digital services have been offered to consumers.

The possible negative reflections of FinTech developments are evaluated within the framework of difficulties in the execution of monetary policy, control, trust and

security problems. It should be noted that the literature on the effects of FinTechs on central banking and monetary policy is quite limited at this stage. However, this issue, which is too important to be ignored, is likely to be the subject of further research.

a) Difficulties in Execution of Monetary Policy: Some central banks have conducted various studies on the possible effects of issuing their own digital currencies on the banking sector and monetary policy, and as a result, the effects differ depending on how the digital currency is designed and released (International Monetary Fund, [IMF], 2019: p.30). The greater recognition and potential proliferation of private digital currencies (which can be issued by FinTechs) has been criticized, in a way, as making it difficult for the central bank to forecast the demand for its own money and threatening the functioning of the monetary transmission mechanism. It is said that the central bank's issue of its own digital currency can prevent the negative effects of such private digital currencies and push it to the second place as a payment tool. However, it is possible that these possible effects, which are still in their budding period, will come before the central banks as a threat in the medium term. As David and Ernie (David K.C., Ernie G.S., 2015: p.13) emphasized in their work *“The decentralized nature of technological innovations, and especially digital currency systems, makes it difficult for any institution to control. This is an issue that should be considered for the economies of developing countries where governments and monetary policy are generally unstable.”*

Another effect of FinTechs in the monetary context is that the widespread use of technologies in financial services can limit the central bank's control over the economy and monetary policy and undermine its lender-of-last-resort character. The monetary policy carried out by the central bank generally contributes positively to financial stability during a business cycle. If the central bank money is limited in an economy and the share of digital money increases instead, the power of the central bank to intervene in the economy will decrease. This situation may cause a dollarization problem in the economy (Financial Stability Board, [FSB], 2017: p.53).

b) Audit Problem: The potential risks of developing technologies on financial stability

may also arise from the fact that these FinTech services act outside the frameworks drawn by regulatory and supervisory institutions. In addition, it is natural for users of the services to demand information confidentiality. The audits of the institutions responsible for providing and managing this may cause these institutions to encounter various problems in open network systems where there are no data controllers (He, 2017: 15-16). While the connection between FinTech startups and traditional banks in many ways reveals the importance of regulation and supervision, it makes it difficult to monitor and manage the FinTech ecosystem, which has not yet settled. This regulation, which emerged as a negative reflection of FinTechs, and auditing shortcomings stem from the fact that most FinTech companies are not considered a traditional financial services institution. Considering this situation, the existing regulations are not valid in many FinTech services and this poses a risk of abuse (Pejkovska M., 2018: p.32).

c) Trust and Security Problem: The lack of an established regulation and supervision system in the FinTech ecosystem brings with it a trust problem. As FinTech and mobile financial services increase, it will hurt consumers' trust; In addition, outsourcing risks, consumer protection risks, money-laundering risks and cybercrime risks through information and communication technologies will begin to become important (Lukonga I., 2018: 21). The most important element of this is cyber-attacks that can be made against data security. A successful cyber-attack can result in the cancellation of financial services or direct financial losses, resulting in financial losses for financial service providers. Therefore, even a successful cyber-attack or such a possibility can negatively affect the reliability of FinTechs that provide financial services (Lukonga I., 2018: 3). This dark side of technology use in financial services is creating greater awareness of cyberattack risks. This awareness leads to a rethink about which of these trust issues is more dominant, which comes with the increase in productivity provided by financial services (Caruana J., 2016: p.2).

2.2 Consumer adoption during pandemic

The Covid-19 epidemic, which is effective on a global scale, has created a serious change in consumer behavior. In this period, even consumers who were far from internet sales sites in the past met almost all their needs from digital media and online shopping sites.

According to the researches, in the past, users under the age of 45 preferred online shopping more as an age scale. However, with the pandemic process, this scale has changed to 18-70 years old.

In addition, e-commerce sites and the sector grew by 85% as of 2020. It is thought that this growth will continue at the same pace in the coming years due to digital transformation.

Digital transformation- it can be expressed as the transfer of business processes and information to electronic media in a fast and time-saving way. This transformation manifests itself in many places, from the shift of shopping to the online world to payment systems and banking transactions.

Table3: Transactions with debit and credit cards.

Date	Number of payment cards, thousand and	Transactions with debit and credit cards		of which operations inside the country						Operations outside the country	
		Number of transactions, thousand	Amount of transactions, mln. manat	via ATM"s		via Post-terminals		via E-commerce		Number of transactions, thousand	Amount of transactions, mln. manat
				Number of transactions, thousand	Amount of transactions, mln. Manat	Number of transactions, thousand	Amount of transactions, mln. Manat	Number of transactions, thousand	Amount of transactions, mln. Manat		
2010	4231	46502	6056	42770	5133	804	195				
2011	4580	50954	7230	45473	6094	1461	224				
2012	5008	57169	8827	47348	7210	3794	375				
2013	5673	67810	10297	48342	7792	6329	562				
2014	5965	79228	11870	49539	8562	3501	612	5440	75	3531	275
2015	5659	85218	12472	51719	8995	3850	706	8489	140	3682	343
2016	5334	83383	12781	53554	9535	5769	835	9792	209	3599	451
2017	5800	96770	14729	59046	11099	8458	1142	14694	413	4984	608
2018	6511	117644	17773	63183	12431	11025	1473	22511	1111	7212	819
2019	7266	162285	23241	72307	15863	18430	1885	38438	2653	14264	1243
2020	9230	226455	28951	81422	19682	34635	2930	57658	3404	20982	1079
2021	11040	355231	37434	95988	22772	80671	3925	95195	6630	36895	1668

Source: <https://www.cbar.az/page-45/payment-system-indicators>

If we look at the share of online shopping during the pandemic process, we can see that online shopping has increased worldwide. During the lockdown, in order to prevent the spread of the Covid-19, almost all shopping malls, clothing stores were closed. In addition, this rate is expected to increase further in the coming years. Of course, there are other issues that users focus on.

In our country, the consumer adoption of digital financial services changed as well. If we look at the statistics of bankcards in Azerbaijan, it seems compared to the past years, during Covid-19 Pandemic, the use of bankcards and the number of transactions via these cards significantly increased.

2.3 Mobile Banking in the Pandemic Era

Digital banking, or new generation banking is expressed as the provision of banking products and services to customers through technological devices and applications without any physical place, without the need for face-to-face contact (Sardana V., Singhania S., 2018: p.29). Digital banking, also known as e-banking offers all the services offered by traditional banking to its customers faster and at lower cost through mobile applications, ATMs and phone calls (Liao Z., Cheung M.T., 2002: p.287).

The banking sector adapts to innovations faster than other sectors and follows technological developments closely. The beginning of electronic payments with the introduction of credit cards into the market in the 50s, the introduction of ATM in the 60s, the establishment of SWIFT in the 70s with the development of e-commerce, the widespread use of computers in the financial sector in the 80s and the development of internet banking in the 90s showed the banking sector. are important digitization steps. In the 2000s, a new era began in the banking sector in the name of digitalization. In general, the stages of digitalization in banking services are summarized in Table 4.

The Digital Banking 1.0 phase in Table 4 is called the development period of e-banking services. The Digital Banking 2.0 phase is the phase where only mobile

banking application is in question. The digital banking 3.0 phase, on the other hand, is the period in which banking services are offered through all kinds of technological tools with an internet connection, in addition to mobile devices. Finally, Digital Banking 4.0 is the period in which new products and services are offered in line with technological developments, with the emergence of new generation customers' habits and the formation of FinTech. In all these phases, bank personnel and customer contact phases decrease as it progresses.

Table 4: The stages of digitalization in banking services.

<p>Digital Banking 1.0 (1998-2002)</p> <p>Customer relations management</p> <p>Database Management</p> <p>E-mail Contact Center</p>	<p>Digital Banking 2.0 (2003-2008)</p> <p>Online Credit Simulators</p> <p>Know Your Customers Process (KYC)</p> <p>Online Bill payment</p>
<p>Digital Banking 3.0 (2009-2014)</p> <p>Online Customer Image</p> <p>Mobile Apps</p>	<p>Digital Banking 4.0 (2015-Present)</p> <p>Virtual Banking</p> <p>Multi-Channel Data</p>

Source: <https://www.risq.info/understanding-the-digitalization-of-banking-financial-services/>

Contactless transaction privilege is not the only advantage that digital banking offers to its customers. The advantages offered by digital banking can be expressed as follows (Vural N., 2019: p.10):

- Digital banking costs are lower than traditional banking.
- Digital banking products and services increase the prestige of the bank

- Marketing costs are low because of communicating with customers and realizing transactions without the need for a branch.
- 24/7 transactions can be made. There is no need to go to the branch to make transactions.
- Since the transaction cost is low, it is possible to offer high interest to customer deposit accounts.
- It is easy to detect irregular transactions as customers can monitor their accounts continuously.
- Marketing of individual products is easy as the transactions of the customers can be followed by the banks.

Digital banking has disadvantages as well as advantages. The disadvantages for banks and customers can be summarized as follows (Vural N., 2019: p.10):

- A system should be established and expert personnel should be employed to solve possible problems that may be encountered during digital banking transactions.
- Due to insufficient infrastructure, customers cannot effectively use their digital banking transactions.
- There are some security vulnerabilities in digital banking.
- The inadequacy of the solutions offered within the scope of the internet branch and mobile applications for the problems faced by the customers.

Technology has affected the banking sector as well as every sector. Banks have become the institutions that use technology most frequently and invest in technology in order to compete and maintain their services. With the effect of the Covid-19 pandemic, banks have had to create new service areas and environments, as well as increase the number of types and channels of their services. Developments in information

technologies and innovations depending on these developments have allowed mobile devices to be used in the banking sector (Suoranta M. and Mattila M., 2004: 354). Banks are at the forefront of the sectors that invest in mobile technologies, use and care about mobile technologies due to the development of the internet and the fact that more people use it (Laukkanen T. and Lauronen J., 2005: 326).

