

# Research on the Digital Transformation of BANK OF CHINA Empowered by Financial Technology

Haifei Liu\*, Ziyang Shen

School of Economics, Guangzhou College of Commerce, Guangzhou 511363, China.

## Abstract

Facing new financial demands, commercial banks must recognize the changes in the competitive landscape, actively implement financial technology, and strengthen the application of financial technology in order to achieve sustainable development. This article analyzes the investment of listed commercial banks in technology and the successful digital transformation cases of BANK OF CHINA. As a large state-owned bank, BANK OF CHINA keeps pace with the times, relies on its solid economic foundation, soft and hard power and brand appeal, drives the use of financial technology to transform the traditional business development model, and has achieved outstanding results. It has certain learning and reference and social practical significance for the use of financial technology for diversified development among commercial banks, the use of financial technology to develop services for small and micro finance, and to solve old development obstacles. Finally, this paper also gives development suggestions and business risk tips according to the problems existing in the development of commercial banks. Through these suggestions, it is hoped that it will help promote the digital transformation of traditional business sectors of commercial banks, and provide strong support for promoting the development of the real industry after the epidemic.

## Keywords

BANK OF CHINA, Commercial Banking, Fintech, Intelligent Digitalization.

## 1. Introduction

### 1.1. Background of the research question

As the information age, the 21st century is an era of global economic prosperity and development, and an era of promoting high-quality development with the power of science and technology. The development of financial technology such as big data information technology platform, Internet of Things cloud computing, and intelligent data application technology has enabled the further integration of finance and technology, and financial technology has become a new breakthrough for the economic growth of various countries. And financial technology, which is developing strongly in my country, has become a technological dividend for the innovation-driven development strategy of service demand.

The State Council issued the "13th Five-Year National Science and Technology Innovation Plan Notice" report clearly emphasizing the establishment of national science and technology financial innovation research and development bases. to further improve the service quality of the banking service industry. In recent years, BANK OF CHINA has formulated a step-by-step digitalization strategy based on actual development needs. The overall development of digital customer drainage, digital system structure, digital development of new products, digital risk control methods, digital management and promotion operations has made various preparations for the digital transformation of enterprises. Consolidate the ability and efficiency of financial services to the real economy.

### 1.1.1. Fintech Definition

Financial technology refers to the efficient combination of information technology and finance, using high-tech to solve the shortcomings of traditional financial services such as low efficiency and lack of accuracy. As early as 2016, the Financial Stability Board, the core body of global financial governance, clarified that fintech is an innovation in financial business. The innovation of financial technology benefits from the rapid development of cloud computing technology and big data analysis technology. At the same time, technology companies need continuous financing in the process of upgrading and development, and the entire financing process is technology finance, that is, technology and finance are mutual promotion. Development, through the upgrade again, will have a positive impact on the financial institutions themselves, the service level of the financial industry and the current situation of the financial market. There are three main ways that fintech empowers commercial banks: first, to obtain more customer resources through technology to expand market share and take the lead. Second, change the traditional financial service model, and let customers enjoy better service by taking customers as the center. Third, promote the integration of banking channels to further optimize their business models and achieve digital transformation [5].

### 1.1.2. Fintech Theoretical Basis

Financial technology is developed on the basis of Internet finance, so financial technology is in a position where the financial industry and technology intersect. The boundaries between technology and finance are gradually blurred, and the two penetrate each other. The scope of business is not limited to the basic mobile network payment business within the bank, including cross-border payment business, digital currency business, payment and settlement business using blockchain, and loan financing. Business, digital identity authentication business, electronic smart contract, wealth smart management, etc. The technology required by financial technology is not only the most advanced Internet technology, but also distributed accounts and security technologies, including high-end technologies such as big data, artificial intelligence, blockchain, biometrics, etc., through the development of more diversified channels and innovative new service methods. Customer experience is the ultimate goal of improving the core competitiveness of financial institutions in the future and key elements such as cost control capabilities [1].

