

Research on the Digital Transformation of Ping An Bank's Retail Business under the Background of FinTech

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Abstract: Since the beginning of the 21st century, the digital economy has gradually become a core driving force for global and Chinese economic growth. Against the backdrop of deepening digital economy development, digital transformation has become an inevitable trend for commercial banks—an essential response to the continuously evolving economic environment of the Internet era and a necessary path aligned with FinTech advancement. As a major source of profit and revenue for commercial banks, the digital transformation of retail banking has emerged as a critical focus in the development strategies of major financial institutions. The development of FinTech has also provided strong technological support for the digitalization of retail banking. This paper takes the digital transformation of Ping An Bank's retail business as a research subject and conducts an in-depth analysis of the innovations in retail banking digitalization, including technological innovation, business model innovation, and intelligent service innovation. It further examines the key challenges faced during transformation, such as shortages in technological talent, inadequate risk control for core retail products, and insufficient FinTech support capabilities. Based on these findings, the study proposes corresponding recommendations, such as cultivating interdisciplinary talent, enhancing asset quality of core products, and increasing investment in FinTech.

Keywords: FinTech; Ping An Bank; Digital Transformation; Retail Business; Digital Economy

1. Introduction

With the changes in the external economic environment, the slowdown of economic growth, and the transition to a stage of high-quality development, rising household income levels

have led to shifting customer demands. The government has repeatedly emphasized accelerating the development of "Digital China" and has elevated it as a key national strategic directive. These changes have driven commercial banks to recognize the vast potential of the consumer market in retail banking, and retail business has gradually become a new engine of growth for banks. Commercial banks are accelerating the transformation of their retail operations, offering differentiated and personalized services to better meet public needs and to ensure the healthy and sustainable development of the banking sector. Alongside the advancement of digital technologies, financial services are increasingly integrating with technologies such as big data, artificial intelligence (AI), and cloud computing, which are providing critical technical support for the digital transformation of retail banking. Commercial banks must leverage FinTech to enhance profitability and competitive advantage. Amid the nationwide trend of digital transformation in retail banking among domestic commercial banks, Ping An Bank remains committed to building "China's most outstanding and the world's leading intelligent retail bank." Adhering to the strategic approach of "Technology-Driven, Retail-Breakthrough, and Precision in Corporate Banking," Ping An Bank has achieved remarkable results in retail business development and is distinctly positioned with the labels of a "Tech Bank" and a "Retail Bank."

2. Motivations Behind the Digital Transformation of Ping An Bank's Retail Business

2.1 Policy Orientation

In recent years, national policies have strongly supported the development of FinTech and the digital transformation of commercial banks, providing a clear direction and robust guarantees for the growth of retail

banking. Since 2019, the government has successively issued a series of policy documents to encourage and guide the financial sector—particularly commercial banks—to accelerate their digitalization efforts. In 2019, the People's Bank of China (PBC) issued the FinTech Development Plan (2019–2021), which explicitly emphasized the promotion of innovative FinTech applications in banking operations. The document highlighted the full utilization of advanced technologies such as big data and artificial intelligence to enhance banking service processes, improve customer experience, and increase the efficiency of financial services. This initiative further aims to drive the intelligent and digital transformation of banks. The plan has provided policy support for innovation in the retail business domain of commercial banks, encouraging increased collaboration between banks and technology enterprises and fostering the deep integration of finance and technology. In 2021, the 14th Five-Year Plan further underscored the strategic importance of financial digital transformation, mandating that financial institutions accelerate their shift toward digitalization and intelligent operations, and promote more inclusive and convenient financial services. The Guiding Opinions of the China Banking and Insurance Regulatory Commission on the Digital Transformation of Banking and Insurance Industries also emphasizes that commercial banks should strengthen data governance, improve risk control systems, and actively explore application scenarios of FinTech within retail banking.

