Cross-border e-commerce firms as supply chain integrator: A Service Dominant Logic Perspective

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Abstract

Cross-border e-commerce is becoming more and more popular all over the world. With the development of technology, competition has gradually shifted from commodity to the supply chain service capacity of e-commerce. This paper adopted a multiple case study method and selected four typical cross-border e-commerce enterprises (OSELL, BizArk, LINCA and Zongteng). Data were collected from 20 interviews, observations and field visits. Adopting Service Dominant Logic in supply chains, three sets of propositions provided answer to how do cross-border e-commerce firms provide services to e-tailors and other platform users from the view of three flows, i.e. information, logistics and capital flow.

Keywords: Service supply chain, Cross-border e-commerce, Service dominant logic

1 Introduction

With the popularization of the Internet and the advance of information technology (IT), e-commerce has been gaining recognition in the globalization context. Compared with American and European countries, China's e-commerce started a little late but has developed very fast, and with a promising future (Johnson-Page and Thatcher, 2001). Over the last few years, China's cross-border e-commerce sales have increased at a rapid rate, thanks to the improving Internet infrastructure, mounting Internet users and a better e-commerce environment. According to the State Statistics Bureau (2016), the trading volumes of China's cross-border e-commerce in the years 2010-2017 were respectively

RMB 1.3 trillion, 1.8 trillion, 2.3 trillion, 3.1 trillion, 4.2 trillion, 5.1 trillion, 6.3 trillion and 8.8 trillion, with an annual increase rate of approximately 20%.

Despite the prosperity of cross-border e-commerce in China, there are still some obstacles regarding data collection and processing, customs clearance, logistics, as well as the efficiency of electronic payment refunding, a preferential policy issued by China's Ministry of Commerce in 2015 (Inama., 2015). According to the China's Ministry of Commerce (2015), China's cross-border e-commerce development has been severely impeded by the unreasonable overall system construction, deviation of priority and imperfect infrastructure. Currently, many Chinese cross-border e-commerce enterprises are building on their existing business foundation, and transitioning from product-dominant logic to the service-dominant logic, to construct their service supply chains.

The cross-border e-commerce is, in itself, a complex system, integrating multiple types of service and information, such as Internet-related IT, cross-border trade, electronic payment and logistics, customs declaration and inspection, law, and foreign language (Baruca and Zolfagharian, 2012). The traditional service supply chain is the single-direction link starting from suppliers and ending with customers, so it lacks flexibility, and problems occurring in any single part would affect the whole chain. In contrast, the e-commerce service supply chain is a network, of which breakdowns would not influence the operations in any single physical entity (Sanchez-Rodrigues, Potter and Naim, 2010). To meet the requirements of customers, cross-border e-commerce enterprises need to cooperate with the product suppliers as well as all service suppliers such as logistics suppliers, third-party payment platforms. And the physical entities of the service supply chain include domestic customers, overseas businesses, cross-border e-commerce websites and logistics enterprises home and abroad (Hameri and Hintsa, 2009). The cross-border e-commerce platforms are the core of the whole supply chain, connecting businesses, customers and logistic enterprises and separating information flow from logistics.

Based on above discussion, the following research questions are developed:

How do cross-border e-commerce firms leverage the three flows of information, logistics, and capital to provide differentiated service and deliver service quality?

2 Literature review

2.1 Service supply chain

As part of the process of supply chain research, the service supply chain has gained more attention due to the rapid progress of the service industry. Research of this subject started from the beginning of the 21st century, when, however, it only scratched the surface. In 2004, Ellram, Tate and Billington (2004) published a treatise "Understanding and Managing the Service Supply Chain", focused on the management of the service supply chain, which marked the extensive attention and research of this subject. Despite the limited scope for research in itself, academicians have mentioned or touched upon derivative concepts and issues, such as value-of-service and supply chain of customer service (Lessard, 2013). Different from the product supply chain, the service supply chain aims to achieve mutual-benefit and promote economic communication through providing

the other party with services. Vargo and Lusch (2004) published a paper titled "Evolving to a New Dominant Logic for Marketing" in the world top Journal of Marketing in 2004, putting forward for the first time the concept of "service-dominant logic", and suggesting that this logic be followed to review goods and service, which challenged the goods-dominant logic that had been prevailing for several decades. Afterwards, they carried out a series of research, and the service-dominant logic has been widely concerned by international academia ever since. In recent years, there has been an evident shift from goods-dominance to service dominance in the thinking pattern of supply chain business (Eng, 2005).

In current domestic and abroad research fields, the service supply chain can be classified into the integration of relevant service components of the tradition supply chain, and a brand new theory (Special Topic Forum on Resources and Supply Chain Management, 2013). And there are two general ways of understanding its connotation, one of which sees the service supply chain as the application of traditional supply chain principles in relevant services (Huhns and Singh, 2005). Management of service supply chain refers to a service-oriented integrated management mode in the process from service creation to delivery concerning information, service offering, service ability, service performance, and service capital (Giannakis, 2011). The core of the service supply chain in the service-dominant logic.

Vargo and Lusch (2004) put forward 8 basic hypotheses of service-dominant logic in 2004, and through demonstration, developed them into 8 basic propositions, thus constructing the primary theoretical framework of the logic. With following modification and improvement, the number of basic propositions were increased to 10, finally forming the relatively sound theoretical system of the service-dominant logic (Lusch, Vargo and Malter, 2006). The 10 propositions mainly focused on four aspects, including the issue of resources and competition edge, differences in market trading mechanisms between goods dominance and service dominance, impacts of value co-creation on the market, or, more specifically, impacts of the co-created value on the supply chain, as well as construction of the basis of the service eco-system.