In essence, internet banking allows you to carry out almost all financial operations, without going to a bank branch. The most essential reason for the adoption of internet banking is that it provides a cost advantage. It provides the cost advantage as follows.

- Performing banking services and selling bank products is less costly.
- Since customers do not have to go to the bank branch to make transactions, banks can reduce the number of their personnel.

The reasons why customers prefer internet banking are as follows;

- Saving time,
- The freedom of place and time provided by the internet,
- More uninterrupted and faster banking transactions,
- Being able to do the process himself and see the process,
- Access to up-to-date reports of transactions
- Performing transactions such as money order/EFT cheaper,
- Security

Telephone banking; customers' access to banking services via telephone. By calling the bank's phone number, the customer can access his own information and perform his financial transactions via a customer representative or answering machine. Some banks use computer systems that can recognize the voice of the customer in

telephone banking systems and enable them to take action according to their answers. The most important factor in preferring telephone banking by customers is; They can perform their banking transactions whenever they want without being connected to the internet.

ATM banking; It is a card with a magnetic security strip or chip on it for banks to perform banking services for their customers. Today, ATMs provide many banking services together. By spreading ATM services to a very wide area, banks encourage customers to make as many transactions as possible. After verifying the identity with the card allocated by the bank, the customer can perform banking transactions such as withdrawing and depositing money, investment transactions (purchasing and selling foreign currency, gold, funds), account movements and balance inquiries. Thus, ATM banking led to a significant decrease in banking service costs by reducing teller transactions.

Mobile banking is a system that is realized by using tablets and mobile phones and provides communication between the bank and the customer. The development of information technologies, the widespread use of the internet and the increase in the use of smartphones are a channel that banks put into practice quickly. When it comes to mobile banking, the first thing that comes to mind is to perform banking and financial transactions with the banking application downloaded to smartphones or tablets.

With mobile banking, customers have the opportunity to access banking services every day and hour of the week, regardless of location and time. Mobile banking is the realization of financial transactions with mobile devices at the desired place and time.

2.4 The effects of Pandemic on Online Shopping

With the developing and changing life conditions and technology from the past to the present, internet networks have started to be important in the lives of all people, and we have almost come to a situation where we cannot imagine our lives without

internet technology. With the innovations that internet channels have brought to our lives, it has become easier for us to do our daily work, and it has provided convenience in many matters such as accessing the information we may need during the day, reading the newspaper, being able to handle our banking transactions instantly, and doing our shopping from where we sit, even with just a mobile phone.

The Internet has brought many innovations to our lives and caused many changes. One of the most important of these changes is undoubtedly the effect it has on our purchasing and shopping habits. While shopping on the internet platforms, consumers have much easier access to the products they want to have, while saving time.

Thanks to the advantages of technology, there have been great transformations in people's shopping habits. The internet environment has also made shopping very easy, and people have the luxury of making detailed examinations about the product they want to buy from where they live, comparing the product with different price and quality options, and reaching the most suitable product in the shortest time. This makes online shopping more attractive for consumers.

This form of shopping, which is called in many ways such as online shopping, in other words, online shopping, online stores or e-commerce; is the type of shopping that the consumer who wants to buy a certain product, finds, examines, pays and has through a distribution channel through a virtual store established on the internet.

The number of people using internet technology and shopping online is increasing day by day in the world. E-commerce provides access to individuals or institutions to have the products or services they need in a much simpler way, in a very short time, by spending less on products with higher quality levels, and shopping without contacting any objects or people, which is very important during the current pandemic period.

The most important innovation brought by online shopping for businesses is that it can reach more customers in a shorter time and offer new marketing opportunities. From the point of view of customers, it is the ability to have the product needed in a shorter time and with the least cost rate.

Consumers go through many different stages when shopping online. Consumers' shopping process; They determine what the product they need or want, and after choosing the most suitable product among many products, they clarify the purchase decision of the product. Then, it means owning the product through distribution channels by making the payment process by using the online payment options for the product.

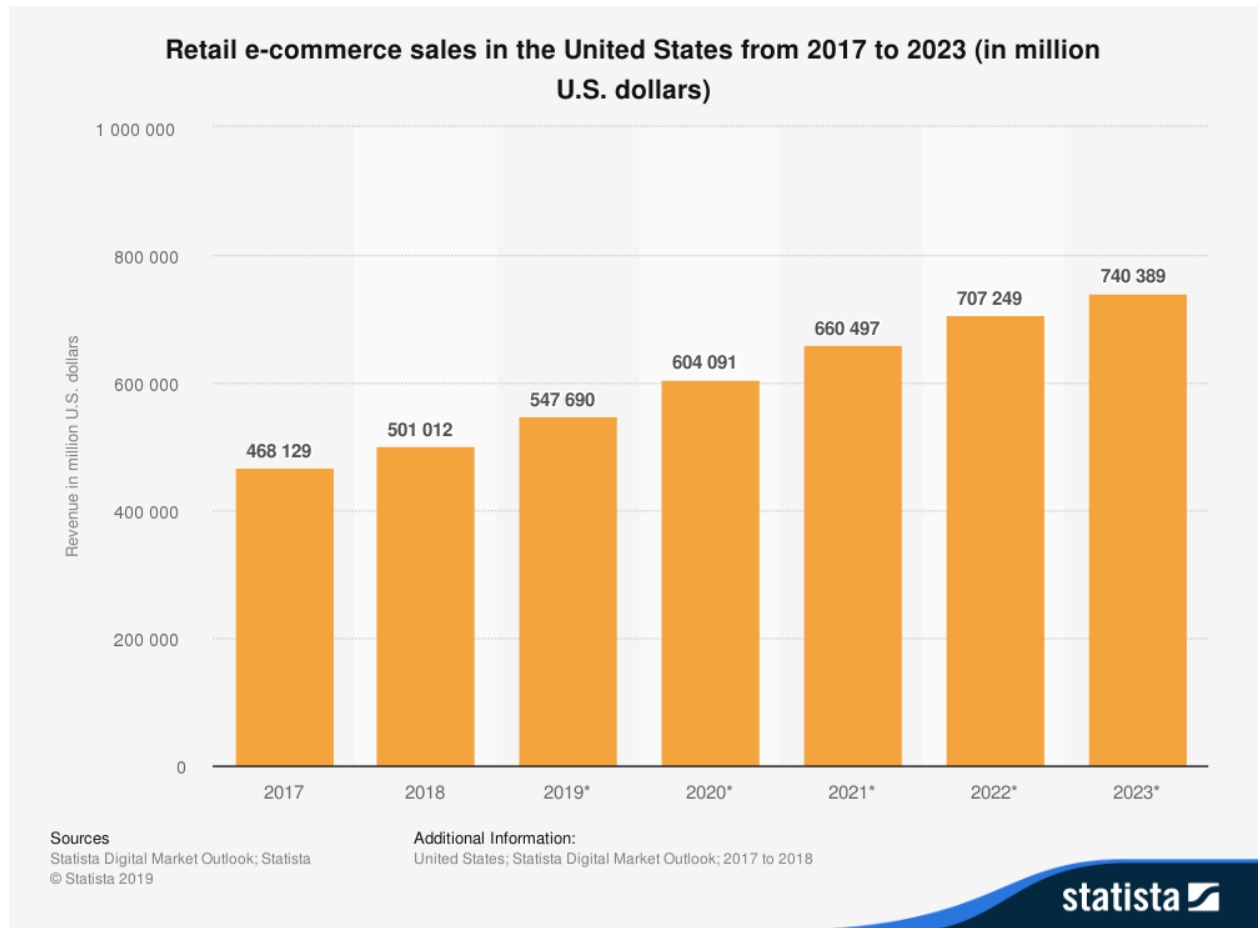
In order to prevent the Covid-19 pandemic and minimize its spread, countries have announced strict precautionary packages. The most striking of these measures was the curfews and the fact that many businesses were forced to take a temporary break from their work. In Graph 3 we can see the trends of online shopping statistics in the case of the U.S.

Many of the businesses that cannot actively use their businesses have moved their businesses to online platforms and have chosen to carry out their marketing and sales activities through these channels. The pandemic has also had a positive impact on many businesses that currently provide services through online channels.

With the curfews, people have come to meet even their most basic needs through businesses that sell over the internet. The main reason why people prefer online channels is that they do not want to risk themselves. The pandemic has caused serious changes in consumer behavior.

According to a study conducted in 2020 on people living in Germany, Canada, France, America and England, consumer types are divided into four different categories after the pandemic;

Graph 3: Retail e-commerce sales in the US from 2017 to 2023



Source: https://www.researchgate.net/figure/Growth-of-retail-e-commerce-values-in-USA-from-2017-2020-and-projections-up-to-2023_fig1_348546849

- **Guaranteed Consumer (11%):** Consumers who are concerned about the pandemic process. Purchasing habits have changed with the pandemic.
- **Stable consumer (26%):** People whose consumption preferences have not changed much during the pandemic period.
- **Cautious Consumer (27%):** Consumers who develop a pessimistic perspective against the pandemic process. They have a tendency to buy only products that are within their needs.
- **Stocking Consumer (35%):** It is the type of consumer who approaches the pandemic process in a panic. The area where they do the most shopping is the markets.