## 1.2. Significance

Through the analysis of data and research reports, as well as the research of scholars in the financial field, we can find that commercial banks themselves have already found that the role of financial technology in enabling banks is increasing day by day. Most of the basic financial technologies have a great impact on the business model and service efficiency of commercial banks, and they are also gradually increasing investment and R&D efforts to seek further digital transformation. Under such circumstances, traditional financial institutions are seeking "new" transformation and urgently need a technology-based transformation and development path. Commercial banks should change their business philosophy, not only see short-term financial profits, but also combine medium and long-term development with national strategic planning, focus on improving the overall financial infrastructure construction and business level of the industry, and provide enterprises with integrated, differentiated Development and quality financial services.

## 2. Literature review

Stjn Claessens studied the popularity of fintech on a global scale and found that the positive effect of fintech in more advanced countries and emerging economies is particularly obvious, and customers can have a better experience when being served. Brand and Hornoff (2020)

Thanks to the help of digitization, the financial industry continues to develop and innovate in providing services, using big data to conduct rapid analysis on the customer's use end and middle and back office, and conduct information on customer preferences and other information. better handling. Gomber (2017) believes that the focus of digital transformation of business entities has shifted from improving business throughput performance to creating employment opportunities and new business models for financial service companies. Abbs (2019) believes that the innovation of digital finance can interact with customers very well. The current financial service providers are being challenged by financial technology, and the performance of financial technology can provide services to customers in less time and at less cost.

Chinese scholars believe that the positive impact of financial technology on the banking industry can be summarized as: reducing the information asymmetry between the banking industry and the banking industry by means of information technology, thereby reducing the risks and transaction costs of both parties. He Dayong (2017) mentioned that commercial banks should pay close attention to the positive linkage effect brought about by financial technology, give full play to their own advantages to stimulate the potential of independent innovation, change their awareness of innovation, and continuously improve their technological innovation capabilities. While giving full play to the maximum effect of financial services' own technology, promote the common progress of financial technology and commercial banks, and realize sustainable financial services.

### 3. Analysis on the digital transformation of BANK OF CHINA empowered by fintech

As a large state-owned commercial bank, BANK OF CHINA is catching up with the new challenges in the new era, learning from the advanced objects in developed countries, winning the trust of the people through efficient services, and building a financial technology system, hoping to realize it as soon as possible. The goal of full digitization. In recent years, BANK OF CHINA has always adhered to the development tenet based on safe production, maintained a stable growth rate, and continued to develop steadily and steadily.

**Table 1:** BANK OF CHINA's profitability statistics in recent years

Yars	Earnings per share (yuan)	Total operating income (yuan)	Year-on-year revenue growth (%)	Net profit (100 million yuan)	Year-on-year profit growth (%)	Net assets per share (RMB)	Roe(%)
<b>2020</b>	0.61	0.61	2.977	1929	2.920	5.98	10.61
<b>2019</b>	0.61	0.61	8.942	1874	4.064	5.61	11.45
<b>2018</b>	0.59	0.58	4.310	1801	4.454	5.14	12.06
<b>2017</b>	0.56	0.55	-0.073	1724	4.757	4.74	12.24
<b>2016</b>	0.54	0.47	1.963	1646	-3.668	4.46	12.58
<b>2015</b>	0.56	0.47	3.942	1708	0.737	4.094	14.53

Source: Compiled from the public information of BANK OF CHINA

From the data in the report, it can be seen that the BANK OF CHINA has made significant progress in its intelligent transformation in the measures to increase investment in scientific research and deploy a large number of scientific research talents. The revenue growth rate is +7% year-on-year, and the growth rate is +4% month-on-month. It is also worth mentioning that non-performing assets are also the best in the past five years. In the future, under the combined effect of stable asset quality and increased non-interest income, profit growth will

continue. promote. This is due to the two current strategies of BANK OF CHINA: improving service quality and optimizing operating systems.

