Research on the Digitalization of Commercial Banks: Take Guangdong Huaxing Bank as an Example

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Abstract
With the rapid development of China’s information technology, the traditional financial services provided by commercial banks have gradually deviated from the trend of the times, and it is an inevitable trend for commercial banks to transform through digitalization. At the same time, due to the emergence of the new crown epidemic, the digitalization of the financial industry has entered a stage of accelerated development. This paper uses the case analysis method, based on the domestic commercial bank environment, and takes Guangdong Huaxing Bank as the object of analysis. By analyzing the three aspects of Guangdong Huaxing Bank’s business digital strategy, information security and operational efficiency in the direction of digitalization, Finally, it puts forward suggestions on the digital transformation of commercial banks based on case analysis.

Keywords
Information Technology; Commercial Banks; Digital Transformation.

1. Introduction
The emergence of digital finance is constantly impacting the traditional business models of financial institutions. At the same time, information technology is also constantly changing people's financial habits and perceptions. In 2020, a new crown pneumonia epidemic has swept the world. Before the outbreak of the epidemic, the digitalization of my country’s commercial banking business was still in a relatively slow development stage; however, the sudden new crown pneumonia epidemic became a catalyst for its digitalization. This global disease has made the digital demand for banking more urgent. Commercial banks have to speed up the digitization of their business.

Cai Guohua (2017) stated that fintech will restructure the financial industry, especially commercial banks. Artificial intelligence, big data, distributed technology, interconnection technology, security technology and other five key technologies, in the financial field, closely focus on the four major applications of intelligent risk control, intelligent marketing, intelligent operation, and intelligent supervision. The industry's product services, business models, and business concepts have brought profound changes to promote the innovation of the banking industry's product services and business models. In the future, the construction of intelligent scenarios may be used to fundamentally change the financial industry[1]. Yuan Bo, Li Yonggang, and Zhang Yilong (2013) believe that commercial banks must attach great importance to the opportunities and challenges brought about by Internet finance, on the one hand, based on their own actual and competitive advantages, formulate step-by-step Internet finance development action plans to quickly seize the Internet finance market First opportunity. On the other hand, it is necessary to actively promote the transformation to intelligent online banking from all levels of operation and management, and further enhance the comprehensive competitiveness and sustainable development capabilities of commercial banks in the Internet operating environment[2]. Wang Zhiming (2020) believes that in order to effectively promote the
transformation and development of my country's banking industry and inject fresh vitality into the banking industry, it is necessary to grasp the development opportunities of information technology, fully understand financial technology, and use financial technology to inject new impetus into bank transformation[4].

In recent years, my country's central government has attached great importance to the reform and innovation of small and medium commercial banks. Such small and medium-sized banks are the main force for my country's banking financial institutions to serve agriculture, rural areas, and small and micro enterprises. Although the small and medium-sized commercial banks have been greatly impacted due to the outbreak of the epidemic, under the impetus of national policies and measures, the reform of small and medium-sized banks will be further strengthened in the future. Especially under the background that the traditional banking business model has gradually fallen behind the people's consumption habits and the regulatory policy environment of small and medium-sized banks has been continuously optimized, the reform and innovation of small and medium-sized banks has ushered in a favorable opportunity. Capital, integrating financial technology to accelerate the pace of reform[3].

Facing the impact of emerging digital finance and other factors, commercial banks, as traditional large financial institutions, need to make more advanced reforms and innovations based on their own conditions in the rapid development of digital finance. The digitalization of commercial banks has become irreversible wave. This article will take the digital case of Guangdong Huaxing Bank as the research object. Under the conditions of the domestic environment, the digitalization strategy, information security and business efficiency of the digitalization process are analyzed to find out the digitalization strategy. Affect the problem and put forward some suggestions for improvement.

