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Research on the Transformation of Traditional Banking Business in the Context of Big Data

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Abstract

In recent years, with the rapid development of big data, its position and value in the economic development system of the entire country are unshakable. In this situation, how to overcome the challenges and seize unprecedented opportunities has become a necessary research issue. This paper systematically discusses the current development status of big data from four aspects of big data: technology, security, application, and management, and shows the opportunities and challenges faced by traditional banks from three aspects of asset business, liability business, and intermediary business under the background of big data. It also puts forward suggestions on diversification, specialization, and digital transformation in three aspects of asset profitability, liability structure, and intermediary business innovation. Big data will have a fundamental and profound impact on the business transformation of traditional banks and provide a continuous stream of new vitality for the transformation of traditional banks.

Keywords

Big data, Traditional banks, Business transformation

1. Definition of Relevant Concepts

1.1 Big Data

Big data refers to the vast scale of data involved, which exceeds the capacity of mainstream software tools to process, manage, and organize it within a reasonable timeframe. It necessitates new processing models to enhance business decision-making, information discovery, and process optimization. Big data has four main characteristics: massive data, high-speed data flow, diversified data types, and low value density. The scale of big data has far exceeded the processing power of traditional database software tools. Big data is usually transmitted and exchanged over high-speed networks, so fast data flow technology is required to ensure that data can be processed and applied in a timely manner. Big data has

a diverse range of data types, including not only structured data but also unstructured data. Due to the diversity of these data types, different technologies and tools are required for processing. Big data may contain some useless or redundant information, which needs to be filtered and extracted through data mining and other technologies to improve the value density of data. The definition of the concept and connotation of big data by relevant scholars summarizes the complexity of big data, which not only refers to data but also includes the technology and ability to analyze massive data to find useful information. After understanding the basic definition of big data, we can understand that effectively improving the efficiency of traditional banking business transformation through big data technology is an important problem that traditional banks need to solve urgently.

1.2 Traditional Banks

Traditional banks refer to institutions that are well-known and recognized by the public for carrying out savings, loans, financial transactions, etc., within the banking regulatory system. Since they are regulated by the state, all the activities they carry out are recognized by the state and formalized. Traditional banking refers to traditional financial institutions, usually including commercial banks, rural credit cooperatives, and rural commercial banks. These institutions usually focus on traditional financial services such as deposits, loans, and wealth management, and their business models are mainly based on offline channels and manual services. The characteristics of traditional banks include a large number of physical branches, long business hours, slow response to customer needs, face-to-face communication for services, and more conservative risk management. In the context of big data, traditional banks need to carry out digital transformation and launch more intelligent and personalized financial products and services to improve operational efficiency, customer satisfaction, and profitability.

2. The Development Status of Big Data and Traditional Banking Business

2.1 Development Status of Big Data

At present, the accumulation of big data is constantly reconstructing the world. The term "big data" is increasingly used in various fields, and this emerging concept has also attracted more and more attention. With the rapid development of science and technology, the transmission of information has become faster and more convenient, and on this basis, we have continuously advanced big data. The Financial Reporting Panel has said that everyone has their own red flags to look out for, and big data tools can allow you to identify them in a relatively short period. Now, people are using huge amounts of data to facilitate their lives and improve their quality of life. However, at the same time, in the process of popularizing and applying big data technology, many technical personnel are still needed to solve and overcome existing problems and play their due role in modernization. With the continuous advancement of technology, the applications developed based on big data will become more and more diverse. Due to the increase in computing power of computers and the increase in the amount of data available, intelligent applications represented by artificial intelligence and deep learning will become more

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common and sophisticated. Overall, the emergence of big data, intelligent applications, and increasingly abundant intelligent terminal products will have a profound impact on all walks of life.