2.2 Increase in Customer Income and Diversification of Demand

Since 2010, China has risen to become the world's second-largest economy and has experienced significant growth in recent years. With the continued development of China's economy, the nation has entered a phase of high-quality development. Concurrently, Wei Xu[1]the disposable income of residents has continuously increased, and household consumption has expanded in scale. From 2013 to 2023, both per capita disposable income and per capita consumption expenditure of Chinese residents have shown a steady upward trend year by year. By 2023, the per capita disposable

income of Chinese residents had reached RMB 39,200, while per capita consumption expenditure rose to RMB 26,800, indicating a substantial expansion in household consumption. This growth momentum demonstrates that China's economic structure is gradually shifting towards a consumption-driven model, with consumption playing an increasingly significant role in contributing to economic growth. The expansion of household consumption scale has created a vast consumer market for retail business, making retail banking a new growth engine for banks. As a result, banks are actively pursuing digital transformation in their retail operations.

2.3 Intensified Competition in the Financial Market and Emerging Challenges

Due to the unpredictability of the economic environment and the intensification of market competition, the traditional profit model heavily reliant on corporate banking has come under considerable pressure. Ping An Bank's net profit from corporate banking operations plummeted sharply to RMB 6.5 billion in 2017. In response to this trend, Ping An Bank shifted its strategic focus toward the retail sector and sought to enhance the profitability of its retail business through digital transformation. By leveraging digital technologies, banks can serve retail customers more efficiently while reducing operational costs. Furthermore, digital tools enable the development of more personalized financial products, thereby expanding revenue streams from retail business and offsetting deficiencies in overall profitability.

The decline in asset quality within corporate banking has also accelerated Ping An Bank's push toward digital transformation in its retail operations. Economic downturn pressures and heightened risks in certain industries have led to an increase in the non-performing loan (NPL) ratio for corporate business, thereby placing greater strain on asset quality. In contrast, the asset quality of retail banking remains relatively stable, with better risk diversification. Through digital transformation, Ping An Bank is able to better leverage big data and artificial intelligence technologies to improve credit risk management in its retail operations and enhance overall asset quality. The digital transformation of the retail business also aids the bank in diversifying risks and reducing its

reliance on a single business line, thereby strengthening its overall resilience to financial risks.

2.4 Intrinsic Advantages of Ping An Bank

Ping An Bank has built a solid foundation for application within the commercial banking sector by capitalizing on its strengths in internet-based operations and its extensive experience in online marketing. With a massive customer base and a wide service coverage, the bank is capable of rapidly collecting and utilizing large volumes of big data in the course of its digital transformation, which significantly enhances its understanding of customer consumption behaviors. Through big data analytics, Ping An Bank can more effectively comprehend customer needs and accordingly develop personalized products and services. This approach not only improves customer satisfaction but also strengthens customer loyalty. Moreover, the bank continuously leverages digital technologies for innovation and iterative improvement, thereby enhancing service quality to better meet evolving market demands.

Ping An Bank has demonstrated considerable strength in financial products and services. Its digital transformation will further promote the diversification and personalization of its offerings to meet the growing and evolving financial needs of customers. Leveraging artificial intelligence and big data technologies, Ping An Bank is able to provide clients with more precise financial planning solutions, while also driving research and development efforts within the bank to better serve its clientele and enhance its competitive advantage in the market. By capitalizing on its core strengths and expanding its operational scale, Ping An Bank aims to build a more comprehensive ecosystem that fosters the integration of finance and technology.

With years of operational experience, the bank has developed extensive expertise in risk management and internal controls. This transformation presents an opportunity to further strengthen its capabilities in identifying and managing risks, thereby ensuring the stable functioning of the institution. Through the application of digital technologies, Ping An Bank can effectively monitor and detect various potential risks in a timely manner, enabling it to make strategic adjustments promptly. This ensures the bank's continued stable operation

amid a rapidly changing market environment and helps prevent the accumulation of non-performing assets.

