

Research on the Platform-Based Retail Business Model Innovation

Binbin Zheng*

With the rise of the platform economy, the retail industry is facing great pressure to shift from a traditional growth model to a platform-based growth model. The one-sided market theory applicable to the traditional business models cannot adequately explain business model innovation in the platform-based growth model. Based on a systematic analysis of the platform economy theory, business model innovation theory, value co-creation theory, and dynamic capability theory and in light of the characteristics of the retail industry, this paper proposes that to achieve platform-based growth, retail business model innovation should be focused on changing the ways to create customer value and capture enterprise value and leveraging modern information systems to achieve value co-creation during the transformation of key business processes ranging from procurement and sales to distribution. In addition, enterprises must get rid of the mindset of making profits from the difference between buying and selling prices and should instead explore new sources of revenue through linking dividend and information value. As platform operators, retail enterprises need to develop dynamic capabilities through the interaction of heterogeneous resources of various platform participants and especially the introduction of social resources, so as to propel innovation in retail business models and ultimately the transformation from traditional growth to platform-based growth.

Keywords: platform-based growth, business model, value co-creation, information value

1. Introduction

In the era of the network economy where all people and things are highly connected, traditional competition centered on product differentiation and individual enterprises has gradually evolved into platform competition (Tan *et al.*, 2015). In recent years, with the success of e-commerce platform enterprises such as Alibaba, JD.com, and Pinduoduo and the rise of new retail, smart retail, and unmanned retail

* Binbin Zheng (email: zhengbinbin1722@163.com), Associate Professor, Dean of Marketing Department, Business School, Putian University, Fujian; Visiting Scholar at the National Academy of Economic Strategy, Chinese Academy of Social Sciences. Fund project: Key Project of National Social Science Fund of China “Circulation Model Innovation and Quality Consumption Promotion: Path, Mechanism, and Policy System” (19AJY020); Fujian Province Social Science Fund “Research on Retail Business Model Innovation in the Context of Platform Economy” (FJ2019B138).

featuring online-offline integration, the advantages of retail enterprises empowered by platforms have been gaining growing attention (Sridhar, 2011; Chao, 2015). Platform-based growth has become an effective way for traditional retail enterprises in China to upgrade their business models (Zhu, 2018). A “platform” is an economic organization designed to achieve benefits by promoting bilateral and multilateral users to conclude transactions (Eisenmann *et al.*, 2006). The key issues, however, lie in how to move from traditional growth to platform-based growth and how to conduct business model innovation for the latter. Many retail enterprises face three challenges in this regard: first, in the internet age, how to shift from the traditional thinking of selling goods to the internet thinking of connecting users from all groups to achieve value synergy? second, how to move from the traditional functions of procurement and sales to platform governance, i.e., functions of managing the relationship among various participants and empowering all types of users? third, procurement, sales, and distribution are the key business processes of retail enterprises (Yahagi, 2011), so how can these key business processes be reformed to make new business models practicable for platform-based growth?

From an academic perspective, a business model articulates the logic, among other things, that demonstrates how a business creates and delivers value to customers while achieving its own value (Teece, 2007; Zott and Amit, 2010). Currently, a growing number of studies discuss business models from the angle of platform competition. Most of them point to two noticeable changes in business models against the backdrop of the platform economy: customer value creation has evolved from linear delivery to networked co-creation (Luo and Li, 2015), while enterprise value attainment has been gradually separated from the delivery of customer value, and instead a new source of revenue is required (Wang, 2011). Although the existing studies have transcended the traditional concept that enterprises are the sole creator of value while customers are purely the user of value (Normann and Ramirez, 1993), they mostly fixate on value co-creation under the enterprise customer relational duality paradigm in the context of service-dominant (S-D) logic (Vargo and Lusch, 2016). And there is little research on the co-existence of multiple players such as suppliers and customers in the retail industry and the value co-creation network encompassing bilateral interactions. Moreover, the existing research focuses on how enterprises and customers achieve value co-creation through resource interaction while giving little attention to how enterprises capture value. Some studies point out that with the rise of the “free” internet economy, enterprises must broaden their sources of revenue by restructuring product portfolios and user portfolios (Wang, 2011), but they disregard value creation by making full use of information, which is now an essential factor of production (Yang and Tao, 2015; Qi *et al.*, 2017). Information is a valued and exclusive resource brought by platforms that connect all things, and the creation of information value is at the core of the shift of retail enterprises from the traditional thinking of operating physical

commodities to the internet thinking of operating commodity data (Yi, 2018).

While research on retail business model innovation has yielded fruitful results, platform-based growth has disrupted the value logic of business models. Therefore, the existing researches are insufficient to thoroughly answer the aforesaid questions, and there are still quite limited studies on retail business model innovation based on the transformation of growth models amidst the rise of the platform economy. Given that China's economy is in the critical period of shifting from old drivers of growth to new ones and enterprises are in urgent need of transformation and upgrading for new growth and aiming to fill in the theoretical gaps of the existing research, this paper examines platform innovation of retail business models and their path and mechanism during the transformation from traditional growth to platform-based growth, provides theoretical support for exploring circulation innovation in the context of the platform economy, and puts forward practical suggestions for retail enterprises on how to foster new drivers of growth.

