

# Fintech and Digital Transformation: Accelerating Innovation in Financial Services

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**Abstract.** This paper focuses on the progress made in the field of financial technology as a result of digital development. The study highlights several major areas of financial technology and analyzes its risk level and future prospects. The research indicates that the areas of online payment and P2P lending are advancing successfully, and their respective legal and regulatory systems are relatively well-established. However, the development of Robo-Advisor and Blockchain faces significant challenges due to uncertainty and a lack of clarity regarding regulatory frameworks. The emergence of ChatGPT has disrupted the traditional understanding of Robo-Advisor, presenting new opportunities for development. On the other hand, the development of products based on blockchain technology poses a great risk as it is challenging to accurately determine their intrinsic value. Overall, digital development has greatly impacted the financial technology industry, and the study emphasizes the importance of understanding the risks associated with new technologies. The research recommends that regulators should work towards creating clear and comprehensive regulatory frameworks to promote responsible innovation in the financial technology sector.

**Keywords:** Online payment; P2P lending; robo-advice; blockchain.

## 1. Introduction

The outbreak of COVID-19 has accelerated the development of global financial technology and also brought new development opportunities for the digital transformation of various industries. For one thing, digital transformation has become a global consensus, and countries have issued national digital strategies. Moreover, the financial industry is an information-intensive industry, which has a huge market scale. Promoting the digital transformation of the financial industry can bring potential economic value. Another thing, COVID-19 has greatly affected market demand. Traditional financial services cannot meet the growing demand for digital finance. At the same time, the development potential of financial technology has been recognized by investors and is favored in capital market investment [1]. According to the statistics of the Zero One Think Tank, although global financial technology investment declined in 2022, the momentum of venture capital investment is still strong.

Technology is changing customers' behaviors and their understanding of the finance industry. Fintech provides a substitute way for traditional financial services for potential clients and affects many different areas of financial services, including online payment, P2P lending, Robo-Advice, Blockchain, and so on. Digital transformation also presents its core values. For one thing, digital transformation injects vitality into traditional industries and improves output value, which is conducive to economic recovery after the epidemic. In addition, it can promote sustainable development, achieve innovation-driven and focus on the future. For another, digital transformation is conducive to industrial optimization and upgrading, and structural transformation. In addition, it helps to reduce business costs and improve the efficiency of capital utilization [2].

Nowadays, the digital development of finance is very rapid, but the development of global financial technology still faces various challenges. Especially in financial supervision and risk control. The digitalization of many financial services has led to additional complexity and opacity, and when new entrants exceed the scope of supervision, it may be difficult to assess risks. Besides there are various new risks such as technology risk, data risk, fraud risk, model risk, and network security, which cannot be ignored, and all pose a threat to financial stability [3]. Based on the background of

digital transformation and development, this paper expounds the development status, future development, and risk challenges of several major financial technology fields.

## 2. Online Payment

With the development of Internet and e-commerce, there are a variety of electronic payment choices, including virtual credit cards, mobile payment, e-cash and so on. In addition, the services provided by mobile payment have become increasingly popular, and cash payment systems have been gradually replaced by electronic payment systems. The development history of currency, to some extent, is the evolution of a payment mode. The evolution from the original barter to paper currency is not only conducive to the expansion of transaction scope and the improvement of transaction frequency, but also improves the efficiency of payment and the security of funds in long-distance transactions. Paper money is much more portable than metal money, but when the amount of money is too large, there is still inconvenience. The emergence of electronic money has solved this problem well. In essence, there is no difference between electronic money and cash. Both of them are backed by the credit of the state, and electronic money is only the digital embodiment of cash. However, money has promoted the development of payment mode to a large extent from entity to virtual. The emergence of third-party payment has solved the problem of distrust between buyers and sellers of online transactions [4].

Compared with traditional ways that using cash, online payment is a powerful way that people do not need to make face-to-face deals, but transfer funds directly into the accounts. Thus, people can buy products online and make transactions instantly. In addition, it reduces disputes caused by dishonest behavior between buyers and sellers. Apple Pay is the one way to pay. It was launched in the United States first, and then developed to many other countries, such as Australia, Canada, and China [5]. Apple Pay is faster and easier than using cards or cash and is accepted on millions of websites and apps. Besides, Apple Pay uses a device-specific number and unique transaction code that ensures privacy and security. Alipay is the world's leading independent third-party payment platform. Alipay is dedicated to providing a payment way which is simple, security, fast and convenient. Users have to authenticate with their real name and provide identity information in order to improve security and credit of account owners. Besides, Alipay also have other services, including credit card repayment, topping up mobile phones, personal finance and many other areas. To some extent, it greatly facilitates people's life.

