Research on the Transformation and Development Strategies of the Financial Industry in the Digital Economy Era from the Perspective of Innovation Theory

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Abstract. Due to the extensive use of digital technologies across numerous industries, the socio-economy have entered the digital economy era, bringing new challenges and opportunities for development in all sectors. The financial industry, being a vital part of the national economy, is facing immense pressure for digital transformation. How to seize the opportunities brought by the digital economy and achieve sustainable development through digital transformation is a crucial issue facing financial institutions. Based on the review of relevant theories and current studies concerning the digital economy, it employs methods such as literature research, survey research, and comparative analysis to research how the financial sector is affected by the digital economy and evaluate the opportunities and challenges the sector is facing in this new digital economy age. On this basis, focusing on the perspective of innovation theory, it proposes innovative strategies to drive the digital transformation of the financial industry, provide specific measures from five aspects: technological innovation, product innovation, service innovation, channel innovation, and innovation of organizational mechanism and support. This research provides strong guidance for the development of the financial sector and its digital transformation in the era of the digital economy.

Keywords: Digital Economy, Innovation Theory, Financial Industry, Digital Transformation.

1. Introduction

The swift advancement and extensive integration of technologies like big data, cloud computing, mobile internet, and artificial intelligence have transformed the fabric of our work and personal spheres. As a result, the socio-economic landscape has transitioned into a novel phase known as the digital economy, which presents an array of both challenges and opportunities across different sectors. As a vital part of the national economy, the healthy development of financial industry directly affects the stability and growth of the economic system. Traditional financial institutions are facing pressure and challenges in digital transformation regarding operating environments, business models, service methods, and competitive situations. Therefore, exploring the transformation strategies of the financial sector in the digital economy era is crucial for encouraging creative development, maintaining financial stability, and fostering economic growth.

This paper, based on the perspective of innovation theory, delves into key issues surrounding the transformation of the financial sector in the age of digital economy. Firstly, it reviews the background of the digital economy, explores its impact on the financial industry, and analyzes the main opportunities and challenges facing the financial sector. Next, by analyzing the application of innovation theory and innovation diffusion theory in the financial industry, it identifies the key driving factors in the process of financial industry transformation. Finally, it proposes strategic recommendations for the current transformation of the financial sector from the perspectives of technological innovation, product innovation, service innovation, channel innovation, and innovations of organizational mechanism and support. Through the implementation of these strategies, the aim is to foster the healthy growth of the financial sector, enhance the convenience, inclusiveness, and security of financial services, and contribute to financial stability and economic growth.

2. Literature References

In reviewing the literature regarding the transformation of the financial sector in the digital economy, both domestically and internationally, it can be summarized into two main aspects: the impact of the digital economy on the financial industry, the research on the digital transformation of the financial industry.

2.1. Impact of the digital economy on the financial industry

Feng Xubo believes that the digital economy, a new type of economy, has become the primary engine fueling economic growth due to the notable rise in the value of data and ongoing technical innovation. It has become an essential driver for transformation and upgrading, and a strategic high ground for a new round of global industrial competition. Breakthroughs and integrated developments in information technologies have promoted the rapid development of the digital economy [1].

Ludmila Vardomatskya and others argue that as a result of the "fourth industrial revolution," the modern economy is in a period of digital development where the quick advancement of digital technology has given rise to the phenomena known as the "digital economy". The digital transformation affects all sectors of economic and social activities, requiring synchronization between the financial industry and real sectors [2].

Zhang Wei views the digital economy is a new economy framework after agricultural and industrial economies. The primary characteristics of the digital economy are the use of digital technology, current information networks as significant carriers, and data as a crucial production element. It has become a national strategy, with digital transformation being an internal requirement for the financial industry [3].

Liu Bin argues that the digital economy's fast growth is driving rapid transformation in the global economy and society, bringing about paradigm shifts in various industries. Under the backdrop of the digital economy, the convergence of industry, finance, and technology has become a prevailing trend [4].

Wang Dan et al. suggest that driving innovation and development in traditional industries through the digital economy contributes to the digital economy's profound integration with the genuine economy, holding significant value in creating globally competitive clusters for the digital industry. The growth of the digital economy significantly enhances the innovation capabilities of traditional industries, facilitating their transformation and upgrade [5].

2.2. Digital transformation of the financial industry

Chen Yaowen et al. argue that data is the core of the digital transformation of finance, with vast prospects and strong feasibility in data integration for the financial industry, offering advantages in optimizing financial services, allocating financial resources effectively, and delivering precise financial services [6].

Tom Butler contends that financial institutions are digital enterprises, and financial technology is essential in the process of transforming the financial industry. Core digital technologies supporting the digital transformation of finance include artificial intelligence, distributed ledgers, smart contracts, quantum computing, and the Internet of Things [7].

Li Yu 'ang et al. propose measures such as strengthening innovative development concepts, improving institutional construction, standardizing the process of digital transformation, enhancing the training of technological talents, and boosting the technological impetus for digital transformation, based on the current status of the financial sector's digital transition [8].