2. Theoretical Basis

2.1. Platform Economy and Platform-Based Growth

2.1.1. Platform Economy

Platforms serve as intermediaries that connect two or more distinct groups of users and enable their direct interaction and are economic organizations with a structure of two-sided markets (Zhu and Furr, 2016). They can exist in both the real world and the virtual space (Tiwana, 2015; Xu, 2006). Modern information technologies represented by the internet, cloud computing, and big data have spurred the development of platforms, which have evolved from product platforms and industrial platforms to platform enterprises and then to platform ecosystems (Gao and Zhang, 2018).

As platform enterprises such as Apple, Microsoft, Google, Amazon, Facebook, Alibaba, JD.com, and Pinduoduo have sprung up in recent years, the platform economy, a brand-new economic growth model, has drawn extensive attention from the academic community, industry, government and other social sectors. Different from the one-sided market that is divided into buyers and sellers in the traditional economy, the platform economy is characterized by two-sided markets and network externalities. By connecting people to people and people to things, platforms efficiently bring together market demand and supply across time and space, making it easier for the supply side to identify, explore, and create market opportunities on the demand side, thus forming value synergy, lowering operating risks, and getting excess economic rent (Liu, 2015). Additionally, the scale of users on one side of a platform can impact the effectiveness of users on the other side. More connections and value interactions enable better match

between supply and demand on the platform and therefore generate more value. Such network effects will attract more participants (Zhu, 2018).

Modern information technologies such as the internet, Internet of Things (IoT), and big data are fully employed by platform enterprises. By connecting two-sided markets, platform operators systematically gather resources, facilitate transactions, and improve efficiency on a win-win basis to achieve network-based value creation and increase value for all parties involved, making them a dominant organizational form and a powerful engine of new economic growth in the mobile internet era.

2.1.2. Platform-Based Growth

In the platform economy, the competitiveness of enterprises no longer depend on a single product or technology, size, or brand but on the resource integration capabilities of their platforms and responsiveness to user needs (Li *et al.*, 2013). The platform economy is shaking up the traditional organization of economic activities, reshaping the value chain, and transforming the logic of value creation and value distribution. Based on the platform economy theory, a platform-based growth model is defined as a new-type enterprise growth model where enterprises leverage modern information technologies and network externalities and platform operators empower all groups of users and promote them to close deals to achieve growth through network-based value-adding operations.

By integrating heterogeneous resources between supply and demand and promoting massive amounts of connections and value interactions between platform participants (e.g., buyers, sellers, complementors and so on), platform-based growth bolsters enterprise growth through network-based value creation. Therefore, to achieve platform-based growth, retail enterprises need to first change their logic of customer value creation. Platform-based growth emphasizes value co-creation among all parties within the value network. Unlike the existing linear value delivery method from the perspective of the value chain or value co-creation in the relational duality paradigm in the context of S-D logic (Vargo and Lusch, 2016), platform-based growth of retail enterprises is more focused on how retailers and suppliers together deliver “supply-side” value to customers, retailers and customers deliver “demand-side” value to suppliers, and suppliers and customers deliver “connection-side” value to retailers (Liu, 2015). The construction of a value co-creation network where any two of the three parties, namely retailers, customers, and suppliers, represent a duality has become the core of retail business model innovation from traditional growth to platform-based growth. Second, with the change of the value creation approaches, enterprise value attainment has been gradually separated from customer value creation and delivery. In the traditional growth model, enterprises provide products for customers while customers pay the corresponding fees for them, i.e., the two sides attain value through

product exchange. In the platform-based growth model, even if enterprises provide customers with high-quality products or services catering to their needs, they may not directly capture revenue from that. The free internet model is a case in point. In addition, previous research emphasizes customer value creation over enterprise value attainment. In practice, some seemingly perfect business models, instead of bringing in profits, can force enterprises to shut down after “burning a lot of money”. Therefore, during retail business model innovation, it is necessary to analyze the mechanism of enterprise value attainment, reconstruct the value network, and open up new sources of revenue to achieve profitability and ensure the stability of business models (Wang, 2011).

The concept, characteristics, and strategic elements of platforms have been defined in the existing studies, which shed light on what a platform is and how to build one. However, there is still little systematic research on how traditional enterprises, especially retail enterprises, can transform themselves into platform enterprises, and even less research on the customer value creation mechanism and enterprise value attainment mechanism in platform-based business models.