However, the risk of online payment is an issue that cannot be ignored. If the payment password is leaked, anyone else can pretend to be cardholders and consume through the Internet. Therefore, it will bring losses to cardholders and this problem is also a major concern about the security of online payments. In addition, online payments platform owns a huge amount of personal information since people need to agree and authorize privacy. Thus, much information about consumption records and consumption habits are recorded. It is very dangerous if privacy is leaked to illegal people. However, due to the large scale of third-party payment and the gradual acceleration of the establishment and improvement of the legal system in recent years, China has introduced a series of practical regulatory measures. The security of information and funds has been better protected, and the probability of users suffering from fraudulent transactions has been reduced. Therefore, the online payment field is booming at home and abroad [6].

## 3. P2P Lending

P2P lending is the most popular type of crowdfunding. It is an abbreviation of peer-to-peer lending, which is a model that concentrate a small amount of funds and then provide more loans to individuals or enterprises in the form of pooled funds to lend people in need [7].

P2PLending was launched in the United Kingdom first, in 2005. Its development scale is expanding and growing rapidly. In the UK, there are not a few P2PLending platforms, and the market

is relatively concentrated. Zopa, FundingCircle and RateSetter have a relatively high market share. In addition to initially meeting the borrower's credit card overdraft repayment and personal debt restructuring financing needs, it also expanded more product forms, such as personal loans, SME loans, professional loans and many other fields. The good development of P2PLending in the UK is due to the strong support of the UK government and the good operating and regulatory environment.

The British government has encouraged P2P network lending and other alternative financial models to develop into an important channel for SME financing and has invested a lot in this field. The government support and P2P network lending platform have formed a virtuous circle to better serve small and medium-sized enterprises, making P2P network lending market share in UK SME loans and consumer loans continue to increase. In the UK, P2PLending is subject to formal financial supervision and industry self-regulatory organizations, and the platform operation is relatively standardized. In terms of operation, the good legal environment and reasonable risk control measures make the loan default rate low. This provides a good guarantee for the development of P2PLending. In contrast, China's P2P lending is mixed, which lacks regulatory and access barriers, and its relevant laws and regulations are imperfect. The operating cost of the platform is high. The phenomenon of some operations going out of business within a few days has also greatly hindered the development of P2PLending in China [8].

To some extent, P2P lending has a great impact on the traditional banking industry. P2PLending has its own advantages, for lenders, it can provide higher interest rates that could not be earned from banks and other financial institutions; for borrowers, it also provides an alternative to the finance and low financing threshold and increase the possibility of unsecured personal credit. In the future, in order to achieve better development and achieve effective market status, P2PLending needs to closely follow the basic positioning of P2PLending, and still needs to be greatly improved in the regulatory mechanism and credit rating system.

#### **4. Robo-Advisor**

A robo-advisor is a digital platform that provides automated, algorithm-driven financial planning and investment services with little to no human supervision. Robo-Advice provide a way for ordinary consumers to access to financial services instead of just high-net-worth individuals. The advent of Robo-Advice has many advantages. By using the questionnaire to acquire financial goals and risk tolerance of users, they can automatically allocate the portion of portfolio. Besides, without manpower, the cost and threshold of opening an account are low. In addition, robots can make objective decisions. By contrast, people are likely to be affected by negative information and become irrational. However, in some special areas such as investment banks, some more elaborate demands for investment cannot be completed by robots. In fact, robots have their algorithm, but many potential problems are not included by algorithm which robots cannot replace human.

