The Impact of Fintech on Traditional Banking Industry and Future Development Trends

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Abstract. The booming development of financial technology has had a profound impact on the traditional banking industry. In terms of business model, the rise of innovative models such as online lending, supply chain finance and open banking has led to online and intelligent banking; customer experience has been significantly improved by intelligent customer service, personalised recommendations and mobile payment; and costs and efficiency have been optimised by automation and cloud computing. However, traditional banks are facing challenges such as market share erosion, increased operational and information security risks, and changes in the competitive landscape due to cross-border competition. Traditional banks have responded positively to these challenges by enhancing their competitiveness and sustainability through digital transformation, technological innovation and cooperation, and management and strategic adjustments. Looking ahead, fintech will continue to advance in technological innovation, the popularisation of smart financial services, open banking and the development of the API economy, and financial regulation will continue to be strengthened, so traditional banks will need to embrace change and strengthen compliance, so as to achieve mutual promotion and synergistic development with fintech, and to jointly promote the progress of the financial industry and the high-quality development of the economy.

Keywords: Fintech; Traditional Banking; Business Model Innovation; Risk Challenges; Coping Strategies; Development Trends.

1. Introduction

In today's era of rapid global economic development, the financial sector is undergoing a profound transformation. The rise of FinTech is like a powerful wave that is impacting every aspect of the traditional banking industry. With the continuous progress of science and technology, FinTech has been developing rapidly around the world and has had a profound impact on the traditional banking industry. This paper will explore the impact of fintech on the traditional banking industry and the future development trend, aiming to provide a useful reference for the traditional banking industry to find its position, cope with the challenges and grasp the opportunities in the wave of fintech.

The development of fintech has not only changed people's financial consumption habits, but also reshaped the competitive landscape of the financial industry. As an important part of the financial sector, the traditional banking industry is facing fierce competition from fintech companies. At the same time, fintech has also brought new opportunities to the traditional banking industry, prompting it to accelerate the pace of digital transformation and improve service quality and efficiency.

By deeply analysing the impact of FinTech on the traditional banking industry, we can better understand the development trend of the financial industry and provide strategic guidance for the future development of the traditional banking industry. In this paper, we will provide a comprehensive overview of FinTech, its impact on the traditional banking industry, the response strategies of traditional banks, and the future development trend of FinTech.

2. Overview of Financial Technology

2.1 Definition and Scope of Fintech

Fintech began in 1866 with the transatlantic telegraph cable linking Western Europe and North America, enabling instant communication between London and New York and initiating the convergence of finance and technology. Its development has gone through three stages: 1980 - 1989

fintech 1.0 stage, banks use mainframe computers to process data, the first direct bank was established in 1989; 1990 - 2010 2.0 stage, the rise of Internet finance, mobile payments, Internet brokers and banks emerged; 2011 to the present 3.0 stage, big data, cloud computing and other new technologies become the main driving force, such as the release of blockchain platform by NASDAQ, Barclays Bank completed the relevant transactions[1]. For example, NASDAQ released a blockchain platform and Barclays Bank completed related transactions.

The Financial Stability Board defines it as technology-driven financial innovation that creates new business models, applications and so on. From a technological perspective, it covers cloud computing, big data, etc.; from a financial industry perspective, it includes third-party payment, crowdfunding, etc.; and from a conceptual perspective, it involves supply chain finance. It has significant advantages in promoting the digital transformation of financial institutions, drawing on information technology to outline customer profiles, predict demand, create consistent services online and offline, and change the organisational structure and business scenarios of banks; it also optimises the technological architecture, supports Internet business, enhances the ability to serve the real economy, expands the breadth of financial services, and assists in financial inclusion.

Figure 1. Definition and Scope of Fintech

2.2 Technological Innovation in Fintech

The development of fintech relies on key technological innovations, such as cloud computing and big data, to change the financial landscape. Cloud computing empowers financial institutions with powerful computing power and storage power, helping them flexibly deploy resources, reduce costs and increase efficiency, and improve business agility and scalability; big data enables the collection, storage and analysis of huge amounts of financial data to support precision marketing and risk management, such as optimising lending decisions; blockchain, with its decentralised features, improves transaction transparency and security in cross-border payments and other fields, and reduces costs and increases efficiency; AI is widely used in customer service, risk assessment and investment decision-making; quantum communication guarantees the security of financial data transmission and theft and tampering. Artificial intelligence is widely used in customer service, risk assessment and investment decision-making to improve service efficiency and scientificity; quantum communication guarantees the security of financial data transmission and prevents theft and tampering.

