Digital Transformation in the FinTech Sector

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Abstract. This paper mainly analyzed the specific application of fintech technology in different aspects, and the changes this emerging technology can bring to people's lives. In terms of the payment system, the formation of oligopoly may lead to serious uneven market competition. Although clients with personal advisers are less likely to trust the services of robots, robo-advice can provide better investment advice to ordinary people and expand the benefit group. For P2P lending, this is a new lending model, eliminating the tedious steps and high fees of the middleman. Virtual currency as an original application of blockchain is the financial derivative that threatened the financial money investment market. The author explained how to benefit more consumers through fintech technology, and the progress of technology enables customers of different classes to have better service experience. The digitalization process of financial services promotes economic development and can provide customers with more inclusive and professional financial services. Fintech has gradually changed the pattern of the financial industry, gradually weakened the role of financial intermediaries, and created a new operating system.

Keywords: Fintech; Payment system; Robo-advice; P2P lending; Blockchain.

1. Introduction

As a technological innovation in the financial industry, fintech will have a huge impact on the financial services industry in the future. It is supposed that fintech may cover and replace the traditional economic operation method in many fields, and optimize the shortcomings in the current economic operation mode. The new developing trend is driving the application of fintech in some emerging sectors, stabilizing the market operation structure, replacing the role of traditional intermediaries, and simplifying the tedious steps in the transaction process. Fintech is more inclined to the transaction results brought by the rapid and convenient process, rather than focusing too much on the intermediary platform and basic technology. For individuals, fintech can help investors reduce transaction costs when the market seeks transactions, through a collective platform to operate more efficiently, consumers will have more options, better-targeted services, and lower market price. For enterprises, fintech can help improve market information, reduce the impact of negative externalities and easing the finance restrictions on the enterprise. High-speed computing, the advancement of data analysis technology, has made rapid changes in the financial industry. Financial technology helps investors diversify risks and allocate capital. Systemic risks are evolving, new lending methods may improve credit quality, and a large number of technical support and applications can reduce costs, improve capital efficiency, and create new economic functions.

This paper will further illustrate the tremendous innovation brought by fintech through four specific examples. The payment system changes the traditional structure of the original market, provides a more open consumption platform for customers around the world, promotes beneficial innovation and competition, and creates more opportunities for buyers and sellers. as for robo-advice, this new type of technology expands the income group, so that wealth advisory services are not limited to the rich. Ordinary people can also build personal financial advisers through the platform of robo-advice. More sophisticated algorithms can provide customers with more accurate investment advice and help them make better choices. For p2p lending, this is a new lending model, eliminating the tedious steps and high fees of the middleman, as it sounds, the borrower and the lender directly transact, the peer-to-peer service is faster and more convenient. Virtual currency in blockchain technology has become one of the hottest topics in today's society. The author will explain in detail the advantages and disadvantages of virtual currency in replacing traditional currency, and whether

we can overcome these difficulties in the future, so that virtual currency gradually becomes the mainstream currency in the market. Moreover, this paper also mentioned some applications of blockchain technology in other fields.

2. Payment System

Nowadays, one of the most popular applications of fintech is the payment system. The system offers a way to transact online, from non-traditional bank accounts to electronic money. Transactions can take place between a firm and a customer, or between a consumer and a producer. Now the most popular payment systems include Alipay, wechat Pay, Taobao and Amazon Pay. Online transaction payment can provide customers with more diversified choices and reduce additional costs in the transaction process. Buyers do not need to arrive at the actual transaction location, which can improve efficiency. Transactions can be completed by convenient password input at the time of payment, omitting the complex transaction procedures of bank operation.

In addition to its use in purchasing platforms, the payment system can also play a role within the banking system. With the continuous digitalization of banking services, banks have better performance and can provide customers with better and accurate services. In addition, all the operations of electronic payment can be carried out on the customer's mobile phone or computer, which makes the payment process more convenient and greatly reduces the cost of paper documents. In the long run, less paper documents can contribute to the cause of environmental protection.

