Research on digital Transformation Strategy of China's Retail Industry based on new retail mode

Yang Xiaoling[a]*, Mohd Rahimie Abd Karim[b], Borhan Sareya Abdullah[c]

[a]Universiti Malaysia Sabah, Jalan UMS, 88400 Kota Kinabalu, Sabah,88670, Malaysia
[b]Universiti Malaysia Sabah, Jalan UMS, 88400 Kota Kinabalu, Sabah,88670, Malaysia
[c]Universiti Malaysia Sabah, Jalan UMS, 88400 Kota Kinabalu, Sabah,88670, Malaysia

Abstract

Following decades of rapid expansion, China's retail industry has emerged as a prominent player in global commerce. However, the competition within the retail sector is intensifying. Chinese retail enterprises are now restructuring their business processes with digitalization as the central driving force, upgrading the production, distribution and sales of goods, and deeply integrating online services, offline experiences and modern logistics to establish a new retail model. This paper focuses on analyzing the challenges present in the digital transformation of retail enterprises based on the new retail model and current status of digital transformation in Chinese retail enterprises. It also proposes a strategic model for the digital transformation of these enterprises. Ultimately, this strategy involves establishing a consumer-centric data analysis system, reengineering business processes based on data flow and reorganizing organizational structures while building an intelligent collaborative digital open platform for internal and external resources to achieve successful digital transformation.

Key words: Retail industry reform; New retail model; Digital transformation; Business model innovation

1. Introduction

After nearly 40 years of rapid growth, China's economy is now slowing down and has entered a stage of high-quality development. The growth model has also changed from input-based growth achieved by increasing labor, capital, natural resources and other factors to efficiency-based growth achieved by increasing total factor productivity. The efficiency growth brought by technological progress and management innovation is the main driving force of the efficiency growth model.

In recent years, China has focused on implementing the strategic layout of the digital economy. The innovation, development and application of big data, cloud computing, block chain and other digital technologies have become a new driving force for sustainable economic development. Enterprises are also actively implementing digital transformation to achieve total factor productivity improvement, among which the digital transformation of retail industry is the most active and prominent.

2. Literature Review

The concept of "new retail," which originated in China and was first proposed by Jack Ma in 2016, is that online, offline, logistics and data are all in one system, using technology to connect people and goods, goods and goods, enabling shopping and delivery anytime, anywhere.

Later, experts conducted research on new retail and gave different explanations, believing that new retail is a new retail business model centered on consumers and utilizing technological innovation and data insight[1]. It is also a comprehensive retail format that better meets consumers' multi-dimensional needs for shopping, entertainment and social interaction in the form of multichannel and pan-retail[2]. It is also a new idea, which is to realize the reconfiguration of elements of traditional retail and the improvement and upgrading of operation mode with the assistance of technology upgrading and realize the deep integration of online and offline services in the form of reshaping the ecosystem[3].

At present, Chinese retail enterprises are in the "growth dilemma" and it is urgent to reshape the competition pattern of the retail industry [4]. New retail promotes the digital transformation, industry structure adjustment and ecosystem remodeling of traditional retail industry and promotes the integration of physical retail industry with online capital flow, business flow and information flow[5].

In recent years, research on digital transformation (DT) is booming. The research on digital transformation mainly focuses on influencing factors, strategic framework and mechanism. Christian et al. constructed the strategic framework of enterprise digital transformation from four dimensions: technology use, change in value chain creation, structural change and finance [6]. Based on the dynamic capability theory, Gao & Wang analyzed the digital transformation process of enterprises and summarized the factors and evolution paths that affect their realization of digital transformation [7].

In recent years, the digital capacity building of various industries in China is still in the initial stage, and the digital transformation effect of most enterprises is not ideal [8] .The overall transformation of China's retail industry is still in the exploratory stage, and a successful transformation model that can be used for reference in the industry has not yet been formed[9] . In short, the research framework for retail digital transformation has begun to take shape, but it still needs to be further improved.

