IBIMA Publishing
Communications of International Proceedings
https://ibimapublishing.com/p-articles/38DigECO/2021/3877221/
Vol. 2021 (37), Article ID 3877221

Impact of Technology on the World Finance

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* Presented at the 38th IBIMA International Conference, 23-24 November 2021, Seville, Spain

Abstract

Since the inception of the era of globalization, economic sustainability has been given significant importance, as it is one of the most crucial factors in stabilizing social, political, and environmental facets. Moreover, sustainability is a requisite in the contemporary world, which is directly related to the socio-economic as well as socio-political development. It has been asserted by the economist that economic or financial sustainability is a strategic gateway to the socio-environmental sustainability as well as the socio-environmental advancement, therefore economic sustainability must be the foremost preference of a state, at both international as well as the national level. Financial sustainability has been defined differently by the different economists. Some have considered it as an ability of the public corporations to implement the financial policies in such a way, to ensure that debt is removed, and investment is increased. Some of the economists have elaborated the financial sustainability as the ability of a government, organization, and an individual to ensure that capital is being utilized in such a way, that leads to increased investment and revenue, which ultimately leads to the social stability, economic advancement, and protection of the environment (Quayes, 2012). And therefore, one of this mechanism is the integration of technology in the financial systems at both national and international level. However, this technology has been fundamentally incorporated into the financial organizations which has greatly strengthened these organizations through new technological means including e-banking, online transactions, increased security, increased accessibility, increased communication, and increased computation of data. Hence, this innovation and the technological advancement has largely benefited the corporate organizations, and the financial institutions, enabling them to use technology for the progress and advancement of the financial systems, and for increasing the revenue.

Keywords: FinTech, E-banking, Blockchain technology, Financial Integration, Digital Currency

Introduction

Financial sustainability has been regarded as the backbone of the national receptacle of a country, as it formulates the strategic framework of the financial system, which in turn is crucial for the complete social, political, environmental, diplomatic, and geographical system of the country. Furthermore, the financial sustainability reinforces the economy to ensure that investment is being made in the right direction, leading to innovation, stability, and sustainable development (Jordão, 2017). This significance of the financial sustainability has significantly increased after the

Cite this Article as: WÓJCIK-CZERNIAWSKA Agnieszka, Vol. 2021 (37) "Impact of Technology on the World Finance", Communications of International Proceedings, Vol. 2021 (37), ISBN: 978-0-9998551-7-1, ISSN: 2767-9640. Article ID 3877221

global financial cries of 2008, in which people controlled the entire system of finances. The preconditions of this global crisis were multidimensional, resulting in the downfall of all the financial institutions and the complete failure of banks. After the onset of the crises, the governments all across the world implemented several policies to save the financial institutions and the economy of the other organizations. The rehabilitation process was a bit complicated, involving the execution and enactment of strategic measures, principally fiscal and monetary policies, but it was technology that saved the finance afterwards, and hence became an important part of the financial systems and financial institutions all across the world.

In fact, this technological revolution has changed the world entirely, affecting every type of business and enterprise. The technology has changed the conventional business models, changing the conventional ways in which businesses operated, changing the traditional modes of investment, and buying, changing every facet of the corporation through innovative means, means that incorporate technology. It has introduced new mechanisms for the corporate organizations, enabling them to solve the problems statistically and strategically. And though it has substantially affected all sectors of the business, it has been predominantly encompassed in the financial systems of the companies, leading to monetary information and economic advancement. And hence, it has significantly changed the finance, bringing innovation into the financial systems, changing the economic systems at both national and international levels. The financial institutions have been most affected by this financial technological innovation (Treleaven, Gendal Brown and Yang, 2017).

For many years the banks and other financial institutions have used the same conventional static business models, that were regarded as highly profitable. But with the advancement of these banks and other economic institutions, they were forced to introduce innovation and to implement modern and strategic ideas that would reinforce the business, thereby protecting finance. And hence, these financial institutions incorporated technology into their business, which changed the complete financial receptacle of the banks and other economic corporations, and led to the development of an innovative financial system, which was comparatively more feasible, more reliable, and more convenient for the organizations. This increased efficacy of the financial system after the incorporation of the technology led to the inception of e-banking, which included digital payments, and digital forms of money (cryptocurrency), crowdfunding, Robo-advisors, and peer-to-peer lenders (Thurner, 2018).