The appearance of ChatGPT some time ago has reshaped people's view of robo-advisor, which is a powerful new chat robot. It cannot only write complex paragraphs, but also enable people who have never programmed to quickly create feasible code [9]. To analyze this problem, we need to introduce a concept, disruptive technology. Disruptive technology is an innovation that significantly alters the way that consumers, industries, or businesses operate. A disruptive technology sweeps away the systems or habits it replaces because it has attributes that are recognizably superior [10]. To take a simple example, the emergence of smart phones has overturned the traditional mobile phone industry. At its peak, Nokia once accounted for 40% of the mobile phone market, but it took less than 10 years from great to lonely. Nokia has vigorously developed the functions of traditional mobile phones and focused on the development of the telecommunications industry. In 1991, it realized the global call technology [11]. However, just like many foreign mobile phone brands pay too much attention to the basic functions of mobile phones and only think about how to achieve high-quality call effects and how to make mobile phones more durable. The traditional mobile phone industry has not realized that after the leap of communication technology from 2G to 3G, the market needs mobile phones that are

not designed for making calls but can be integrated with the Internet and designed for the Internet. After Steve Jobs, the former CEO of Apple, announced that he "reinvented the mobile phone", the global industry has made a new definition and understanding of smart phones. In addition to the impact on the mobile phone industry, the emergence of smart phones has completely changed people's understanding of photography, music players, handheld game players, book kiosks and other industries. Once, photography was a luxury product and MP3, MP4 and PSP were booming. However, with the performance optimization of smart phones and more complete functions, the development of these industries has been greatly impacted. From this example, we can see that we need to take a cautious attitude when looking at the development of ChatGPT. Previous AI, such as AlphaGo, mainly existed in areas that are difficult for the general public to achieve, but ChatGPT's breakthroughs in chat, text generation, open answer and other fields have made it a broad user base. At present, ChatGPT still faces some challenges and disputes in the technical field. It is difficult to judge the future development and changes of robot advisors such as ChatGPT.

## 5. Blockchain

Blockchain is a shared and immutable account book which aims at facilitating transaction records in the service network and processes of tracking assets. Anything of value can be tracked and traded on the blockchain in order to reduce the risk and cost of all aspects [12]. In the digital economy, blockchain is an important driving force of the digital economy. Because when human society enters a digital driven society, data has no value in everyone's hands, and data is valuable only through sharing. The traditional data sharing and data protection have formed a natural contradiction, and the blockchain has emerged at the historic moment. Through distributed ledger technology, data sharing and data privacy protection have been realized.

Blockchain technology is also the underlying foundation of platform economy, sharing economy and digital economy. Based on the blockchain's distributed bookkeeping and decentralization functions, transactions between different individuals can be conducted with low cost and high efficiency without trust-related verification. This way has changed the participation rules and operation mode of the traditional sharing platform to a large extent, thus providing great possibilities for the business model innovation of the sharing economy. Taking the automobile industry as an example, in the future digital economy scenario, users do not need to own vehicles, but only need to own a small part of the use rights and interests of vehicles, which greatly improves the use efficiency of automobiles and forms a sharing economy around automobiles.

But the future development potential of blockchain is huge and full of challenges. Take NFC as an example. Unlike Bitcoin and ETH, NFC is an interchangeable token. Each piece is unique and indivisible. At present, it has developed rapidly in the field of art and games. However, the value of ETH mainly depends on two aspects. The first is the recognition of the public, and the second is the rarity and irreplaceable degree of the article itself. However, this raises a problem. It is difficult to measure the price of ETH. Moreover, the weak liquidity of ETH and the imperfection of regulation and law further aggravate the risks in this field. The application of blockchain technology has unlimited possibilities in the future, but when the price of NFC products is far higher than its development feasible price, and lacks liquidity, it is likely to become a foam.

## 6. Conclusion

This paper describes the development status of several major financial technology fields in the digital era. At present, the fields of online payment and P2P lending are relatively perfect, and the relevant laws and regulatory systems are relatively clear. In contrast, the development of Robo-Advisor and Blockchain still faces great uncertainty and challenges. The newly emerged ChatGPT has broken the original situation that the development of AI is concentrated in advanced fields and has had some impact on the general public. Breakthrough and improvement in technology are the

problems that this industry is facing. As an underlying foundation, blockchain has had an impact in all industries and has derived many related products. However, the current laws, regulations and policies cannot cover the development of emerging products, and the intrinsic value of these products is not easy to accurately measure, so there are great risks in this field. This paper holds a cautious attitude towards the risk of financial products, but digitalization is an irresistible trend. The development potential of financial technology and digital transformation in the future is huge. Strengthening infrastructure construction and improving the protection mechanism of financial supervision and risk prevention and control are good guarantees for promoting digital transformation. The impact of Robo-Advisor on traditional or current industries, the application of Blockchain technology in different fields and how to reduce the risk of blockchain technology are the focus of the next research.

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