Technical Journal, University of Engineering and Technology (UET) Taxila, Pakistan *Vol. 26 No. 4-2021*
ISSN:1813-1786 (Print) 2313-7770 (Online)

The Emergence of FinTech with Blockchain Technology

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Abstract- Financial Technology, which is named FinTech, is related to financial companies or firms that use innovative technologies to provide their services or products to customers efficiently and quickly. FinTech startups firms using digital technological methods to compete with traditional banking services also support finance industries that positively impact the country's economy. The finance sector, predicting that FinTech can be a well-known future technology for its users. The vital advantage of the financial industry is using FinTech that includes only technology-based innovations that are very supportive and familiar to the financial market. Blockchain technology has had a significant effect on the existence of FinTech. FinTech uses secure payment methods when a user makes a transaction from his account with the help of Blockchain technology. This paper investigates the importance, role, and existence of Financial Technologies by using Blockchain technology and provides an in-depth review of FinTech applications, integration, challenges, and future of FinTech using Blockchain. It will give an excellent opportunity to have wast knowledge for a new researcher.

Keywords- FinTech, Blockchain, Integration, Adoption, Challenges, FinTech Role, FinTech Importance, Future Technology

I. INTRODUCTION

Today, financial technology became the most growing sector with a lot of its needs. For the last twenty years, cash or funds are transfer from mobile wallets without having any difficulty. People have also become familiar with terminologies like Bitcoin, Blockchain, and other digital currency methods to transfer money everywhere. Financial technologies are growing very fast and change the world and financial institutes and rely on traditional methods. They must update their services or products to compete with the changes in the world [1-3]. According to the collected data of financial technologies, investment in FinTech startups has increased at a very high number annually with 350Billion $ [4]. A report about the growth in FinTech is showing the relationship between FinTech and its entities, as in Figure 1. According to the global survey of 2019, the FinTech sector had funded 400 billion $ annually within a tremendous amount of investment [3]. As we noticed from the figure below, financial services or institutes have a significant change followed by the new and updated technology. The consumer wants digital services or products that would be easy to use more cheaply and efficiently [5-7].

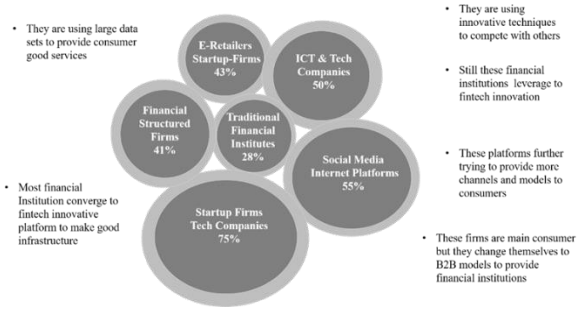

Figure 1: The percentage of consumers who believe in the following entities are becoming the most valuable in the next five years [1]

FinTech Ecosystem

FinTech ecosystem consists of government fields, financial service provider firms, and other FinTech startup firms. These firms help the other startup firms to make new innovative products to expand their businesses. FinTech firms can observe the market strategy and new incoming products that make similar products for customers in this competitive while, including their services. Creating new innovative technologies is an excellent step for new startups and tech companies, motivating them to develop innovative technologies [23]. In Pakistan, the FinTech

ecosystem is working in its early stage, and this is due to the unawareness of technology in Pakistan's people. Only a few FinTech firms are operating in big cities like Karachi, Lahore, and Islamabad. The leading cause of limited investment in financial sectors is the slow growth of FinTech firms in Pakistan and the lack of new entrepreneurs' interest in creating FinTech firms and generating regulatory problems in the finance sector. However, the lack of work together between stack holders blocks the growth of the FinTech ecosystem in this country. The main features of the FinTech ecosystem, which are playing significant roles in the finance sector of one's country, are given below in figure 2[18].

1.2. Solutions to Grow FinTech Ecosystem in Pakistan

Traditional banking systems provide services to customers, not at a reasonable cost, and they are also have limited geographic branches to leave the unserved areas in Pakistan. Due to increased mobile penetration attacks, FinTech introduces new intelligent products and services targeting un-served regions at a low cost. It is impossible to grow FinTech business in that country where they have no FinTech ecosystem. Without business attraction and acceptance in the market, the FinTech ecosystem could not be created and grow.