2.2. Retail Business Model Innovation

2.2.1. Connotations

Driven by the advancements in science and technology, changes in the business environment, market opportunities, consumer behavior, and other factors, constant innovation is required for business models to accommodate to social development and maintain competitive advantage. Research on business model innovation, which is generally based on the transaction cost theory, resource-based theory, resource dependency theory, dynamic capability theory, social capital theory, and value chain theory, has yielded fruitful results, and representative studies include those by Morris *et al.* (2005), Osterwalder and Pigneur (2013), and Zott and Amit (2011). Karl Marx’s theory of circulation points out from the holistic perspective of social reproduction and business capital division that the retail industry serves as a circulation intermediary that connects production and consumption, where retailers make profits by selling products or services directly to end consumers. This attribute determines the particularities of retail business models compared with others.

Purchasing goods from suppliers and selling them to consumers is the most traditional business model in the retail industry, as adopted by the earlier “traveling merchants” (peddlers), “sedentary merchants” (mom-and-pop grocery stores), and open-air markets (Li and Ren, 2018). Retailers purchase from various suppliers to develop diversified product portfolios to attract consumers. The combination of procurement and sale by retailers reduces the search costs on the supply side and the consumer side,

improves transaction efficiency, and helps lower social circulation costs.

As commerce further evolved, the shift in the retail business model from single-store operations to chain store operations has broken the limits of business districts and connected a wide range of consumers through multiple stores and the store network to achieve business growth. Modern business models such as supermarkets, convenience stores, and specialty stores fall within this category. The aggregation of market demand in chain store operations can help enterprises achieve economies of scale, improve bargaining power, reduce procurement costs, and gain competitive advantage through reform of centralized procurement business processes. This represents an important business model innovation in chain store operations. However, centralized procurement and scattered store sales have given rise to time and space gaps between procurement and sale. In order to ensure the availability of the right products in sufficient stock when the customers demand them, an important topic in retail business model innovation for chain stores is how to build an efficient commodity distribution system. With the advances in information technology, chain enterprises have invested heavily in the construction of information systems, POS deployment in stores, and real-time sharing of information between stores and the headquarters. Based on information systems, retail enterprises have established high-frequency and small-batch logistics and distribution systems to achieve rapid iteration of in-store products and reduce inventory risk (Zheng, 2018). The application of information systems by chain enterprises introduce information technology system to strengthen business management business management, propelling the rapid development of chain business models and supply chain management.

Procurement, sales, and distribution are key business links in the modern retail business model. Procurement includes the purchasing activities from manufacturer brands, as well as the development of private brand products and imports from overseas. Correspondingly, distribution covers the primary logistics of products carrying manufacturer brands from the production stage to the distribution centers of retail enterprises, secondary logistics from distribution centers to stores, logistics from raw materials procurement for private brand products to production, as well as sorting, reprocessing, and other functions performed by distribution centers. Stores sell products through well-thought decorations and layout, suitable prices, and a variety of promotional activities.

The connotations of procurement, sales, and distribution vary by the value created by enterprises for customers. For instance, Walmart provides customer value with the “everyday low prices” marketing strategy and has achieved business model innovation featuring low-cost procurement and distribution by improving the efficiency of logistics and distribution and underpinning the construction of information systems (Li and Wang, 2006). Aeon, another well-known supermarket brand, puts customer experience at the core of its marketing strategy, provides customers with products of unique value

and excellent quality and has achieved business model innovation by enhancing the capability of its commodity department to develop private brand products (Zheng, 2018). In order to provide customers with the convenience of instant consumption, the convenience store giant 7-Eleven has established dedicated plants, set up a product development team and shared distribution system, built a high-frequency and small-batch logistics and distribution system, and accelerated the iteration of in-store goods to achieve business model innovation (Zheng, 2018). Based on the changes in the market landscape and their unique values and leveraging information technology, retail enterprises continuously adjust key business processes such as procurement, sale, and distribution to bring about new business models and provide consumers with valuable products or services to increase sales and revenue. The general framework of a retail business model is illustrated in Figure 1 below.

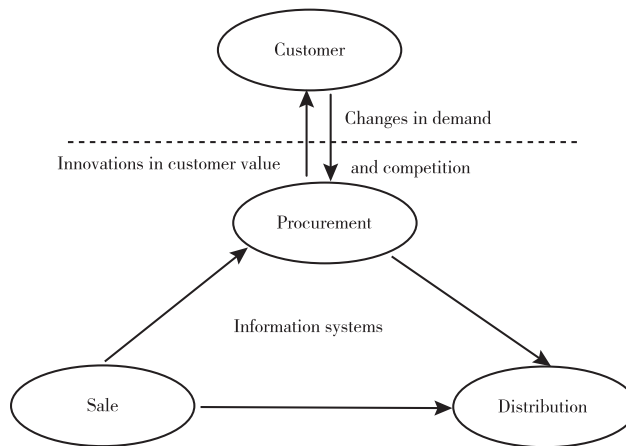


Figure 1. General Framework of a Retail Business Model

Source: drawn by the author.

