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Innovation paths and strategies of small and medium-sized bank fintech

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Abstract: *In recent years, domestic BAT giants have entered the field of financial technology, and traditional major commercial banks have also established partnership with JD, Baidu and Tencent and other Internet companies to carry out strategic cooperation and seek the operation mode of "Finance + Internet". Under a variety of pressures, the development of small and medium-sized banks is difficult, so the development of technology coupling is very important. However, due to the lack of financial technical talents, technical risk management ability is very weak, and the amount of data is very small, which leads to the poor ability of data collection, sorting, analysis and mining. There is a huge gap between small and medium-sized banks and large banks, which face many risks and challenges in the application of financial technology. Therefore, small and medium-sized banks need to firmly establish the idea of Internet, reflect the "supervision sandbox" mode, improve the design of high-level supervision, rely on cross-industry cooperation, create joint competitive advantage, and at the same time, it also need careful budget, open up a unique financial technology development road.*

Keywords: *Small and Medium Commercial Bank; Fintech; Blockchain; Cloud Computing*

1. Introduction

With the emergence of big data, Cloud computing, Blockchain, artificial intelligence and other technologies continue to progress, so the effectiveness of financial technology is becoming more and more obvious. To realize the organic integration of finance and technology, Internet-based and digitalized financial services will help strengthen core business capabilities, operational efficiency and user experience, and reduce risks and costs. Compared with traditional large commercial banks, small and medium-sized banks are developing financial technologies. In this respect, small and medium-sized banks have unique advantages such as light historical burden, small ship turning, short decision-making radius, independent and powerful control, etc. Therefore, they need to rely on local third party revolution to be cutting-edge, unique and differentiated financial technology development. The advantage of latecomers is market opportunity.

2. Fintech builds the promise of commercial value

2.1 Big data

The definition of big data provided by McKinsey Global Research is as follows: It is so large that it is far beyond the scope of acquisition, storage, management, and analysis. Within the processing capacity of traditional database software tools, data collection, large data model, fast data flow, four functions of multiple data types, low type and low value density. In practical application, big data technology conducts correlation analysis on a large amount of data and finds new value from it. In terms of customer marketing, the bank's customers have different working areas and consumption habits, and the bank's lifestyles use big data to analyze customers in different ways, so that targeted marketing plans can be provided according to the geographical advantages. To further expand the bank's business scope and customer base by assigning a major business to the bank and forming a team of experts to provide specific services and accurately target customers.

The development of big data technology in intelligent risk control, the development of risk management with new technology and management methods, internal structured data, unstructured data and the data collected from the Internet and the third party cooperation can be inferred, excavated through association relationship, such as the identification of the group relationship between companies,

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the relationship between investment companies and individuals, the guarantee relationship, employment relationship. Due to power control, it is necessary to keep up with the major events occurring at each node and predict the branches that may be at risk in the future, thus reducing the non-performing loan rate of the business bank.

2.2 Blockchain

Blockchain is an open distributed ledger system that allows any number of nodes in participating systems with a set of encryption methods to correlate to generating data blocks, each containing a specific time, and all internal systems to exchange data and generate data fingerprints.

Check the validity of this information and link to the next database block. The chain has decentralized, unreliable, collectively maintained, reliable databases and openness that can provide sources and anonymity to achieve traditional centralization and rely on reputable approval mechanisms to create new opportunities and challenges. Banking industry payment and settlement, digital invoice, smart contract, credit information, etc., need to provide a more secure, more convenient and efficient technical method. Compared with traditional payment systems, Blockchain payments are transferred by a consensus mechanism of value executed directly by both parties to the transaction. There is no intermediate agent involved. Each node of the system stores a complete set of copies of data. Based on the block, the chain technology of general decentralized inter-bank financial transaction contract is established to provide users with cross-border real-time payment and settlement services of currency, so that cross-border payment will be more convenient.

2.3 Artificial intelligence (AI)

Artificial intelligence since the release of Google's latest A1Phago 2.0 could lead to a new wave of technology. The breakthrough of deep algorithm of neural network has set a benchmark for basic artificial intelligence technology. The rapid development of artificial intelligence, such as computer vision, robotics and speech recognition, has brought great changes to the whole society.