2.1.1 Development Status of Big Data Technology

In terms of key technology research, big data format transformation, data transfer, and processing are the core problems that need to be solved urgently. Due to the heterogeneity and diversity of big data, improving the conversion efficiency and data transfer rate of big data formats is a necessary way to increase the application value of big data. In big data processing, reorganizing data and handling erroneous data are also effective measures to improve the value of big data applications.In terms of applied practice research, big data is mainly used in data management, data search analysis, and data integration. Among them, data management is mainly used for large-scale Internet databases and new data storage models and integration systems; data search and analysis are mostly used in social network models; and data integration is used to develop new functions of the overall database by integrating data from different sources with different functions.Finally, in terms of data security, user privacy and data quality issues in big data technology are the focus of current data security research.At present, the development of China's big data industry is still showing a steady upward trend. With the support of policies and capital, the scale of big data in China will continue to grow in the next few years, but the growth rate may stabilize. Unlike traditional data, big data has obvious differences in the way it is generated, the storage carrier, the way it is accessed, its form, and the characteristics of its source. Big data is closer to a certain group's behavior data, so it is more comprehensive, accurate, and valuable.

2.1.2 Development Status of Big Data Management

The management of big data refers to the management of the entire process of collecting, storing, processing, analyzing, and applying massive data. With the rapid development of technologies such as the Internet of Things and artificial intelligence, big data management has become a very important and indispensable part of various industries. With the continuous advancement of hardware technologies such as sensors and the Internet of Things, big data management is constantly evolving. The rapid development of cloud technology, distributed systems, distributed file systems, and other storage technologies has made big data storage more secure. The increasing maturity of efficient and reliable big data processing and analysis technologies, such as the wide application of various machine learning, deep learning, natural language processing, and other technologies, has greatly improved the efficiency of data processing and analysis. This allows for the mining of more valuable data and information across various sectors. The current big data application scenarios are becoming more and more extensive, with big data being widely used in finance, healthcare, retail, transportation, manufacturing, and other fields. It is gradually changing the business model and operation mode of these industries, making big data an important driving force for all sectors in the future.

2.1.3 Development Status of Big Data Applications

Big data is an important strategic asset that is widely used in various industries. It can not only help enterprises achieve refined operation and improve efficiency but also promote the development of the

national economy. In addition, big data also plays an important role in the innovation of the information industry, addressing the challenges of big data storage management, and transforming economic and social management.

With the rapid development of new technologies such as the Internet of Things, cloud computing, and artificial intelligence, big data technology is increasingly connected to these fields. The rapid development of the Internet of Things will greatly improve the ability to obtain data, and the application of cloud computing and artificial intelligence will also be deeply integrated into big data analysis systems, promoting the continuous emergence and deepening of integrated innovation.

In general, the continuous development of big data technology and the emergence of new technologies will bring more opportunities and challenges to various industries and will also promote innovation and progress in various fields. The development of the big data industry will usher in a period of rapid growth, and innovation will become the main focus of the development of big data. The integration of big data and major industries will also accelerate, providing new impetus for the expansion of the digital economy and the transformation and upgrading of traditional industries. This will certainly reshape our model of economic and social development. With the advent of big data technology, the Internet, and mobile devices successfully solving practical problems, big data is collected, stored, and processed, which can be used in various scenarios, including finance, medical care, retail, large-scale manufacturing enterprises, and government agencies.

In the financial field, big data applications can help banks carry out credit evaluation, transaction monitoring, and fraud detection, thereby improving risk management capabilities. In the financial field, big data applications have become a trend. With the growth of financial business volume and the advancement of computer technology, the ability of the financial sector to collect, manage, and analyze large amounts of data is constantly improving. The role of big data in the financial sector should not be underestimated. First, traditional banks can identify, quantify, and manage risks through big data analytics. For example, the use of big data technology can more accurately assess the risk of loan default and take appropriate measures to reduce the risk. Second, traditional banks can use big data analytics to predict market trends and make investment decisions. For example, by analyzing historical data and real-time market information, it is possible to determine which stocks or funds have better investment value.Third, traditional banks can use big data analytics to understand customer needs and provide more personalized services. For example, banks can recommend products and services that are suitable for customers based on their transaction history and other data. Finally, traditional banks can leverage big data technology to detect fraud. For example, by monitoring transaction patterns and activity, it is possible to identify unusual transactions or other unusual behavior and take appropriate action to prevent fraudulent activity.