2.2.2. Value Co-Creation of Retail Enterprises in the Platform Economy

With the rise of the internet in recent years, traditional retail business models have been severely challenged by online models (Sheng and Wu, 2010). Online retail has been favored by consumers since it transcends the restrictions of time and space and offers countless product varieties. Since 2016, new concepts such as new retail, smart retail, and unmanned retail have emerged, blazing a new trail of innovation powered by online and offline integration. The advances in information technology, digital transformation of the technological foundation of the retail industry, changes in consumer behavior, and data resources are the main driving forces of retail business model innovation in the internet era (Qi *et al.*, 2017).

In the internet era, the retail industry has become borderless, gapless, and

encompassing (Qi *et al.*, 2017). Integrating the resources of various retail entities represented by suppliers and building a value network for value co-creation has become an important way of innovation for retail enterprises. Although the existing literature has analyzed business model innovation from different perspectives and scenarios, the emphasis on customer value, transformation from unidirectional value creation to value co-creation, and shift from value chain creation logic to value network co-creation logic are the consensus among current business model innovation studies (Gummesson and Mele, 2010).

Business model innovation in the context of the value chain creation logic is mainly based on unidirectional value provision, emphasizing effective control and acquisition of resources (Hallen *et al.*, 2014; Jensen *et al.*, 2016). This is the main value creation method in the traditional growth model, where the monotony, scarcity, and homogeneity of commodity resources in parallel with the intensified competition constitute the main bottlenecks to the development of enterprises. Therefore, to underpin the ability to acquire commodity resources has become the main direction of retail business model innovation. As can be seen in Figure 2, retailers collaborate with and integrate the resources of suppliers or manufacturers, carry out product and service innovation based on market demand, guide suppliers or manufacturers to produce and provide products that meet market demand, and sell products and services to customers through their vast network of channels to achieve customer value creation and delivery (Yan, 2015). The purpose of business model innovation is to improve the value chain management capability of retailers. Products or services provided by suppliers act as the carriers of value creation, and retailers serve as the key nodes to achieve value exchange of products or services. In this case, production and consumption are two independent processes and only interact in market exchange. However, because of the communication and interaction with customers and the restrictions of market information asymmetry on the product development, production, and design capabilities of suppliers, such product-oriented business model innovation can hardly increase customer stickiness and results in new forms of homogeneous competition.

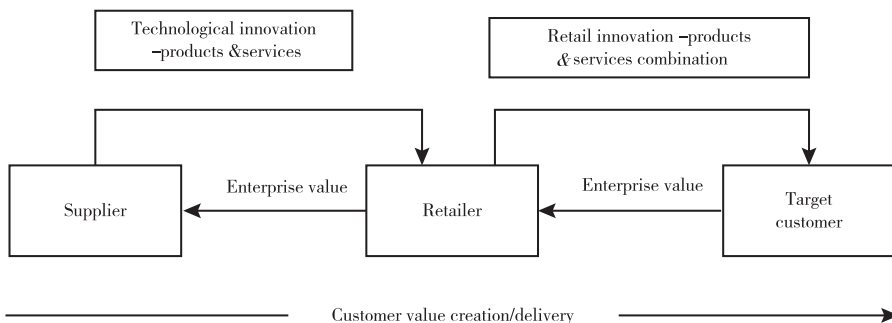


Figure 2. Unidirectional Value Creation Process

Source: drawn by the author.

With the advent of the internet era, the logic of value creation has seen dramatic changes. The internet has transcended the limitations of time and space for transactions, sped up transactions, reduced intermediate processes, and connected people to people and people to things. The value creation theory has shifted from the traditional linear value chain thinking to the complex and dynamic value network thinking; business model innovation under the network-based value co-creation logic highlights value co-creation, with a focus on two-way interactions and cross-sectoral integration (Liu, 2015). The platform business model is a typical example of value co-creation.

Value co-creation is a dynamic process in which all actors co-create value through information interaction and resource integration (Payne *et al.*, 2008). From the service-dominant viewpoint, value is jointly created by the enterprise and the customer, and value co-creation is premised on the enterprise-customer relationship (Vargo and Lusch, 2008). By contrast, in the platform business model, a retail platform brings together suppliers, consumers, and complementors, among others; individual enterprises are no longer the sole value creator; all parties are connected through the platform, and the interactions between retailers and customers, suppliers and customers, retailers and suppliers, and retailers and complementors have enabled various actors in the value network to co-create social value through many-to-many relationships (Jian *et al.*, 2016). All parties go beyond the duality of competition and cooperation and co-create value in information interaction, where the production and consumption processes are integrated rather than independent of each other. As a platform operator, a retailer no longer simply performs a role in value transfer and exchange; instead, it integrates resources from various sectors, empowers all parties, and extends the value-added effect to the entire network. Such a shift in functions poses new challenges for retail business model innovation during the transformation from traditional growth to platform-based growth.

