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Analysis of Commercial Banks' Digital Transformation Driven by Fintech

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Abstract:

This article reviews the literature related to the digital transformation of commercial banks driven by financial technology. Against the backdrop of the rapid rise of cutting-edge technologies such as cloud computing, big data, blockchain, and artificial intelligence, traditional service delivery methods relying on branches and manual operations by commercial banks have become difficult to adapt to customers' demands for convenient, personalized, and real-time financial services. On the other hand, China's economy is transitioning to a stage of high-quality development. In this process, commercial banks need to further enhance their service efficiency and strengthen service coverage capabilities. Consequently, commercial banks must confront competitive pressures from internet financial institutions and accelerate their digital transformation. Meanwhile, the development of financial technology also provides guarantees and assistance for the smooth progress of commercial banks' digital transformation. Therefore, China's commercial banks are facing a critical period of digital transformation. This article begins by explaining the core connotations of financial technology and bank digital transformation, then analyzes the current status and main characteristics of bank digital transformation, focuses on various issues faced by the current bank digital transformation. Finally, it provides an outlook on the direction of subsequent related research and puts forward corresponding suggestions, aiming to provide guidance for China's commercial banks to overcome the constraints in digital transformation and achieve high-quality development empowered by digitalization.

Keywords: Digital transformation; fintech; commercial bank.

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1. Introduction

The current global digital economy is thriving, and fintech has evolved from being merely a „technical auxiliary tool" to becoming a significant force in reshaping the banking ecosystem. Moreover, fintech's disruption of commercial banks is comprehensive and across all domains. Firstly, in terms of service models, traditional banks, which primarily rely on physical branches, have been inexorably impacted by the decentralized online service processes brought about by fintech. Users no longer need to physically visit branches to handle these services; they can seamlessly complete all transactions through mobile banking. This '7×24-hour' borderless financial service has broken the spatial and temporal constraints of traditional financial formats. Secondly, in terms of customer reach, fintech can achieve a seamless experience. Through platform scene integration and „on-demand plug-in" push methods, products are seamlessly linked during customers' transactions and consumption processes, maximizing customer experience. In contrast, traditional banks still adhere to the „set up a stage and let customers perform" approach, only engaging in face-to-face communication after customers have completed their transactions, which to some extent hinders understanding the pain points of younger customer segments. Thirdly, in terms of operational efficiency, some traditional banking services involve manual review, such as credit approval and risk approval, which require human assistance. This can take a day or several days to complete, resulting in significant time consumption. However, fintech can significantly reduce operational costs and enhance customer satisfaction through big data and AI algorithms, offering instant approval.

In this context, the digital transformation of commercial banks is an inevitable trend: on the one hand, with the increase in per capita disposable income, people's demand for finance is gradually upgrading, from the initial „basic deposit and withdrawal" to the current „personalized financial management, intelligent investment advisory, cross-border finance", etc. Digitalization is the best choice for banks to meet the diversified needs of customers, which cannot be surpassed by any other means at present; on the other hand, internet financial institutions quickly capture retail market share based on purely online business models, while technology companies rapidly expand into customer acquisition, payment, credit, and other fields through the vast traffic they possess. If traditional banks do not make a firm decision to undergo digital transformation, they will face the risk of customer loss, customer base attrition, and further squeezed market share. In the past two years, there has been a wealth of academic research on financial technology and the digital transformation of commercial banks. This research can be summarized from the following three perspectives: from the perspective of transformation value, scholars such as Yuan et al. concluded through empirical research that there is a „U-shaped" relationship between financial technology and the profitability of commercial banks [1]. In the early stages of financial technology, higher investment costs will lead to increased costs, but from a long-term perspective, it is beneficial for commercial banks to use financial technology to improve service processes, expand customer base, and enhance their profitability; from the perspective of transformation necessity, Shi and Wang argue that financial technology has a certain impact on banks' traditional businesses (including but not limited to payment and wealth management products), and has penetrated into the core business of banks' traditional finance (such as credit and risk control) [2]. Furthermore, with the application of financial technology, banks' competitive advantages will be weakened. However, it can also be further observed that the economic relevance of actually released financial technology plans is significant. The introduction of financial technology plans between 2013 and 2019 was accompanied by an increase in economic indicators, indicating that the transformation towards financial technology has strong macroeconomic value for the banking industry; from the perspective of transformation issues, Du was the first to point out the contradictions in technology and data security that exist in the application process of financial technology, and to identify some problems that have emerged in the process of vigorously promoting the development of financial technology and the digital transformation of banks. This laid the foundation for subsequent research [3].

However, existing research still has shortcomings: most studies on banks focus on the transformation of large banks, with few studies focusing on the transformation of small and medium-sized banks. Furthermore, in-depth exploration has not yet been conducted on the dynamic prevention and control of risks in bank transformation, as well as the integration of financial technology, green finance, and inclusive finance. Therefore, this paper summarizes the current situation, mechanism of action, and problems faced by the digital transformation of banks driven by financial technology, proposes corresponding measures, and aims to provide better high-quality transformation references for different types of commercial banks and improve the research system related to the high-quality transformation of commercial banks.