3. The effects of Ping An Bank's Digital Transformation in Retail Business

In 2023, Ping An Bank's personal banking business surpassed RMB 1.2 trillion in scale, marking a 10% increase compared to 2022. This growth clearly demonstrates the bank's robust capabilities in the retail sector. Particularly among high-net-worth individuals, the retail business has expanded to cover 100,000 branches or service points, with total assets reaching RMB 1.5 trillion—an increase of 15% year-on-year—establishing Ping An Bank as a leader in serving high-net-worth clientele. Ping An Bank has implemented a “technology-driven” operational strategy, applying technologies such as artificial intelligence and big data in the retail sector to significantly enhance the customer experience. One prominent example is the Ping An One Wallet app, whose monthly active users have exceeded 50 million, making it a critical access point for retail banking services.

From 2016 to the present, Ping An Bank's retail business has undergone three distinct phases of digital transformation, solidifying its position as an industry leader.

From the end of 2016 to the end of 2018, the first phase of transformation marked the advent of the 1.0 era, characterized by the concept of “intelligence” and represented by the emergence of the “Smart Bank.” During this period, Ping An Bank significantly increased its investment in digital technologies and continuously refined its operational model. With credit cards, “New E-loan” (Xin Yi Dai), and auto finance as its core areas of growth, the Bank adhered to the development strategy of “technology-driven, retail breakthrough, and refined corporate banking,” thereby promoting the steady development of its retail business.

The second phase of transformation spanned from the beginning of 2019 to the end of 2020 and was known as “Smart Bank 2.0.” During this period, Ping An Bank continued to advance digital transformation in the retail sector and proactively restructured its business model, achieving notable progress particularly in the areas of AI banking and open banking. Through digital means, the Bank was able to enhance the efficiency and quality of retail services, thereby

contributing to the sustainable development of the overall retail banking industry.

The third phase of transformation took place in 2021, marking the 3.0 version of the Smart Bank. Ping An Bank integrated a “customer-oriented” approach with a “data-driven” strategy to restructure its personal financial services development model, resulting in the formation of five interconnected business components: “Open Banking,” “AI Banking,” “Remote Banking,” “Offline Banking,” and “Integrated Banking.” These elements are interwoven and collectively form an organic and cohesive system. Through its intelligent operational system powered by the “AI Brain,” Ping An Bank is able to more accurately identify customer needs, tailor more suitable products and services, and deliver comprehensive customer service, thereby facilitating the intelligent transformation of the banking industry.

In terms of the effectiveness of Ping An Bank’s retail business transformation, the Bank’s ranking in the personal finance sector improved from ninth place in 2016 to second place in 2022. This advancement demonstrates that the digital transformation of Ping An Bank’s retail operations has played a positive role in enhancing the development of its financial services.

3.1 Growth in Retail Business Revenue

Ping An Bank has achieved remarkable results in the field of personal finance. Through a detailed analysis of customer needs, the bank provides personalized products and services to enhance customer satisfaction. By establishing a digital platform, Ping An Bank not only expands its user reach but also enhances business precision, enabling it to better cater to the diverse needs of various customer segments. This transformation has strengthened the bank's profitability on the foundation of improved operational efficiency and has increased customer stickiness. The application of digital transformation not only improves service quality but also significantly reduces operational costs, thereby enabling the bank to provide a wider array of high-quality services to its clients and further enhance corporate profitability. Through the automation and intelligent optimization of business processes, Ping An Bank has reduced its reliance on manual labor, improved capital efficiency, and delivered faster and more convenient services to customers.

Ping An Bank’s retail business operating income has continuously increased in recent years, reaching RMB 96.2 billion by the end of 2023—an increase of nearly RMB 63.3 billion compared to RMB 32.9 billion in 2016. The proportion of operating income derived from retail business has also remained stable at around 58% in recent years. Net profit from retail business rose from RMB 9.3 billion in 2016 to RMB 19.8 billion in 2022, demonstrating an overall upward trend in profitability.

3.2 Enhanced Customer Acquisition Capability

Through digital transformation, Ping An Bank has integrated digital technologies across various financial services to expand its customer base and enhance its operational customer resources via multiple channels. By leveraging digitalization, Ping An Bank has effectively transcended geographical limitations to engage with a wider range of users—particularly digitally native groups such as the younger generation—thereby not only broadening its customer base but also strengthening communication with clients. By utilizing technologies such as big data and artificial intelligence, the bank conducts more granular analyses of customer consumption behavior, preferences, and needs, enabling precision marketing. Through personalized product recommendations and tailored services, Ping An Bank enhances customer awareness and conversion rates, thereby boosting the company's growth potential.