2.3. Dynamic Capabilities

Dynamic capabilities are an enterprise ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments (Teece, 2007). In the turbulent and unpredictable market environment, dynamic capabilities enable enterprises to promote organizational change and achieve strategic transformation through the reconfiguration of resources. Whether a retail enterprise can successfully move from traditional growth to platform-based growth ultimately depends on its dynamic capabilities and path dependence (Liu, 2015).

Teece (2007) asserts that dynamic capabilities can be grouped into three categories

of activities: perception, acquisition and transformation. Hao *et al.* (2013) believe that dynamic capabilities includes the ability to identify the environment, the ability to integrate and reconfigure resources, and flexible organization and technology, etc. Wang and Ahmed (2007) classify dynamic capabilities into adaptive capability, absorptive capability, and innovative capability. Luo and Li (2015) categorize dynamic capabilities into market-oriented perception capability, social networking capability, organization and learning absorption capability, and communication, coordination, and integration capability. In fact, dynamic capabilities are composed of various elements, and their connotations often vary by the development needs of different enterprises.

The existing research finds that dynamic capabilities can promote transformation of enterprises and enable them to gain competitive advantage, but the processes and mechanisms vary widely in varying environments. For example, in the e-commerce market, enterprises need to develop dynamic capabilities in response to the continued involvement of external stakeholders to promote enterprise value creation (Koch, 2010). As for restructuring and gradual supply chain transformation, resource integration and reconfiguration methods determine different dynamic capabilities, leading to path differences (Xiao *et al.*, 2015).

A platform business model empowers growth by connecting different groups of users and through value interactions. It is a co-creational organization that engages consumers and multi-stakeholders, and its value comes from resource interactions between multiple participants (Ramaswamy and Ozcan, 2015). Therefore, in the process of transformation towards platform-based growth, the formation of dynamic capabilities not only highlights resource interactions between enterprises and consumers but also involves interactions with other stakeholders. Nonetheless, there is still little in-depth discussion in the existing research on how various actors interact with resources and how dynamic capabilities promote the formation of platforms.

With the advent of the internet era, innovative retail business models have cropped up, such as new retail, smart retail, digital retail, and unmanned retail. Current studies are gradually shifting their focus from the traditional growth model based on the value chain creation logic to the platform-based growth model based on the network-based value co-creation logic, and have addressed the important role of dynamic capabilities in business model innovation. In general, scholars around the world have systematically discussed the issues regarding business models, promoting the development of this research area. However, the existing literature provides no systematic answers to such questions as how the key processes of procurement, sale, and distribution in platform business models can be reformed to achieve customer value co-creation, and how enterprises can acquire value to achieve sustainable development given the separation of customer value creation and delivery and enterprise value attainment. Therefore, starting from the transformation

of key processes, this paper discusses the general theoretical framework including the path and mechanism of retail business model innovation from traditional growth to platform-based growth and is of practical significance to enable enterprises to embrace the platform economy and help foster new drivers of economic growth.

3. Characteristics of Platform-Based Retail Business Model Innovation

3.1. Changes in Customer Value Creation

3.1.1. Procurement

In the platform-based growth model, it is an inevitable trend for retail business models to shift from unidirectional value creation to network-based value co-creation. If traditional buyers continue to purchase goods based on personal experience, preferences, or sales data, they will find it difficult adapting to the rapidly changing consumer needs and the platform model. When a retail enterprises transitions toward platform-based growth, it needs to attract various user groups such as suppliers and customers while engaging complementors and the cross-sectoral supply chain to promote information interaction and value sharing among the participants.

A traditional e-commerce platform is a third-party access system designed to achieve benefits by facilitating transactions between different users (Eisenmann and Parker, 2006). Unlike traditional e-commerce platforms, the platform business model emphasizes value co-creation among all parties in the value network as the retail industry is shifting to platform-based growth. Retailers and customers create value together. After obtaining revenue from direct transactions with the customers, the platform operator needs to promote value creation and direct transactions between the supplier and the customer and value co-creation between the retailer and the suppliers aimed at meeting customer needs. As the value creation method changes, the relationships between retailers, suppliers, and customers become more complicated. They together form a value co-creation network where any two of them interact with each other. Through value co-creation, they connect product information and complete business processes such as procurement and product development. Therefore, in terms of value co-creation and retail business model innovation, the interests and resources of different platform participants should be integrated and properly coordinated in order to achieve the value-added effect for the platform.

3.1.2. Sales

In the traditional growth model, retail enterprises attract consumers to their stores with convenient locations, inviting decorations and in-store layout, diversified product

portfolios, and various promotional activities in order to deliver value and obtain sales revenue, and retail spaces act as an isolating mechanism that prevents the loss of consumers. With the development of digital technologies, however, online and offline shopping channels become increasingly diversified, and stores are no longer the only node for value transfer. Even if consumers are attracted to a store, there will not necessarily be transactions as consumers can compare prices and place orders online, which actually results in a loss of consumers for the physical store. Therefore, customer guidance and closed-loop management has become an important issue in sale innovation in the platform business model.