Technological innovation disrupts traditional financial services. Breaking the old model of relying on physical outlets and manual services, mobile payment and digital currency change the payment method; improving the efficiency of financial institutions, automated processes and intelligent systems to reduce human intervention and errors; optimising services, relying on big data and artificial intelligence to achieve personalised customisation and improve customer satisfaction; cutting operating costs, reducing hardware and manpower inputs by means of cloud computing, etc.; strengthening the prevention and control of risks, real-time monitoring of risks by big data, prediction of trends by artificial intelligence, blockchain to ensure transaction security, preventing fraud and risks, and providing a new dimension to financial services. Big data monitors risks in real time, artificial intelligence predicts trends, and blockchain guarantees transaction security, preventing fraud and risks and injecting new vitality into finance.

2.3 Current Status of Global Fintech Development

China's fintech is a regional feature, concentrated in economically developed areas, such as Beijing, Shanghai and Shenzhen, the enterprise innovation products and services to promote the development of the industry. Foreign fintech development is diverse, according to the "2024 global fintech centre city report", the global fintech competition is fierce, city ranking score gap narrowing, Asian advantage highlights, hotspot shifting to emerging centres, China and the United States lead but the United States meet challenges, such as Dubai, Abu Dhabi rankings rose, Tel Aviv, Mexico City fell.

Industry players are diversified. Fintech companies are innovation pioneers, such as Ant Group privacy computing used in multiple financial scenarios, Immediately Financial five technological innovations and output services to help enterprise digital transformation. Traditional financial institutions are actively transforming, with the Bank of Communications pushing a "5G financial cloud network", and large international banks innovating payment, enriching platform functions, and self-researching AI platforms to improve efficiency. Regulators guide and regulate, such as the Central Bank of China planning the development of fintech, building "four beams and eight pillars", and promoting regulatory sandboxes and other work. Investors provide funds, and user demand feedback drives innovation, e.g. mobile payment and digital currency are widely popularised due to user demand, which together shape the ecology and development trajectory of the fintech industry.

3. Impact of Fintech on the Traditional Banking Sector

3.1 Innovation in Business Models

Fintech has prompted traditional banking to move online and intelligent, with the rise of online lending models. Banks use big data and artificial intelligence to accurately assess customer credit and achieve rapid lending, such as Minsheng Bank, which uses intelligent algorithms to anticipate risks and reduce costs and increase efficiency, and 360 Finance, which cooperates with Bohai Bank to serve small and micro groups. Supply chain finance has been revolutionised with the help of fintech, providing banks with risk assessment by analysing transaction data, driving business, influencing the market structure of the banking industry and reducing concentration.

The rise of the open banking model, where banks cooperate with third parties to integrate financial services into multiple scenarios. Leveris helps banks integrate products and services with new technologies, and Shanghai Huarui Bank builds an intelligent financial system, pushes mobile banking applications, introduces intelligent customer service and big data analysis, improves service experience and efficiency, and conforms to the transformation path of "traffic management" to enhance market adaptability and customer stickiness.

3.2 Customer Experience Enhancement

Intelligent customer service borrows artificial intelligence to answer customer questions and improve efficiency. Shanghai Huarui Bank's intelligent customer service system responds to demand in real time and provides accurate services. Personalised recommendation analyses customer data based on big data to customise financial products and services for customers[2]. Traditional banks can learn from this model to meet diversified needs, such as Leveris' data-driven optimisation of the customer experience, which enhances customer satisfaction and loyalty and expands business opportunities.

The popularity of mobile payment has changed the payment habits, traditional banks to expand mobile payment business, cooperation with technology companies to push products, such as ICBC using technology to broaden service channels, control risks, reduce costs and increase efficiency. Mobile payment enriches the scene, covers both online and offline, improves payment efficiency and convenience, enhances customer reliance, and promotes the growth of banking business and the exploration of innovative service modes.

3.3 Cost and Efficiency Optimisation

Fintech optimises costs and efficiency for traditional banks. Intelligent risk control monitors risks and evaluates credit according to big data and artificial intelligence to reduce the rate of non-performing loans, and 360 Finance solves the problem of online risk control and ensures asset security. Intelligent investment consulting provides personalised investment advice based on customer conditions, expands business areas and improves service efficiency.