3. Methodology

This study employs a combination of quantitative and qualitative methods to comprehensively analyze the digital transformation pathways of Chinese retail enterprises under the new retail model. The quantitative analysis utilizes data from the National Bureau of Statistics of China spanning 2012 to 2022, which clearly illustrates the development trend of the retail market shifting from incremental growth to a stock market structure. This provides a realistic background and data support for understanding digital transformation.

In the qualitative analysis, this study adopts the Dynamic Capability Theory and constructs an "Necessary Condition–Driving Factors–Outcome" analytical framework, as illustrated in Fig1. Specifically, technological change and organizational change form the foundational conditions for digital transformation, while organizational innovation capability and digital capability serve as key driving forces. These elements collectively enable enterprises to achieve business model innovation, business process reengineering, and the development of digital operating systems.

By integrating statistical data, industry analysis, and case studies of representative enterprises, this study validates the applicability of the analytical framework. It highlights the critical role of technological advancements and organizational capabilities in driving the digital transformation process. This approach not only bridges theory and practice but also provides valuable references and insights for Chinese retail enterprises to identify suitable transformation pathways amidst the digital wave.
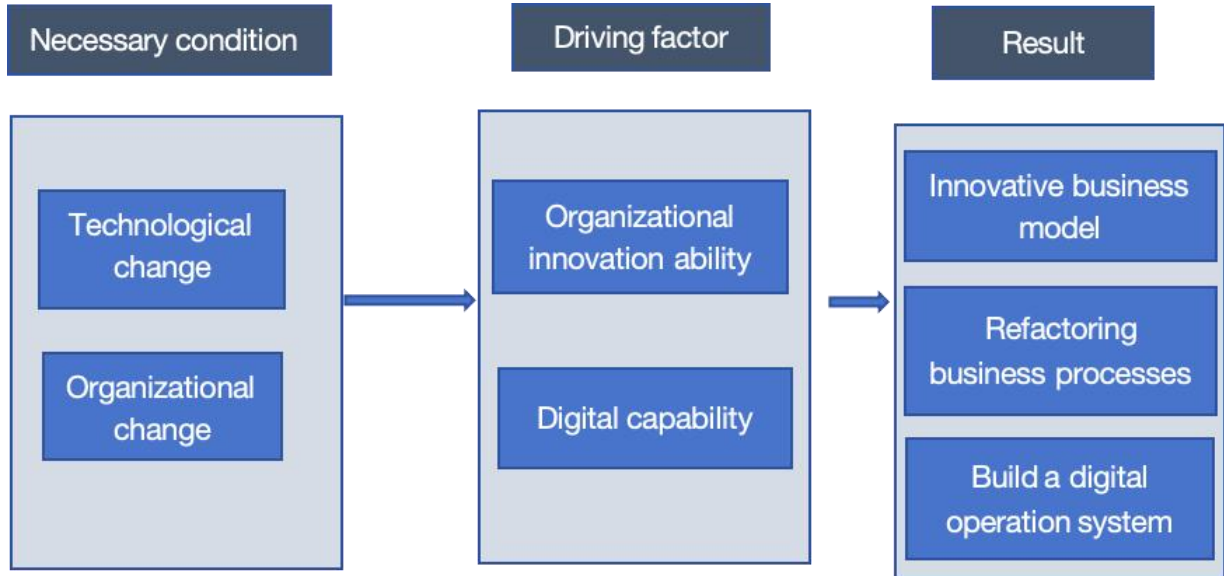
Fig1. Digital transformation strategy model of retail enterprises

4. Findings

In recent years, with the widespread application of digital technologies such as big data, artificial intelligence, and cloud computing, China's retail industry has made significant progress in digital transformation. However, despite a high adoption rate, the overall level of digitalization remains at a preliminary stage. Most retail enterprises still face challenges such as lack of digital strategy, insufficient organizational transformation, and a shortage of digital talent during the transformation process. To address these challenges, this study proposes a digital transformation mechanism tailored to the needs of retail enterprises, aiming to provide effective pathways to facilitate comprehensive digital transformation and upgrades.