Physical stores, as the unique resources of brick-and-mortar retailers, should be fully utilized. The aesthetic design of store space can provide consumers a good shopping experience and increase the value of goods, while the creation of commercial space can play a complementary role in connecting customers. For example, Daikanyama T-Site has gone far beyond a bookstore that sells nothing but books. By making use of the physical space and adopting innovative business models, it has become a place where people can buy or read books, drink coffee and socialize. Alibaba's Hema supermarket and YH Super Species, which focus on "high-quality shopping experience + on-site services + convenient delivery", represent business model innovation that combines physical stores and mobile apps. How to fully tap into the value of store space, develop a multi-screen connection model, and prevent customer loss is a vital part of closed-loop customer management in the platform business model.

3.1.3. Distribution

In the traditional growth model, logistics mainly refers to the distribution from logistics centers to stores. The function of logistics is to replenish store inventory in a timely manner, accelerate the iteration of in-store goods, and achieve a balance between reducing inventory risks and losing sale opportunities due to shortages. In the platform-based growth model, consumers can place orders online or offline, pick up their goods themselves, or have them delivered to the doorstep. A new type of distribution system that encompasses distribution from logistics centers to stores, logistics centers to customers, logistics centers to suppliers, and stores to customers should be established. To meet the diverse needs of different distribution entities, the logistics systems are becoming more complicated. For example, the distribution from logistics centers to stores requires sales prediction and inventory management based on the zero inventory thinking in a bid to reduce logistics costs and improve logistics accuracy. For consumers, logistics is needed for online and offline integration in order to meet personalized and fragmented needs through targeted and fast experiential services. For logistics enterprises, they need to efficiently integrate logistics resources based on whole-chain big data to shift towards intelligent logistics. Retail

enterprises can expand their own logistics networks or build logistics stations based on information systems and empower logistics to make it more intelligent and automated by using real-time data and data technologies (Han and Wang, 2018). Although self-built logistics systems can reduce marginal costs and increase the marginal benefits, they require continuous inputs. For example, JD Logistics has been stuck in an awkward situation of chronic losses. Therefore, the construction of logistics systems needs to fully utilize social logistics systems and integrate with social logistics resources through the connection to platform operators.

3.2. *Changes in Enterprise Profit Model*

3.2.1. Linkage Dividend

In the traditional growth model, retailers purchase goods in bulk to reduce costs goods and improve operating efficiency, and make profits through the difference in prices. However, in the platform-based growth model, consumers pursue unique products to express their individuality. In this case, traditional mass production can no longer meet consumer demands. Moreover, the countless varieties of products on the internet and transparent prices make it increasingly difficult for retailers to make profits from commodity sales. Wang (2011) proposes that in the face of the free economy trend enabled by the internet, enterprises need to restructure their value network and explore new sources of revenue to achieve profitability and ensure the stability of business models.

Retail enterprises, as platform operators, connect suppliers, complementors, and customers and thus dig into in-depth consumer needs to provide consumers a better experience during interaction and increase the value of products for consumers. By connecting multiple heterogeneous resources, they can satisfy long-tail needs and improve the efficiency of matching and sharing of resources, so that the platform can achieve network-based added value and all participants can get more value. Therefore, business models in the internet era pursue linkage dividend (Luo and Li, 2015).

Linkage dividend refers to a situation where retail enterprises, instead of directly selling products to make money or focusing on pursuing sale dividends, take their products as an entrance to attract customers and create continuous value for consumers through value synergy and interaction to get revenue (Luo and Li, 2015). For example, by linking Taobao customers with its financial platform and attracting scattered deposits, Alibaba has leapfrogged in financial innovation and obtained financial benefits from massive amounts of deposits. The innovation of platform-based retail business models needs to depend on various participants linked through the platform and the platform's advantage in heterogeneous resources to achieve value, rather than simply pursue the spread between buying and selling products.

3.2.2. Information Value

Yang and Tao (2015) point out that the value co-creation logic in the internet era just regards information as an element supporting the value creation process rather than truly gives weight to and uses information as an important production factor or tries to use information itself to create new value. Sviokla and Rayport (1995) propose to create value through the collection, organization, selection, aggregation, and distribution of information.