2. Analysis of the Current Situation of FinTech-Driven Digital Transformation of Banks

2.1 Economic Environment

On the economic front, China‘s economic growth has entered a crucial period of high-quality digital development, demanding further enhancement in the service efficiency of the financial system. With the increase in domestic residents‘ consumption power, the demand for high-quality, digital financial services has surged. Ye, Weng and Wu conducted research and analysis on China Construction Bank and China Merchants Bank, respectively, concluding that in the retail industry, which can directly reflect consumer demand, the development of financial technology has greatly promoted the expansion of retail scale, providing consumers with a faster and more convenient consumption experience [4,5]. This, in turn, has also driven technological advancements such as digital payment methods and e-commerce. Meanwhile, Liang analyzed data on gross domestic product (GDP) from 2013 to 2019 and found that China‘s GDP continued to grow overall within six years after the release of its financial technology plan, further reflecting that the current domestic economic environment provides a favorable development environment for financial technology [6].

2.2 Technical Conditions

Advancements in technological conditions serve as the driving force behind the digital transformation of banks. The Internet of Things, big data, artificial intelligence, and other technologies have become an indispensable part of commercial banks‘ business operations in China. While providing banks with new products, these technologies can effectively disassemble and reassemble business operation processes. Coupled with the application and upgrading of various new technologies, business operations become more efficient, and customers receive better services. Cheng et al. stated that commercial banks focusing their development strategies on the efficient application of cloud computing and blockchain can lay a solid foundation for the digital transformation of banks, enhance the level of business operations, pave the way for commercial banks to achieve digital transformation, and lay the groundwork for commercial banks to usher in a new era [7].

2.3 Competitive Environment

Currently, China‘s banking market exhibits a distinct digital competition landscape. To attract more customers and expand their market share, commercial banks continuously optimize and improve their banking services and business levels through digital competition. Among them, Bai et al. studied the relationship between banking competition and digital transformation, and concluded through regression analysis and other methods that both the degree of banking competition and the operational efficiency of banks are significantly positively correlated with the degree of digital transformation of banks, serving as important intrinsic driving factors. Thus, it can be seen that the digital transformation of China‘s commercial banks has a favorable competitive environment [8].

3. Impact Mechanism of Fintech-driven Digital Transformation of Banks

3.1 Disruption and Innovation of Banking Business Model

Currently, the traditional business model of commercial banks in China primarily relies on services provided by traditional physical bank branches. The integration of financial technology has significantly propelled the digital transformation of these traditional branch-based services. Yu has conducted comprehensive research on this topic [9]. With the widespread adoption of online banking and mobile payment applications, customers can effortlessly complete transactions, inquiries, and other services anytime, anywhere, solely through their mobile phones or computers. These transactions can be facilitated through a few simple steps, greatly saving customers‘ time and providing them with a more convenient and efficient business experience. Secondly, banks are gradually reshaping the field of business analysis through big data analysis and artificial intelligence technology. By integrating multi-dimensional data sources, they have achieved a comprehensive and precise credit portrait of customers. Simultaneously, utilizing technical means such as Application Programming Interface (API) interfaces enables more convenient and secure cooperation with financial enterprises, enhancing the security and diversity of banking services.

3.2 Enhancing and Strengthening the Bank‘s Risk Control Capabilities

Another core business of commercial banks in China is credit assessment and risk management and control. In the traditional credit assessment process, a large amount of customer personal information often needs to be col-

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lected, while risk control requires strict supervision. Fintech, through big data analysis and artificial intelligence technology, is gradually reshaping the field of risk management. In this regard, Lin has conducted research on its impact mechanism; through the application of big data technology and the integration of multi-dimensional data sources, a comprehensive and accurate credit portrait of customers has been achieved [10]. This not only helps to improve the accuracy and comprehensiveness of credit assessment but also enables the precise identification of abnormal transactions and fraudulent behaviors, thereby reducing fraud risks.

3.3 Digital Improvement of Bank Audit System

The coverage of financial technology has also profoundly affected the internal audit of commercial banks. In this regard, Fu has conducted in-depth research on how big data disrupts traditional audit models. Firstly, he compares the traditional audit process and the efficiency of manual auditing with big data auditing. Through comparison, it is found that big data technology can subvert the thinking logic of manual auditors and significantly improve audit efficiency. Secondly, in the selection of audit data, traditional auditing mostly adopts sampling methods, which are subject to randomness and uncertainty. However, big data auditing has a vast amount of data and utilizes big data models for analysis, greatly reducing randomness. Thirdly, the application of big data technology can provide real-time security monitoring for the audit process, greatly improving audit security [11].

4. Current Challenges and Countermeasures for the Digital Transformation of Chinese Banks

4.1 There is a Risk Associated With Data Technology

In the process of promoting digital transformation of banks through cutting-edge technologies such as big data, issues such as data risks and system failures may arise. In their research on technological risks, Wang et al. found that during the development of new technologies, vulnerabilities and operational instability are prone to occur, leading to crashes and a series of security issues such as data leakage, which seriously affect the operation of banking businesses [12].