Cash transaction gradually shows some defects in the transaction process. As people's demand for transactions increases, some developing countries may not be able to provide enough offline transaction platforms or banking institutions. However, the abolition of cash as a medium of exchange will not weaken the role of money as a measure of value in transactions. Cashless payment by online banking can still guarantee 1 the circulation of goods, the flow of cash, and the speed of economic development. The development of online banking promotes economic growth. Take a survey in Malaysia, which reported a significant increase in the use of online and mobile banking apps since April 2020. This may be due to the cashless policy promoted by the Malaysian government. Research shows that people are more inclined to use credit transfer to purchase goods through very convenient procedures. Since the promotion of online banking in Malaysia, more and more people are more familiar with online operating procedures, which promotes the popularization of payment system in the fields of credit cards, electronic wallets and credit transfer [1]. However, online payment may reduce the diversity of suppliers, and the market may face an oligopoly situation. For example, Apple Pay accounts for over 75% of contactless payments in the US [2].

3. Robo-Advice

Robo-advice is a kind of emerging technology that helps people when they are facing trade-offs and making financial decisions. Robo-advisors help clients collect and analyze large amounts of data, and provide individuals with alternative recommendations in an automated way. In the past, wealth management services were only available to wealthy investors, but now with the advent of Robo-advisors, investors can enjoy equal treatment. In addition to lower prices, Robo-advisors also show superior characteristics to human wealth advisors in many ways. Human advisors may criticize investors' behavior with subjective opinions, not serving every customer fairly. Moreover, human advisors have limited energy, they may have limitations in thinking and cognitive abilities. Robo-advice can help customers make choices in detail, such as how much to save and how much to spend each day, how to save money in the most reward, and how to avoid taxes to the greatest extent.

Since robo-advice services are fully automated and the operation of this service becomes more popular and stable with the development of technology, robo-advice will charge a lower consulting fee than human financial advisors, so that some people with poor financial conditions can also get private advice. On the other hand, Robo-advice evaluates the needs of customers over the long term

and improves algorithms, so as to understand the needs of customers better than human services. On the regulatory side, Robo-advice is easier to be overseen by regulators, since robots are separate from the possible inefficiencies or miscalculations in human service. For some customers who have never been able to fully trust Robo-advice's services, the platform can provide the option of human-computer interaction, when it is difficult to make decisions. Customers can call some human consultants for consultation, and the robot only plays an auxiliary role.

According to a survey report, people who don't own a lot of indexed funds and don't have much knowledge of investment strategies tend to benefit more from Robo-advisors. The report shows that the cash share and the transaction volume at the time of registration shows a positive correlation, indicating that people who can get a lot of income in the transaction generally hold a large amount of cash, they do not have the awareness of converting their assets into an investment. For some customers who are just trying to invest, Robo-advisors can introduce services to them well and guide them to the right way to manage their finances. Conversely, more experienced people benefit less from the robot's recommendations. These people usually hold a large amount of assets, and they usually have their own personal property advisors, so they may not have enough trust in Robo-advisors [3].

4. P2P Lending

As the automation of lending services increases, customers are more inclined to choose new hospitality services. Lenders can understand the operation mode of the platform through data information, and find the platform that makes the most profit through the comparison of multiple platforms. The variety of data sources on the web provides lenders a variety of options that they don't have to be as hesitant as they are offline because of the limited options. For offline institutions, they need higher maintenance costs and higher customer activity, which leads to higher service charge for offline lending services, harming the interests of customers. With the development of the era of big data, banks are committed to establishing their services as online activity platforms. For example, an application of the online service is the mobile banking app, with the software, customers can check their account financial management anytime, anywhere. Some customers may prefer the digital solutions of current banks instead of the emerging Fintech solution. Therefore, Fintech lenders and banks can establish cooperation, mutual benefit, fintech to the bank to share their technology and platform, banks to fintech to provide more mature experiences and solutions [4].