2.1.4 Development Status of Big Data Security

With the rapid development of big data, data security issues are becoming more and more prominent. In order to ensure the normal operation of the network system, various technical and management measures

have been adopted to ensure the availability, integrity, confidentiality, and authenticity of network data, so as to ensure that the data transmitted and exchanged through the network will not be altered, decreased, modified, lost, or leaked.

However, with the exponential growth of the volume and traffic of big data, the nodes and regions of data flow are becoming more and more complex. At the same time, the diversification of usage scenarios has also brought new security challenges, and the original protection methods can no longer meet today's security requirements. In this case, more advanced technical and management measures need to be taken to ensure the security of data, including but not limited to encryption algorithms, network firewalls, access control mechanisms, and security audit systems.

In addition, data security also needs to rely on the support and guarantee of policies, laws, and regulations. Strengthening the protection of data privacy and personal information and cracking down on illegal access and use of data are essential. Only by taking all-round measures to ensure data security can we promote the healthy development of big data applications and provide a solid data foundation for the prosperity and development of society. Data security has been redefined as an independent security system. With the development and popularization of big data technology, big data security has become a topic of great concern.

Currently, big data security faces many challenges. Cities like Tianjin, Guizhou, and Shenzhen, among other provinces and municipalities, have accelerated the establishment and improvement of data security management systems, further refined the implementation of data security management requirements, encouraged technology cultivation and talent construction, and consolidated the cornerstone of the development of the data security industry. At present, the formulation and introduction of support policies for the data security industry are on the agenda. Relevant departments will formulate and introduce special policies for the development of the data security industry to create a favorable development environment for China's data security industry. The data security standard system will be further improved. The state and relevant standardization organizations in various industries will accelerate the development of data security standards in areas such as the identification and protection of important data, data security risk assessment, monitoring and early warning, and security assessment of important data and personal information leaving the country, and further improve the construction of data development and utilization technologies and data security standard systems. The industry's self-discipline activities have been steadily advancing. Further attention will be paid to the cultivation of data security talents. The state has made corresponding work arrangements for the data security industry in strategic and top-level design documents such as the development of the digital economy and the big data action plan. However, a national top-level plan specifically for the data security industry has not yet been formed, and China's data security industry development policy needs to be further clarified and refined. First, data storage is secure. As the amount of data increases, data storage becomes an important issue. Issues such as data breaches, data tampering, and data loss can have a serious impact on a business. Second, data transmission is secure. Big data platforms usually need to transmit data, which requires

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security during transmission. Otherwise, the data may be stolen, tampered with, or destroyed during transmission. Again, data is safe to use. On the big data platform, all kinds of users can access data through APIs or other interfaces, so it is necessary to ensure the security of user access to data. Without proper control, users may misuse data or use it for illegal purposes. Finally, cloud computing security. Big data platforms are usually deployed in the cloud, so it is necessary to ensure the security of the cloud computing environment. Cloud computing security issues include virtualization security, network security, identity authentication, and access control.

2.2 Current Status of Traditional Banking Business Development

Currently, traditional banking faces many challenges and opportunities. First of all, with the continuous development of technology, consumers have an increasing demand for digital services. As a result, many traditional banks have to accelerate their digital transformation and provide more convenient and fast online services to meet the needs of consumers. For example, many banks have launched digital services such as mobile apps and online banking, so that customers can manage their accounts more conveniently. Second, emerging technologies such as blockchain, artificial intelligence, and automation are transforming the infrastructure and business models of financial services. Many banks are researching and adopting these new technologies to improve their efficiency and reduce costs. In addition, with the rise of fintech companies, traditional banks are also facing competitive pressure. These companies offer services similar to payments, lending, and investing but typically have greater flexibility and lower cost structures. In general, the current situation of traditional banking business development is in a period of change and adjustment. Banks need to adapt to the needs of the market and constantly innovate to stay competitive and attract customers.