### **3.1. Fight the tough battle of technology and support service quality based on science and technology**

In recent years, the information technology department of BANK OF CHINA has adhered to the concept of fintech-led innovation-driven development, developed fintech competitiveness on the premise of maintaining the Bank's characteristics, and provided the driving force for transformation and development. BANK OF CHINA has been a national foreign exchange and foreign trade professional bank for a long time [3]. With the approval of the state, BANK OF CHINA has agreed to operate and manage national foreign exchange, including international trade settlement and non-trade settlement foreign exchange business, and spare no effort to support the development of domestic foreign trade and promote economic growth. Based on the rapid development of my country's cross-border e-commerce and the growing demand for citizens' outbound tourism consumption, BANK OF CHINA launched the BANK OF CHINA Cross-border e-Commerce in a timely manner, breaking the cumbersome shackles of traditional settlement methods, and making settlements through third-party payment e-commerce platforms to achieve import and export of RMB There is also the full inclusion of foreign exchange scenarios.

### **3.2. Optimize the internal business operating system and upgrade the innovative investment platform**

The optimization of the bank's core system is crucial to the quality of service. Once the hardware equipment system cannot keep up, it will lead to the stagnation of development [4]. The smart smart investment business launched by BANK OF CHINA enables customers to invest or handle various businesses through the mobile banking client. It is understood that this function can also intelligently analyze and screen the products recommended by customers by analyzing the big data of customers' investment preferences. , and combined with the trend of the financial market to give customers a more objective investment advice.

## **4. The positive impact of fintech strategies on the transformation of BANK OF CHINA**

### **4.1. Fintech promotes the endogenous development model and will move towards the overall digital operation**

The outbreak of the epidemic has accelerated the online demand of financial customers, and also promoted the optimization of the financial business structure and the improvement of the service model. BANK OF CHINA implemented the "mobile first" development strategy in Guangzhou Branch, continued to increase investment in technology, and accelerated the construction of customer flow from offline to online. For some customers who have no time or very little time, complete business for customers online. Guangzhou BANK OF CHINA will use Internet digital technology to launch a small program of "BANK OF CHINA Financial Planner Online", and develop a "financial artifact" that is easy to operate and highly professional. Customers can easily obtain convenient financial advisory services.

### **4.2. The growing role of blockchain**

According to the "Opinions on Supporting the Stable Cycle and Optimization and Upgrading of the Supply Chain Industry Chain" jointly issued by the People's BANK OF CHINA and the Ministry of Industry and Information Technology, it is clear that financial institutions must take every opportunity to share information with the real economy, and coordinate and link industries, so that the industrial chain The comprehensive level of financial services in China

has been steadily improved, relying on the combination of financial technology and supply chain finance to improve the digitalization level of financing chain supply chain finance [2]. Financial institutions can rely on technology empowerment, and industrial chain finance has become the focus of financial technology to solve problems such as movable property pledge, product inspection, and risk control. Deepen the application of cluster chain technology; build a cluster chain industry enterprise platform; transfer bank credit as the focus of the cluster chain enterprise platform; build a cluster chain trade financing platform to shorten the loan approval process and improve the efficiency of trade financing. At the same time, make full use of big data quantification, cognitive technology, Internet of Things, etc., increase information collection, risk identification, monitoring, improve matching precision products and effective risk prevention and control.

#### **4.3. Digital currency has entered the financial system in an all-round way, changing the ecology of financial development**

In recent years, the excessive issuance of banknotes has led to an increase in inflation, frequent third-party payment security crises, and the gradual maturity of blockchain technology, resulting in the emergence of digital currencies such as Bitcoin, Ethereum, and Ripple. Digital currency has the advantages of low transaction cost, fast transaction speed, anonymity and fixed amount. Digital currencies do not need people and clearinghouses to process data, so they are more convenient and faster to trade. Digital currency can be divided into wholesale and retail according to users and uses.