4.1. The current state of digital transformation in Chinese retail enterprises

China's retail industry has experienced the evolution process from traditional mode - modern management mode - chain mode - real estate mode - new retail mode. Before 1980, China's business model was mainly the traditional model under the planned economy system, with department stores as the main business; In the 1990s, the retail industry introduced modern management mechanism, and a modern business model with consumer demand as the center existed. In the early 21st century, under the influence of Wal-Mart, Carrefour and other large chain retail enterprises, Chinese retail enterprises expanded rapidly by the mode of chain operation. Chain operation became the main operation mode of retail enterprises, and supermarkets became the main business form. The subsequent decade saw the rise of commercial real estate, with shopping centers gradually replacing department stores as the dominant force and the business model shifting to real estate.

In 2016, Jack Ma first proposed the concept of "new retail", which involves the deep integration of online and offline channels, as well as the incorporation of modern logistics, big data, cloud computing, and other innovative

technologies. Following this proposal, e-commerce enterprises such as Alibaba and Jingdong began to explore the development path of new retail.

The full onset of COVID-19 in 2020 resulted in a global economic downturn, significantly impacting the retail sector. In China, the proliferation of food delivery platforms and fresh food e-commerce has further accelerated the shift of consumers from brick-and-mortar stores to online platforms, prompting manufacturers to establish direct sales channels through online platforms and intensifying competition within the retail industry. The new retail model places digitalization at its core driving force, enhancing and revolutionizing the production, distribution, and sales processes of goods while deeply integrating online services, offline experiences, and modern logistics.

According to the National Bureau of Statistics of China, from 2012 to 2022, the total retail sales in China have shown a steady increase, although with a declining growth rate year by year. Particularly in 2023, due to the impact of the epidemic, there was a negative growth rate in total retail sales of consumer goods in China. In 2022, the total retail sales of consumer goods in China amounted to 6.21$ trillion, representing a decrease of 3.9% compared to the previous year. In 2012, online retail reached a scale of 0.18$ trillion in China, accounting for 6.23% of that year's total retail sales of consumer goods. It is evident that China's retail industry is transitioning from an incremental market to a stock market and this substantial market worth 5.5$ trillion requires digitization for harnessing new growth opportunities.
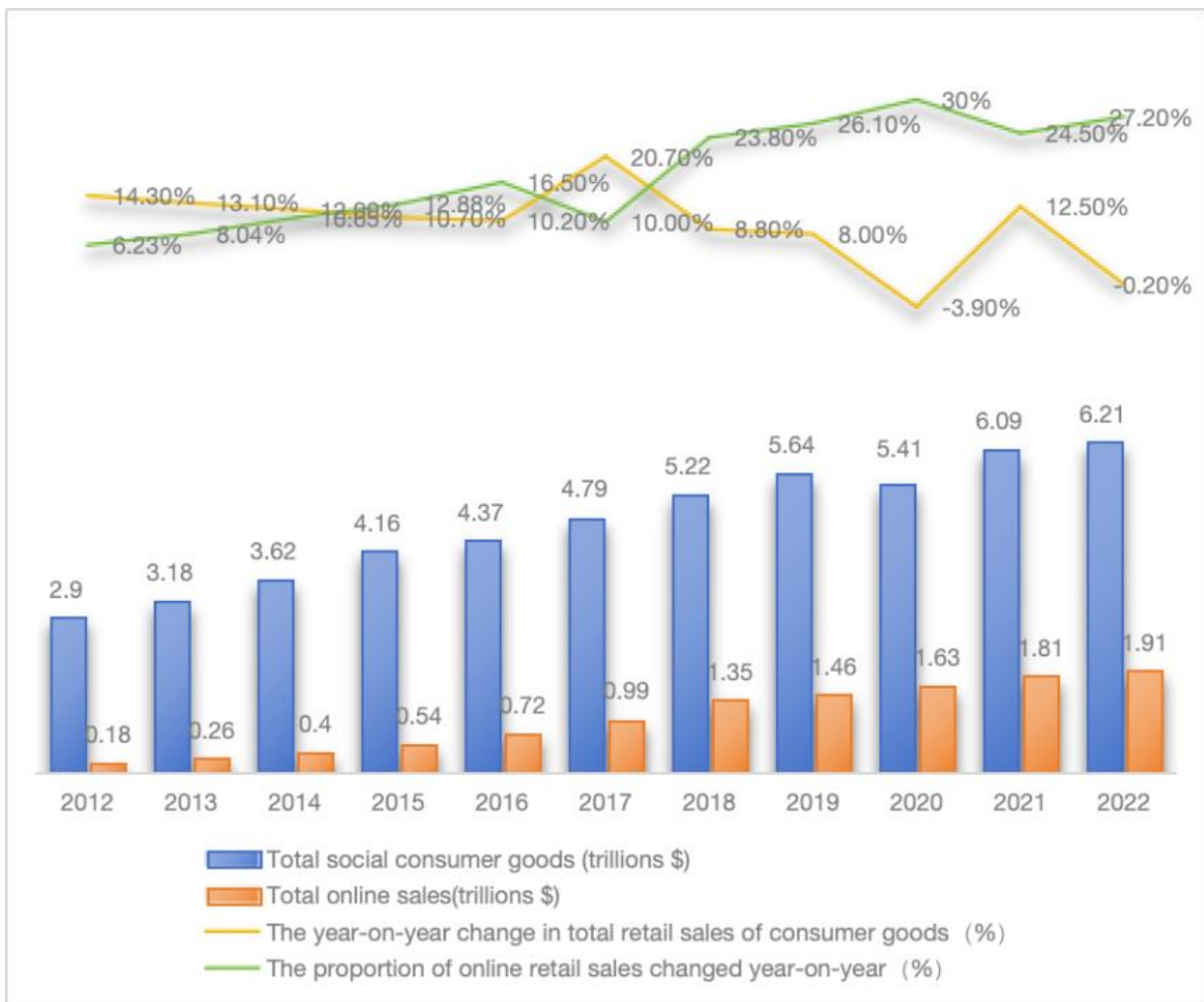
Fig2 The total retail sales of consumer goods and online retail sales in China from 2012 to 2022
(Source: National Bureau of Statistics of China)