Ping An Bank has fully leveraged its integrated strengths to collaborate with various domestic and international industries, establishing a diversified financial services ecosystem that supports enterprises in expanding into global markets and capturing new growth opportunities. Through online advertising, social media marketing, and precision-targeted outreach, Ping An Bank has been able to attract a larger customer base more efficiently, significantly improving customer acquisition effectiveness. The number of individual customers has grown steadily in recent years—from 40.47 million in 2016 to 125.43 million in 2023—representing a 209.93% increase. At the same time, the retail business assets under management also grew from RMB 797.6 billion in 2016 to RMB 4.0312 trillion in 2023, underscoring the rapid growth and robust development of Ping An Bank’s retail

business.

3.3 Improvement in Asset Quality

By leveraging technologies such as big data and artificial intelligence, Ping An Bank is able to accurately assess customers' credit risk and formulate optimal credit management strategies accordingly, thereby enabling effective control over corporate credit risk. In line with its digitalization efforts, Ping An Bank has established an intelligent risk management system under the "Risk Control 3.0" framework, comprising platforms such as the Apollo Unified Credit Granting Platform, the SAFE Anti-Fraud Platform, and the Hunter Platform. Through comprehensive monitoring of lending behaviors, the bank achieves risk control across the three key stages of lending—pre-loan, in-loan, and post-loan—thus forming a closed-loop commercial operation model. This enhances the monitoring and early warning of risks, enabling the timely identification and resolution of potential issues, and ensuring the security of corporate funds. As a result of these initiatives, the bank's overall operating performance has improved significantly, with a noticeable decline in the NPL ratio and a more rationalized asset structure. In 2015, Ping An Bank recorded a non-performing loan ratio of 1.91%; however, driven by its digital transformation efforts, the figure steadily declined, reaching a historic low of 1.07% in 2018. A portion of customers experienced a decline in employment income in 2023 due to the impact of the macroeconomic environment, resulting in an increase in the retail NPL ratio to 1.37%. Although this represented a slight uptick, the overall trend showed a decline in the NPL ratio, indicating an improvement in the quality of financial services and an enhancement in the asset quality among commercial banks.

4. Deficiencies in the Digital Transformation of Ping An Bank's Retail Business

4.1 Shortage of Technological Talent

For commercial banks, Liang Zhang [2] the challenges posed by digital transformation are not limited to technological changes but also encompass shifts in corporate culture. With the rapid development of cutting-edge technologies such as artificial intelligence, big data, cloud computing, and blockchain, there is an urgent need for talent equipped with digital thinking

and digital technology capabilities. At present, one of the major challenges facing Ping An Bank is the shortage of technical personnel. Although the bank has sought to address this issue through internal training programs and partnerships with universities to attract high-level professionals from the digital technology sector, these efforts still fall short of meeting the talent demands imposed by the digital economy. In particular, the scarcity of top-tier talent in critical technology fields such as blockchain and artificial intelligence has become a bottleneck hindering Ping An Bank's capacity for innovation and development.

4.2 Inadequate Risk Control of Core Retail Products

With the rapid development of financial technology, Hongzhi Wang[3] major financial institutions have successively implemented innovations in business models and product structures. However, Ping An Bank still faces significant challenges in the risk control mechanisms of its retail products. Despite the bank's efforts to establish "OneConnect Financial Technology," build the intelligent risk management framework under the "Risk Control 3.0" system, and introduce leading domestic and international risk models to enhance risk governance and achieve initial outcomes—with notable progress made in pre-loan, in-loan, and post-loan risk management—the asset quality of certain retail loan products such as credit cards, "New E-loan" (Xin Yi Dai), and auto finance remains highly volatile. In particular, the bank faces substantial difficulties in controlling the NPL ratio in these areas. Although Ping An Bank has improved its risk management models by applying big data and artificial intelligence technologies, and has strengthened its capabilities in risk identification and early warning, it continues to face customer credit risk challenges under a complex market landscape and a continuously evolving macroeconomic environment. Hao Deng[4] The bank's NPL ratio is influenced by various factors, including economic cycles and consumers' repayment capacities. Striking an effective balance between risk control and business growth remains a key issue for the future development of the banking industry.