2.2.1 Asset Business

Asset business is a business activity in which commercial banks obtain profits by absorbing liabilities such as customer deposits and then using these funds for lending or investment. In this process, the bank treats customer deposits as liabilities, while the assets that provide loans or investments to borrowers are the assets of the bank. In this way, banks are able to earn a variety of income streams, such as loan interest, returns on investment, and various other fees. The asset business is the most significant revenue source for commercial banks. Traditional banks must undergo transformation in the current era of big data.

One of the main profit channels and core businesses between banks and customers is affected. Firstly, the decrease in interest rate spreads between deposits and loans has led to a gradual decline in traditional banks' income from interest rate spreads. Secondly, the rising non-performing loan ratio puts pressure on banks' profits. Thirdly, the yield on wealth management products has also decreased. Lastly, fluctuations in the bond market impact banks' profitability. Overall, these trends do not apply universally to all banks, and various factors continue to shape the industry's future development.

2.2.2 Liability Business

One of the important businesses of a traditional bank is the taking of deposits, which is the activity of raising the required funds by promising the public to repay them. Thus, it is considered a business on the

liability side. In other words, when a bank takes deposits, it is actually promising to repay the funds to the depositors in the future in the form of principal and interest, thereby obtaining the necessary funds to carry out its business. In addition, the liability business also includes its own capital, borrowings, interbank deposits, and funds raised through bond issuance. The size of the liability business directly determines the scale of the commercial bank's lending, making the liability business the foundation of the various operations of the commercial bank. Since the most representative aspect of the liability business is the absorption of deposits, this article focuses on the deposit business.

According to data released by the China Banking Association in 2021, by the end of 2020, the total assets of China's banking industry reached 326.69 trillion yuan, of which deposits amounted to 216.13 trillion yuan. This shows that the liability business of traditional banks is still dominant in the entire banking industry. However, from the perspective of digitalization, with the development of Internet technology, more and more users have begun to use digital channels such as mobile banking and online banking for deposits, wealth management, and other operations. According to data released by the People's Bank of China, in the fourth quarter of 2020, the number of Internet banking customers reached 853 million, and the transaction volume of Internet banking totaled 487.4 trillion yuan. This shows that the transformation of traditional banks cannot wait, and digital business has become an important direction for the development of traditional banks' liability business. Deloitte's 2020 Banking Outlook report analyzes the impact of technologies such as big data, the Internet, and mobile payments on traditional banking business models. The results show that global banks and financial institutions are expected to invest more than $20 billion in the development and deployment of big data technologies and related services by 2020. Traditional banks need to take steps to remain competitive in the market. At the same time, big data also gives non-bank institutions such as Alipay and WeChat Pay the opportunity to challenge traditional banks. It is expected that by 2020, the transaction volume of China's mobile payment market will reach 30 trillion yuan. Mobile payments are becoming a more convenient and secure way to pay, with the global mobile payment market expected to reach $3.4 trillion in transaction volume by 2020. Mobile payment represents both an opportunity and a challenge for banks, which need to actively explore business models and technical means of mobile payment to provide better services and remain competitive in the market. Under the influence of technologies such as big data, the Internet, and mobile payments, the traditional banking business model is undergoing major changes. Banks need to take proactive steps to adapt to new technologies and market environments, improve service levels, and remain competitive. They need to understand their customers' needs more comprehensively and pay increasing attention to personalized services to retain customers. Additionally, with the development of artificial intelligence, big data, and other technologies, traditional banks lag behind in customer service efficiency, analysis, and risk management compared to newer technologies. Finally, traditional bank deposit business faces fierce competition from non-bank institutions (e.g., Alipay, WeChat Pay) and other financial institutions (e.g., securities companies, insurance companies), and must continue to innovate and improve to stay competitive in the market. Driven by digitalization and technological

innovation, traditional bank deposits are constantly adapting to change, improving service levels, maintaining customer relationships, and competing with other financial and non-bank institutions.