And as this technological advancement took over the financial sector, the significance of the people began on decreasing, as the finance is all about the algorithmic combination, which involves complex data analysis and requires the calculation of data, which is quite complicated to be done manually, and hence requires technology. It has been implied that though people were considered as an important part of every organization including the financial institutions but with the technological advancement, the importance of the people have relatively decreased. The technology has received preferential attention from the corporate organizations because of its increased efficiency, effectiveness, and efficacy. And it has been demonstrated that technology saves time, and is far more error-free than humans, the same task performed by a human in hours, can be performed by technology within minutes, or within seconds. And that's why technology has been deployed by almost all financial organizations and is deemed as one of the most useful tools in the financial sector for the undertaking daily tasks (Kabuye, 2018).

If we evaluate the significance of the technology in the financial institutions, it has offered numerous advantages, including the technological concept of e-banking and online transactions, increased security, and reliability in the financial system increased opportunities to reach the international consumers by making payments across the border, allowing the companies to outreach globally, increased financial risk management, and private or digital money.

E-Banking

If we consider the e-banking, it is principally considered as the use of computers and telecommunications to allow the transactions to be performed online over a telephone or a computer, using the internet rather than human interaction. The most significant features offered by e-banking includes the electronic transfer of electronic funds for retail purchases, automatic payroll pledges, online bill payments, automatic teller machines (ATM), and others. The concept of e-banking is relatively new and was developed in the early 21st century in the USA, and due to its effective services, and increased operational efficiency the e-banking was adopted all across the world. The success and the advancement of the banking and principally the e-banking which includes online transactions is because of the overdue evolutions in the technology, which has entirely revolutionized the banking sector and the financial system associated with this banking sector. It has been asserted by financers that these online transactions are highly indispensable and are enormously sensitive, and they must be performed through a reliant source, a source assuring accuracy as there is no room for any type of error. And this reliability and accuracy can only be achieved through technology that uses modern algorithmic combinations and statistical data to operate the business, and make transactions (Juričić, Radošević and Fuzul, 2019). And these operations cannot be undertaken by the people, or by using manual force, giving technology an upper hand over people. Moreover, technological innovation takes comparatively much less time as compared to manual force or people, and hence billions of these transactions are made all over the world, using the technology. In addition to these online transactions which facilitate the banks and the financial institutions, the incorporation of the technology in the finance has also developed a new and modern concept, banking from home or home banking, that facilities the people. Home banking allows the people to make

transactions, buy products, pay bills by sitting in their homes. And all they require for this banking is an internet connection with a mobile phone or a laptop. And therefore, the e-banking has integrated the financial systems, through an effective and efficient mechanism that facilitates the people and the corporate organizations all over the world. Moreover, e-banking has also significantly reduced the use of the paper currency, as well as the physical transfer of paper money and coinage, from people to people and from place to place. Besides this, the e-banking enables the banks and the financial institutions to keep a record of the daily transactions through a systematic process incorporating computation of data. And all these processes are then concluded in a report that is used by the banks to computer the future transactions as well as future projections. And this all system of the e-banking is possible by the use of technology and by the use of an interconnected system of the network that can perform operational tasks through comparative analysis, and by the use of algorithmic data, allowing the banks and the financial institutions to perform accurate and error-free projections (Chen, 2019).

Increased Security and Financial Integration

Besides e-banking and home banking, another significant advantage of the technological incorporation in the financial system or fundamentally finance has been the increased security which the technology has provided, by saving large sums of money and data, investments, and others. It is a common notion that finance and the financial system is always highly protected, and is the most significant asset of an organization, which is always safeguarded by the organization, not only because of the money but because of the protection of the database. The things that must be protected in the financial system of an organization include the finance principally, the data record, the mode of transactions, and the processes involved in transactions. And as a result of this high sensitivity, the nature of these transactions must be protected through increased security. And this increased security can be provided by the technology, which uses a complicated combination of algorithmic data to protect the record of the transactions and the record of the consumers to which transaction is made. Hence technology protects and secures the banking sector, making it more reliable and effective. The researchers have implied that the financial protection system uses the modern information technology to protect the data, and this modern information technology system uses a technological system that utilizes complex software and firewalls to make sure that all the data is protected and all processes are seamless and are free from external interferences. And this factor has made the technology one of the most significant assets for the finance. This technological advancement and progress, has allowed the finance to prosper, thereby offering the companies a competitive advantage, enabling the organizations to execute and enact a reliable, effective, and legitimate system, allowing these organizations to progress both economically, and professionally. This increased security is provided by block chain technology, which integrates the security system. The reason that a blockchain network is difficult to hack, is because of the complicated algorithmic data on each block in the chain, and how these blocks record the information (Eyal, 2017). If one block in the chain is changed or altered, it would indicate immediately that it had been changed, because the data of the subsequent block will be changed. Hence, to hack the regulatory system of the cryptocurrency, the hacker will have to change the entire blockchain and change the data of every block, across all of the versions of the blockchain, distributed across all the computers. These blockchains are normally monitored by an integrated network or precisely a peer-to-peer network since it is a distributed ledger, where each of the multiple participants implies a disciplinary protocol to inform and verify the addition of data to a block, as well as the production of new blocks. And this all-systematic mechanism of data input, data record, and data processing, makes the blockchain a relatively secure system (Kotishwar, 2020).