Cloud computing helps banks migrate their data and business systems to the cloud, enabling resource sharing and lowering labour costs, which reduces Minsheng Bank's reliance on traditional hardware and software and enhances its core competitiveness. Automated business processes cut down on human input for credit approval, and fintech companies assist banks in integrating and innovating to improve operational efficiency, enhance the banking industry's sustainability and market competitiveness, and promote technological transformation and upgrading of the industry's efficiency.

3.4 Risks and Challenges

Fintechs pose a risk to traditional banks. Market share is being eroded as fintech companies attract young customers with convenient services and efficient credit approvals, impacting traditional banks' payment and credit businesses, resulting in a loss of customers, threatening market position and business growth, and altering the customer mix and market demand orientation.

The introduction of technology brings operational risks, system failures affect business and customer experience, human errors cause transaction and data problems, staff training becomes more difficult, operational risks increase, affect service stability and data security, and test the bank's technology management and personnel quality improvement capabilities.

Information security risks are highlighted, the amount of bank data increases in the era of financial technology, leakage affects customers and reputation, hacker attacks and the application of new technologies bring new threats, data sharing has hidden dangers, security measures need to be strengthened, and the protection of information security has become a key task for banks, which is related to the operation and development of the foundation, and affects the customer's trust and the image of the market.

3.5 Changes in the Competitive Landscape of the Market

Technology companies have intensified competition in the banking industry, providing personalised financial services based on technology and innovation, and impacting traditional banks. For example, the Ant Group has launched Balance Treasure, which has expanded in the areas of payment, lending and wealth management, weakening the traditional business advantages of banks, changing the competitive situation in the market and the tendency of customers to make choices, and prompting the banking industry to think about change and survival.

The traditional banking business model is challenged by inefficiency and high costs of offline branches, while online services have gained prominence, and credit and wealth management businesses are under pressure to innovate [3]. Active digital transformation banks prevail, and vice versa, the share of the shrinking, such as some banks to promote online platforms and optimise the service process to enhance competitiveness, while conservative banks by the impact of fintech, the market share of the erosion of the banking industry to promote structural reshaping and development model change.

4. How Traditional Banks are Responding to the Fintech Challenge

4.1 The Need for Digital Transformation

Customers' behaviour has changed due to fintech, and they are keen on convenient online financial services. The popularity of mobile devices and the speeding up of the Internet have made mobile

payment popular and enhanced the convenience of payment; the young clientele was born in the Internet era and prefers digital products such as smart investment advisors; fintech has expanded the space of choices, allowing customers to compare and select the best financial solutions, which has led to the upgrading of the demand for traditional banking services, and the urgent need for digital change.

Digital transformation is a must for traditional banks to survive and develop, and can improve efficiency and reduce costs. Borrowing cloud computing, big data and artificial intelligence, can automate and intelligent business processes, such as intelligent customer service and credit approval system to improve efficiency, cloud computing to reduce the cost of hardware and software, optimal resource allocation. It can also improve customer experience and increase stickiness, and mobile banking applications and personalised recommendation systems can meet customers' needs for convenient and personalised services and enhance satisfaction. And help expand business innovation and development, such as open banking embedded in the service scene, blockchain applied to cross-border payments and other areas, for traditional banks to bring new opportunities and innovation space, and promote its integration into the wave of financial technology to survive and strive for strength.

4.2 Technological Innovation and Cooperation

Traditional banks need technological innovation and cooperation to meet the challenges. In the application of big data, Minsheng Bank collects and analyses huge amounts of financial data, and relies on customer and market data to assist in precision marketing, risk management and market forecasting, such as providing a basis for lending decisions and helping the bank to anticipate trends. In the application of cloud computing, Minsheng Bank relocates its data and business systems to the cloud, flexibly allocates resources, and improves its agility and scalability, thereby reducing its dependence on traditional hardware and software and increasing its core competitiveness. Artificial intelligence is used in customer service, risk assessment and investment decision-making to improve efficiency and science, and is used by 360 Finance to solve online risk control problems and ensure asset safety.

Figure 2. Technological innovation and cooperation

Co-operation with fintech companies can complement each other's strengths and create business models and services. In the field of supply chain finance, fintech companies analyse transaction data to help banks assess risks and develop products to meet the financing needs of enterprises; in terms of service enhancement, we can draw on the advantages of customer experience of fintech companies, such as cooperating with Leveris to introduce technology and concepts, push personalised product and service recommendations, and improve customer satisfaction, so that we can work hand in hand to enhance our competitiveness and sustainability, and respond to the impacts of fintech to achieve synergistic development.