With the entry into the pandemic process in 2020, the time people spend at home has increased. In this process, people have tended to both eliminate the deficiencies of the living space they live in and make it better than before. The fact that people do not want to come into contact with any object or person due to the pandemic has led them to tend to shop online. The fact that online shopping is done without contact and the price of the purchased products is made through secure systems has made this shopping method more popular and preferred by more people in the current period. The pandemic process has accelerated the digitalization process of businesses and has led to more investments in this area. In particular, services such as contactless payment and delivery in a short time have increased the confidence of consumers in this shopping method and caused it to be preferred for meeting almost all their needs. Looking at the data obtained at the end of 2020, it has been observed that the rate of online shopping has increased by 85% compared to 2019.

As the pandemic has changed the shopping preferences of all societies living in the world, it is an inevitable reality that these habits will change in our country. While the change in customer preferences is negative for many business areas, it has turned into an opportunity for some businesses. The profit rates of online sales channels have increased considerably, as traditional shopping has, in a sense, been forced to move to internet channels. On the other hand, there has been a great decrease in the revenues of hotels, cafes, restaurants, and all areas where people socialize.

Research has shown that during the Covid-19 pandemic period, consumers prefer domestic products as much as possible. As a result, both global transportation opportunities limitation and the incentive to support local businesses can be shown.

Before the Covid-19 pandemic, it is seen that people's online shopping preferences were mostly for products and services such as accommodation, travel and jewelry. After the pandemic, these preferences changed, the demand for these areas decreased, and the demand shifted to medical and cleaning products.

While there has been a decrease in the demand for many product groups due to the pandemic, there has been a great increase in the demand and sales of different product groups. For example, the fact that the most important thing in this period was personal hygiene, created a serious explosion in the demand and sales of cleaning and personal care products, and even people tended to buy these product groups more than they needed. People mostly bought disinfectant products, cologne and masks that have become mandatory. In this period, the most searched products on internet browsers were again cleaning products. Some businesses trying to turn this situation into an opportunity have started to sell products by almost doubling the prices. Due to the fact that the virus is related to the strong or weak immune system of the human body, people wanted to strengthen their immune systems and their demands for products that strengthen the immune system increased.

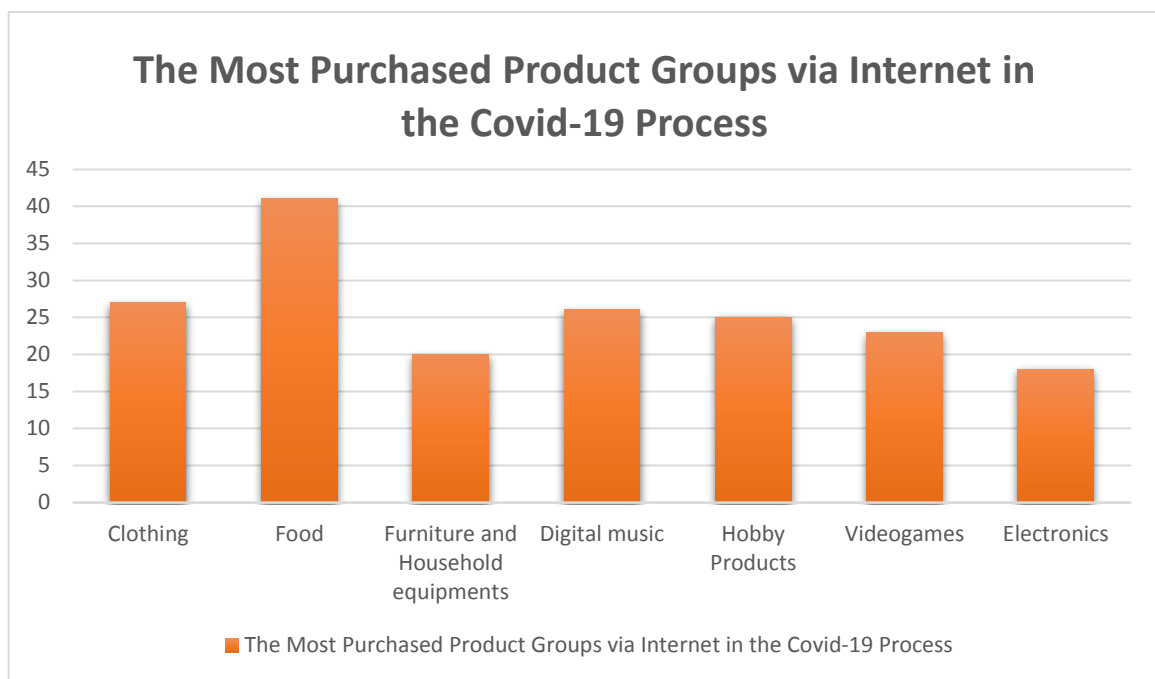
According to a study on online shopping during the pandemic process; It has been observed that consumers tend to shop online during the pandemic process. When evaluated on the basis of gender, it was determined that women were more likely to shop online, and the shopping made from normal markets before the epidemic shifted to the online environment. In addition, while most clothing shopping was done before the epidemic, it was observed that the shopping shifted to food after the epidemic. The most common reason for this situation is the desire to stockpile food by increasing people's fear and anxiety levels with restrictions.

It has been observed that great developments and transformations have occurred in e-commerce with the effect of the pandemic. Businesses that made the correct analysis of the situation and directed themselves to sell through internet channels were more profitable from this situation. In a sense, the pandemic has accelerated the transition from traditional shopping to online shopping.

Although meeting the increase in customer demands, which occurred with the acceleration of online shopping due to the pandemic, brought positive results in

financial terms, on the other hand, it created difficult situations in terms of meeting the demands. Businesses have had to make great efforts to ensure customer satisfaction and prevent complaints. The reason for this can be shown as the fact that customers are satisfied with their shopping is considered a success factor for the business. Considering the competitive conditions, it is an important element for businesses that sell over the internet to ensure the continuity of their existing customers as well as to attract new customers.

Graph 4: The Most Purchased Product Groups via Internet in the Covid-19 Process



Source: <https://unctad.org/news/covid-19-has-changed-online-shopping-forever-survey-shows>

Online shopping during the pandemic period;

- Being more practical and simpler,
- The opportunity to be evaluated immediately by being informed about discounts, campaigns and promotions,
- Easy handling of payment transactions through internet banking channels,
- Having a great variety of products and

- Advantages such as being able to own products without leaving home in the pandemic environment have made online shopping a customer preference and contributed significantly to the development of e-commerce.

There have been businesses that have given a new direction to the path they follow in line with the changing consumer purchasing behaviors during the pandemic process. For example, online businesses that sell various or a single product category have started to market products that are among the most basic needs of people in this process, and they have increased their product diversity by opening new categories for these products in their online stores. This situation contributed to increase their profit rates by making more sales. When looked at, it is seen that sales and marketing made over the internet is a structure that can instantly see customer needs and produce solutions according to the situation.

According to the 'Commerce Insight' research; It has been observed that e-commerce has increased by nearly 150% in the period of March-May 2020 in Germany, America and England. Although this rate decreased in May, it increased again in June.

In the pandemic process, consumer behavior has turned to online shopping with the effect of obligations and restrictions. This situation has given the opportunity to rise in the form of online shopping. With this rise, it is quite obvious that this transformation in shopping will continue after the pandemic. It has become a necessity for businesses that sell over the Internet to evaluate the process and after the process in the most accurate way, to make their current and future plans in this direction and to offer the highest quality products and services to their customers in order to ensure their continuity.

For online shopping to continue after the pandemic, businesses;

- Keeping the product range offered in their virtual stores wide,

- Keeping consumers' interest alive by providing campaign and promotion opportunities,
- Continuing promotional activities in other social media channels used by consumers,
- Observing and researching consumer requests and needs, and making personalized product offers with appropriate product group services,
- They must provide the most accurate and simple services during the purchasing, payment and delivery processes.

It seems that in the post-pandemic period, the preferences of consumers will continue in line with the habits they have acquired throughout the process, and the online businesses that businesses have restructured or developed during the pandemic will gain continuity.

Obligations that came with restrictions during the pandemic period led people to shop online. The fact that this way of shopping can meet the needs by avoiding contact, without exchanging money in any way, without going into crowded environments, has contributed to being a highly preferred method during the epidemic period. Businesses have become unable to do business with the restrictions, many of them have been closed, businesses that are not closed and can continue their business with e-commerce have been very profitable from the pandemic environment. In fact, the pandemic has brought about forced changes in the way businesses operate, and almost completely changed consumer preferences. Consumers' preference for the products of world-renowned companies has been restricted, and their tendency to products within their own countries has been observed.

It is quite possible that the behavior will provide continuity with the change in habits. The steps that businesses will take after the pandemic will be structured entirely depending on consumer demands and preferences.

Since we are still in an ongoing process, the research and observations made are interpreted by considering the consumer attitudes and behaviors realized in the process and how the businesses that sell over the internet carry out their activities.

As the common point of the researches about how the shopping habits of the consumers after the pandemic will progress, it is that the shopping habits that the consumers gained during the pandemic period will continue and even increase afterward. It is among the forecasts for the future that people will purchase the products they buy at the point of basic need (food, cleaning) through internet platforms. Of course, it is very difficult to make predictions for this situation at this stage. It would be wrong to make a definite judgment while the issue of how the process will have social and economic effects has not yet been clarified.

With the pandemic process in the last year, the number of people shopping online has more than doubled. When we look at the future periods, it is obvious that the culture of shopping on the internet, which people earn, will be an option to be preferred in the post-pandemic periods.

In the current pandemic period, the rate of shopping online has increased in many product groups. The fact that consumers who did not shop online before the pandemic preferred this shopping method has been a very effective factor in increasing shopping rates.

For the post-pandemic period, the decrease in the rate of online shopping, the same or higher increase will be the result of the consumers' habits and the benefits and satisfaction levels of the shopping method they use.

The importance of shopping on the Internet has been understood more during the pandemic period. The fact that people who do not want to be affected by the epidemic do not go out of their homes either on their own initiative or with the effect of the

restrictions brought online shopping has become the most important source of meeting their needs.