4.2 Shortage of Digital Talents

In the digital transformation of commercial banks, digital talents represented by fintech are indispensable. However, there is a shortage of such talents among current bank employees in China. Li conducted research and analysis on the current status of fintech talents. By analyzing the talent data and training conditions of top financial universities in China, he concluded that there is a lack of cultivation in cutting-edge technologies in the current training of financial talents in China, leading to a shortage of fintech talents of about 1.5 million or more in recent years, and fewer talents capable of filling fintech positions [13]. This has resulted in a lack of fresh blood in the development of fintech, making it difficult for financial talents to directly contribute to the digital transformation of the banking industry [14].

4.3 Negligence in Management

The digital transformation of commercial banks cannot be achieved without the support of technology and talent, and a scientific and comprehensive digital management system needs to be established. However, at the current stage, China‘s commercial banks have not paid sufficient attention to digital management. Liu concluded through empirical research that currently, China‘s commercial banks are generally „strategically digitalized“, but there are still certain resistance points from strategy to business management, such as inadequate data network construction and low technology penetration rate, which make the digital transformation within banks somewhat difficult.

5. Response and Improvement Measures

5.1 Improve the Risk Control System and Scientifically Manage Data Risks

The management and control of data risks require mutual cooperation from all aspects to achieve comprehensive improvement. Both technology and management need to be improved accordingly. Technologically, should increase research and development efforts in data privacy technology, enhance data computing capabilities to reduce the probability of data vulnerability risks, and introduce blockchain technology to ensure data stability in financial transactions. In terms of management, banks need to conduct thorough data compliance checks and establish a professional risk control department to conduct real-time monitoring of data.

5.2 Implement an Internal and External Collaborative Talent Cultivation Mechanism to Fill

the Gap in Digital Talent

Firstly, Efforts should be made to strengthen the digital training efforts in the domestic financial talent cultivation system, introduce data science and big data technology courses among financial talents, and enhance their digital literacy. Secondly, policymakers and educational institutions should introduce high-end financial technology talents and technology experts with a global perspective, as well as top-tier talent teams such as professors and doctors from prestigious domestic universities. At the same time, peopleshould set up incentive policies with international competitiveness to expand the channels for talent cultivation. Thirdly, campus should strengthen international exchanges and cooperation, and establish joint laboratories and practice bases for financial technology both inside and outside the school.

5.3 Optimize the Digital Governance Structure System

Banks should establish a digitization governance system that facilitates full-domain collaboration, set up a digital transformation committee led by senior management and involving cross-departmental participation, coordinate planning, coordination, and resource allocation, and break down barriers between business lines, technical lines, and management lines while ensuring top-level design and overall planning. Apply agile management models to simplify management processes, compress decision-making steps, accelerate project delivery, and implement the implementation pace, promoting the transformation of innovative practices into business scenarios. Establish an evaluation system for digitalization effectiveness, using technology penetration, business digitization level, and business online level as basic measurement standards. Regularly optimize according to general directions and stage goals, continuously leverage the effects of digitalization, and continuously sink the transformation strategy level to specific businesses.

6. Conclusion

Fintech is a crucial productive force in the era of digital economy. It has been fully integrated into the entire chain of commercial bank operations and development, serving as a driving force for the digital transformation of banks. From a business practice perspective, driven by the triple factors of economy, technology, and competition, fintech has, on one hand, completely disrupted the traditional bank‘s „offline-centric“ business model. It centers around customers, making services ‘mobile, contextualized, and intelligent’. On the other hand, it utilizes big data and artificial intelligence technologies to reconstruct the bank‘s risk prevention and control system as well as audit supervision system, transforming credit approval from „relying on people“ to „relying on data,“ This enables banks to operate more efficiently and effectively manage risk prevention and control, thereby promoting high-quality development of commercial banks. Of course, there are still many issues in the process of fintech empowering the development and transformation of the banking industry. These include: firstly, the increasing risks associated with data and technology. The application of new technologies inevitably brings corresponding technical vulnerabilities and data leakage risks, and may also introduce technology leakage risks to new digital fields; secondly, the scarcity of talents with a combination of finance and technology, lacking excellent talents in IT, applications, and other fields; thirdly, some banks do not have a good management system to carry out digital transformation, resulting in many commercial banks failing to transform „strategic digitalization“ into „business digitalization.“ The lack of a comprehensive IT and other technical system has led to issues such as lagging data network construction and poor promotion and application in banks, which also hinders the in-depth development of the banking industry‘s transformation to some extent.

Regarding this issue, commercial banks should leverage existing resources and open up new traffic channels. Only by continuously innovating technological means to solve difficulties in reform and strengthening top-level design to ensure a solid institutional foundation, can commercial banks make more contributions to the development of China‘s financial industry in the digital economy era.

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