4.3 Insufficient Support Capacity of FinTech

Under the continuously evolving and dynamic

market conditions, Ping An Bank's current technological infrastructure remains inadequate to meet the overall demands of its digital transformation. Fang Zheng[5] A key challenge the bank now faces is how to enhance this foundational system to strengthen its flexibility and scalability.

Although Ping An Bank has made substantial investments in advanced technologies such as blockchain and cloud computing, there remains a significant gap between its R&D input and the actual returns. In terms of blockchain application, Ping An Bank lags behind the industry both in the maturity of its technological capabilities and the breadth of its application scenarios. Specifically, it has yet to achieve substantial technological implementation in areas such as cross-border payments, digital currencies, and supply chain finance, thereby failing to fully harness the potential of these innovations. To bridge this gap, Ping An Bank must significantly increase its investment in technological R&D, with a particular focus on blockchain and other emerging technologies. Additionally, it needs to intensify collaboration with upstream and downstream enterprises within the industrial chain. Such efforts would facilitate the integration of technology with business operations, laying a more solid foundation for future competitiveness within the industry.

5. Strategies for the Digital Transformation of Ping An Bank's Retail Business

5.1 Cultivating Interdisciplinary Talent

Ping An Bank must intensify its efforts to cultivate interdisciplinary talent with integrated expertise in "finance + technology" and improve its mechanisms for talent acquisition and development. Xiaozhen You[6] The bank should regard the cultivation of such "finance + technology" professionals as a core strategic objective. Emphasis should be placed on recruiting individuals with diverse academic and professional backgrounds, prioritizing those who possess both financial and technological expertise, and incorporating this objective into its long-term talent development planning. Ping An Bank may establish joint training mechanisms through collaboration with universities and research institutions, offering FinTech-related courses that combine theoretical instruction with practical application. This approach will provide students with

comprehensive learning experiences and build a high-quality talent pool for the bank's future development.

The bank should also focus on its existing workforce, establishing a robust system for enhancing employees' digital literacy, with a particular emphasis on improving their capacity to apply advanced technologies such as big data, artificial intelligence, and blockchain. The goal is to ensure that employees not only master traditional banking knowledge but also gain a deeper understanding of the interconnection between technology and retail finance. The training content should center on modern technological competencies, aiming to enhance the bank's practical capabilities throughout the digital transformation process. Furthermore, the bank should build an online training platform, enabling personnel to access up-to-date technological developments within the industry at any time and thereby continuously improve their professional skills.

5.2 Improving the Asset Quality of Core Products

Since the digital transformation of Ping An Bank's retail business, the overall NPL ratio has gradually declined. However, the NPL ratios of core retail products—such as credit cards, the "New E-loan" (Xin Yi Dai), and auto finance—remain higher than the average NPL level. Therefore, Ping An Bank must further enhance the asset quality of its core product portfolio.

Ping An Bank should strengthen its digital risk management philosophy and further improve its risk management system to enhance its capabilities in risk identification and early warning. This includes ensuring the implementation of stringent risk assessment and screening procedures to prevent the inflow of high-risk assets into its investment portfolios. Continuous optimization of the intelligent risk control platform is essential to establish more accurate credit data models, thereby improving the reliability of loan approvals. Additionally, the post-lending management system should be further developed, with periodic inspections and stress testing of existing assets to enable the timely identification of potential risks and the formulation of corresponding mitigation strategies. Moreover, Ping An Bank needs to optimize its customer composition by reducing the proportion of high-risk clients, thereby

lowering the overall financial risk. Accurately identifying customers' abnormal transactions and strengthening the monitoring of their consumption behavior are essential steps. Fang Zheng[7] By leveraging big data analytics, Ping An Bank can forecast customers' repayment capacity and consumption patterns, thereby enabling the construction of an optimal investment portfolio.