In recent years, the digital transformation of China's retail industry has made important progress. Many traditional retail companies have begun to increase investment in science and technology to accelerate the process of digital transformation. Online retail also continues to grow, becoming an important channel for consumers to shop. At the same time, digital technologies such as artificial intelligence, big data and cloud computing are increasingly widely used in the retail industry, providing more accurate data support for enterprises' business decisions. For example, Ali-baba, the Chinese e-commerce giant, has actively promoted the digital transformation of the retail industry over the past decade. They use big data, artificial intelligence and other technical means to achieve comprehensive digitization from the aspects of commodity recommendation, marketing strategy, supply chain management and so on. Through detailed user portraits and personalized recommendations, consumers' shopping experience is improved, while sales efficiency is also improved.

The retail industry has a high penetration rate of digital transformation, but the level of digitization remains relatively low on average. Start-ups in convenience stores, supermarkets, and professional stores have made significant digital achievements. Specifically, 85% of convenience store enterprises have initiated digital transformation, with 57% being in the initial stage focusing on intelligent logistics, unmanned stores, and intelligent monitoring. Additionally, 70% of department stores have also commenced digital transformation primarily through online sales channels. Furthermore, over 85% of large supermarkets have begun digital transformation with a focus on "online and offline integration.

Iresearch Consulting company's "China Retail Digital Transformation Research Report" indicates that digitization permeates the entire process of retail development and innovation. In terms of commodity management, retailers are implementing AI algorithms to digitally drive all aspects of the supply chain, including commodity analysis, competitive analysis, and inventory analysis. This enables them to guide product development and innovation through insights derived from user data. Regarding store management, data is utilized to enhance the efficiency and oversight capabilities of headquarters in controlling regional stores and expanding their management scope. Simultaneously, exceptional managerial experiences are distilled to standardize store operations, quantify work processes, reduce human factor impacts, and elevate business management efficiency and standards. With regards to marketing strategies, precise user profiling is conducted using data analytic which then facilitates efficient targeted marketing campaigns while maximizing the life cycle value of users.