Provisions of FinTech

This integration of technology in finance is regarded as the FinTech. FinTech is broadly evaluated as the use of the new technology in the financial sector to reinforce, innovate, and improve the use of financial services to automate the operational tasks and the services. FinTech is highly significant, as it has entirely revolutionized the business world, making it reliable and convenient to operate and for this reason, FinTech is currently used by the corporate organizations, by the business owners, and by the consumers to effectively administer their financial or economic operations, financial mechanisms, and processes by the use of systematic and specialized software, by the use of computers, mobiles, and principally internet. FinTech is an assortment of finance and technology, which has substantially ruled out the people in the finance, as technology has completely taken over it. It has been implied by the technologists that predominantly technology was implemented to the financial institutions through the back-end mechanisms, whose entire objective was to benefit the organizations in performing the organizational tasks, but with the technological advancement, this conceptual framework has changed, changed to benefit the consumer by developing consumer-oriented services. And hence under these consumer-oriented services, FinTech has now evolved as it includes the integration of financial systems of different sectors, including education, retail banking, investment management, industries, fundraising and non-profit management and others (Kowalski, Lee and Chan, 2021).

If we use a broader spectrum to analyze the integration of technology in finance, it is principally evaluated as the integration of the technological advancement in the financial operations to improve the efficacy and effectiveness of the business tasks and for automating the consumer services. And this phenomenon of FinTech functions by the

incorporation of unbundling services by the corporate organizations through a developmental process of creating new markets, by increasing brand awareness. Moreover, FinTech has also been used by the companies to promote financial inclusion and to lower the operational costs, with increased transparency.

One of the most important parameters of FinTech is the assortment of the FinTech and the new technology such as artificial intelligence. This artificial intelligence is a comparatively broader encompass of the new technology since it includes numerous facets, including machine learning, data-driven marketing, behavioural analytics and others which largely facilitates the organizations in performing the business operations, and in taking effective financial decisions. Besides, FinTech has fundamentally been used with this new technology to strengthen the customer services. This has been done by the use of chatbots and the interfaces provided by the artificial intelligence, which helps the customers in the basic tasks and in lowering the cost. And because of the significance of the FinTech, a large number of companies are investing in FinTech landscapes. This is evident from the fact that in 2016, nearly 17.4 billion USD were invested in FinTech, while in 2017 nearly 83.6 billion USD were invested in the same industry., which increased o 143.37 billion USD in 2018 (Treleaven, Gendal Brown and Yang, 2017). Most of the investment is being made in the North America, and the second most investment is being made in Asia, while the USA is in the third number. And after the Covid-19, this significance has increased significantly, because of the increasing provision of the flexible working conditions, which includes teleworking and the provision of flex hours. However, since our discussion is based on the integration of the financial system by technological system, therefore we will evaluate the Fintech in terms of this financial system (Hellwig and Huchzermeier, 2019). The researchers have presented a list of areas principally a list of parameters, which represent the potential benefits of the FinTech. This list is as follows,