The main target of artificial intelligence is the complex tasks of machines, which usually require low-end repetitive tasks of human beings, and need to reduce emotional interference and improve work efficiency. In banking, therefore, the impact of AI will be restructured. Financial service ecology should reduce duplication of work of banks, reduce service cost and improve service efficiency.

3. The necessity for small and medium-sized banks to explore fintech

3.1 External environmental pressure

3.1.1 Fintech company rise rapidly

JD Finance was independently operated in 2013, and its businesses cover supply chain finance, consumer finance, cloud capital, wealth management, payments, insurance, securities, and financial technology. Many other areas have established strategic positioning of technologies that are useful to the financial sector. Baidu Finance officially joined the technical development of the financial department in 2016. The level at which relevant technologies are open to the industry is our national financial technology level. Ant Financial's strategic investment in Jinbei symbolizes the wise investment field of BAT domestic giants. There is no doubt that the encouragement of large financial technology companies in the field of smart investment will exacerbate the rapid development and growth of the industry, and also have a significant impact on the investment market of the traditional financial sector, especially small and medium-sized banks.

3.1.2 Traditional large and medium-sized financial institutions are experimenting with fintech

In recent years, large and medium-sized financial institutions have made various attempts, financial technology innovation, as well as innovation in the form of cooperation with Internet companies. For example, four major banks: Industry, Agriculture, China and Construction are cooperating with Jingdong, Baidu and Tengfei one after another. China Telecom and other Internet companies such as Alibaba have established strategic partnerships. A cooperation agreement was also signed with consumer banks Xiaomi and Sohu to expand and strengthen Internet fund convergence. CDB makes corporate investments in "Kaixin loans" through its subsidiaries, such as CDB, using online and offline models, the national Internet financial service platform for small and medium-sized enterprises, and

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opens its technology subsidiaries directly to some of China Everbright Bank to explore "Finance + Internet". Ping An Bank, Industrial Bank and China Merchants Bank's technology subsidiaries Everright Cloud Pay, Ping An Technology, Industrial Data, and Zhaoyin Yunchuang have had some success on their Internet. Some projects use new technologies. For example, China CITIC Bank released the first blockchain credit information transmission and sending system in China, which can shorten the sending time of letters of credit and documents, improve credit rating, and enhance the efficiency of authentication business processing when used, and enhance the security of letter of credit business.

3.2 Banks themselves need to transform and develop

3.2.1 The need to break bottlenecks in development

Nowadays, small and medium-sized banks are faced with many contradictions and bottlenecks in their development. For example, the ability to control the leverage of interest rates is not high, and the rate of return on assets is slow; Business process planning and design is not scientific; The marketing method of intermediate business varieties is backward. With regard to service modalities, counter operations, and electronic structures, there is a serious shortage of investment, and facilities are few and far between, making it difficult to meet the diverse needs of each client. In addition, the high-end talent pool of small and medium-sized banks is insufficient, so it is necessary to improve the overall quality and support the reform of financial technology to break the bottleneck constraints of small and medium-sized banks.

3.2.2 The need for achieving corner overtaking

Small and medium-sized banks have small scale, strong self-management ability and light historical burden. The power of science and technology can quickly diversify and lay the groundwork for financial products. Local people take its perfect business service as the effective business direction.

The development of fintech features is sufficient to enable small and medium-sized banks to overcome geographic limitations and spatial and physical networks, achieve low-cost online business, win customers, build professional and advanced banks, and continuously enhance the user experience and user vitality.

4. The path of fintech boosting the transformation and upgrading of small and medium-sized banks

4.1 Business model transformation

Small and medium-sized banks don't just want to go the financial technology route. It is the first step in the online migration of the original offline business and is the development of the business data word transformation. The other is to make the business product scenario-oriented. Using big data provides a more intelligent and efficient way of human-computer interaction. Redefine, rethink and optimize the customer as a core business process customer experience through digital transformation. Small and medium banks identify customer needs, analyzing potential risks and establishing better customer testing. The second is channel digitization. Pay attention to the seamless connection between the various channels, providing customer support through connections, outlets, mobile clients, and phone banking. The third is to abandon the biographical standardized operating procedures, and consider from the perspective of consumers for the individual personalized marketing and personalized services. For example, the opinion analysis of small and medium-sized banks, the creation of big data analysis such as transaction data, and the panoramic view of segmented customer groups. Fourth, detailed analysis of unstructured data and dynamic interactive experience of more information can provide more professional financial analysis and investment advice due to intelligent analysis systems provide customers with systems.