The first of the measures taken with the epidemic is the necessity of maintaining social distance. This situation has revealed the desire of people to avoid contact with any person or object in their shopping. It has been the option of making contactless transactions, which is the best way to provide isolation in shopping. In the process, consumers make the purchase of the product or service they want without contacting anyone, again through internet channels, and ensure that they come to their doorstep without ever going out.

The fact that online shopping can be carried out practically, especially during the pandemic process, to be instantly informed about campaigns and discounts, payment can be made without contact, the products needed can be accessed more quickly, the product is offered with more than one option with different price policies, the product range is wide, and most importantly, social distance The fact that it provides the opportunity to shop in the comfort of their home without crossing the borders has made the orientation of consumers to these platforms faster.

Considering the effects of the internet on people and the usage rates of the internet in today's conditions, it is an inevitable fact that people turn to businesses that sell through internet channels during the pandemic process and the number of people who shop over the internet increases rapidly.

Online shopping has brought a new option to the traditional way of shopping, according to customers. In online shopping, the customer can evaluate many different options at the same time, make comparisons and save time. For businesses, it provides a great deal of profit and low-cost rates. In short, online shopping offers many advantages for both the customer and the seller. Especially during the pandemic period,

it has become the first choice of consumers and businesses with the difficulties brought by both social and economic restrictions.

The pandemic process has created a great crisis environment for businesses, most businesses have gone to shut down completely, some of them have taken a break from their work temporarily, and most of them have turned the crisis into an opportunity and started to continue their business on the internet. The rapidly developing pandemic process has reminded businesses once again that selling over the internet is an important element.

The increase in the rate of shopping made over the Internet has also positively affected many sectors. Especially businesses that do distribution business are at least as profitable as online sellers from the process out. Businesses that will continue their sales through internet channels after the pandemic need to focus on the infrastructure works, personnel structures, sales and marketing strategies, and the correct functioning of distribution channels.

Since we are still in an ongoing process, the research and observations made are interpreted by considering the consumer attitudes and behaviors realized in the process and how the businesses that sell over the internet carry out their activities. As the common point of the researches about how the shopping habits of the consumers after the pandemic will progress, it is that the shopping habits that the consumers gained during the pandemic period will continue and even increase afterward. It is among the forecasts for the future that people will purchase the products they buy at the point of basic need (food, cleaning) through internet platforms. Of course, it is very difficult to make predictions for this situation at this stage. It would be wrong to make a definite judgment while the issue of how the process will have social and economic effects has not yet been clarified.

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For the post-pandemic period, the decrease in the rate of shopping on the internet, the same or higher increase will occur as a result of the consumers' habits and the benefit and satisfaction level of the shopping method they use. For the seller to gain and increase the situation constantly, it will be about how the businesses will continue their marketing and sales strategies, and it will be about the trust they provide to their customers in order to ensure their continuity.

The Covid-19 pandemic crisis, which developed suddenly and unexpectedly and affected the world, affected all the activities of the countries and caused the lifestyle of even a single individual to change and be reshaped. It has led to the reconsideration, postponement or complete disappearance of future goals in personal, business or country-wide. Although we cannot see the end of the process in the current period, the researches and developing technologies related to the pandemic crisis are promising. Although there are still some concerns and doubts, especially the fact that the vaccine for the disease has been found and applied, has reduced people's anxiety levels a little bit.

It is still a mystery how this process, which is still going on in the world and we still cannot predict when it will end, will leave traces on the social and economic fields

of humanity in the future. In addition to all these, there is also the fact that every crisis is an economic opportunity.

While many businesses and people suffered economic injuries in the process, there were also brains and business lines that turned the crisis into an opportunity. For example, in these times when it is difficult for us to go out of our homes and many shopping malls are closed, the online shopping platforms that we turn to in order to meet our basic needs have been the businesses that have made the most profit from this situation and have secured their jobs in the future. In this period when everything is getting closer to digitalization, people's turning to social platforms to spend time at home, following the content there, and starting to read e-books have produced very positive results for businesses investing in this field.

Shopping online is a process that is more profitable, requires less time, and allows the needs to be met without entering crowded environments. It is very clear that many businesses have moved their businesses to online platforms and will continue to do so in the future. Running their business in this way means lowering costs for businesses.

2.5. Impact of Pandemic on payment processing trends

Looking at the impact of the COVID-19 pandemic, which began to spread in our country in March 2020, we see that it played a major role in increasing contactless payments. 2020 can be considered a turning point for the adoption of digital payments in the world.

The need for hygiene rules to protect against the disease when paying, and the growing need for shopping via smartphones, will lead to a long-term increase in digital payments, even if the pandemic slows down. If we look at how online payments have changed in the United States, we can see that, as in other countries, digital payments, especially mobile payments, have increased. It is clear that the demand for contactless payments is growing. According to a recent study by Forrester Research, retailers

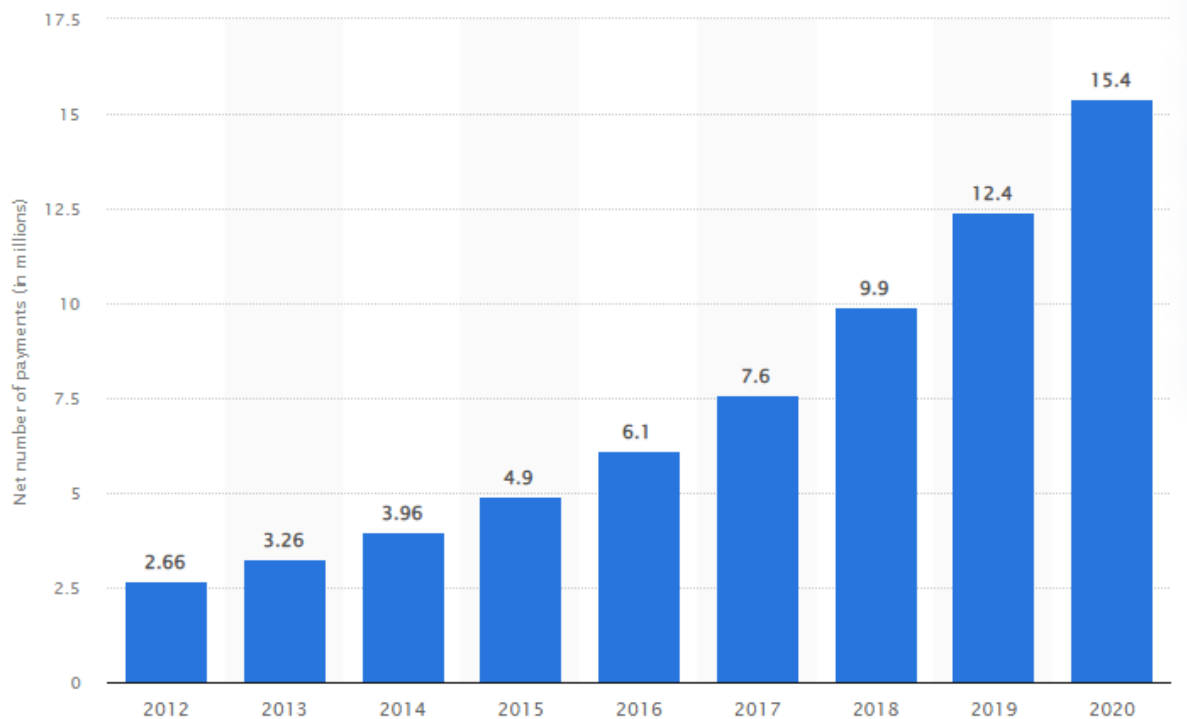
reported a 69% increase in contactless transactions since January 2020 (<http://web.archive.org/web/20210727080503/https://www.groupfio.com/customer-loyalty-trends/>).

The coronavirus outbreak has moved many of our daily routines to digital. Our shopping habits come first among our digitally transferred routines. Even those of us who have never done our kitchen shopping from virtual markets before preferred to shop online during the quarantine period. Therefore, the epidemic made a change in the shopping and payment habits of many consumers inevitable. We have started to prefer the online shopping model and the contactless payment methods that come with it more often, as it poses much less threat to health and is more hygienic. As is commonly known; Cash and POS devices are the leading players in the spread of the epidemic due to too much contact. For this reason, the demand for contactless/remote payment methods has increased. As such, online payment and collection systems have become even more important in e-Commerce.

Online payment systems, which have become widespread in recent years, have gained great momentum with the global COVID-19 pandemic. Consumers' online shopping or the use of contactless payment systems in their physical shopping brought competition in the payment systems sector. According to the "World Payments Report 2020" data of the Capgemini Research Institute, which focuses on the impact of the COVID-19 pandemic on the global payments industry, almost 50 percent of consumers use digital wallets, including QR (Quick Response) code-based payments. In recent years, it has been observed that many people, including consumers in our country, have turned more towards new generation banking and payment systems.

With digital wallets, money can be transferred easily and quickly without the need for banks. The number of digital wallets worldwide, which was 2.3 billion in 2019, is expected to reach approximately 4 billion in 4 years, with the increase in use during the pandemic period.

Graph 5: PayPal's number of payment transactions from 2012 to 2020(in billions)



Source: <https://www.statista.com/statistics/419778/paypal-annual-payments/>

It is expected that online payments will increase every year as technology advances and people use more fintech services. For example, it is not difficult to see the increase in online payments if we look at the payments made via PayPal in the period from 2012 to 2020 on Graph 5.

2.6. The growth of Robo Advisory Services during the Pandemic

Robo Advisors or Digital Asset Management services is the digital transformation of the asset management service. In this transformation, access to the professional asset management service to the masses becomes possible. Therefore, like industry 4.0, Robo Consulting can be called asset management 2.0.

