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Technological Innovation in the Financial Services Industry

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Abstract: With the rapid development of global network platforms and science and technology, some emerging financial technologies (Fintech) have been applied to commercial activities and promoted the development and evolution of business models to a certain extent. However, the problems exposed at the same time have not received full attention. Based on the application examples of financial technology (e.g., online payment, peer-to-peer lending, robo-advisor, and blockchain) collected this year and the comments of some authoritative persons, this paper will objectively analyze financial technology from the aspects of current situation, development potential, risks and limitations. The study found that although the lack of financial technology has significant advantages in business activities, its risks and limitations are also a major challenge to the future development of financial technology in a period of rapid development. Relevant technical personnel are needed, and the cooperation between enterprises and the government is the healthy and sound development of financial technology.

Keywords: financial technology, potential, limitation

1. Introduction

Financial technology has had a profound impact on global economic activities. The rapid development of Internet, mobile devices and big data analysis technology has set off a wave of digital transformation of a great number of enterprises. Some new fintech motivate the innovation of trading of today's market, such as online payment, P2P, artificial intelligence and blockchain. These emerging technology products can make trading activities in the financial market more efficient, automated and diversified, and gradually become the mainstream of current and future trading methods. Despite statistics, there is a noticeable growth in Web3 VC deal from Q1 2019 to Q1 2022 (about 370%), higher than any other tech sectors. Share of fintech enterprises increase 66% between 2020 and 2022 [1]. Therefore, fintech is recognized as the main innovation trend of the future business system, with considerable development space and investment potential. The Australian government has also declared that they support for the development of fintech in the country. However, the large-scale application of financial technology also faces risks and challenges that cannot be ignored. Recently, there have been many discussions about the risk and limitations associated with the application of fintech in business activities.

Some of them are analyzed based on actual cases that occurred in recent years. However, neither development advantages nor potential problems. Since the use of most financial technologies is only in the initial stage, some are even in the theoretical stage and have not yet been put into practice. Most

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of people's analysis of financial technology is based on the evaluation of financial technology from the Internet and self-media. Most of them are visions of the future rather than an objective perspective based on fintech. What is the real status of financial technology in the world today? What are its advantages and possible limitations? Research on these issues is of great significance to the development and application of financial technology in business activities.

This study analyzes the impact of financial technology on business models based on the application of financial technology in today's global market and related research literature, trying to put the hot discussion issues of the society on financial technology under an objective and reasonable analysis. This study systematizes the impact of fintech on business activities. First, four of the most popular fintech products will be selected, including online payment, P2P, artificial intelligence and virtual currency. The implications are then subdivided into advantages, opportunities, risks, and limitations based on actual cases and relevant research literature.

2. Online Payment

With the advancement of technology and the vigorous development of the world economy, online payment systems have emerged as the times require. It has gradually replaced traditional cash, credit card and other payment methods, and has become the most important payment method for people at present, including Alipay, WeChat payment, Apple Pay and so on. Now people's demand for online payment is also increasing. Online payment has also developed rapidly. China is the country with the largest online payment market. In 2021, Bank of China processed a total of 274.969 billion electronic payment transactions, an increase of 39.744 billion transactions compared with 2020, a year-on-year increase of 16.90% [2]. Compared with traditional payment methods, online payment is more convenient and faster. Online payment transfers are fast and usually arrive instantly. Funds are transferred between different accounts in a short period of time through the payment platform, which greatly improves the efficiency and security of capital circulation. At the same time, the online payment system can form a mutually reinforcing relationship with the e-commerce, which will help promote the market economy. At the same time, this advantage can enable the online payment system to form a mutually reinforcing relationship with e-commerce, which will help promote the market economy. The use of online payment in conjunction with online shopping has brought about tremendous changes in shopping patterns. Shopping just got faster and more efficient. Customers can remit funds to the seller's account in a short period of time, which improves the efficiency of shopping.