4.2 Risk control system transformation

In the process of small and medium-sized banks and commercial sectors exploring financial technology due to major environmental changes, the traditional risk management system can not adapt to the new business needs, new products and new transactions emerging in an endless stream. Therefore, risk management developed in parallel with business transformation.

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The first is that original passive use of big data analysis and consider management team analysis and Internet of things technology of active risk management can enhance customer background checks. Fraud data analysis model can prevent financial fraud more effectively. Large monitoring systems monitor customer money flows before and after an event. Second, traditional compliance reviews usually use human and material resources as well as financial techniques. Artificial intelligence can be used to process large amounts of data quickly and make the right decisions for further improvement. The efficiency of compliance audit can ensure the integrity of audit.

5. Risks and challenges faced by small and medium-sized banks in fintech innovation

5.1 The risk of insufficient data

The development of financial technology needs extensive data support. Small and medium-sized banks have a small number of customers, weak business systems and weak ability to store and collect data. In 2018, ICBC's individual customers and mobile banking had 607 million and 313 million customers, but small and medium-sized banks, China Merchants Bank, retail business, individual customers and leader machine banking only had 125 million and 67.54 million customers in 2018. As a result, small banks often lag behind in data collection, classification, analysis and mining.

5.2 Technical risk

By using the "cloud computing+ mobile" approach to facilitate the conversion process, small and medium banks should prioritize security risks. Once important data leaks are inevitable due to cyber attacks and accidents, this leads to an increase in the number of banks. It suffered heavy losses in terms of assets and reputation. What is more serious is that once the systematic information security incident shakes the bank's business foundation, you can't expect everything to protect your data and applications, because it's anchored in the cloud.

Although network deployment in the public cloud and hybrid cloud security solutions can respond to cyber attacks, such as viruses and Trojans, there is a lack of insight into mobile device risks, early warning and emergency response. Small and medium-sized banks need to develop appropriate risk control measures according to their own capabilities.

5.3 Risk of talent shortage of fintech

Fintech relies on Internet technology to transform its financial services, not just "Internet+ Finance", but also some advanced technologies. Big data credit surveys combined with artificial intelligence can facilitate the learning of credit risk quantitative models and automatic approval. Such skills require a large number of financial technology professionals. Small and medium-sized banks how to build a financial sector technical team to adapt to the new situation poses a severe challenge to small and medium-sized banks.

6. Fintech innovation development strategy for small and medium banks

6.1 Find the right positioning, and take the fintech development road of fine, characteristic and differentiated

There is a gap between small and medium-sized banks and large banks. Small and medium-sized banks should identify and investigate developments in financial technology that match their unique functions and resources. Modeling, exploring the gap in the financial market, developing differentiated and irreplaceable business models, and filling the market gap.

6.2 Strengthen exchanges and cooperation to create joint competitive advantages

Regulators need to organize small and medium-sized banks to explore collaborative models of inter-bank digital transformation, and encourage small and medium-sized banks to work together to innovate and achieve complementary benefits. Sharing business expansion, intensive use of resources and shared digital transformation is a shared competitive advantage.

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6.3 Learn from the "regulatory sandbox" model and improve the top-level design of regulation

Financial regulators need to help small and medium-sized banks transform their financial technologies, and provide policy guidance for technology application and innovation. Due to China's "regulatory sandbox" model, some high-tech banks are encouraging relevant banks to first increase their systems, organizations, processes and so on.

We will accelerate the pace of innovation in risk prevention, relax regulatory tolerance appropriately, and strike a balance between innovation and development. At the same time, we need to insist on safe profits, and supervise and guide the regulatory requirements for the digital transformation of small and medium-sized banks. Small and medium-sized banks have approached the reality and can effectively identify and prevent technical risks and prevent systemic risk events.

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