The Robo Consulting system is a technological initiative that can combine and automate investment consultancy and portfolio management processes, serving a wide range of users, minimizing or completely eliminating the risk of error caused by human

intervention and emotions. Thanks to this structure, it provides the service it offers at a lower cost compared to traditional portfolio management, thus expanding its customer base.

Robo Consulting companies that emerged in the USA after the 2008 crisis set out to provide professional portfolio management services to small investors' savings. It started as the implementation of only a certain financial model with technical support in the process of Robo 1.0. Then, with a hybrid structure in the Robo 2.0 process, savers were provided with personalized asset management services. In the last period, in the Robo 3.0 process, it is ensured that all financial needs are presented to savers through inter-institutional integrations.

More than 200 Robo Consultants around the world reach approximately 150 million people and manage 1.5 trillion dollars. This number is expected to reach 5 trillion dollars and 400 million people in 2025.

As the coronavirus pandemic spread all over the world, it negatively affected the economy - large and small businesses, investments, and economic situations. However, it cannot be ignored that the pandemic has created a huge surge in this sector with the effect of robo consulting services. Although some of the mentioned sectors were negatively affected during the spread of Covid-19, the pandemic showed how worthy robo consulting services are. It is possible to see the results of the effect with the large increase in the number of accounts opened in robo consulting platforms. This increase observed since the beginning of 2020 was an increase of 3.1% in the first three months of 2020. Analysts think that the reason for this increase is also the high number of Millennial investors in the bear market. Thus, millennials have a greater tolerance for risk and economic damage, and they are more tend to rely on the recommendations of robo advisor services than their own knowledge and experience in situations such as stock falls.

Digital consultancy or robo advisory services collect and analyze data from users online, submit a proposal and invest automatically. Compared to traditional financial services and advisory services, digital advisory services have more advantages:

Investment Opportunity for Everyone

In traditional investment advisory services, there is a high fee threshold to start investing. Therefore, investor candidates who wanted to invest but did not have a sufficient budget could not benefit from investment consultancy services. Robo consultant service appeals to investors of all budgets (especially low-budget) by providing convenience in matters such as minimum investment amount and offer opportunities such as low management fees. It is also a way out for those who cannot find time to invest and create an investment portfolio. In short, robo consultant service; is one of the most suitable investment services for the low and limited budget, inexperienced and busy investors.

Lower costs

Financial advisory services have high management fees. This is where the robo consultant service comes into play, and with its low management fee, it is an invaluable Indian fabric for investors. Robo-advisors provide significant savings in management fees paid for financial advice. Likewise, the investment proposal is made by algorithms. No one needs to do any additional work to give advice. In addition, the cost of doing this work is very low, as the monitoring and balancing of portfolios and tax adjustments are all automated. No costly human intervention is required. In addition, investing in passively managed index funds and exchange-traded funds instead of actively managed funds also saves on commission and trading costs and offers suitable investment opportunities.

Easy Operation

Mobile, desktop, tablet and web applications have become more useful today, where software technologies have developed and the concept of the user interface has become more important. For this reason, you can easily use the robo consultant service by using any technological tool. In addition, the fact that robo advisor platforms provide extra ease of use for investors and do not sleep like financial advisors, that is, working 24 hours a day, makes the robo advisor service indispensable.

Allows You to Create Portfolios According to Your Goals

Investors' investment character may be different. Some investors like to take risks, while others prefer to be guaranteed. In addition, not every investor's budget is the same. In order to turn this diversity into an opportunity, robo advisor platforms can create a portfolio specific to the investor situation, thanks to its ease of use. Therefore, it would be more accurate to create a personalized investment portfolio with the robo consultant service.

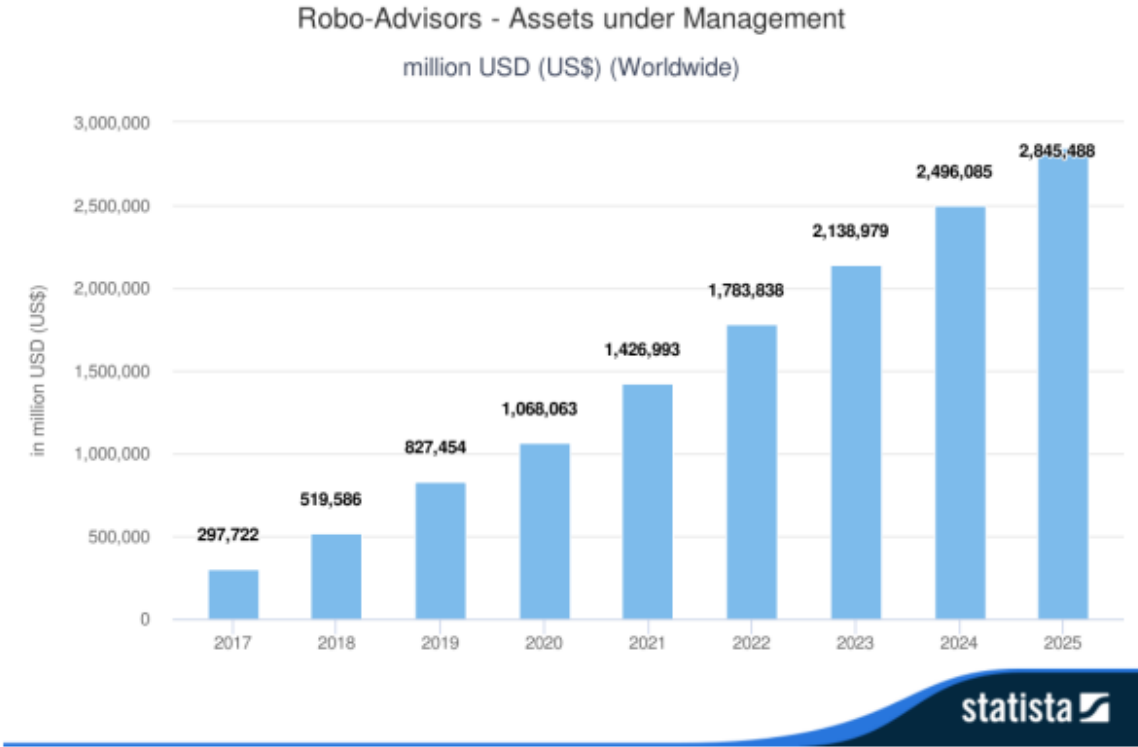
Robo-advisors are unaffected by emotions.

As human beings are made up of emotions, one of the things that affect our decision-making process is our emotions. Sometimes our decisions are negatively affected by our emotions. The fact that robo consulting services are completely devoid of emotions, the decisions made by robo consultants are based on more real-time statistics. Thus, robo-advisors reduce the impact of logical behavior, and poor and wrong decision-making decisions that are critical in times of uncertainty. It seems more comfortable and reasonable to use robo advisory services and invest in this way, especially in a period when a pandemic such as Covid-19 spreads, and people's psychology is more turbulent.

Although there is the lack of personal support as one of the shortcomings of robo-advisory services, this sector is going to grow even more as the pandemic increases the use of robo-advisory services. As can be seen from the chart above, by the end of 2020,

robo-consulting services reached 1,4 trillion US dollars. It is estimated that this number will increase to 2.1 trillion next year, reaching 147 million users. It is also possible to see possible forecasts for the periods after 2023 from the chart.

Graph 6: Robo Advisors-Assets under management, million USD.



Source: <https://www.statista.com/outlook/dmo/fintech/digital-investment/robo-advisors/worldwide?currency=usd>

For the Post Pandemic era, it is estimated that robo-advisory services will be replaced by hybrid robo-advisory services. The hybrid robo advisory model represents a model in which customers have access to digital platforms, but can also receive human-based investment advisory services through one-to-one communication channels within certain periods or when deemed necessary. To put it simply, the hybrid advisory model was created by fusing traditional methods with technological methods in the field of investment advisory.

The common feature of companies using the hybrid consultancy model is that asset management services are offered at a more affordable price compared to the traditional model, without intermediaries, in an uninterrupted and scalable manner. The

implementation of this model is ensured by utilizing three basic technological innovations summarized below.

First, the hybrid consulting model makes extensive use of technology to provide customers with a simplified service experience. At this point, companies offer automated services to their customers with the help of algorithms such as online investment proposals, model management and automatic rebalancing. In this way, it is possible to provide low-cost and self-selected services for customers using a simple user interface. Thanks to the hybrid consultancy model, all of these services can be gathered in a single point. This emphasis on user-oriented designs and continuous innovations in this field is among the sine qua non of hybrid consulting model firms that fall into the financial technology group of companies. That is, while traditional actors preferred to use technological developments in their own internal structures, companies using the hybrid consultancy model used it in the fields of customer-oriented speed, simplicity and digitalization.

Secondly, the fact that companies offer financial education and personalized content to customers in a digital way is an important innovation used by the hybrid model. The digital delivery of these services is important given that many traditional asset management companies still send complex, obscure printed materials using legacy technologies such as mail or fax. On the other hand, hybrid consultancy model firms using digitalized fields have had the chance to reach potential customers by using individuals who have experience in transmitting information over the internet. Rather than focusing on topics that ordinary people don't care about, such as market research or stock analysis, it has been possible to establish more appropriate relationships with customers by focusing on subjects such as education on personal finance that may be of interest to individuals.

Third, the hybrid consulting model focuses on low pricing and management and transparency in fees. Generally, traditional asset advisory actors follow a pricing policy of over 1%, while the hybrid advisory model often turns to low-cost ETFs (Exchange-

Traded Fund), providing lower-cost investments with a passive understanding. In addition to the low cost, the hybrid consultancy model uses methods that increase transparency such as clearly displaying the fees in the digital environment and/or informing the customers immediately in case of any changes in the fees. Considering that the traditional model usually conveys fees to customers in a complex and difficult-to-understand table, the hybrid model provides advantages in terms of pricing and transparency.