When traditional banking systems and new FinTech firms work together to develop new innovative technologies, they help the customers access these platforms anytime to send and receive their money [15]. FinTech companies try to copy one another to learn, combine FinTech firm's platforms and their applications shown in a figure.

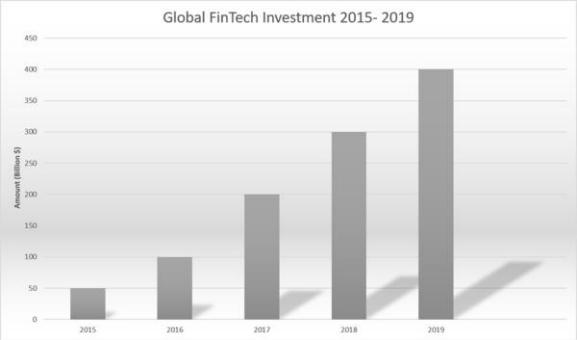

Figure 2: Global FinTech investments 2015- 2019[8]

1.3. FinTech Ecosystem

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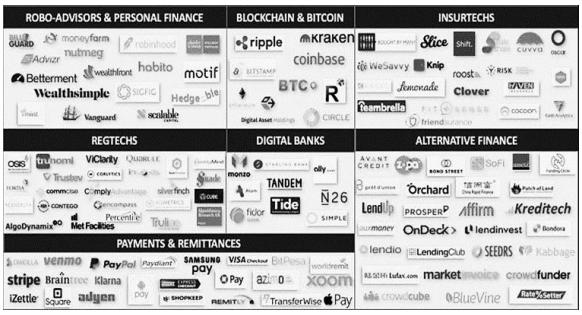

Figure 3: Ecosystem of FinTech Firms

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II. FINTECH APPLICATIONS INTEGRATED WITH BLOCKCHAIN TECHNOLOGY

Blockchain Technology is considered the most popular innovation in financial technology, which revolutionized the world with its wondering aspects. Blockchain Technology decentralized the third party to transfer the cryptocurrencies; it also manages the requirements for the FinTech industry to provide the

customers with better financial products at a lower cost [23]. FinTech firms are trying to lead the way in developing Blockchain applications to provide better services to consumers than traditional systems. Due to change, traditional firms are also participating in adopting Blockchain Technology to manage themselves with time. The figure is showing the relevance of Blockchain in the financial services industry. The role of Blockchain integration in different kinds of fields is shown in figure 4 [7].

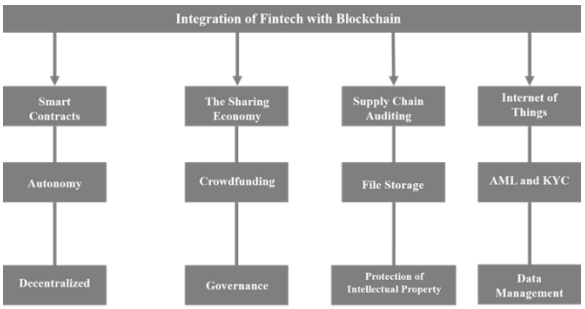

Figure 4: Influence of Blockchain in FinTech

Due to rapid change in the FinTech ecosystem, FinTech firms like MoneyLion,
Robinhood raises its money in significant figures. This change also increases the growth rate of the mobile banking system and digital payment methods. Fin-Tech-based applications have main three parts, which give below.

- There are many mobile applications for online money transfers, bill payments, invoices and expense the trackers of banks.
- FinTech firms developed such types of applications as trading, loans and savings services that allow any user to make a profit in the stock market by using these platforms
- FinTech integration with Blockchain technology to enable a secure payment system through Bitcoin cryptocurrency.