4.3 Management and Strategic Alignment

Technology-enabled optimisation of the banking service process, the introduction of artificial intelligence to achieve intelligent customer service, speedy answers to customer questions to reduce the waiting time, big data analysis of demand for personalised solutions, reduce business links, standard processes, improve the efficiency of the service and experience, simplify the operation, ensure continuous quality service, and enhance the customer's goodwill and trust.

Strategically, we are transforming to retail and intermediary business, using big data to analyse behavioural and transaction data, push personalised recommendation, differentiated pricing and precision marketing, and innovate product services, such as setting up an intelligent investment advisor platform; intermediary business is expanding into supply chain and consumer finance, raising the proportion of revenues, optimising the business structure, lowering the reliance on capital and raising revenue, adapting to the new state of the financial market and the competitive landscape, enhancing profitability and development resilience, and matching the trend of fintech. The trend of the financial technology era.

Strengthening risk management to build a comprehensive framework, with the Board of Directors taking overall responsibility and specialised departments coordinating and promoting, controlling risks in the whole process, improving the internal control and audit system, and raising the level of operation, risk control and compliance; optimising the traditional risk control system, accurately identifying and evaluating operational, reputational, credit and compliance risks, and disposing of them in early warnings to reduce losses; reconstructing a new type of system to cope with the diversification of investments and transformation of strategies, and controlling the risks of market, liquidity and outsourcing moral hazard, so as to ensure the soundness of business and to cope with the uncertainty of fintech changes[4]. To cope with the uncertainty of fintech changes, escort the bank's sustainable operation and development, and solidify its market position and financial security foundation.

5. Future Trends in Financial Technology

5.1 Continuous Technological Innovation

The future of financial technology focuses on artificial intelligence, data-driven and blockchain innovation. Artificial intelligence has led to the intelligent upgrading of financial services. Intelligent investment advisors use algorithms to provide personalised investment and asset allocation based on customers' risk and financial situation, and analyse huge amounts of data through machine learning to improve accuracy; intelligent customer service uses natural language processing to answer questions around the clock and improve efficiency and satisfaction.

Big data and cloud computing promote data-driven transformation of financial services, massive data collection, storage and analysis, mining customer demand, customised loan solutions based on consumption and credit history; cloud computing strong computing power and storage, fast processing data, such as fintech companies to use this real-time assessment of risk and processing transactions, optimise service efficiency and accuracy, and innovate the service model and quality.

Blockchain reshapes the financial industry; cross-border payment reduces intermediate links, improves efficiency and reduces costs, and increases transaction transparency and traceability; in supply chain finance, it records and verifies transaction data, ensures safety and reliability, solves the financing difficulties of small and medium-sized enterprises, and transforms the process and structure of financial transactions, builds a cornerstone of trust, and facilitates business expansion and synergy.

5.2 The Spread of Smart Financial Services

A new generation of smart financial technology is on the rise, blockchain is used in cross-border payment to improve efficiency and reduce costs, ensure the security of supply chain finance, and regulate the development of regulation. Big data and AI empowers banks, analysing data to help marketing and wind control, and AI is widely used in customer service, evaluation and decision-making to improve efficiency and scientificity. Privacy computing solves the contradiction of data security sharing, protects sensitive information, digs up data value, and pushes the financial industry to evolve towards intelligence, individuality, and convenience.

Intelligent investment and customer service to achieve personalised investment and efficient service, fintech based on big data to push personalised financial products, traditional banks to learn from to meet diversified needs, mobile payment to change habits, banks to expand their business,

push open banking, integration of services in the scene, to mention the convenience and experience, innovative service methods and products, the layout of the industry and customer interaction.

Figure 3. The spread of smart financial services

5.3 Open Banking and the API Economy

Open Bank Xing, banks open API and third-party cooperation to expand the scene, Pudong Development debut API Bank to follow up, Leveris to help integration and innovation, Huarui Bank to build a smart system, improve efficiency and increase the experience [5]. The core of data sharing and opening up, changing the service model, integrating daily operations, improving stickiness and business diversification, innovative cooperation and service delivery, and constructing an open ecosystem and collaborative network.