Although online payment has great potential for development, the current risks and limitations it faces also need to be faced up to. The efficiency and convenience of the online payment system may increase the risk of money laundering and tax evasion [3]. Without strict regulatory measures, online payments may be used to engage in illegal activities such as money laundering and tax evasion. For example, money launderers can quickly move funds from illegitimate sources through fake transactions and transfers. And the anonymity of online payment will also facilitate it. Similarly, some merchants will also use these methods to cover up part of the real sales to evade taxes. On the other hand, the large-scale promotion of online payment systems requires relatively high infrastructure requirements. It requires a lot of technological equipment and a sound and reliable network platform. At the same time, professional technical personnel are needed to upgrade and maintain the system. But these are challenges for some developing countries. These required conditions are relatively scarce in such areas, and there are not a large number of banks to provide a foundation for capital circulation. A study by Mishra (2008) showed that in Nepal, electricity and telecommunications are not available throughout the country. This will limit the development of online payment [4]. In addition to infrastructure, people's confidence in online payments is also a problem. Although more and more people are beginning to use electronic payment methods such as WeChat Pay and Apple Pay, they still worry that their property safety and information security cannot be guaranteed. For example, because the

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online payment system needs to be tied to their own bank accounts and personal information, all users will worry that this will give cybercriminals an opportunity. In addition, news about telecommunications fraud and network security issues has been exposed in recent years. This further increases people's concerns about using online payments.

3. Peer-to-Peer Lending

The vigorous development of the global economy has increased the demand for market liquidity. This has created room for a new type of fintech platform - P2P. P2P platform (peer-to-peer lending platform) refers to a mode of direct financing that connects the capital demander and the capital provider through the Internet platform. In the past few years, P2P platforms have expanded rapidly. The market value of the global P2P online lending platform in 2021 is as high as 112.9 billion US dollars, and it is expected to increase to 525.3 billion US dollars in 2027, with a compound growth rate of 28.1% from 2022 to 2027 [5]. P2P Finance News also predicts that P2P will remain a strong financial sector in the UK. Earlier this year, Innovate Finance's 36H Group reported that the UK's P2P lending market could grow by 120% in 2021 [6]. The industry is expected to grow 11.8% year-on-year by the end of 2002. P2P platforms increase the effectiveness of the market. Because it provides a new type of financing channel. Compared with traditional bank loans, small and micro enterprises can borrow directly from investors, avoiding cumbersome and complicated lending procedures, increasing the liquidity of market funds, and further promoting the development of the capital market and economic growth. Moreover, the loan interest rate is relatively low, and the low-cost lending platform provides opportunities for more entrepreneurs.

P2P network lending platforms still have certain risks and limitations in the cash financial market. The P2P experience model is relatively new, and there is no perfect legal policy to supervise it. This will lead to the security risk problem of P2P platform. The P2P platform is an intermediary platform, which usually connects the payer and the borrower to achieve profit. Due to the need to upload the personal information of both borrowers and lenders, it is easy to cause the risk of information leakage. Moreover, it is difficult for the lending platform to ensure the authenticity of the information. Lawbreakers will take advantage of this to carry out illegal activities such as fraud. By providing false information to establish a large number of head accounts to quickly borrow a large amount of illegal funds, this is called "shadow banking" [7]. The late matching after the borrower and lender are bound is also a challenge for the P2P platform. Although the steps of traditional bank lending are relatively complicated and require a large amount of bank customer information, it also lays the foundation for efficient and reliable customer matching. The bank brings together the borrower's funds and the customer information of both borrowers and lenders in the capital market, and can quickly and efficiently lend funds to the borrower, increasing the efficiency of capital circulation. However, P2P only provides a platform to link borrowers and lenders, and it is difficult to ensure the matching of supply and demand of loan funds. This may result in excess capital flow for borrowers and difficulty for lenders in raising sufficient funds. Moreover, the threshold of the P2P platform is relatively low, and the customer information is not accurate and perfect. The security of customer rights and interests will therefore be at risk. For example, criminals will provide false identities to defraud loan funds, causing customers to suffer losses. The occurrence of a large number of related cases will gradually destroy people's confidence in the P2P platform and seriously restrict the development of the P2P platform [8]. Since 2012, Chinese P2P platforms have begun to expand wildly, with about 5,000 operating platforms at the peak. However, due to the regulatory vacuum, illegal fundraising, fraud and other chaos emerged one after another, the P2P industry has experienced three thunderstorms. Since the supervision was cleared, the number of P2P online lending platforms has completely returned to zero [9].