4.2. The current state of digital transformation in Chinese retail enterprises

i. The retail industry is in need of a comprehensive digital strategy.

Managers in the retail industry unanimously acknowledge that the primary challenge in digital transformation lies in reshaping the mindset of middle and senior management, which fundamentally constitutes a strategic issue for enterprises. The competitive landscape of the digital era necessitates leaders to possess a keen understanding of digital technology and emerging business models, as well as continuously evaluate and adjust corporate strategies. However, due to its traditional nature, senior managers within certain enterprises are accustomed to conventional modes of thinking and management concepts. Meanwhile, middle managers and employees at all levels may lack comprehension or alignment with digitization efforts, making it arduous to transition from hardware-oriented thinking prevalent in the industrial era to software-centric thinking demanded by the digital age—a significant hurdle encountered during digital transformation.

Furthermore, varying departments exhibit disparate perceptions and interpretations of digitization alongside distinct interest demands, rendering it challenging for them to converge on a unified objective and undertake concerted actions—necessitating top-level systemic design by leaders. Survey findings from Deloitte reveal that approximately 60% of enterprises embarking on digital transformation have yet to establish a clear developmental trajectory for their endeavors. Additionally, data from Wipro Digital indicates that 35% of executives identify the absence of a coherent transformation strategy as a principal impediment hindering realization of the full potential offered by digitization.

ii. Retail companies ignore the digital transformation of their organizations

Most retail enterprises pay more attention to digital technology in digital transformation, ignoring the overall transformation of the internal structure of the enterprise, which leads to poor transformation effect. For example, due to the pressure of lack of relevant talents and funds, some retail enterprises rely on third-party consulting companies or capital acquisition to complete the transformation, ignoring the individuation and differentiation of enterprises, resulting in failure; Some retail enterprises mistakenly focus on digitalization in digital transformation. Although they have invested a lot of money to upgrade technology and obtained a lot of data information, they lack the organizational structure to adapt to it, resulting in the failure of data to play a corresponding role. There are also companies that learn successful cases but fail to succeed due to the lack of talent.

For example, although various information management systems and digital tools are introduced, there is no corresponding system design and organizational remodeling, the responsibilities and rights of digital transformation between departments are not clear, and there is a lack of effective supporting assessment and incentive mechanism.

iii. It is difficult for Chinese retail enterprises to change their corporate culture

The process of enterprise digital transformation is also the process of enterprise culture reshaping. If the culture of traditional enterprises does not change, digital transformation will be difficult to carry out. In addition to the update of technology, digital transformation is more important than the adaptability of the organization. If the organizational culture is too stubborn and conservative, new working methods and workflows will be difficult to be adopted, and digital transformation will encounter obstacles. In the process of promoting digital transformation, many enterprises do not endow corporate culture with new digital connotation, or blindly start digital transformation when they have no unified understanding of digitalization, which leads to the failure of enterprise digital transformation.

iv. Chinese retailers lack digital talent

In the Research Report on Digital Transformation of Chinese Enterprises, Tsinghua University Institute of Global Industry pointed out that with the increasing popularity and importance of digital technology, enterprises' demand for digital talents shows explosive growth, and the challenge of digital talent gap is huge. Driven by digital transformation, with the change of business direction of retail enterprises, many new positions have emerged, such as new channel expansion, offline and offline integrated operation, store operation data analysis, etc., and there is a shortage of talents in these new positions. At the same time, the digital era has put forward higher requirements for talents, which will no longer apply to professionals who only master information technology.

4.3. Digital transformation strategy model of retail enterprises

i. Technological change and organizational change are the necessary condition for digital transformation of retail enterprises

With the rapid development of science and technology, digital technologies such as artificial intelligence, blockchain, cloud computing, and big data have changed the basis of industrial development, thus triggering the fourth industrial revolution[10] . The application of digital technologies such as big data and artificial intelligence is the key driving force of digital transformation in the retail industry. Digital technology has changed the media

mechanism to achieve the matching of supply and demand, thus promoting the digital transformation of the retail industry [11].The digitalization process runs through the road of retail development. Before 2005, the information technology POS, ERP and WMS mainly adopted by retail enterprises had all included data technology. In 2016, the construction of new retail DMP, CRM, CDP and other technologies helped enterprises better apply data.