Sun Lingyan, according to the study of the transformative impact of digital finance on traditional finance, suggests advancing the transformation and upgrading of financial formats, financial models, and financial regulation to address the balance between digital finance and traditional finance, data usage and data security, and the balance between financial innovation and financial regulation [9].

Tobias Riasanow et al. present seven innovative models for digital evolution in the financial sector after analyzing 792 financial technology companies. These models include removing brokers, improving transparency, cloud computing, combining and integrating of services [10].

In conclusion, researchers both domestically and overseas have carried out in-depth analyses of the financial sector's transformation in the age of the digital economy, achieving fruitful results. Existing literature unanimously recognizes that modern economic development has entered the digital economy era, and its rapid development is profoundly affecting various domains of socioeconomic and societal activities. The financial industry should seize the opportunities and challenges of the digital economy, make the most of cutting-edge technology like AI, blockchain, and accelerate digital transformation. However, previous studies have mainly been based on a macro level, offering a research on the digital economy and the financial sector's digital revolution. Unlike previous research, this paper focuses on the innovation perspective, not only exploring the financial industry's potential and difficulties in the digital economy era, but also proposing specific measures for the financial industry to promote digital transformation through innovation, starting from "innovation" as the core driving factor of digital transformation. This is an effective supplement to existing theories and research, with greater practical significance and operability.

3. The Impact of digital economy on the financial industry

The rise of the digital economy is one of the most significant economic trends of this century. Its core lies in the innovation and application of information and communication technologies, which redefine the ways of production, delivery, trade, and consumption. With the widespread application of new technologies, the digital economy is becoming a major force behind the expansion of the world economy, not only fostering the emergence of new business models but also triggering profound transformations in traditional industries, especially the financial sector.

Firstly, internet finance has become the primary means of financial service provision. The traditional face-to-face service model is gradually being replaced by online platforms. Internet-based services such as digital currency, mobile payments, and online lending has become mainstream financial service models. These changes have greatly enhanced the convenience, accessibility, and timeliness of financial services while challenging the operational methods, service capabilities, profitability, and market shares of traditional financial institutions.

Secondly, data resources have become a cornerstone of financial innovation. The use of big data and other technologies enables financial institutions to analyze customer behavior more accurately, optimize processes and innovate products more targeted, and provide more personalized services to customers. Meanwhile, the extensive use of big data in risk management optimizes risk monitoring for financial institutions, reducing the probability of risks occurrence. However, the collection and use of data also raise widespread concerns about privacy protection and data security.

Thirdly, the emergence of fintech has reshaped the competitive landscape of the financial industry. The use of digital technology significantly enhances the innovation capabilities of the financial industry, laying the foundation for the financial sector's digital transformation. The entry of traditional technology companies into the financial sector and the vigorous development of fintech companies have broken the market monopoly of traditional financial institutions, injecting new vitality into the financial industry and further driving the improvement of financial innovation efficiency and service levels. However, it has also increased the complexity of market competition, expanded financial risks, and heightened the difficulty of financial regulation.

It's evident that the digital economy has brought extensive and profound impacts on the financial industry. Conventional banks, securities and other financial organizations are facing unprecedented opportunities for development, as well as immense pressure and challenges for transformation. Seizing the opportunities brought by the digital economy wave, fully utilizing new technologies for sustainable development is a crucial issue facing financial institutions. "Innovation" is the core driving factor for financial institutions to achieve digital transformation.

4. The application of innovation theory in the financial industry

Schumpeter, the proponent of innovation theory, believed innovation to be one of the primary drivers of economic development. He defined innovation as "the creation of new combinations", referring to the recombination of existing production factors to create new products, technologies, markets, or methods of production. According to Schumpeter's innovation theory, economic development is not achieved through linear, stable growth but through the sporadic and irregular growth of innovation. Innovations are categorized into five types: new product innovation, new market innovation, new methods of production innovation, new combinations of resources innovation, and new organizational forms innovation [11].

Rogers' innovation diffusion theory complements and develops innovation theory further. Rogers posited that the adoption and spread of innovations are societal processes, not just internal corporate innovation activities. According to Rogers, key factors in the innovation diffusion process include the characteristics of the innovation, the structure of the social system, and the decision-making processes of individuals [12].

Innovation theory and innovation diffusion theory have played important roles in advancing the financial sector by providing theoretical guidance and practical support for its innovative development. Innovation theory emphasizes entrepreneurship as the main driving force behind innovation, encouraging financial institutions to innovate financial products and services through exploring and applying new technologies and improving combinations of production factors to meet the constantly changing market demands. The innovation diffusion theory focuses on the adoption and spread of innovations. By understanding the market's attitudes and behaviors towards new products and services, financial institutions can better adjust their innovation strategies, promoting the diffusion and popularization of innovations. In the digital economy era, financial institutions must constantly innovate and diffuse innovations, introduce new technologies, optimize business processes, and improve service levels to better adapt to market demand and promote the continuous and healthy development of the financial industry.

5. Innovation-driven transformation strategy for the financial industry

In response to the opportunities and challenges presented by the digital economy, and guided by innovation theory and innovation diffusion theory, specific strategies for the financial industry’s digital transformation are proposed in five areas: technological innovation, product innovation, service innovation, channel innovation, and innovation in organizational mechanism and support.