2.2.3 Intermediate Business

Traditional banks can receive payments, make payments, and handle other entrusted matters on behalf of their customers, receiving fees for these services. This type of business is known as intermediary business. Compared with other businesses, intermediary business requires less capital investment, and has higher returns and lower risks, so it has become one of the important indicators for evaluating the core competitiveness of commercial banks. According to data released by the People's Bank of China, in 2019, the main sources of profit for commercial banks included net interest income, fee and commission income, and investment income, with the three types of income accounting for 52.4%, 35.4%, and 11.6%, respectively. According to data released by the China Banking and Insurance Regulatory Commission, at the end of 2019, the non-performing loan ratio of commercial banks was 1.86%, and the provision coverage ratio was 181.5%. According to data released by Bain & Company, a world-renowned consulting firm, at the end of 2019, the total number of customers of China's five largest commercial banks reached 940 million, with retail customers accounting for more than 70%. According to data released by the China Securities Regulatory Commission, in 2019, the total operating income of China's joint-stock commercial banks was 10.49 trillion yuan. Therefore, traditional banks must actively expand the sources of non-interest income, such as fees and commissions. They should expand the scale of intermediary business by launching diversified financial products and services, such as trusts, funds, and insurance, to improve profitability. With the intensification of competition in the financial market and the continuous change in customer needs, traditional banks need to continue to innovate and optimize to enhance profitability and market influence.

3. Challenges Faced by Traditional Banking in the Context of Big Data

With the gradual maturity of big data technology, traditional banks are facing unprecedented challenges in terms of asset business, liability business, and intermediary business. In the context of big data, banks need to understand customer needs more accurately and provide customers with more personalized and customized products and services.

3.1 The Profitability of Asset Business Has Declined in the Context of Big Data

Living in an era of big data, data makes everything traceable, explainable, and provides us with a measurable scale. The impact of big data on the asset business of traditional banks cannot be ignored. Traditional banking asset business is affected by a variety of factors, not the least of which is the changes brought about by technology and digital transformation. With the rapid development of technology, consumers' needs and expectations for financial services are constantly changing. The model and service mode of traditional bank asset business can no longer fully meet the needs of modern consumers, and it will be difficult for traditional bank asset business to adapt to market changes and customer needs. Emerging fintech and internet finance companies have put competitive pressure on traditional banking

asset businesses. These companies use the latest technology and innovative business models to provide more convenient, fast, flexible, efficient, low-cost, and high-yield financial products and services, attracting more and more customers.

Today, commercial banks are undergoing a dramatic transformation. One of the most important changes is the increased requirement for their own channel construction, and at the same time, they are also carrying out refined management in terms of further improving user service quality and experience. This is the innovative power generated by the competition between commercial banks and Internet finance. From the perspective of macro and internal relations, this also represents a change in the concept of commercial banks. They have not only accepted the model and characteristics of Internet finance but are also actively making changes and even strengthening cooperation with Internet financial companies to achieve a symbiotic and win-win situation. Therefore, the competition between commercial banks and Internet finance is no longer a simple zero-sum game but has become a relationship of cooperation and innovation.

The asset business structure of different financial institutions or investment companies may be different, and the specific asset allocation strategy depends on the company's business objectives, risk appetite, and market conditions. The asset business of traditional banks mainly includes cash assets, loan business, bill discounting, and investment business. In the context of big data, the decline in the profitability of the asset business is mainly caused by the following aspects: the popularity of data analysis technology. With the popularization of big data technology, many investment institutions and banks have also begun to use big data technology to analyze market dynamics and evaluate asset value. This has made traditional banks more competitive and less able to rely on traditional business models to maintain their profitability as before. Customer needs have changed. With the advent of the digital era, customers' demand for investment and wealth management services has gradually changed. Many clients want to invest through online platforms rather than seek professional help like traditional asset managers. This has led to a significant loss of customers from traditional banks, and this churn continues to grow. This is also an important reason for the decline in asset earnings. The use of big data technology can improve the operational efficiency of traditional banks, but it also requires investment institutions and banks to constantly update technology, which will incur additional costs for the maintenance, development, and research of big data technology. In addition, the use of big data technology requires stricter supervision, and the strengthening of government supervision and the *improvement of risk control requirements will also increase these costs. Therefore, in the context of big* data, traditional banks need to innovate business models and actively use big data technology to find new profit points. At the same time, they need to adapt to changes in market demand, reduce costs, and improve service quality to maintain their profitability.