2.1. Adoption of Blockchain Technology for Financial Technology

Blockchain Technology looks like a new technology considering that it is ready to adopt the technology by finance companies and firms who want to use it. Blockchain Technology is so attractive because of the features which it has. The consumer still does not understand it and does not understand some of this technology's negative points. According to the survey, 60 per cent of the internet users have very little knowledge about Blockchain, and less than 10 per cent have a perfect understanding of Blockchain Technology [11]. Blockchain technology has many technical issues, so that the FinTech firms needed to deal with these issues. There is a need for high throughput and a consensus mechanism that the firm will adopt for future use during the transactions. There are also some security problems related to Blockchain Technology, such as losing passwords and 51 per cent attack data penetration. The regulatory framework is known as the main uncertainty for adopting Blockchain Technology.[9]
While assuming Blockchain Technology, a question always arises whether Blockchain can be acceptable or not. So, some of the firm's owners are still thinking about adopting the technology, and Blockchain Technology is still ambiguous for their users. Blockchain Technology is a future technology to adopt and very helpful to verify the customer transaction, but it needs more work. According to many types of research, it will be the upcoming internet, but some companies still have trust problems with Blockchain Technology.

III. CHALLENGES IN USE OF BLOCKCHAIN TECHNOLOGY

3.1. Technical Issues

Blockchain technology was introduced as the new technology for its users and also for the finance industry. Still, it has some technical issues which create barriers between the users and also in Blockchain technology. It is still ambiguous technology for those users who do not even know its name. They want to know about this technology for better implementations in their businesses. It includes the following factors that show in the figure below of its technology sector.

3.2. Business Development Issues

Blockchain technology has essential features which make it different from others. It has no central activity between the two parties or a central storage system. It allows the users to participate in trust-based technology for their transactions. But it has some limitations, like as it removes the central authority of firm owners, which changes entirely traditional business systems because most of the money comes from the fee of transacted money and brokers that rely on the conventional banking system [20].

3.3. Data Protection Issues

To store personal user data in a decentralized manner has many privacy issues. When users enter Blockchain technology-based platforms, all the transactions the user made visible to everyone. Suppose the secret user key is stolen from anyone while having online data. It will cause a real problem for the individual user because their privacy explodes to any user of Blockchain. FinTech firms use data analytics to

predict credit and lending mechanisms and are trying to use fraud detection methods to know about customers' loyalty. FinTech data controllers have some following points which are necessary to implement in any FinTech firm. [22].

First of all, the data controller must be honest and track the user data to know how data is used. The risk department of organizations sometimes breaches user data privacy and security to learn about specific users' information. The controller team should check that the automatic taking decision software was working correctly or not. Protect the data with intelligent devices and programs and be available when data is required. The challenges or issues that occurred during FinTech or Blockchain-based platforms' functioning are shown in figure.5.

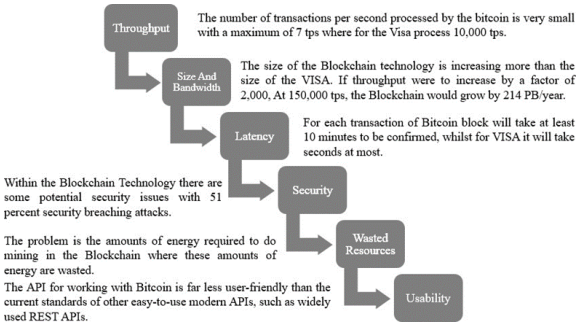

Figure 5Technical challenges of Blockchain Technology

IV. FUTURE OF FINTECH WITH BLOCKCHAIN TECHNOLOGY

FinTech emphasizes that the traditional technologies should merge into digital technologies which can stand on the user expectations more efficiently. FinTech offers digital technologies like the internet, social media, and other technology 24/7 everywhere in the world. Decentralization in financial services creates the FinTech ecosystem where traditional banks and FinTech firms can gather to make new products and change the world with new innovative technologies.[13] According to the finance industry experts, 2020 to bring enormous change in the future of the FinTech industry. Goldman Sachs predicts that by the end of 2020, the worldwide FinTech industry will enumerate up to 47Trillion. Four essential points in FinTech banking will change the industry and drive immense growth.