Another application of Fintech is peer-to-peer lending. peer to peer lending is a financial institution that allows individuals to obtain loans directly from others, eliminating the middleman, connecting borrowers and investors directly, and enabling transactions by setting some terms. This method of borrowing sets a universal interest rate by checking the creditworthiness of the borrower, which has certain benefits for both the borrower and the lender. For lenders, they can set higher interest rates because they cannot be sure that the lender will default or not, and there is no doubt that higher interest rates represent higher income. For borrowers, those with better credit can apply for lower interest rates than banks. Moreover, by eliminating the cumbersome steps of traditional banks, borrowers can borrow more easily and quickly for all purposes. Surveys have show that the P2P lending has grown rapidly from a small base. In the UK, P2P lending now represents about 14% of the new lending to SMEs. Estimates suggest that more than half of these credits were unlikely to have been provided by existing banks [5].

The main advantage of P2P lending is that the lending relationship can be established directly between the borrower and the lender, rather than running through the platform. Borrowers need to provide their own credit information before borrowing, and they can obtain a capital loan after the platform releases and approves. For lenders, the platform will help analyze the risk of the investment, eliminate possible credit risks, and rate the borrower's credit. As more and more people tend to use P2P Lending services, the platform's risk assessment system is gradually becoming comprehensive. Online lending platforms will now consider tens of thousands of data nodes, including tracking

borrowers' usual consumption habits and consumption patterns, to gain a deeper understanding. The platform recommends lenders to invest their property in a decentralized manner, not just to pursue a better return on one particular investment, although the probability of risk has become very small, but for the safety of personal property and reduce the difficulty of recovering assets, providing multiple loan paths can indeed diversify risks.

In order to attract more customers, in China, some investment platforms even promise investors a fixed return on principal, and if investors urgently need to use the funds, they can withdraw 90% of their outstanding investments with only two days' notice. In this way, the investment method of withdrawing money at any time gives customers the return of time deposits in the form of demand deposits. From My Perspective, another advantage of P2P lending is that it can establish a connection directly between borrowers and lenders. If the borrower contacts the same lender for a long time, both parties will build confidence in each other, establish a good cooperative relationship, and over time, the credit quality of both parties will become very reliable, and customers can even become friends. In this way, the P2P lending service provides a good platform for both parties to make friends.

For borrowers, P2P lending may not provide as much support as traditional banks when they cannot repay their debts within the stipulated time. Furthermore, compared with traditional banks, P2P lending will have a higher interest rate in the initial stage, mainly because the loan is unsecured. However, if the borrower has a higher credit score, P2P lending can appropriately lower the interest rate for him. Although there are still some problems in P2P lending at this stage and better handling fees are charged, there is no doubt that p2p lending has gradually become the mainstream direction of future lending methods, and more and more high-quality users choose to use peer-to-peer lending.

5. Blockchain

The Austrian-born economist Joseph Schumpeter pointed out the “creative destruction” which means that disruptive innovation can cause the replacement of the traditional economic system and constitution. Blockchain, as an emerging technology, is characterized by open and transparent data, hidden transactions, instantaneous exchange, and decentralized. Based on these advantages, the information which is converted by blockchain is encrypted and without intermediaries. The unique contribution provides the opportunity for the blockchain to replace the old method in which the global economy operates. However, the creative destruction by blockchain might bring various kinds of challenges to the economy. As a global currency, virtual currency is one of the largest and most original markets of the blockchain economy. However, it has become a speculative product that is easily affected by government regulations. Virtual currency has been closely concern by the government since it appears. Here are the reasons.

First, the government does not want to lose control of the currency. With the development of virtual currency, it will gradually replace traditional currency in the market. Unlike traditional currencies, the decentralized characteristic of virtual currencies does not require the control of a central authority. However, the government needs monetary control. They use monetary policy as a tool to balance economic development. They use easy monetary policy to boost prosperity or fight the recession. To elaborate, the government increases the money supply in the market by purchasing reasury bonds, establishing capital construction, and handing out welfare and subsidies. On the contrary, the government uses the tight money policy to respond to high inflation, such as by selling treasury bonds.