Retail is one of the industries where big data is most widely used, but it is also among the industries that face greatest difficulty in big data application. The retail industry collects an enormous amount of membership data, sales data, customer shopping history, logistics data, and service data through modern information technologies, and the amount of data has continued to grow rapidly (Li and Ren, 2018). On the basis of data collection and analysis, the retail industry has gradually achieved digital transformation in terms of customer behavior, goods, services, marketing, supply chain, and decision making. Retail big data has become an important operating resource, which comes from a wide range of data sources including both online and offline channels and in different types such as structured and unstructured data. How to transform these big data into valuable information is the key to the attainment of enterprises value. On the basis of introducing POS information systems, 7-Eleven strengthens the management of individual products based on real-time data such as customer groups, time periods, and climate change to detect hot and slow-selling products as early as possible and then, through its effective logistics and distribution system, continuously brings in popular products while getting rid of slow-selling products in an effort to adjust the product structure and improve the turnover rate of products. In addition, through real-time analysis of sales data via POS, it cooperates with first-class factories, famous chefs, and well-known brands to develop high-quality private brand products with high added value, which greatly enhances its competitiveness (Zheng, 2018). It can be seen that 7-Eleven has successfully transformed big data into valuable information that helps it improve its competitiveness through the collection, organization, selection, aggregation, and distribution of big data.

At present, only a small amount of data has been utilized by physical retailers, while the majority of data stays untapped in China. There is no specific method for how to translate large amounts of data into information support for business decision-making; instead, business decisions are often made based on experience and feelings, which may lead to decision bias, weakening the competitive edges (Li and Ren, 2018). When establishing an integrated data processing system, the retail industry should work out a complete set of data collection, analysis, and application solutions, standardize the processing of commodity data and business data, construct a data analysis model, and

improve the effects of data collection, analysis and application through continuous trial and error to turn it into valuable information.

In the platform-based growth model, retail enterprises should attach importance to the value of information itself. The data collected via each node needs to be analyzed to make it valuable information to empower various users on the platform and achieve the value-added effect. How to organize, select, aggregate, and distribute information to create value is an urgent issue to solve in retail business model innovation.

3.3. Establishment of Information Systems

The information system is the infrastructure of retail business models, where data technology is the core, and big data, cloud computing, and other next-generation technologies are the important underpinnings for business model innovation. The collection, analysis, and processing of massive amounts of data to turn it into valuable information depends on the establishment of information systems. Information technology capabilities are the foundation for the construction and development of multilateral platforms (Tan *et al.*, 2015), since the subject of platform-based growth is no longer an individual enterprise but an ecosystem of various stakeholders. To put it in another way, information technology capabilities are the basis for promoting value co-creation among platform participants.

Information systems provide important information support for decision-making during the business processes of procurement, sales, and distribution and are the guarantee for the effective implementation of these processes. For example, Daimaru, a Japanese department store chain, invested 500 million yen in 2002 to upgrade 2000 POS devices and introduce single-item management software that can collect highly segmented data by stores and style, greatly improving its data analysis capabilities (Yahagi, 2011).

As the initial investments in information systems are often enormous, enterprises need to consider which systems they should invest in themselves or can be constructed through collaboration, so as to empower all platform participants to create value and reduce the access costs for key members while raising their platform switch costs, thereby attracting and retaining key members (Wang, 2015). For example, after Alibaba became a shareholder, department store chain Intime connected to the internet giant's information system and quickly completed digital transformation of product management, membership management, and supply chain management, reducing the time and costs for information system construction and improving operating efficiency.

3.4. Development of Dynamic Capabilities

Dynamic capabilities play a pivotal role in business model transformation from

traditional growth to platform-based growth organization. The dynamic capabilities of the retail industry mainly include procurement capabilities, sales capabilities, and logistics and distribution capabilities and can also be divided into logistics and store inventory coordination capabilities, store operation capabilities, collaboration capabilities with suppliers, individual product management capabilities, and capabilities for cross-sectoral cooperation in private brand commodities (Yahagi, 2011).

The retail business processes, in which retail enterprises translate organizational and individual knowledge and experience into business operations, are a summary of the past business knowledge and a concrete manifestation of an enterprise's dynamic capabilities (Yahagi, 2011). First, dynamic capabilities are developed during the process of continuous trial and error. Second, compared with traditional business environments, consumers serve as important value co-creators in the platform business model (Erdem *et al.*, 2016). Consumer involvement has become an important factor in the development of dynamic capabilities for enterprises, and the synergy between enterprise and consumer resources has propelled the transformation of internet organizations. Capturing, adapting to, and guiding consumer changes can boost collaborative dynamic capabilities between enterprises and consumers (Xiao *et al.*, 2015). Finally, a platform is a co-creational organization that engages consumers and multi-stakeholders, and its value comes from resource interactions between multiple participants (Ramaswamy and Ozcan, 2015). The development of dynamic capabilities not only emphasizes resource interaction between enterprises and consumers but also involves interaction with other stakeholders such as suppliers. Therefore, platforms should fully promote resource interaction among all participants to cultivate dynamic capabilities, so as to accomplish their business model innovation.

4. A General Theoretical Framework for Retail Business Model Innovation

With the rise of the platform economy, the innovation of retail business models and related theories in one-sided markets no longer work in two-sided markets because of platform-based growth. On the basis of the platform economy theory, value co-creation theory, and dynamic capabilities theory, this paper comprehensively analyzes the changes in the way customers create value, shift in enterprise profit models, and model innovation driven by dynamic capabilities during the transformation of retail enterprises from traditional growth to platform-based growth. In view of this, a general theoretical framework for retail business model innovation is constructed, as shown in Figure 3.