If an investor wants to meet with a real person and learn about complex issues, robo consulting firms have a limited ability to meet this demand. Considering this aspect, it is seen that both traditional firms and robo consulting firms should offer complementary services. Hybrid consulting has emerged as a business model to meet this need.

Although digital platforms do great things in the field of asset management, incorporating the human factor into digital platforms is an indispensable feature for many investors. In the client-consultant relationship; There are some points such as guiding customers in challenging and different market conditions and encouraging customers to apply and synthesize different solutions. Considering that robo consulting is only suitable for passive investment strategies, clients who want to implement such active investment strategies always need the human factor. In order to meet the needs of customers with different expectations, it is necessary to present a model that combines the advantages of the robo consulting model and the human factor. Therefore, it has been seen that the robo consulting model has a complementary function rather than replacing the traditional consulting model.

2.7. Digital insurance

In recent years, the share of digital sales has been increasing in insurance, as in almost all sectors. Undoubtedly, the effect of the pandemic process is great. The changing shopping habits and consumer demands, especially with the pandemic,

created an important opportunity for companies operating in this field. As the increasing interest caused new players to enter the market, insurance companies and large agencies started to create digital sales channels. The insurance industry in general has been very slow in developing digital applications and business models compared to other industries such as banking, retail, media, and travel. In addition, it is observed that the number of relatively small-scale but innovative initiatives that have placed technology at the heart of their business models that have emerged recently is increasing, and it is observed that customers' demand for these services is awakened.

The research conducted by Bain And Company in 2014, covering 18 countries, shows that even today, the proportion of insurance customers willing to actively use digital applications varies between 35% and 70% between countries (Bain And Company, 2015). In the same research, 79% of customers state that they will use digital channels in the next few years. Customer trends are affected by cultural differences, while digital channels are preparing to become the main distribution channel in some countries such as the UK, while in some countries such as Germany, customers seem less willing to these new channels.

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In this process, where the demand on the customer's side is in such a change, researches also reveal that insurance companies accelerate their digitalization investments. According to the results of the research conducted by Accenture in 20

countries, 24% of the companies are working to completely digitize their sales processes, while 28% will realize this transformation within the next 3 years and 28% will realize this transformation in more than the next 3 years. The ratio of companies that do not have such a plan is only 19%.

After the pandemic in 2020, the digitization phase has accelerated even more. Digitization of services digitalization of services offered to customers and intermediaries during and after-sales carried out through channels. These services can be listed as follows:

- Providing information,
- Receiving policy offers online,
- Online policy sales,
- Carrying out cross-selling activities,
- Online operations of renewal policies,
- Online management of after-sales services, especially damage processes,
- Channel integration: the fact that the process that started in one channel can be completed in the other channel.

Insurance companies and their intermediaries may be at different stages in the provision of these services on their digital channels. Depending on the strategic decisions, the adequacy of their infrastructure or the readiness criteria, there may be companies that only provide information services, or there are also those that move all services to digital channels.

In the model where insurance companies create their own digital channels, companies allow their customers to purchase insurance policies with their main brands or sub-brands through their websites and harmonized mobile applications. Companies eliminate intermediary expenses in direct sales practices, in return, they undertake the functions of intermediaries such as finding customers and managing customer relations. The most developed market for the model in question is North America. More than half of all non-life insurance premium production in the region is carried out without

intermediaries, and digital channels constitute an important part of direct sales volume. Almost all of the top 10 companies in the United States, including Geico, State Farm and Progressive companies, produce through digital channels. England is one of the countries where the direct sales market is developed.

The digital revolution of recent years in insurance is Comparison Sites (Aggregators) and Online Insurance Brokerage Services, which are built on the "compare and buy" business model.

Comparison Sites are structures that bring customers and insurance companies together. On these sites, customers receive online comparative offers from all companies in the market that have a digital infrastructure. After the customer selects the offer they want to underwrite, the rest is transferred to the insurance company's system to complete the operation. As can be seen from the flow, comparison sites are not involved in the sales and after-sales processes. They generate their income by taking a certain percentage over the policy premium offer or a fixed fee per customer found. Insurance Companies can use different branding strategies on comparison sites. While some place their products with their main brands, some prefer to offer sub-brands and lower segment products to the user. The first examples of comparison sites were born in the UK market and spread very quickly in the market. The reason for this is that insurance companies use direct sales channels, price-sensitive and internet

The customer structure that thinks that they can buy more affordable products is shown. Other factors are that customers are open to new brands due to the dynamics of the market, and that technological developments allow websites to be designed quickly and conveniently, and that electronic collection is possible. Gocompare.com, Comparethemarket.com, Moneysupermarket.com, Confused.com are the biggest players in the market. The main competition is between these four players and these companies are always among the top 10 advertisers. Although there are differences, motor insurance, traffic, housing, compulsory earthquake, travel health, complementary health and physician professional liability insurance products can be

purchased online first as an offer through the websites of online insurance intermediaries, the preferred option can be purchased by entering the credit card information and the policy printout. It can be received via e-mail or its image can be printed instantly.

The Covid-19 pandemic, as a result of the further popularization of digital services since 2020, has made many contributions to the business as well as the revivals in this sector, digitizing the distribution channels of the insurance industry, increasing the number of customers by opening a new channel. These contributions can be listed as follows:

- Capturing changing customer trends, being a part of customers' special days, getting to know customers better,
- Ability to control customer churn rates more easily,
- Being able to design products from the customer's point of view,
- Perceiving the financial return of creating customer loyalty more easily due to the high cost of new customers,
- These analysis techniques, developed the "big data" approach and advanced data analysis competencies, and decision-making processes that will create value in areas such as risk acceptance, marketing and damage management.

to be more effective with

- Developing a culture of creative thinking and innovation within the enterprise,
- Operational efficiency,
- To be able to provide simpler and faster processes and effective process management.

Digital transformation does not seem easy for the industry with the potential to conflict with traditional channels and the investment costs to be made in technology, processes and human resources. However, more effective data and customer management allow for better financial results, creating a more innovative business culture and bringing the insurance industry much closer to its customers. It should also be perceived as a great opportunity to carry the insurance perception to the place it

deserves. The Covid-19 pandemic can actually be defined as a triggering factor for this sector to go further.

CHAPTER III. DECENTRALIZED FINANCE-THE BRIDGE TO THE FUTURE OF FINANCE

3.1 A term of DeFi. Pros and cons of Decentralized Finance

Today, we carry out our financial and commercial business and transactions with the nominal currencies of the central bank, which are accepted and used as a means of payment and value storage. In addition to fiat currencies, we also use precious metals and papers in commercial life. We use all these financial instruments through central financial institutions and organizations regulated by law.

Individuals have very limited control over the instruments/assets they use in financial life. With these tools, individuals can perform their financial transactions and transactions only with the permission of central institutions and through many complex procedures. In addition, in today's financial system, it is obvious that there are many limitations and significant inequalities in terms of individuals' access to financial instruments.

Decentralized finance applications constitute an important alternative to many problems of traditional finance applications, some of which are mentioned above. Decentralized finance applications provide us with a financial service experience that is interpersonal, transparent, secure and accessible from anywhere in the world without any barriers, without a central authority such as the government, banks and other financial institutions behind it, that is, without the need for permission from any authority. DeFi, which we will use in this article and you will hear frequently in the near future, is a concept derived from the combination of the initials of "Decentralized Finance", the English equivalent of Decentralized Finance. The emergence and prevalence of DeFi as a concept took place in a very recent period in several stages.

The cryptocurrency Bitcoin article was published in 2008, Bitcoin was launched in 2009, and the radical, innovative and original financial solutions it offered attracted attention. Along with Bitcoin, the potential of blockchain technology, which is the technology behind Bitcoin, has been realized and many pilot studies have been carried out on its use in different sectors and fields, especially in the financial sector. Today, studies on the use of blockchain technology are carried out in many areas such as banking, land registry, notary public, law, infrastructure services, telecom and network security.

An important technology that we should mention about DeFi is the smart contracts developed on blockchain technology. Blockchain technology offers us the opportunity to perform financial transactions that are decentralized (distributed), interpersonal (peer-to-peer), open and transparent, immutable, secure and at very low costs. Smart contracts are a transaction protocol developed to perform more complex transactions on this technology.

If we describe smart contracts over a lease agreement; Let's assume that we will make a one-year lease agreement, that the flat to be rented has two separate owners at 30% and 70%, and that we will pay the rent to the landlords on the 1st of each month for 12 months in proportion to their share. When we encode this contract as a smart contract on the blockchain network. On the first of each month, the rental fee will be automatically deposited into the landlord's account from the amount deposited as collateral from the tenant's account, and these transactions will be added to the blockchain network. In this case, the transactions will be carried out in a transparent and secure manner, and the need to trust/need a third party or institution will be eliminated. Much simpler and more complex types of smart contracts like this can be developed.

Currently, over \$600 million in assets are valued in the DeFi system. This number continues to increase exponentially since 2017. Among the most famous DeFi applications are Maker DAO, Compound, Uniswap, Augur, Pooltogether.

The DeFi system provides financial access to millions of people around the world. The fact that anyone in the world could easily send money to someone on the other side of the world was the beginning of the cryptocurrency revolution. DeFi, on the other hand, advances the operation of cryptocurrencies. As mentioned above, the biggest problem of the traditional financial system is access. DeFi emerged with the aim of ensuring that everyone is included in the financial system by putting the issue of access at the center.