3.2 In the Context of Big Data, the Debt Business Structure Is Single

Traditional bank liabilities are also affected by a number of factors, not the least of which is the change brought about by technology and digital transformation. The basis of traditional bank operations is to

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have funds; in the source of funds column, except for part of their own funds, the rest are absorbed in the form of liabilities. However, such liabilities usually have costs, and with the further development of big data, these costs are still rising. Therefore, this requires traditional banks to use liabilities flexibly, which is still in the exploratory stage. The impact of big data is to prompt traditional banks to consider more effective use of liabilities while taking into account profits and fulfilling the social responsibility of supporting the construction of the national economy. In the context of big data, a single liability structure will lead to higher financing costs and liquidity risks for banks. Once a certain type of debt instrument fails, traditional banks may be hit by capital breakdowns, which will affect the bank's solvency and soundness. The single structure of the liability business is mainly caused by the following aspects:

First, the traditional business model is outdated. With the development of big data technology, many new financial institutions are emerging, such as P2P online lending and virtual banks. The business models and operating models adopted by these institutions are different from those of traditional financial institutions. However, the assets held by financial institutions such as traditional banks and trust companies are basically fixed-income products, such as deposits and bonds, resulting in traditional banks being relatively single on the liability side. Second, there is the issue of risk appetite. Many traditional banks focus more on safety and stability than on risk aversion when it comes to liabilities. This risk appetite leads to a more conservative borrowing approach, resulting in a relatively homogeneous debt business structure. Third, technical limitations. Traditional banks mainly rely on offline channels, such as bank outlets and ATMs, which restrict their development of liability business and make it unable to flexibly carry out diversified liability business like Internet financial institutions.

Therefore, traditional banks need to actively transform, adopt new business models and operating models, and expand debt business channels with the help of new technologies such as the Internet to achieve diversified development. At the same time, it is also necessary to strengthen risk management capabilities, balance risks and returns, and improve the diversity of the liability business structure.

3.3 Lack of Innovation in the Integration of Intermediary Business and Big Data

The intermediary business of traditional banks aims to provide a variety of fee-based financial services to different customer groups, thereby obtaining better profit income without tying up their own assets or liabilities. These products not only require revenue generation but also need to improve customer stickiness and accumulate customer resources. However, the emergence of big data has brought certain changes to this model, opening up a new, convenient, efficient, and low-cost financial service model with the participation of the general public. Nevertheless, from the perspective of the development model, the emergence of big data seems to have had a greater impact on the intermediary business of traditional banks. This is because research and analysis show that the intermediary business of traditional banks needs to revitalize existing customers and must have the characteristics of freedom, flexibility, and convenience, which is an objective trend. Although the emergence of big data has accelerated the transformation and innovation process of commercial banks' intermediary business, it has not changed the importance and value of traditional banking intermediary business. Adapting to market demand,

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improving service quality, and mastering advanced technology and management methods are all key factors for traditional banks to continue to expand their intermediary business. Intermediate business refers to the income obtained by banks by providing customers with services such as consulting, transaction matching, and asset management in addition to providing traditional deposit and loan business. At present, with the rapid development of big data technology, more and more financial institutions have begun to apply big data to intermediary business to achieve more personalized and efficient services and marketing. However, the intermediary business of some banks still has the problem of lack of innovation performance in big data. The issues are as follows:

First, the way data is sourced has not been expanded. The data sources that banks rely on for intermediary business are mainly customer relationship management systems, e-commerce platforms, social media, etc. However, these data do not always cover all customers and markets, and the amount of data is limited, making it difficult to support a wider range of intermediary business. With the rapid development of big data, all walks of life have begun to use big data for data integration, making traditional banks have to keep up with the pace of the times. Second, the level of technology has not been innovated. Although big data technology has developed maturely, some bank employees lack the necessary technical knowledge and skills to make full use of existing technical means for data mining and analysis, which affects the innovative performance of intermediary business. Third, customer needs are not clearly understood. Due to the diversity and personalization of customer needs, it is difficult for banks to accurately capture customer needs when carrying out intermediary business and to provide customers with more personalized and differentiated services.