Specifically, customer value is co-created by platform members, which has changed the procurement and product development methods. A retailer's platform consists of a physical store and an online platform. It attracts customers to the store and improves their shopping experience through store layout and achieves closed-loop customer

management online. In terms of the enterprise profit model, the retailer attains its enterprise value from linkage dividend and information value and needs to get rid of the traditional mindset of making profits from the spread between buying and selling prices. Dynamic capabilities, as the guarantee of business model innovation, are developed through business operations, inter-organizational learning, knowledge sharing, and resource interactions, which form mutually reinforcing relationships. In short, to achieve platform-based growth, the key no longer lies in how much resources an enterprise acquires or controls but how to integrate social resources, supplier resources, and complementary resources.

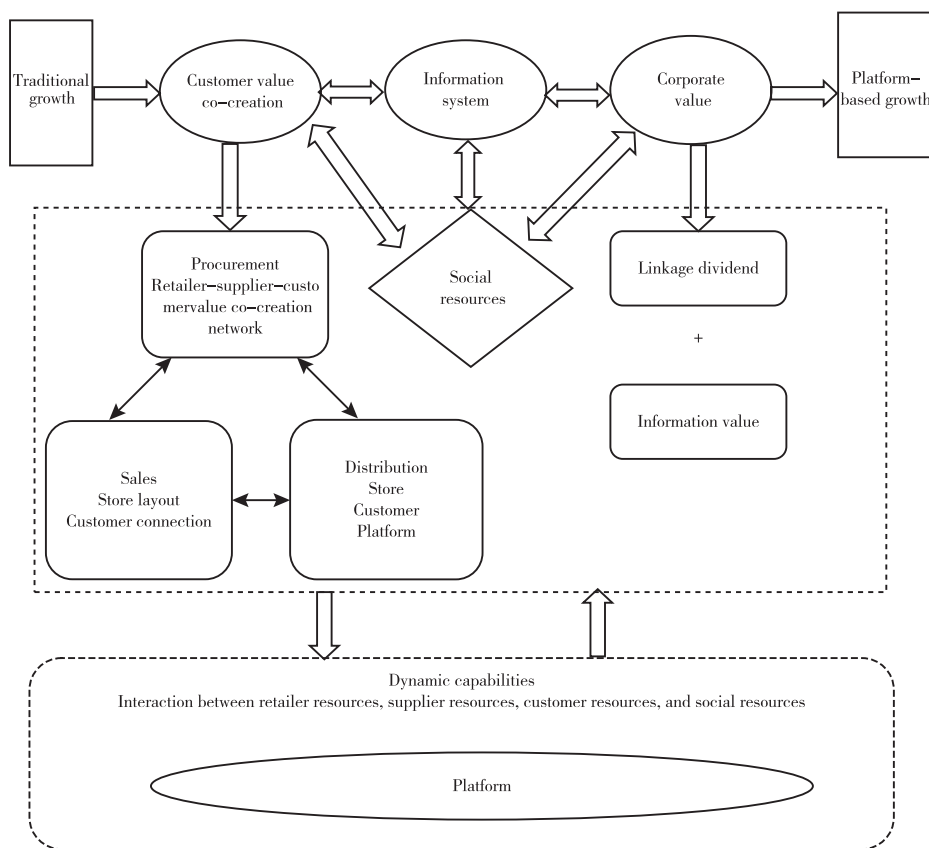


Figure 3. Theoretical Framework of Platform-Based Retail Business Model Innovation

Source: drawn by the author.

5. Conclusion

In the platform economy, the retail industry is facing great pressure to shift from

a traditional growth model to a platform-based growth model. The one-sided market theory applicable to the traditional business models cannot adequately explain business model innovation in the platform-based growth model. Based on a systematic analysis of the platform economy theory, business model innovation theory, value co-creation theory, and dynamic capabilities theory and in light of the characteristics of the retail industry, this paper proposes that to achieve platform-based growth, innovation in retail business models should be focused on changing the ways to create customer value methods and capture enterprise value and leveraging modern information systems to achieve value co-creation during the transformation of key business processes ranging from procurement and sales to distribution. In addition, enterprises must get rid of the mindset of making profits from the spread between buying and selling prices and explore new sources of revenue by linkage dividends and information value. As platform operators, retail enterprises need to develop dynamic capabilities through the interaction of heterogeneous resources of various platform participants and especially the introduction of social resources, so as to propel innovation in retail business models and ultimately the transformation from traditional growth to platform-based growth. Finally, a general theoretical framework for retail business model innovation is constructed, laying a theoretical foundation for future business model innovation. Plus, this theoretical framework can be used to analyze more cases so as to discover the general law and internal mechanism of retail business model innovation towards platform-based growth.

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