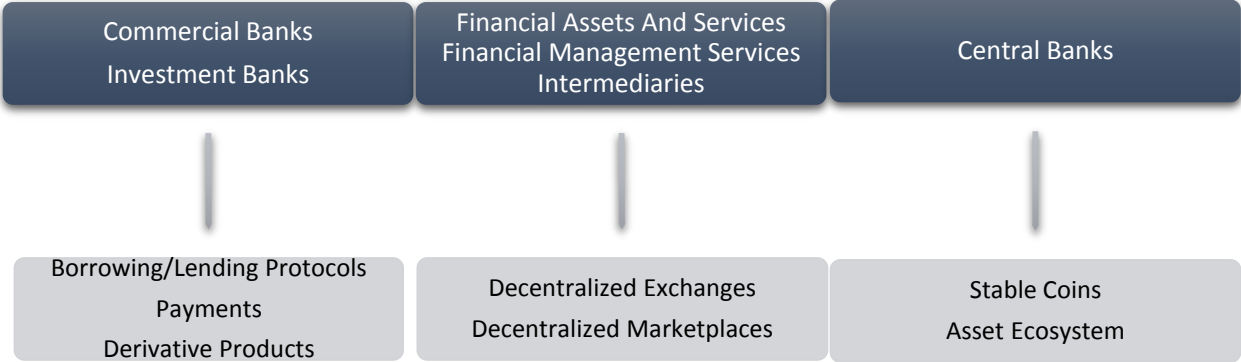
While banks or intermediary institutions undertake the intermediation activities in the traditional finance approach, in decentralized finance, intermediation activities are carried out through smart contracts running on the blockchain network. In other words, financial services take place over the blockchain network. It consists of financial applications built by adding smart contracts on DeFi.

Although decentralized finance is thought to have emerged as an alternative to traditional finance by many authors, it is also seen that it gradually gains a unifying character. An example of this situation is that in October 2021, a French bank pledged its bonds and applied to a decentralized community to borrow from the DeFi system. This situation can be interpreted as the question of whether decentralized finance will rival or replace traditional finance from time to time.

Figure 1 shows the equivalents of the basic elements of traditional finance in decentralized finance. Accordingly, instead of the intermediaries in the traditional finance understanding, intermediaries in decentralized finance disappear and decentralized stock markets and marketplaces emerge. In return for the lending mechanisms of commercial and investment banks, there are borrowing/lending

protocols. Decentralized exchanges, decentralized marketplaces, stable coins are also the skin issues that arise with decentralized finance.

Figure 1: Traditional finance vs DeFi Ecosystem



Source: Popescu, (2020) p.44

The use of DeFi services, which have the potential to lead to many innovations in the international financial system, will become widespread by those who do not have any bank accounts and in regions where banking services are inadequate. Especially in these regions, DeFi can provide a decentralized monetary system with the influence of non-competitive actors and speculative investors. (Brennecke K., 2022).

The negativity that spread to the entire financial sector with the bankruptcy of Lehman Brothers in the 2008 Crisis led to a decrease in the confidence of economic units in the banking and financial system. Cryptocurrencies and DeFi emerged in such an environment. In this system, the ability of economic units to transfer these currencies without the need for any financial intermediary increases the attractiveness of the system. At the same time, these transactions are carried out within the framework of the principle of confidentiality. Therefore, users feel freer than in traditional finance, and users of decentralized finance systems exhibit a more democratic structure because they are also participants in the system.

The emergence of decentralized finance has created several advantages in some areas. These are:

- Decentralization of capital markets with the emergence of decentralized stock markets
- Changing the traditional banking understanding
- Borrowing and lending transactions between users without intermediaries
- Creating and using new instruments in the financial field
- Mobility of transactions with less field cost compared to traditional finance

There are also some disadvantages of decentralized finance. These are:

- Systemic vulnerabilities arising from the newness of the system
- Uncertainty of countries' regulations in this area
- Low number of users due to technology infrastructure requirement
- Some inadequacies in the infrastructure required for data storage
- Relatively slow completion of transactions

Decentralized finance has some advantages over centralized finance. Transactions in decentralized finance are completely anonymous. Since there is no intermediary or 3rd party, there is no operational risk or risk of error in the transaction process. The whole process is more electronic as it is done by software running on the blockchain. Since all records are kept on the blockchain, there is no risk of loss or deletion. There is no need for KYC (Know your customer) to process.

Some disadvantages of decentralized finance can be expressed as follows: the absence of any financial intermediary or an authority to control the transaction puts the responsibility of possible mistakes on the user and it is not possible to compensate for the mistake made. This situation necessitates that all transactions to be made are controlled by users much more carefully and constitutes an obstacle to the rapid spread of DeFi.

While creating decentralized finance applications, Ethereum ranks at the top in terms of usage density. While developers and users in the market mostly operate on the

Ethereum system, decentralized finance applications may occasionally encounter scalability and relatively high transfer fees due to network density.

Figure 2: Amount of money locked on major DeFi systems (Million/Billion \$)



Source: <https://defillama.com/> (*Stake and Pool liquidities included)

As seen in the Figure 2, the most locked amount is in the Ethereum blockchain network. In addition, it is seen that the number of keychains in other blockchain networks is increasing. Planning to switch to Ethereum 2.0 completely from the first quarter of 2022, Ethereum is accompanied or rivaled by similar systems such as Avalanche, Solana, Algorand, Cardano, etc. that emerged later. Of course, the impact of the Covid-19 outbreak should not be overlooked in these increases.

3.2 How Blockchain is transforming money, market and banking.

Blockchain technology, which causes financial transformation, started to become even more popular during the spread of the Covid-19 pandemic. Decentralized exchanges are platforms that enable cryptocurrency trading. Decentralized applications on blockchain systems with the smart contract feature of decentralized finance platforms can be defined as DApps. These decentralized applications can be run on multiple blockchains at the same time. For example, Curve Finance (CRV) can run on

Ethereum, Avalanche, Fantom and a few other blockchain systems, while MakerDao (MKR) only works on the Ethereum blockchain. At the same time, decentralized finance platforms and blockchains that can run smart contracts (Ethereum, Solana, Cardano, etc.) can bridge between them through updates made in smart contracts, thus enabling more blockchains to work.

Cryptocurrencies, which are among the most talked-about topics of recent times, have brought new technologies and trends. Among them, ICO movement, NFT technology, Metaverse and virtual universes can be counted. The concept of decentralized finance is another concept that emerged with crypto money and blockchain technologies. It has started to be used by various segments for reasons such as decentralized finance, new generation liquidity provider, staking, yield farming, fast, confidential, secure and cheap transaction fees. With the blockchain updates and the emergence of more useful smart contracts, the growth in the sector and the increase in the number of users continue. In addition, it is seen that the amount of locked on DeFi platforms is gradually increasing. With the transition of the Ethereum system used by decentralized finance to Ethereum 2.0, it is expected that there will be an improvement in scaling, transaction speeds, decrease in transaction fees and increase in security. These situations result in decentralized finance taking a larger share of traditional finance. On the other hand, factors such as the fact that DeFi requires a serious technological infrastructure, complexity, technology requirement, and lack of compensation for errors are factors that reduce its preferability. The selection of oracles is very important for the reliability of smart contracts and data.

With the introduction of new technologies and the emergence of new areas, it is seen that the rapidly advancing DeFi system will become more common in the future. The changing perception of money in the 21st century, emerging new currencies and new technological infrastructures are some of the elements that will bring DeFi to the fore in this process. DeFi can be considered as one of the factors that will create a

catalyst for the global financial system that emerged with globalization to go further. Because anyone in the world can be a part of the decentralized financial system. It would be more correct to perceive this situation not as the disappearance of the traditional understanding of finance, but as a transformation. The successful realization of this transformation may lead to the emergence of a faster, more accessible, less costly and safer system.

Decentralized finance, with its smart contract technology and token economies, continues to be a phenomenon that is at the main focus of the regulations. Regulators continue to focus on tax avoidance and money laundering problems in cryptocurrencies and decentralized finance and seek solutions. On the one hand, blockchain networks such as Ethereum, Avalanche, Cardano, etc. continue to contribute to the development of decentralized finance, on the other hand, decentralized finance platforms are increasing day by day. Even though the decentralized finance sector is small compared to traditional finance, it is showing a steady increase in terms of volume and number of users. There are also various problems that prevent the decentralized finance sector, which has become more preferable thanks to confidentiality, speed, low transaction fees, and high earnings, from becoming more widespread. Difficult to understand user interface, volatility in the crypto money market compared to regulated markets, insecurity due to the new technology are among the problems that need to be focused on and solved. One of the important problems in DeFi is the high volatility in cryptocurrencies and the resulting exchange rate risk. While users continue to use centralized cryptocurrency exchanges heavily, decentralized finance and decentralized exchanges continue to develop themselves.

Despite the work done by various sectors, the regulations for the DeFi ecosystem are not yet at a sufficient level. In order to accelerate the development of decentralized finance at the global level, there is a need for more cooperation and coordination in the international financial system. In order to improve the system and eliminate some

existing gaps, it is important for countries to quickly pass laws and regulations in this area.

Cryptocurrency banking, which we started to see examples of today in the USA and Europe, is very important in terms of including crypto money in the current financial system and the supervision of the system by the regulators. It is possible to divide the banks that provide crypto money banking services into three according to their structure and fields of activity. The first of these is cryptocurrency-friendly traditional banks. These banks are institutions that cooperate with cryptocurrency exchanges and subsequently provide crypto money custody services to their customers. Bank Cler, a banking group subsidiary of the Swiss State Bank (BKB), provides cryptocurrency trading and custody services, especially targeting the younger generation. Operating in the USA, Silvergate provides services to key players in the cryptocurrency markets such as Paxos, Circle and Gemini.

We can consider the second type as “innovative cryptocurrency banks”. These banks build their services entirely on cryptocurrencies instead of traditional banking instruments. Switzerland-based SEBA and Sygnum are early representatives of innovative cryptocurrency banks, providing custody, trading, asset management, cryptocurrency-based mortgage lending and B2B banking services to their clients.