4. Suggestions for the Transformation of Traditional Banking Business in the Context of Big Data

In the context of big data, China's traditional banks are actively transforming, improving their platforms and businesses through big data, providing customers with better financial services and a broader range of financial services, and broadening the asset business, liability business, and intermediary business of traditional banks. In the context of big data, traditional banking needs to be transformed to adapt to market demands and trends. The traditional banking industry is currently going through a unique era of full digitalization. With the rapid rise of the Internet and big data, information barriers have been broken, and big data and information technology are gradually subverting the business model of banks. Traditional banks have become outdated in terms of product updates and iterations, customer experience optimization, etc. The need for digital transformation in traditional banks cannot be ignored. At present, the wave of financial technology is coming increasingly wave after wave, and traditional banks can only remain competitive in the fierce market competition by actively embracing technology and digitalization.

4.1 Diversification and Transformation of Asset Business

Traditional banks should carry out a reasonable transformation method based on their own development scale and should be deeply aware that using big data to enter the Internet is a low-cost and high-yield attempt, which is in line with the trend of contemporary world economic development. However, banks

trying to diversify should find their own transformation path and formulate a transformation strategy, rather than just transforming for the sake of transformation; they should carefully consider their approach.

With the advent of the Internet era, more and more customers no longer go to the bank to handle business, and the bank has gradually become a behind-the-scenes support. In terms of cash assets, bank loans, and other businesses, banks should make full use of big data technology to calculate potential risks. They should also use big data technology to locate target customers, implement accurate delivery, understand customer needs, and conduct one-to-one marketing. In the context of big data, the asset business needs to be diversified to adapt to market demand and development trends. Expand Investment Horizons: Traditional asset management companies can expand their investment horizons, including not only traditional financial products such as stocks and bonds but also focusing on cutting-edge technologies and emerging industries. For example, industries such as the Internet of Things, blockchain, and artificial intelligence all have high investment value. Identify Investment Opportunities Based on Big Data Technology: Asset management companies should dig deeper into the value of various types of data and grasp investment opportunities based on big data technology. Through big data analysis, they can better predict market dynamics and industry development trends, thereby improving return on investment. Establish a Risk Management System: With the increasing market risks, asset management companies need to establish a sound risk management system and use big data technology and machine learning to identify, assess, and prevent risks. Launch a Wide Range of Wealth Management Products: Asset management companies should launch diversified wealth management products to meet the different investment needs of customers, such as complex, hierarchical, and principal-guaranteed products. They should strengthen the construction of service systems and improve customer satisfaction. Strengthen Investment in Technology: Asset management companies need to strengthen technology investment, embrace digital transformation, master and apply cutting-edge technologies such as big data, artificial intelligence, and blockchain, and promote business transformation and upgrading. Improving operational efficiency and profitability is crucial.

4.2 Specialized Transformation of Debt Business

In the big data environment, commercial banks need to diversify their internal business to enhance their professional capabilities. Complex business can be retained at the business desk for processing, or it can be handled through standardized management and partitioning. On the big data platform, commercial banks can use cutting-edge technologies such as artificial intelligence, blockchain, and cloud computing to form strong support, obtain customer data from the trading platform, create a complete database, and continuously develop new financial products and businesses based on the potential directions indicated by the database. Big data focuses on the acquisition, storage, processing, analysis, and visualization of financial big data. Among them, the core technology of financial big data includes the basic bottom layer, data storage and management layer, computing and processing layer, and data analysis and visualization layer. Through these technical means, commercial banks can have a more comprehensive understanding