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4. Robo-Advisor

Artificial intelligence has always been a hot topic in science and technology. When it comes to artificial intelligence, people will automatically think of self-driving cars, house smart housekeepers, mobile assistants, etc. With the continuous advancement of technology, artificial intelligence has gradually been applied to other industries. Recently, artificial intelligence has been combined with business activities and has achieved certain results. Accenture analyzed that in 2021, the executives of the world's 2,000 largest companies who participated in the AI discussion conference believe that the possibility of their company's stock price rising is expected to increase by 40% [10]. Current research shows that AI proficiency in only 12% of enterprises applying AI technology can bring superior profit growth and business transformation to the company. Through Eisen's machine learning model, they predict that the proportion of AI successful people will increase from the current 12% to 27% in 2024. The mature application of artificial intelligence has changed from "can" to "when" the problem solved [10]. Artificial intelligence has great potential for development in the capital market because of its intelligent processing modules and the computing power and accuracy of computers. AI is changing investment patterns by analyzing vast amounts of data. By collating and analyzing a large amount of historical data, artificial intelligence can predict the future market, give investors some suggestions, and adjust the investment portfolio according to the forecast results to maximize returns. Compared with traditional manual analysis, AI analysis is faster, more accurate and more objective. According to the results of the analysis, artificial intelligence can carry out automated transactions according to the investment portfolio, which greatly improves the investment efficiency [11]. The transformation of investment banks is the most representative example of the application of artificial intelligence in business activities. In addition to simply pursuing revenue maximization, artificial intelligence can also provide customers with customized services. It can give targeted advice to investors according to the investment preferences of customers. For example, if the customer is a risk averse, then artificial intelligence will increase the reference proportion of project risk. In this mode, artificial intelligence will first consider the risk factor of investment projects rather than the rate of return. J.P. Morgan uses artificial intelligence technology to conduct big data analysis to improve its investment portfolio, predict market conditions and give customers more valuable investment advice [12].

Some have reservations about the use of artificial intelligence in business. Tim claimed that people in the news of AI's major achievements will forget that AI as an emerging technology has limitations in machine learning, its subsets and deep learning [13]. AI systems rely on large amounts of data to learn. Once the data source is inaccurate or missing, it will lead to deviations in the system model, so that artificial intelligence will have errors in predicting future market trends. These erroneous recommendations can be fatal to investors. AI models are also affected by other factors, such as device performance and computer resources. If the market is highly dependent on artificial intelligence models, it will also give hackers an opportunity. They will hack into the system to maliciously tamper, steal data or destroy the system, causing heavy damage to the financial market. These are all factors that cause the instability of artificial intelligence systems. In addition to external factors, the artificial intelligence model itself also has limitations in market analysis. Although the artificial intelligence system can process a large amount of information from an absolutely objective perspective, it may not be able to fully understand the market environment and information when making trading decisions. After all, the market is based on people, and the absolute rationality of AI makes it unable to understand the consumer psychology of customers. When the customer's consumption behavior is contrary to the calculation logic of AI, it may be difficult for artificial intelligence to give accurate predictions.

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5. Blockchain

The concept of virtual currency formally appeared in a paper titled "Bitcoin: A Peer-to-Peer Electronic Cash System" published by a pseudonym Satoshi Nakamoto in 2008 [14]. In January 2009, a programmer or program group named Satoshi Nakamoto created Bitcoin for the first time, and it is also the most traded and well-known cryptocurrency today. The development of virtual currency shows a trend of continuous innovation. Since the advent of Bitcoin, some new cryptocurrencies have also emerged, such as Ethereum and Dogecoin. Virtual currency has experienced great development and changes since its inception. With the advancement of technology and the recognition of the financial community, virtual currency has been recognized to a certain extent and widely invested and used. Since its launch in 2009, the price of Bitcoin has risen to as high as $60,000 after experiencing several fluctuations. As an open source blockchain platform, Ethereum provides a smart contract system that enables decentralized applications and digital currency transactions. Ethereum's token Ether is also sought after by investors due to its wide range of application scenarios, and its market value has exceeded 200 billion US dollars.