The third type is cryptocurrency banks that focus on a specific use case. These usually focus on areas such as debit cards and loyalty programs that can convert cryptocurrencies in the payment space. For example, Kraken Finance in the USA and Revolut in the UK belong to this classification.

3.3 Covid-19 and Cryptocurrency market.

The pandemic, which started in Wuhan, China in December 2019, has had an impact on blockchain technology as well as other financial services sectors. In this process, as Blockchain technology became more common, it also helped data collection

and analytics for the pandemic. That's why Enterprise Blockchain startup Hacera has launched MiPasa, a new Blockchain platform to assist with data collection and analytics for COVID-19. The company has partnered with IBM, Oracle, the World Health Organization and other technology firms to make this happen. These companies will work collaboratively in an open data center using Blockchain technology to check the accuracy of coronavirus-related information.

Jonathan Levi, the founder of Hacera, said:

“Sadly I don't think we have a few more weeks... We're all seeing data from the World Health Organization (WHO), Johns Hopkins University, the Center for Disease Control (CDC) and others. MiPasa, on the other hand, is a center that aims to synthesize data from different sources and help them harmonize.”

By encouraging someone infected with the Corona-19 virus to report confidentially and effectively, it may be possible to create a map by ensuring that the data in the system matches the original. Thanks to this map, it can be found who has priority for testing or where the disease is concentrated. This information collected in MiPasa can be compared and analyzed with data from the World Health Organization and the Center for Disease Control.

This contribution was embraced by many platforms, and a blockchain-based donation platform called Shanzong was developed by China-based blockchain startup Hyperchain to provide financial support to further expand this project. The COVID-19 virus, which can survive for up to three days on banknotes, makes it necessary to digitize and transition to a cashless life. For example, Turkey has acted quickly for this purpose, and the Interbank Card Center (BKM) has recently increased the passwordless transaction limit for contactless payments to 250 TL. On the other hand, it can be said that COVID-19 has also slowed down the transition to digital money. For example,

although this global epidemic delayed the foreign release of China's digital currency called DC/EP, the work gained momentum (Global Times, 2020).

Bitfury, one of the Amsterdam-based blockchain technology companies, donated its 6000 GPUs (computer power) to research led by the University of Washington to fight this disease and find the vaccine for the epidemic.

Many Dutch technology companies such as TYMLEZ, Cyberprint, Compumatika and Traxion came together and announced that they implemented the technology against Corona and announced that they would share information with the government, healthcare professionals and hospitals using Blockchain technology. TYMLEZ will help move the supply chain of medical products to a transparent and open Blockchain platform.

In cooperation with Italia4 Blockchain and Federazione Lavaratori Pubblici, they started to provide relief funds to municipalities with a non-profit project called “Italian Wonder” to support cultural heritage in Italy during the COVID-19 pandemic. The donations collected in this project are transferred to the municipalities with the help of Blockchain technology and all parties can see this transparently. The blockchain-based firm called Algorand conducted a global survey on COVID-19 on March 27, 2020 and named it the “COVID Report” (the purpose of the survey was to share and constantly update global information, status and symptoms regarding the Corona-19 outbreak. Algorand While the number of people responding is not very large, the information gathered shows that Blockchain's future contributions are of no small importance.

Blockchain technology can be used in many fields such as health, finance, supply chain, copyrights, political elections, insurance, law, donations, foreign trade, to create a more transparent, healthier, more effective, more accurate, faster and more humane world.

Blockchain spending is predicted to rise to \$5.6 billion in 2025. Aiming to use Blockchain technology in the healthcare field, IBM Blockchain CEO Gari Singh said, *"We started brainstorming about how to more securely collect, share and use verified information about the COVID-19 disease. Because we need to replicate this information."*

In fact, Blockchain technology can provide very important solutions in the follow-up and diagnosis of deadly epidemics such as coronavirus and can become an important resource in monitoring the epidemic with the data set it creates. Particularly, it can be a very effective weapon in terms of transparency, auditability, security, decentralization, data storage, protection and rapid delivery to suppliers, which are the main features of Blockchain. It can be a means of separating areas where the disease has not spread from those that are widespread. It can provide patient quarantine by recording the symptoms, developments and reactions of the patients to the drug moment by moment.

The protection of patients' data and personal information is possible with Blockchain technology, and patient safety is ensured without adversely affecting the principles of accountability and transparency. The dissemination of this technology and its activation at every stage will expand its use and very rapid response will be given to the epidemic.

It is extremely important in terms of doing the daily work without coming into contact with the virus and opening the way for healthcare professionals to help patients without increasing the risk of contamination. Blockchain technology emerges as an extremely effective method in terms of both continuing the treatment process and preventing contamination in ongoing transactions from user to user or cross-border transactions. Blockchain technology has already proven in the fight against COVID-19 that it is an extremely useful technology in the supply of medical drugs and equipment and in reaching the necessary services. Knowing that this kind of support will continue

in the future and making plans and preparations accordingly will provide a great convenience in the fight against the epidemic. It is a contribution that Blockchain technology can make to determine the location of the needs in the transportation process and to ensure the most successful access of the products as soon as possible.

Blockchain technology can transfer financial aid from its source to the place or region where the epidemic spreads, without delay and in the fastest way. Efforts to find a vaccine are extremely costly and resource-intensive. Delivering aid to pharmaceutical companies or those in need can be done both safely and quickly.

In these days when the fight against the COVID-19 global pandemic continues and we try to reach real and accurate information, we can try to overcome the obstacles to reaching accurate, healthy and clean news with the help of blockchain technology. they can be used. While Blockchain technology can be used in all these areas in the fight against the pandemic, we need to remove the obstacles that prevent it from being used as soon as possible. E.g; It is necessary to establish the legal infrastructure that plays a regulatory role, remove legal obstacles, and draw the legal framework by the state and NGOs. A platform that will be formed without knowing what is legal and what is not may cause problems later on. For all these reasons, we need a future developed and optimized Blockchain technology. It will allow simple and easy use; store information without delays and without compromising our security; A Blockchain technology that can benefit from different advanced technologies will strengthen us in the fight against a global pandemic such as COVID-19.

CONCLUSIONS AND RECOMMENDATIONS

The Covid-19 pandemic, which emerged in China and affected the world in a short time, was initially considered a health problem. But later on, it brought social, political and economic life to a standstill. So much so that countries quickly closed their borders, slowed down their production, stopped their foreign trade, closed their schools, and went into quarantine. Such a situation has accelerated the transformation of digital technologies, making access to information easier and increasing the channels of access to goods and services. As a matter of fact, it allowed some physical work and actions to be done on virtual platforms. In particular, actions such as examining patients via video conference, conducting classes online, and providing video services by banks show the prevalence of digital tools and services. In order to effectively combat the Covid-19 pandemic, both public institutions and the private sector have started to produce policies by turning to digital tasks and services, which are considered new.

Although there are health-related activities and sanctions at the beginning of these policies, many regulations concerning social, political and economic life have been introduced. Digital tools and services increase productivity by positively affecting many fields from industry to education, from health to transportation, and from diplomacy to management, as they remove the communication process from being dependent on cable. This efficiency is explained by the fact that the information flow on a global scale is faster and easier, and it saves time. On the other hand, with the gaining of digital technologies in political, social and economic life, public institutions and private sectors are undergoing structural and functional transformation. In particular, digitalization's rapid feedback, accurate and instantaneous storage of data and transparency require effective communication and accountability.

In this study, we tried to investigate the impact of the Covid 19 pandemic on digital financial services and it seems that it will lead to positive developments in the long run. During the pandemic period, due to lockdown, the fact that digital finance

operations can be carried out regardless of time and place, has created a great increase in the use of these financial services.

The pandemic process we are in reveals that it will not be possible to return to the high-contact lifestyle we were used to before and that we need to get used to the living conditions of this new normal. As a result of this, it is thought that digitalization should be reconsidered by every individual and every institution in the finance sector, where both human and money contact is the most, and digitalization should be transformed into a lifestyle.

According to this study, it can be said that the financial service sector has become digital, but on the other hand, customers see the use of these digital channels as a necessity, not as a natural flow of life, but as a necessity. For this reason, it is thought that financial institutes should carry out promotional and information activities in a way that will direct their customers to digital finance channels more. It has been determined that the digitalization process will accelerate and there is a need for change in strategic issues such as market, product and partner. When the pandemic started, it was revealed that the current level of digitalization positively affected the post-pandemic digitization speed and the need for change. In other words, those who have a high level of digitalization will be able to adapt to the needs of the new business world much more quickly. The vast majority of employees, managers and company owners stated that digital platforms positively affect productivity and performance.

A new era will begin for Fintechs, which provides digital finance services in the post-Covid era. During the pandemic process, the Fintech industry has made it easier for people to access financial services at a time when people are confined to their homes due to quarantine measures. In the past years, the fintech industry has grown and transformed, passing through many important stages. The fintech sector will become a more necessary part of the economy. While not every company will become a fintech company, the fintech ecosystem will expand remarkably and make up a more critical

part of the economy. Over the next five years, the new era of companies offering digital financial services will be permanent and change at an unprecedented rate.

The Covid-19 Pandemic obviously shows us the multipurpose nature of digital technologies. Especially for economic productivity, the development and implementation of digital projects are of great importance. The Covid-19 process, on the one hand, allows progress in the successful transfer of data to the digital environment and meeting the most basic needs, on the other hand, it deepens the digital divide in society. This digital divide is recognized as the "new face" of inequality. On the other hand, since digital life depends on the web based, the smallest connection problem or disconnection in the webspace creates a serious security risk. This security risk not only pacifies the internal dynamics of the states but also neutralizes their power against other states.

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