5.1. Technological innovation

Building advanced digital infrastructure. Financial institutions should increase investments in new technology areas such as AI blockchain, and cloud computing, adopt advanced technologies to enhance the construction of digital infrastructure, improve the computational speed of computer systems and data processing efficiency, and provide faster, more efficient, and smarter business processing and decision-making capabilities. Additionally, there should be a significant push for the digital core system upgrade and transformation, adopting a flexible modular architecture to improve the flexibility, stability, and security of the system in response to the rapid changes in the financial market and business needs of the digital economy era. Strengthening data security protection, including encryption technology, identity verification, and security auditing, is also essential to ensure the safety of customer data and privacy.

5.2. Product innovation

Constructing a differentiated digital financial product system. Financial institutions should seize the online and mobile trend of customer transactions, increase the innovation and promotion of internet financial products, and develop distinctive products with market recognition. In terms of financing products, introduce digital financing products with lower thresholds and broader applicable

customer groups based on data credit, with service terms and product durations that can be customized flexibly. For wealth management products, use artificial intelligence to develop intelligent investment advisory products that are fully online and capable of real-time processing, providing customers with precise and convenient online, personalized asset analysis, and wealth diagnosis for intelligent wealth management services. In the payment product system, create digital payment products that are more convenient to use, simpler to authenticate, smarter in processing, and safer in transactions using technologies like NFC and QR codes, and strengthen their application and promotion in various payment scenarios in production and life. By offering a rich array of digital financial products, financial institutions can meet the diverse financial needs and preferences of different customers, continuously enhancing the inclusivity and accessibility of digital finance.

5.3. Service innovation

Constructing a 24/7, personalized intelligent digital service system. Utilizing artificial intelligence and natural language processing technologies, financial institutions can establish an intelligent customer service system that breaks free from the constraints of traditional service hours, providing continuous online customer support 24/7, 365 days a year, and resolving customer issues in a timely manner while reducing labor costs and enhancing customer service capabilities. Based on big data analysis, provide tailor-made, intelligent, interactive digital financial services for different age groups, asset statuses, and risk preferences, meeting the diverse financial needs of different customer groups and enhancing the customer service experience.

5.4. Channel innovation

Building an integrated online and offline digital financial service channel. Following the trend of mobile internet development, increase investments in digital channels, strengthen the construction of online channels such as mobile apps, and build professional online financial service platforms, promoting the priority deployment of all business, products, innovations, and benefits in online channels. With "technology + data" as the dual drivers, continuously push for the online and mobile transformation of various products and services, achieving full product coverage and full process integration in online channels. Enhance the intelligent transformation of offline branches by utilizing IoT, biometric identification, artificial intelligence, etc., to offer intelligent self-service machines, intelligent teller robots, and others, improving service efficiency and customer experience while reducing operational costs. Strengthen the integrated development of online and offline channels, connecting mobile apps with offline branches as the two main financial transaction channels, establishing connections between mobile apps, offline branches, customer managers, and remote customer service to promote seamless integration and collaboration between online and offline channels.

5.5. Innovation in organizational mechanism and support

Establishing a collaborative and efficient organizational structure and an innovation support mechanism for information sharing. Regarding organizational structure, financial institutions should break down departmental barriers, promote information sharing, and establish flexible organizational structures and business processes that adapt to the rapid growth of the digital economy. In aspect of human resources, strengthen the construction of a digital talent pool, including data analysts and digital product managers, and cultivate a group of composite talents proficient in both cutting-edge digital technologies and financial expertise, enhancing the digital application capabilities of various professional teams. Financially, optimize the allocation of financial resources, increase investments in the digital finance field, and prioritize the expenses for technology innovation projects and digital finance project expenses. In risk management, utilize new technologies to enhance risk monitoring and management, improve the identification and response capabilities for digital risks, establish and perfect risk management and compliance systems, reduce the potential risks brought by digitalization, and ensure the stability and safety of digital transformation.

6. Conclusion

In general, the rise of the digital economy has profoundly changed the landscape of the financial industry, bringing new challenges and opportunities. For traditional financial institutions, digital transformation is imperative. Through the exploration of relevant theories and existing research, this paper describes the impact of the digital economy on the financial industry and identifies the key factor driving the financial institutions' digital transformation. From the perspective of innovation theory, a series of innovation-driven strategies for the digital transformation of the financial sector are proposed. These strategies encompass technological innovation, product innovation, service innovation, channel innovation, and innovation of organizational mechanism and support.

This study provides valuable insights and practical guidance for the digital transformation of financial institutions. By adopting these strategies, financial institutions can better adapt to the digital economy era, enhance competitiveness, meet evolving market demands, and contribute to the growth of the digital economy.

However, successful digital transformation is a continual, long-term procedure that needs constant adaptation and adjustment. Financial institutions must embrace innovation, adopt forward-thinking strategies, and timely respond to technological advancements and demand changes to attain sustainable development in the age of digital economy.

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