The risk and potential of virtual currency coexist. Due to the lack of corresponding perfect regulatory policies, the virtual currency market has also exposed many problems in the process of rapid expansion. There are huge differences in the situation of virtual currency in different countries, and regulators have not made comprehensive regulations, which brings great uncertainty to investors. And because of its anonymity, cryptocurrencies are easy to circulate in illegal activities such as gambling and drug trafficking. In 2011, Bitcoin was considered the first currency to gain widespread use on the black market. The skyrocketing price of Bitcoin in 2013 attracted a large number of investors, but at the same time hackers and scammers also took notice of the virtual currency market. The Mt. Gox exchange used to be one of the exchanges with the largest trading volume of Bitcoin, but in 2014 it was hacked and led to bankruptcy. On the other hand, cryptocurrency is a virtual product of the Internet and has no real value. This makes cryptocurrencies prone to bubbles. The price fluctuations in the virtual currency market are relatively violent and are easily affected by factors such as market demand, supply, and investor confidence. Moreover, cryptocurrencies are based on network technologies such as blockchain, and factors such as network security and technical failures will also seriously affect the market.

6. Conclusion

Through research, this paper finds that financial technology has an increasingly profound impact on global economic activities, and its development potential and limitations are obvious. Financial technology provides a new business transaction model that makes transactions more diversified and efficient. But the risks and limitations it brings cannot be ignored. Enterprises and technicians should adopt a more cautious and objective attitude towards the application and development of financial technology, face up to its potential problems and make improvements. Then cooperate with the government to formulate sound regulatory policies so that financial technology can promote commercial trade with a good trend. The contribution of this paper is to objectively analyse the impact of financial technology on business activities in terms of advantages and challenges based on current examples. It is beneficial for market participants and other relevant personnel to further understand the current status and basic attributes of financial technology. Finally, this study does not fully consider public attitudes towards fintech. Consumer psychology of demanders plays a very important role in the study of market orientation. The foothold of an emerging thing often also depends on the acceptance of countless individual consumers. In the future, global citizens' views on financial technology can be fully included and classified discussions can be conducted to facilitate further in-depth research on this topic.

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References

[1] *Fintech and the Future of Finance. World Bank. https://www.worldbank.org/en/publication/fintech-and-the-future-of-finance, last accessed 2023/03/13.*

[2] *Suryono, R., Budi, I., & Purwandari, B.: Challenges and Trends of Financial Technology (Fintech): A Systematic Literature Review. Information, 11(12), 590 (2020).*

[3] *Khan, I., Olanrewaju, F., Baba, M., et al (2017). A Compendious Study of Online Payment Systems: Past Developments, Present Impact, and Future Considerations. International Journal of Advanced Computer Science and Applications, 8(5): 256-271 (2017).*

[4] *Mishra, B.: The Development of E-Payment and Challenges in Nepal, 159-168 (2008).*

[5] *Peer to Peer (P2P) Lending Market: Global Industry Trends, Share, Size, Growth, Opportunity and Forecast 2022-2027, Research and Markets (2022).*

[6] *Gaw, K., & Gaw, K.: British P2P "remains powerful." Peer2Peer Finance News. https://p2pfinancenews.co.uk/2022/12/13/british-p2p-remains-powerful/, last accessed 2023/03/13.*

[7] *Suryono, R., Purwandari, B., & Budi, I.: Peer to Peer (P2P) Lending Problems and Potential Solutions: A Systematic Literature Review. Procedia Computer Science, 161, 204–214 (2019).*

[8] *Han, L., Xiao, J., & Su, Z.: Financing knowledge, risk attitude and P2P borrowing in China. International Journal of Consumer Studies, 43(2), 166–177 (2019).*

[9] *Reflection on P2P: From everywhere to zero. Sina Finance. https://finance.sina.cn/zl/2020-11-30/zl-iiznctke3925198.d.html?vt=4&cid=79615&node_id=79615, last accessed 2023/03/13.*

[10] *The Art of AI Maturity: Advancing from practice to performance. Accenture. https://www.accenture.com/au-en/insights/artificial-intelligence/ai-maturity-and-transformation, last accessed 2023/03/13.*

[11] *Walczak, S.: Artificial Neural Networks and other AI Applications for Business Management Decision Support. International Journal of Sociotechnology and Knowledge Development, 8(4), 1–20 (2016).*

[12] *Artificial Intelligence. J.P. Morgan. https://www.jpmorgan.com/technology/artificial-intelligence, last accessed 2023/03/13.*

[13] *Chui, M., Manyika, J., Miremadi, M.: What AI can and can't do (yet) for your business. McKinsey Quarterly (2018).*

[14] *Nakamoto, S.: Bitcoin: A Peer-to-Peer Electronic Cash System. www. Bitcoin.org, last accessed 2023/03/13.*