- Electronic banking, or e-banking
- Banking from home
- Digital currency principally cryptocurrency
- Blockchain technology, which includes Ethereum, a type of distributed ledger technology (DLT), which stores the data record on a computer network, but does not have a central ledger.
- Insurtech, the assortment of technology in an insurance company, to improve and automate the customer services.
- Open banking, which is a type or a modification to e-banking, but uses blockchain mechanism and promotes the access of the third-party (a party other than bank and consumer) on the data record of the bank, enabling the bank to develop a collaborative interconnection through an application, that creates a network of financial institutions, principally banks and the third party.
- Smart Contracts, which also uses technology in the computer programs, using the blockchain technology to atomize the contracts between the buyers and the sellers.
- Robo-advisors which incorporate algorithmic means to atomize investment and to incorporate effective decision-making mechanisms, for the financial inclusion, increased accessibility, and lower cost.
- Cybersecurity, which leads to increased protection of the data, through increased protection of databases, and the transactional record, and the transactional processes, and this is significantly important because of the increased cybercrime ad decentralized storage of data.
- Unbanked service that often disadvantages the low-income individuals, or who are financially less developed, and the traditional banks also underscore or undervalue these individuals, as some of the mainstream financial institutions.

Blockchain Technology in Finance

If we evaluate these parameters, they are explicitly related with the block chain technique, which has revolutionized the financial system through a systematic use of the technology, making the financial system more reliable and effective. Blockchain has now matured as one of the most valuable technological means in digitalization, which has different inherent uses, including the digital currency. This system is now consolidated into numerous permanent ledger operations and is helping several organizations. Hence, it is one of the most validated discoveries of the 21st century. Blockchain is an example of a decentralized database, which preserves the transactional data by employing unalterable cryptographic data, which is generally observed as the hash. A blockchain is primarily an extended list of datasets, which are referred to as the blocks, and these blocks are connected together by applying numerical algorithms of cryptography. All of these blocks consist of cryptographic data, which is analogous to the data of the consequent block. This data is particularly transactional information and a time record. This transactional data manifests the record of each of the transactions, whereas the timestamp is used to retain the record of the time, and the day on which each of the blocks was originated (Balling, Lierman and Mullineux, 2003). This presents the comprehensive data record of each of the blocks. As each block consists of the complete information of its record and the information of the subsequent block, and hence these blocks protect the data on each of these blocks, keeping the information intact. This entire network of blocs is referred to as the blockchain, which is defined as an algorithmic system for recording information in such a way, which renders it impossible or at least difficult to alter, modify, or hack the system. This fact makes the cryptography a reliable algorithmic combination, as it is entirely based on this series of blocks, whose

data cannot be changed, substituted, or altered without changing the configurational progression of the blocks. This presents the comprehensive data record of each of the blocks. As each block consists of the complete information of its record and the information of the subsequent block, and hence these blocks protect the data on each of these blocks, keeping the information intact. These blocks are correlated with each other and form a network of data, and this network is resistant to any change, once the data is recorded (I G, 2020). A blockchain is also assessed as an electronic balance sheet including the transactional data, which is transcribed and translated across the entire system of blockchain across the computer system. Each of these blocks has a certain record of transactions, and every time a transaction is made, the data of that transaction is appended to the balance sheet of the shareholder (Dhotre, 2019). And this type of decentralized database, which is controlled by several participants, is regarded as a Distributed Ledger Technology (DLT).

Automation of Business Processes

Similarly, if we evaluate the significance of the FinTech or technological integration into the finance, it has been significantly important for the atomization and commoditization of several financial practices, and mechanisms. It has been implied that technologists are increasingly using the technology for the automation of the manual processes that are predominantly resource-intensive, particularly for financially established and economically advanced organizations. This enables these organizations to reach do new customers, and to offer them effective and better services. This fundamentally allows the organizations to reach the global customers, and to provide them with services, that were once limited to the local customers. This has been possible because of two things, firstly the automation facilitated by the technology, and secondly the e-banking introduced by the banks, allowing the customers to make-transactions using their mobile phones and the internet. However, if we predominantly analyze the process of automation, researchers have asserted that Robo-advisors have largely contributed to this process, automating all the operations of the website, controlling the managerial tasks including asset allocation, enterprise advice, tax devaluation strategies, investment strategies, and other services are all provided to the customers through the online web portals, providing the companies with an investment plan, giving them a rational plan If their financial integration and financial systems. Some of these Robo-advisors include Wealth Front, Nutmeg, Future Advisor, and others, which assist the companies in serving their customers in a better and effective way, thereby enriching customer experience (Kang and Yun, 2016).