2. Overview of Digitalization of Domestic Commercial Banks

2.1. The overall situation of the domestic banking industry

For the current economic environment, the country's prudent monetary policy adjustments will be more flexible, counter-cyclical adjustments will increase, and the overall liquidity of the banking industry will improve. At the same time, it must be noted that the banking industry is still affected by multiple unstable factors. In the next period of time, the upward pressure on non-performing assets, the corporate governance of some small and medium-sized financial institutions, and the rebound of some market chaos are still relatively high[5].

2.2. The status quo of digitalization of domestic commercial banks

In the past, the main channel of banking business was business outlets, and customers who wanted to handle related business could only go to the outlets. With the continuous development of information technology such as big data and cloud computing services, the handling of banking business has also begun to transform into intelligence. Channels have changed from offline outlets to online platforms, and most commercial banks have accelerated their investment in digital transformation of their businesses. Take the number of mobile banking users as an example. Since 2019, the number of mobile banking users has increased steadily. Among them, the number of mobile banking users of large commercial banks has exceeded 1.3 billion, and the number of mobile banking users of joint-stock commercial banks has exceeded 4 Billion.

It can be said that the digitization of commercial banks has enabled greater breakthroughs in banking business, and digitization is a reform plan for commercial banks to break through the limitations of traditional businesses. Regardless of the development of financial technology or the reform and development of banks themselves, the digitalization of commercial banks has become an irreversible trend. The banking industry combined with national policies and
financial environment measures to start a new round of development plans for the digital transformation of the banking industry. Commercial banks will have more opportunities on the road to digital transformation today. Digital technologies such as Internet technology, big data, cloud computing, Internet of Things, and artificial intelligence have profoundly changed the market environment, financial ecology and business models of commercial banks. With the continuous embedding of technology in the financial ecosystem, new business models of major commercial banks are constantly emerging, and product innovations are emerging one after another. Commercial banks are facing the risk of digital transformation.

3. Case analysis of digitalization of commercial banks

3.1. Analysis on the Digitalization Strategy of Commercial Banking

3.1.1. Guangdong Huaxing Bank's business digitalization strategy

Based in the Guangdong-Hong Kong-Macao Greater Bay Area, Guangdong Huaxing Bank has entered its second "five-year plan" since 2017. It has made deeper innovations and reforms for digital transformation. Its business digital strategy can be summarized as the following three Aspects:

(1) Intensify product innovation, build an online full-process product chain for international business, and use online platforms to provide new marketing channels for the company's financial business.

(2) From electronic to online and mobile, from electronic banking to Internet banking. Based on the electronic account system, Huaxing Bank provides customers with various services such as personal wealth management and corporate treasury management through Internet technology, comprehensively broadens the breadth of Internet products, and strives to build a distinctive Internet banking brand. At the same time, it uses big data as the core to build a scientific and comprehensive risk control system, with every effort to create a big data risk management model, to escort the Internet banking business.

(3) Continuously improve the online intelligent platform, and promote the transformation and development of retail banking business through "public-private linkage". Relying on the Internet, Huaxing Bank strengthens cooperation with financial technology companies, and vigorously builds online asset management, cross-regional wealth management and sales platforms to promote the realization of online sales in areas without branches. On the other hand, Huaxing Bank always regards financial services for small and micro enterprises as its long-term development strategy, makes full use of high-quality resources, actively innovates the loan service model for small and micro enterprises, and promotes the improvement of small and micro enterprise banking services through online and standardized high-quality platforms development of. At the same time, we use business data to sort out existing corporate customers, acquire high-net-worth customers in batches, continuously strengthen the characteristics of online platforms, customize professional products and services for the Greater Bay Area customer base, and explore corporate customers and customers through information technology such as big data and cloud computing. The new needs of individual customers provide all customers with more convenient and efficient intelligent and personalized retail financial services.