Ping An Bank should actively pursue collaboration with external technology companies and leverage their technological advantages to drive financial product innovation. Emphasis must be placed on the application of digital technologies and on implementing a stratified and categorized management system for retail customer segments. Through in-depth insights into customer needs, the bank can design highly competitive financial products tailored to client demands, enhance product personalization, and effectively address the issue of product homogeneity in the market. Zhenpeng Guo[8] This approach will better satisfy the increasingly diversified financial needs of customers.

5.3 Increasing Investment in FinTech

The intensity of FinTech investment serves as a driving force behind the digital transformation of retail banking operations in commercial banks. Against the backdrop of FinTech, the digital transformation of retail banking has become a development trend both domestically and internationally. Several commercial banks have already integrated FinTech across multiple operational domains, achieving measurable outcomes in digital transformation. The primary initiatives involve accelerating FinTech innovation, establishing Internet Finance Departments, and continuously innovating Internet-based financial products; An integrated Internet finance architecture encompassing social life, financial services, and payment systems should be established. Banks must continue to increase investment in FinTech by incorporating advanced technologies such as blockchain, cloud computing, and big data to enhance the digitalization of their operations. Libin Zeng[9] Although the application of FinTech in transforming retail banking may lead to a temporary rise in technology-related costs, it is expected to reduce the operating costs of commercial banks in the long run. Moreover, the adoption of technological tools will significantly

improve operational efficiency.

Ping An Bank should persistently increase its research and development efforts and investment in key areas such as big data, cloud computing, artificial intelligence, and blockchain. By expanding financial input, the bank can rapidly align itself with global technological advancements and position itself at the forefront of innovation. Zhenxi Wong[10] Ping An Bank should also establish an open innovation platform and actively encourage collaboration with technology firms and innovation teams to facilitate the application and development of emerging technologies, thereby accelerating their maturation and industrialization. Through technological cooperation with external partners, the bank can not only enhance its own technological capabilities but also integrate cutting-edge technologies into its operational activities, thus improving its overall competitiveness and service quality.

References

- [1] Wei Xu. Exploration and Reflection on the Digital Transformation of Retail Business in Commercial Banks. *Modern Finance Guide*, 2023(12): 65-67.
- [2] Liang Zhang. Research on the Digital Transformation of Retail Business in Commercial Banks. *Financial literature circle*, 2023(12):109-111.
- [3] Hongzhi Wang, MinFeng Lu. A Brief Analysis of the Digital Transformation of Retail Business in Commercial Banks. *Chinese banking industry*, 2023(9):68-69.
- [4] Hao Deng. Research on the Innovative Development of Bank Retail Business under the Background of Digital Transformation. *Today's wealth*, 2024 (34):35-36
- [5] Fang Zheng. Research on the Innovation of Marketing Model for Retail Business of Commercial Banks Based on Credit Card Business. *Shanghai Business*, 2024(05):58-59
- [6] Xiaozhen You. Research on the Innovative Thinking of Retail Finance in Urban Commercial Banks under the Background of New Era Fintech. *Modernization of shopping malls*, 2024(06):42-43
- [7] Fang Zheng. Research on the Innovation of Marketing Model for Retail Business of Commercial Banks Based on Credit Card Business. *Shanghai Business*, 2024(05):14-15

- [8] Zhenpeng Guo. A Brief Analysis of the Path Selection for Digital Transformation of Small and Medium-sized Commercial Banks. Northern Finance, 2023(8):103-106
- [9] LiBin Zeng. Research on the Connotation, Path and Development Trend of Digital Transformation of Commercial Banks. Regional Finance Research, 2023(9):22-29
- [10] Zhenxi Wong. Promote the integrated development of corporate and retail businesses of commercial banks through digital transformation. The era of fintech, 2023, 31(7):13-19.