of market dynamics and customer needs. At the same time, they can better improve the level of risk control and decision-making, and achieve the maximization of business objectives. In the context of big data, the liability business needs to be professionally transformed to adapt to market demand and development trends. The following are some suggestions: Expand the Business Scope: Traditional financial institutions can expand their business scope by cooperating with other industries, such as partnering with technology companies and real estate developers to launch a wider range of liability products. Promote Digital Transformation: Traditional financial institutions need to strengthen their digital transformation and establish comprehensive electronic channels to provide reliable, efficient, and high-quality services. At the same time, it is essential to protect customer privacy and data security。 Strengthen Risk Management: Traditional financial institutions must enhance risk management when developing diversified liability businesses. This includes assessing and troubleshooting potential risks before product design and strengthening supervision and control during operation. Introduction of Emerging Technologies: Traditional financial institutions can introduce emerging technologies such as artificial intelligence and big data to improve the efficiency of business processes and enhance the precision and accuracy of risk management. Strengthen Innovation: Traditional financial institutions need to focus on innovation, create new wealth management products, and integrate them with both online and offline channels to better serve customers. In short, traditional financial institutions need to actively expand their business scope, strengthen digital transformation, enhance risk management, introduce emerging technologies, and focus on innovation to achieve the specialized transformation of their liability business. This process must align with regulatory policies while ensuring the protection of customer privacy and data security

4.3 Digital Transformation of Intermediate Services

In the context of big data, intermediate businesses must undergo digital transformation to meet market demand and development trends. Compared with Internet finance, the intermediary business of traditional banks has a low degree of digitalization and lacks the support of digital technology, capital, and talent. First of all, we should strengthen data mining capabilities, which traditional financial institutions need to enhance. Strong data mining capabilities involve in-depth mining and analysis of customer data, and the development of more personalized marketing strategies. At the same time, customer privacy and data security should also be emphasized. Secondly, we should use artificial intelligence technology. Traditional financial institutions can leverage artificial intelligence technologies such as machine learning and natural language processing to analyze and mine data, thereby improving marketing effectiveness. Third, promote digital marketing. Traditional financial institutions need to promote digital marketing from online to offline to achieve omni-channel marketing and improve customer experience and satisfaction. In the process of digital marketing, risk management and supervision need to be strengthened to ensure business compliance. Fourth, optimize product design. Traditional financial institutions need to continuously optimize product design according to customer needs and market changes, and launch new products to meet market demand and enhance market

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competitiveness. Finally, build a team of marketing professionals. To better achieve digital transformation, traditional financial institutions need to establish a professional marketing team with advanced technology and professional capabilities to improve marketing effectiveness.

All in all, traditional banks need to actively strengthen their data mining capabilities, use artificial intelligence technology to promote digital marketing, optimize product design, and establish professional marketing teams to achieve the digital transformation of intermediate business. This process needs to align with regulatory policies and focus on protecting customer privacy and data security.

5. Conclusion

In the process of rapid development of the global economy, the traditional banking industry has been affected and impacted to a certain extent. Combined with the background of the rapid development of big data, this paper studies the impact of big data on traditional commercial banks and their transformation strategies and concludes as follows:

First of all, big data has both advantages and disadvantages for the development of traditional banks. On the basis of reviewing the development process of big data, analyzing the current development status of big data, and summarizing the development characteristics of big data, this paper argues that the combination of traditional banks and big data can improve product innovation and solve the problem of a single debt structure, but there are also problems of high risk and difficulties in supervision. Second, the impact of big data on traditional banks is enormous. Whether it is in the asset business, the liability business, or the intermediate business, it is inseparable from the support and integration of big data technology. Only by making full use of big data technology can the profitability of the asset business increase, innovate more high-quality financial products, and understand and meet customer needs. Using a variety of products can enhance customer satisfaction, improve operational efficiency, and profitability. Only by making full use of big data technology can traditional banks adapt the liability business to the needs and development trends of the market. Only by making full use of big data technology can they continue to innovate in the field of intermediate business. Finally, in the context of big data, traditional banks must transform and use big data technology to drive their own development and change. Only in this way can they continuously improve their competitiveness and create more value for customers.

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