3.1.2. Guangdong Huaxing Bank's business digitalization strategy

Through a summary of Huaxing Bank's business digital strategy, it can be seen that the strategy is very specific and advanced. The most direct manifestation of the implementation strategy is the changes in its business and management fees.
Table 1. Huaxing Bank 2016-2019 business and management fees

<table>
<thead>
<tr>
<th>Project</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee's salary</td>
<td>71,843.65</td>
<td>73,706.86</td>
<td>98,176.03</td>
<td>128,425.78</td>
</tr>
<tr>
<td>Business promotion fee</td>
<td>8,008.03</td>
<td>8,438.38</td>
<td>11,219.19</td>
<td>13,610.56</td>
</tr>
<tr>
<td>Business service fee</td>
<td>3,488.77</td>
<td>4,774.24</td>
<td>7,034.16</td>
<td>3,476.07</td>
</tr>
<tr>
<td>Information Technology Support Fee</td>
<td>5,086.06</td>
<td>4,025.89</td>
<td>6,624.81</td>
<td>7,050.58</td>
</tr>
<tr>
<td>Other fee</td>
<td>39,404.04</td>
<td>41,528.89</td>
<td>45,852.74</td>
<td>47,319.12</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>127,830.55</strong></td>
<td><strong>132,474.26</strong></td>
<td><strong>168,906.93</strong></td>
<td><strong>199,882.11</strong></td>
</tr>
</tbody>
</table>

Data source: Guangdong Huaxing Bank Annual Report

The reform of business digitization is not achieved overnight, but on the basis of introducing high-tech, training expert talents, and buying technical equipment to continuously promote innovation and continuously improve. Because Huaxing Bank is still in a critical period of strategy implementation, the business digitalization strategy has further expanded Huaxing Bank’s expenses, especially the salary expenses for the introduction of relevant technical talents, which has also increased the bank’s financial burden to a certain extent.

Although Huaxing Bank’s operating expenses are still rising year by year, it insists on focusing on business digital development, making full use of technology investment funds, and by introducing high-tech information technology, strengthening cooperation with financial technology companies, and building an intelligent online platform. Its corporate financial business, retail banking business and other types of business layout network channels, ensuring that it has a stable profitability level while implementing its business digitalization strategy.

### 3.2. Digital Information Security Analysis

#### 3.2.1. China Renaissance Bank’s countermeasures

The digitization of business has brought a lot of information and data to Huaxing Bank, but digitized information often carries greater risks. The Internet allows commercial banks to obtain information such as corporate credit and corporate financial data more conveniently and quickly, but it also provides more forgery methods for companies that do not meet business conditions. When the bank's business processing channels change from offline to online, the information obtained by commercial banks will become more unreliable, and business risks will increase accordingly. Moreover, due to the onlineization of business channels and the continuous maturity of Internet technology, banks need more advanced and effective financial technology to support and manage the confidentiality of digital information. Therefore, commercial banks will face more serious information security issues in the process of digitization.

For corporate credit issues, Huaxing Bank vigorously introduces and develops risk management information technology, with big data as the core, builds risk databases and intelligent risk management systems such as Sikuquanshu, Langyan system and Tianyan, and enhances the intelligent and refined risk management work. In response to the incomplete credit information of small and micro enterprises, insufficient mortgage guarantee capabilities, etc., the inter-bank credit extension system was launched, and third-party big data cooperative credit scoring was actively introduced to expand the public platform with the government. Blockchain industry group cooperation, in-depth cooperation with tax authorities, deepening bank-government interaction and bank-business cooperation, further enhancing the ability to control credit risk, reducing the risk of corporate information to loans and other businesses, and speeding up approvals, etc. Process, improve customer business experience, and provide better protection for the bank's overall digital information. In terms of network information security, Huaxing Bank continues to improve network attack and defense mechanisms while
conducting risk management, improving network security prevention and control capabilities, and ensuring information security.