Systematic Evaluation and Commutation of Data:

Another significant advantage of the using the technology in the financial system is that it uses the data systematically and strategically, and plays a central role in the data development of the financial institutions. This data is recorded and maintained in such a way that the data of each of the customers is protected, maintaining their record, enabling the companies to systematically verify the data, making it more reliable. If we evaluate how this systematic data computation benefits the organizations, then it has been asserted that it provides a credit score to the banker, and this banking score is related to each of the customers, and the decision is taken by the banks according to these credit scores. Similarly, insurance companies also evaluate this data, and always analyze the data of each of the customers before enacting any new policy or strategy. But this system has now progressed, and this progress is fostered by the technological advancement. Technological growth has led to the development of an interconnected world, where all networks are interrelated, allowing the organizations to evaluate their customers and their behaviour before implementing any decision. This is evident from the fact that many financial organizations, particularly economically advanced insurance companies have identified modern and advanced mechanisms of generating data, that assist them to make effective decisions about price, encouraging their stakeholders to undertake smart and innovative decisions. This leads to financial promotion and integration, thereby growing the finances of the company (Allen and Koshima, 2018).

Plat-form based Capital

Similarly, another significant advantage of the incorporation of technology into the financial market has been the formation of the platform-based capital, an effective means to generate capital through the automation of the entire system. This system is currently used by numerous companies, which fundamentally connect the buyers and sellers through a platform that can grow large revenues, leading to exponential growth in finances. For instance, this system is currently used by Uber and OLX, which are the largest companies in today's world, because of their technological system (Mainelli and Yeandle, 2006).

Marketing Strategies

Moreover, the financial system has been strengthened also because of the integration of the technology in the other organizational sectors as well, dominantly the management sector, marketing sector, and the human resource management sector. Though it has bought enormous success to each of these, the marketing sector had been most successful, as technology has provided the organizations to reach the global customers, enabling them to increase the brand awareness and to expand the business in the global markets. Hence, technology has opened new gateways for

the companies and the financial integration, enabling the companies to strengthen their different segments, especially the financial system, thereby achieving the business goals, leading to organizational success (Mainelli and Yeandle, 2006).

Conclusion

The technological revolution has transformed the world completely, changing every type of industry and enterprise. The technology has revolutionized the typical business models, replacing the conventional ways in which businesses worked, breaking the traditional modes of investment, and buying, improving every facet of the corporation through innovative means, means that incorporate technology. The banks and other economic institutions have employed the same conventional static corporate models, that were considered as highly profitable. But with the advancement of these banks and other economic institutions, they introduced innovation and executed modern and strategic ideas that would reinforce the business, thereby protecting finance. This technological advancement has offered numerous advantages, including the technological concept of e-banking and online transactions, increased security, and reliability in the financial system increased opportunities to reach the international consumers by making payments across the border, allowing the companies to outreach globally, increased financial risk management, and private or digital money, primarily by the use of block chain technology, which is an algorithmic system for recording information in such a way, which renders it impossible or at least difficult to alter, modify, or hack the system. Each of these blocks has a certain record of transactions, and every time a transaction is made, the data of that transaction is appended to the balance sheet of the shareholder. And this type of decentralized database, which is controlled by several participants, is regarded as a Distributed Ledger Technology (DLT). Hence technology protects and secures the banking sector, making it more reliable and effective. Similarly, this integration of technology in the finance is also considered as FinTech, which is the use of the new technology in the financial sector to reinforce, innovate, and improve the use of financial services to automate the operational tasks and the services, including e-banking, home banking, digital currency, blockchain technology, insurtech, smart contracts, robo-advisors, open-banking, cyber security and others. the atomization and commoditization of several financial practices, and mechanisms. It has been implied that technologists are increasingly using the technology for the automation of the manual processes, which is implemented by the FinTech, through computation analysis of data. This enables the companies to systematically verify the data, making it more reliable. incorporation of technology into the financial market has been the formation of the platform-based capital, an effective means to generate capital through the automation of the entire system. And it strengthens the organizational sectors as well, dominantly the management sector, marketing sector, and the human resource management sector. Though it has bought enormous success to each of these, the marketing sector had been most successful, as technology has provided the organizations to reach the global customers, enabling them to increase the brand awareness. Hence, as a result of these all benefits offered by technology to the financial systems, the people are being neglected from the financial organizations, clearly evaluating the hypothesis, that technology is more important than people in the financial organizations.

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