The API economy is a new economic state of cross-system interaction, which has become a driving force for transformation of many industries, interconnection with open banks and expansion of scenarios, cooperation between banks and e-commerce APIs for mutual benefit and win-win situation, and embedded services in supply chain finance, technology analysis data and bank APIs to improve the efficiency and stability of the chain, create a fusion model and value chain, and drive industrial upgrading and economic growth.

5.4 Strengthening of Financial Regulation

The development of fintech has led to changes in regulatory policy, with the General Administration of Financial Supervision issuing a document to regulate the application of fintech finance, such as supply chain finance, and strong data and risk control regulation; global regulators are collaborating to research and develop adaptive models and standards to prevent cross-border risks. When traditional banks innovate, they focus on compliance and risk control, build a comprehensive framework, led by the board of directors, coordinated by specialised departments, strong internal control and audit, control business risks, and ensure soundness.

We will fine-tune prevention and control, focusing on early warning and training for operational risk, specialised monitoring of reputational risk and improving the mechanism, using technology to accurately screen credit risk, and monitoring and controlling deviations in compliance risk according to the system, and strictly abiding by the regulations. Reconstructing the system, responding to investment diversification and strategic transformation, building market, liquidity and outsourcing ethical risk control systems, adapting to fintech business innovation, stabilising the operating order and market credibility, and supporting sustainable development and financial ecological balance.

6. Conclusion

Fintech has profoundly reshaped the traditional banking industry, bringing both opportunities for change and challenges. In terms of business model, online lending, supply chain finance and open banking have emerged, promoting the intelligent transformation of banking business online and expanding service scenarios; customer experience has been upgraded by intelligent customer service, personalised recommendations and mobile payment to meet diversified needs and enhance payment convenience; and cost efficiency has been optimised by automation and cloud computing to reduce

costs and increase efficiency. However, financial technology has caused traditional banks to face the risk of losing market share and customers, and the introduction of technology has brought about operation and information security risks, and intensified cross-border competition has reshaped the market pattern, putting pressure on the traditional business and reshuffling its share.

Traditional banks have responded positively to the challenge of digital transformation to adapt to the market, enhance competitiveness, and meet customers' demands for convenient online services; technological innovation and fintech companies have joined hands to introduce advanced technologies such as big data and develop new business models and services in a complementary manner; and in terms of management strategy, they have optimised their processes, adjusted the focus of their business, and strengthened risk management, so as to enhance their sustainable development power.

In the future, financial technology will continue to innovate, artificial intelligence, big data and blockchain will lead the development of intelligent, accurate and safe financial services, intelligent financial services will promote the upgrade of the industry's intelligent personality and convenience, and the open banking and API economy will promote the integration of finance and industry and give rise to diversified business models and values. At the same time, strengthened regulation to escort the stability and security of the financial market, traditional banks must strictly abide by compliance risk management when innovating.

Overall, fintech and traditional banking are intertwined and developing in tandem. Traditional banks should take the initiative to accept fintech, accelerate digitisation, deepen technical cooperation, optimise management strategies, adapt to the development trend, move forward steadily in the financial market changes, achieve new leaps in sustainable development, shape the new ecology of the financial industry and the future pattern, satisfy the diversified financial needs of the economy and society, and inject new impetus and vitality into the upgrading of the financial system and the high-quality development of the economy to develop a new space and a new realm.

References

[1] Liu X. FINTECH DISRUPTION IN TRADITIONAL BANKING: OPPORTUNITIES AND CHALLENGES FOR FINANCIAL INSTITUTIONS[J]. Trends in Social Sciences and Humanities Research, 2024,2(8).

[2] Hodula M. Beyond innovation: fintech credit and its ripple effects on traditional banking profitability [J]. Finance Research Letters,2024,. 63105307-.

[3] Shi J, Wang Y. Channel Conflict: The Impact of Fintech on Traditional Banking[J]. Journal of Humanities, Arts and Social Science,2023,7(7).

[4] M. J G, Daniel R. The Predicament of FinTechs in the Environment of Traditional Banking Sector Regulation - An Analysis of Regulatory Sandboxes as a Possible Solution[J].Credit and Capital Markets - Kredit und Kapital: Volume 52, Issue 3,2019,52(3):323-373.

[5] Riyanto A, Primiana I, Yunizar, et al. Disruptive Technology: The Phenomenon of FinTech towards Conventional Banking in Indonesia[J]. IOP Conference Series: Materials Science and Engineering, 2018, 407 (1).