3.2.2. Digital information security response analysis
Through the narrative of Huaxing Bank’s digital information security countermeasures, it can be seen that while the bank is digitizing its business, it also understands the backwardness of the original risk prevention and control system, and information security has a significant impact on the digital development of commercial banks. Therefore, HuaxingBank When the original risk management system lags behind the development of the times, the bank resolutely uses high-tech to transform and upgrade it, and build multiple databases and intelligent risk control systems to further reduce the risk of information asymmetry.

3.3. Analysis of digital operation efficiency
3.3.1. Guangdong Huaxing Bank’s operational efficiency improvement measures
The operational efficiency of the banking business can be improved in two parts: internal operations and external services. In terms of internal operations, Huaxing Bank actively uses information technology to develop from manual operations to intelligent operations, and optimizes the operation management framework. In terms of external services, Huaxing Bank insists on taking customers as the service center and developing online marketing through digital platforms. Develop and improve online business models to achieve online professional operations.

3.3.2. Analysis of operational efficiency improvement
Operational efficiency has always been the focus of the improvement and development of commercial banks, and the reform of the digital model has allowed banks to find a new direction for improvement. It can be said that the introduction of digital technology has comprehensively promoted the innovation and transformation of traditional businesses from inside to outside.

<table>
<thead>
<tr>
<th>project</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asset Utilization(%)</td>
<td>21.95</td>
<td>23.61</td>
<td>22.85</td>
<td>25.2</td>
</tr>
<tr>
<td>Return on Assets(%)</td>
<td>0.57</td>
<td>0.81</td>
<td>0.77</td>
<td>0.87</td>
</tr>
<tr>
<td>Weighted average ROE(%)</td>
<td>0.62</td>
<td>0.9</td>
<td>0.86</td>
<td>0.95</td>
</tr>
<tr>
<td>Net Profit Margin on Sales(%)</td>
<td>26.16</td>
<td>34.3</td>
<td>33.52</td>
<td>34.66</td>
</tr>
</tbody>
</table>

Digital technology has greatly improved Huaxing Bank’s internal operations and external service operating models, thereby effectively increasing the profitability of its banking business. At the same time, we can also see that Huaxing Bank’s asset utilization rate has generally been on the rise in recent years. This also shows that digital and intelligent technology has further improved its ability to operate assets.

The improvement in operating efficiency reflects the improvement of Huaxing Bank’s internal operations, which shows that the development of online and intelligent operation management driven by digitalization has brought positive benefits to Huaxing Bank; and the significant increase in profitability also reflects the digitalization. The superiority of the service model brought by the business model.

4. Conclusion
This article combines the digital overview of domestic commercial banks, the necessity of bank digitalization, and the digital case of Guangdong Huaxing Bank, and focuses on the analysis of three major aspects of commercial bank business digitalization strategy, information security and operational efficiency, and draws the following conclusions:
First, in order to accelerate the pace of digitization, many commercial banks blindly carry out
digital transformation of existing businesses, but are unable to convert the digitization model
into the driving force of business in a timely manner, resulting in a vicious circle of insufficient
funds and stagnant reforms. It can be said that the balance of input and output of commercial
banks in the transformation process is the foundation of their digital development. Therefore,
ensuring a relatively balanced state of input and output is the first point of commercial banks'
digital transformation.

The second point is that commercial banks should pay attention to the prevention and control
of risks while carrying out digital transformation. Digitization will not only expand the
traditional risks of banks, but also bring new risks to banks such as network information
security. Therefore, commercial banks must ensure the simultaneous upgrade of their own risk
prevention and control systems during digital transformation, so as to ensure the
confidentiality of information resources and ensure the development of banking business.

Third, in the digital transformation, commercial banks must break the old business model of a
single method, from the inside to the outside, while improving the internal management system
while continuously improving the external service model, through the "public-private linkage",
bank-government cooperation and other perspectives. The combination of multiple platforms
and the active use of information technology to ensure the personalization, specialization and
intelligence of the business can provide sufficient impetus for the bank's overall digital
transformation.

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