Second, the virtual currency still has some vulnerabilities. “Firstly, scalability, Bitcoin block size is limited to 1 MB now and a block is mined about every 10 mins. Subsequently, the Bitcoin network is restricted to a rate of 7 transactions per second, which is incapable of dealing with high frequency trading” [6]. “Moreover, it has been shown that privacy leakage can also happen in blockchain even when users only make transactions with their public key and private key” [7]. Therefore, unstable data dissemination and potential security problems make blockchains vulnerable. Due to those technical vulnerabilities, the government might stipulate some policies based on its instability, which

will bring challenges to the developing prospects of the virtual currency. Take China as an example, the Chinese government enjoys broad regulatory authority that it can bring to bear on domestic Bitcoin users, exchanges, and miners. Regulators have issued policy decrees to directly influence the exchange and mining sectors and also targeted Bitcoin indirectly through externalities like energy prices [8]. Based on those regulations, the price of virtual currency decreases by a large degree. Werner stated that people are "risk-aversion", and their interests and confidence will be weakened greatly due to the restricted policies [9]. With the supply-demand model, the demand for virtual currency will decrease, while the supply still remains the same or even grow. Consequently, there will be a low equilibrium price. Moreover, the majority of the virtual currency market are the investors and the capitalists, with the price of Bitcoin falling quickly, many investors' accounts had evaporated which will cause economic instability.

On the other hand, blockchain technology can also be applied to many other industries. The part most likely to have a great impact on the global economy is the replacement of intermediaries since it could change the structure of how the traditional economy operates. In the 1970s, the economist Douglass North, another Nobel laureate in economics, showed that some 45 percent of the United States gross national product was devoted to the "transaction sector" [10]. Banks are the most typical example of the transaction sector, which provide a reliable platform for sellers and buyers to trade and help them deal with the complex procedure when exchanging. Blockchain with the unique characteristic of decentralized and fast transition speed will substitute those transaction sectors like banks. Although applying blockchain technology can reduce the transaction cost and eliminate the exchange delay, lots of labor will lose their job as the intermediaries disappear. Among the "45% of the GNP", a large amount of money went to hiring the staff and maintaining the bank operation [10]. If the middleman service is completely substituted in the future, sectors that require labor are completely replaced by technology, and the role of artificiality will be weakened which will lead to a high unemployment rate which will bring another challenge for the market.

6. Conclusion

To sum up, fintech, as an emerging technology, is changing the global economy. Although there are still some problems in various applications at the present stage, according to the general trend of development, some small problems can be removed through government control and technology modification, which will not affect the future development prospects of fintech.

As for the payment system, the formation of oligopoly, which may lead to serious uneven market competition. However, the situation of oligarchy is inevitable. Under the certain control of the government, the government will control the monopoly power of oligopoly through corresponding laws and regulations, and the market will be in a relatively balanced state. Moreover, for customers, they are more likely to consume under a brand that has generated trust, and the products of large companies provide customers with more dependence and product guarantees. As for robo-advice, although clients with personal advisers are less likely to trust the services of robots, robo-advice can provide better investment advice to ordinary people and expand the benefit group. Although p2p lending may have the situation that borrowers do not keep faith, resulting in the loss of funds for lenders, due to the platform's use of credit borrowing, with the continuous improvement of government control provisions, this situation will be less and less. Virtual currency as an original application of blockchain is the financial derivative that threatened the financial money investment market. Meanwhile, many industries are trying to use Blockchain as the foundation technology for their digital transformation. First, because of blockchain technology's decentralization, the disappearance of some intermediaries in the industry would bring waves of layoffs and that would be a big challenge for the market. On the other side "driving organization-wide innovation is a challenging process that requires a solid foundation, which most organizations lack". Fast and transparent superiority does not apply to every industry. Some industries prefer security to speed. Thus, blockchain technology not only brings unlimited opportunities to the market but also challenges

and fluctuations. Every industry should carefully evaluate the feasibility when using new technologies to transform to avoid creative destructive, and not get greater losses because of blind innovation.

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