### **5. conclusion and suggestion**

#### **5.1. conclusion**

Based on the development of big data analysis technology and cloud computing AI intelligence, commercial banks are fully capable and must make changes and make transformations in line with the times. By innovating the causes and consumption behaviors of traditional financial models, it has played an active role in promoting the development of my country's national economy, and also prompted my country's traditional commercial state-owned banks to actively challenge the transformation of strategic models. In the process of digital core strategic transformation, if commercial banks want to gain a foothold in the fierce financial market competition, they must have their own distinct characteristics, and choose an appropriate digital development strategic positioning that suits them. sustainable development. At the same time, in order to comprehensively improve the core competitiveness of the bank, we must make joint efforts in hardware, software, organization, talent and other supporting facilities. By accelerating the deployment of fintech, the banking industry has increased investment in the field of science and technology, and gained a share of the most cutting-edge fields of fintech, seeking to realize the transformation and empowerment of outlets.

#### **5.2. suggestion**

##### **5.2.1. Strengthen the construction of digital financial infrastructure and use technology to promote development**

The banking industry is the most representative leading industry in the digital industry, but my country's digital infrastructure construction is still relatively weak, and the uneven development of the digital economy among the countries has hindered the application and popularization of digital financial technology in the financial field. Therefore, we should focus on strengthening the digital economy. Financial infrastructure construction.

### **5.2.2. Promote the development of cooperation projects with scientific and technological enterprises**

Banks can use the technology of technology companies to help carry out cooperation projects in the construction of financial scenarios, improve their own strength and influence with the help of high-tech companies, broaden the channels for attracting new customers, and tap more powerful potential customers. For technology companies, the financial attributes of cooperation with banking institutions will be stronger, such as risk control, marketing models, etc., which can help them reduce financing difficulties during operation, imperfect financial management systems, and lack of compound talents.

### **5.2.3. Scenario-based innovation for network infrastructure**

Intelligent outlets need to combine display technology with customer experience, combine the unique advantages of offline services, enhance customer experience, and redesign business scenarios. With financial services as the core, it gathers surrounding resources and transforms outlets into comprehensive service centers to meet customers' daily life, financial services and other value needs.

### **5.2.4. Strengthen the training of docking service personnel to further improve service quality**

Service quality requires employees to be customer-centric, and at the same time to improve their service level and customer service skills, to achieve the purpose of improving the overall quality of employees.

### **5.2.5. Strengthen synergy between outlets to improve together**

Through the investigation, it can be found that the same commercial bank branch has the same infrastructure such as decoration, and the services provided are also the same. However, according to the actual situation, each branch can provide differentiated services according to its own characteristics and the surrounding environment. For example, the branch in the center of the business district can provide more new financial services through the self-service area and the online banking experience area. After re-integration of resources, re-allocate high-quality resources, cooperate with each other to reduce costs, improve the efficiency and success rate of marketing, improve the overall service quality, and promote the digital transformation of outlets.

## **Acknowledgements**

This research work was supported by School-level Scientific Research Project of Guangzhou College of Commerce: Research on the Current Situation and Countermeasures of the Integration of Production and Education in Applied Universities—Take private equity talent as an example (Project Number: 2020XJYB020) and Outstanding Course Construction Project Guangzhou College of Commerce: Private Equity and Venture Capital (Project Number: XJYXKC202106)

## **References**

- [1] Mengfei Liu, Qi Wang: The impact of financial technology on the performance of commercial banks: Theoretical and empirical research, Finance Forum, vol. 26 (2021), 60-70.
- [2] Jinliang Luo: Research on the impact of financial technology on the profitability of commercial banks in my country (MS., Anhui University of Finance and Economics, China 2020), p.2-43.
- [3] Yimao Li: An empirical study on the impact of financial technology on the profitability of listed commercial banks in my country, Journal of Natural Science of Hunan Normal University, vol. 43 (2020), 83-89

- [4] Ke Wang: Theoretical and empirical analysis on the impact of financial technology on the operation of commercial banks (Ph.D., University of International Business and Economics, China 2019), p.2-109.
- [5] Rui Wang, Zonghang Li: Research on financial technology to promote the transformation of my country's Internet financial supervision model, Journal of Xihua University(Philosophy & Social Sciences), vol. 39(2020), 68-77.