Table 1 Some Blockchain-Based Companies

S.#	Application	Country Name	Features	Website Link
1	Science Soft	Texas	Blockchain Audit, Blockchain infrastructure, and Blockchain Training System.	https://www.scnsoft.com/ pres-room/pressreleases/ 672 minskroutes-mobile-app
2	Prolifics	Florida	Cloud, Data & Analytics, DevOps, Digital Business, & Quality Assurance.	https://apkpure.com/ prolific-works-free-books-on-your-device/com.reubro.instafreebie
3	Ripple Lab	San Francisco	Decentralized Financial Tool.	https://apkpure.com/ripple-Safety/com.ripple support. activity
4	Leeway Hertz	San Francisco	Blockchain Applications.	https://www.leewayhertz.com/project/leica/
5	Blockchangers	Norway	Blockchain Development& Consulting.	https://www.blockchangers.com/
6	Techracers	Delaware	Information Technology services.	https://deqode.com/about/
7	Chromaway	Sweden	Building Smart Contracts and Dapps.	https://chromaway.com/
8	OpenLedger Aps	Denmark	Building Blockchain Solutions and Products.	https://apkpure.com/developer/Openledger%20ApS
9	Ezetech	USA	Web Development and Tech Consulting.	https://apkpure.com/eze-tech-for-technicians/com.ezepostit.ezetech
10	LimeChain	Bulgaria	Blockchain Development and Consulting.	https://www.crunchbase.com/ organization/limechain#section-overview

4.1. Digital Banking

The era of totally digital banking is approaching. Most existing banks already try to use the global payments and effectively transfers them, and those who do not yet will join the trend. According to the survey, the capabilities of trading the currencies along with Bitcoin and Ethereum online will come daily. According to the study, 36 per cent of consumers go to the physical banks in 2020 [15].

4.2. Impact of Blockchain

In 2019, Blockchain technology became a more discussed topic because its personification in financial services was comparatively slower than in other fields. The future of FinTech in 2020 is most linked to Blockchain technology. Still, the main reasons are transparency and trust in technology, significantly decreasing the time needed for transactions, and improving the cash flow.

According to the opinion of experts, 77 per cent of the internet user uses Blockchain technology [16].

4.3. Digital Services

Many FinTech companies decided to break their application logic into small independent services to reduce their costs connected with delivering services. Unfortunately, it turned out that their architecture is not so endurable and managing those takes more time and money than it was previously expected [7].

4.4. Future of FinTech with Innovative Technologies

Technologies have already come to active usage while developing financial products and services. The research about the future of FinTech says that 32 per cent of FinTech firms are using Artificial intelligence techniques like voice matching systems and predictive analytics to decrease the fraud in the customer management system [10]. Such statistics are predicted to increase in 2020 and beyond, encouraging more investment in robots and Artificial intelligence solutions. The future of FinTech in the finance industry lies in the implementation of agile technologies and strengthening data security policies. In the digital era, it becomes crucial to meet the demands of technology-savvy customers and keep up with technological progress to remain competitive.

V. CONCLUSION

Innovative technology and creativity are considered essential factors for FinTech firms to enhance profitability, growth, and competitiveness. FinTech firms are always trying to develop and create new products and services by using innovative technology such as Blockchain technology which is considered a highly trusted technology that will significantly impact the FinTech sectors. FinTech firms have the strength and weak points, but FinTech firms will make colossal progress into such technology in adopting Blockchain technology. FinTech firms are investing millions of dollars in Blockchain technology. The adoption of Blockchain technology will change the financial sector due to the characteristics of this technology, notably eliminating intermediaries from the financial industry. Blockchain technology is a disruptive technology with significant features, especially making transactions without a central authority. But, Blockchain technology also has some technical challenges such as security and business risks. In this paper, we are trying to illustrate FinTech, Blockchain technology, integration of both technologies, adoption of Blockchain technology in FinTech platforms, and their challenges during the adoption of blockchain technology in the financial sector. Also, we discuss that how we can integrate Blockchain technology with FinTech firms. Using Blockchain technology, the penetration rate in ICT decreases compared to other techniques. in future, Enhance rules, thus fostering public confidence and mitigating systemic risks. Collect pertinent information on the possibilities that re-antimedicalization of technology may offer.

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