The changes in the external technology environment and the changes in consumer demand have put forward higher requirements for new retail enterprises. The new retail has promoted the concept of multichannel retailing and innovated retail models, such as various convenience retail models, home retail models, fragmented retail models and community models.

ii. Organizational innovation capability and digital capability drive the digital transformation of retail enterprises

The essence of retail digital transformation is the optimization and upgrading of cost, efficiency and experience[12], and its internal mechanism is the organizational change driven by digital technology[13] .At the same time, entrepreneurs' innovative spirit is also one of the key factors affecting the success of retail enterprises' digital transformation [14]. Retail enterprises are often limited by their own resources and capabilities, so they do not have the conditions to realize digital transformation. In addition to internal efforts, successful digital transformation of enterprises needs to break boundaries and mobilize resources across companies [15]. Learning organization and organizational innovation ability have become the main driving forces of digital transformation.

The dynamic capability of enterprises can help enterprises grasp the latest practice results of digital transformation in the industry, assist enterprises to learn advanced external digital technology, promote enterprises to optimize their digital goals and operation mode, and realize the digital transformation of enterprises[16] . It can help enterprises effectively resist changes in the external environment, optimize enterprise resource allocation and transformation mechanism, reduce transformation risks, and accelerate the pace of digital transformation[17].

As a dynamic capability, digital capability promotes the overall process reengineering and organizational reconstruction of enterprises from user connection and information collection at the consumer end to algorithm computing power and cloud construction in the middle of enterprises, and finally realizes digital transformation. With the help of intelligent consumer terminals and other technologies, enterprises can collect and analyze corresponding consumer data in real time. Digital stores have begun to obtain dynamic data such as consumers' in-store time, check-out time and in-store behavior in real time, and conduct real-time analysis through the data center. The final retailer reduces risk through better digitally enabled consumer insights, sales information, response times, communication with the store network, and through better demand management[18].

iii. The results of digital transformation of retail enterprises

The first is business model innovation. The empirical results show that digital transformation has a significantly positive impact on business model innovation[19], and business model innovation brought by digital transformation abounds. Enterprise decision makers should enhance strategic insight and management cognition, actively design business model innovation, and promote the development of strategic flexibility and resource flexibility in strategic planning, organizational structure and culture to implement business model innovation[20]. Retail enterprises realize marketing innovation, internal and external resource innovation, channel innovation and management innovation through digital empowerment, so as to complete business model innovation.

The second is to reconstruct business processes. The digital transformation of retail enterprises starts from the improvement of existing business, and then extends to new services, new markets and new customer groups, as well as further business model transformation. For retail enterprises, the omni-channel business model is the trend of development. Through digital technology transformation, stores can bring better in-store consumption experience to consumers, and at the same time, retail enterprises can use store space to provide marketing services for brands and create more revenue channels.

Third, reshape management and build a digital operation system. Digital transformation empowers employees and helps them improve their productivity and efficiency. Automate routine tasks and streamline processes by digitizing workflows. Save time and cost and improve efficiency by integrating with business intelligence. By building a full range of data capabilities from identifying data to applying data, retail enterprises can realize data-assisted and driven decision-making processes. At the same time, enterprises can use data analysis and artificial intelligence technology to optimize existing business, build a rapidly iterative and self-driven innovation system, and ensure the original power of continuous digital transformation. In the enterprise through internal mechanism, brainstorming for digital innovation; Introduce external cross-border partners to obtain inspiration for new technologies, new scenarios and new applications.

5. Conclusions

Under the new retail model, the Internet economy continues to develop, and the demand of online consumer market continues to be activated. Technological change and retail organizational change provide necessary conditions for retail enterprises' digital transformation, and organizational innovation ability and digital ability further drive retail enterprises' digital transformation.

Acknowledgments

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Yang Xiaoling, 1980.10.Fujian, China, is a PhD candidate in management at the University of Sabah, Malaysia, and her main research interests are digital transformation strategies in Chinese retail industry.