Vargo and Lusch (2006) put forward and continued to develop and improve the service dominant logic. We all know that service logic refers to the focus on creating values together between producers and consumers, between other suppliers and value chain collaborators, in the process of continuous interaction. Logic is the underlying philosophy of organizing and understanding objective phenomena (Smith, 1984). It provides us with a view of the problem at the paradigm level of thinking before theories. And commodity dominant logic and service dominant logic (Lusch, Vargo and Malter, 2006) are the different logics or angles to understand the economy and market exchange. Therefore, it can be said that SDL is a concept relative to the commodity dominant logic.

3 Research methodology

The multiple case study method is utilized to study service dominant logic and information processing in cross-border e-commerce, because both of them are in the state of early stage with few theories (Eisenhardt, 1989; Voss et al., 2002). The purpose of this

paper is to deal with this phenomenon through forming a theory about service supply chain in cross-border e-commerce. This theory can facilitate the exploration of the relation of service dominant logic with information processing in this field. Ghauri (2004) has believed that, to study international business, case study is excellent. The data of this method are received from cross-border and cross-cultural settings. It is suitable for the research because of the data from China and the West. It is agreed by Piekkari and Welch (2004) that, as for cross-cultural research, qualitative method possesses some advantages. They help the learning of deeper cross-cultural and reduce cultural bias and ethnocentric assumptions (like the utilization of survey instruments). Cross-border e-commerce enterprises are taken as the analysis units. Meanwhile, four enterprises are chosen which have cross-border e-commerce service.

3.1 Case selection

OSELL, BizArk, LINCA and Zongteng selected in this research are all at the forefront of China's cross-border e-commerce, an industry with companies growing exponentially, and support from facilities such as the established Free Trade Zones (FTZ). According to the State Council of China (2015), since the opening of the first FTZ in Shanghai in 2013, there have been altogether 11 across China so far, including three in the City of Tianjin, and Provinces of Guangdong, and Fujian in 2005, as well as seven in the City of Chongqing, and Provinces of Liaoning, Zhejiang, Henan, Hubei, Sichuan and Shaanxi in 2017, all of which are aimed at attracting more cross-border e-commerce. Thanks to the strong support, more and more companies have started their cross-border e-commerce business in the FTZs. All the four companies operate cross-border e-commerce, provide relevant service, and possess certain data-analysis capability, making them via subjects for this case study and Table 1 is the basic information of four companies.

Table 1 Basic information of cases

Company	Location	Establish Date	Main business type	No. of Employee	Proactive project
OSELL	Chongqing	2010	B2B Export business	2000+	OSELL APP and Connect cross-border B2B online/offline sharing platform
BizArk	Nanjing	2009	B2B Export business	300+	The tailored overall solutions for the overseas marketing of Chinese enterprises
LINCA	Fuzhou	2014	B2B Import business	200+	An e-commerce full channel service platform is being built
Zongteng	Fuzhou	2007	B2C Export business	1000+	Global supply chain service platform with B2C customer business as core

3.2 Data Collection

Because all four companies conduct both online and off-line cross-border e-business, this

study collected data not only in their offices, but also in their online stores, and from multiple sources such as analysis of the corporate information, field visits, interviews with staff, and second-hand analysis of official reports from the Internet and e-commerce sources.

The researcher interviewed five employees during the two visits to Zongteng; 5 employees during the two visits to Linca; 5 leader during the visit to Osell; 5 leader during the visit to BizArk. During the process of investigation and interview, researches managed to acquire information concerning the historical development, ties with suppliers and customers, operations, and a business mode.

3.3 Data Analysis

The present research adopts a five-step qualitative analysis. Firstly, basic introduction and records of interview and observation about the four companies were documented to identify their business patterns and reveal their core competitiveness. Secondly, business mode profiles of the companies were compiled based on analysis of their development and lines of business (Li et al., 2012). Thirdly, the core service indices of the companies were listed. The essence of the supply chain service includes integrating ability of the supply chain, as well as core indices such as supply chain logistics, business flow and capital flow. Therefore, the companies' supply chain service abilities were identified based on their different services and relevant indices, and through analysis on the cross-border e-commerce enterprises' core competitiveness. Fourthly, the companies' abilities in data mining and analysis identified through their capacity to provide service, as well as through their data projection ability, and analysis of data of volume, transaction, buyer and seller information, merchandise, behavior, after-sale service and logistics. Finally, an information processing framework for analyzing corporate business was constructed based on the business models of the four companies, and on the assumption that the service-dominance ability and data mining ability are not separate, but partly interactive and mutually dependent, co-driving the development of intelligent supply chain.

4 Case description

4.1 OSELL

Founded in March, 2010, OSELL.COM was one of the first-batch trial businesses of cross-border e-commerce launched by the Ministry of Commerce, an official partner of Boao Asia Forum 2016 Summit, a global brand, supplier and incubation platform for global cross-border e-commerce for 15 million Chinese manufacturers, the biggest cross-border ecommerce B2B platform in China and the first cross-border "Internet of Business" platform in China.

Under the background of "Internet+", OSELL has fully explored the huge market and unlimited opportunities in emerging economies and developing countries of "One Belt and Road" with 4.4 billion populations and a total volume of 210,00 billion US dollars. Enjoying a series of benefits issued by the government to drive the cross-border export, the company is also focusing on challenges posed to export enterprises in exploring new overseas markets in the process of conventional foreign trading export and trying to

integrate the global resources of “One Belt and Road”, proposing a “Dual Park in Two Countries” mode of cross-border e-commerce.

The mode of “Dual Park in Two Countries” is to build the OSELL Workshop cross-border e-commerce industrial parks in the domestic industrial belts and land in the industrial belt cities through investment attraction, exquisite exhibition and cross-border innovation center. By now, OSELL has basically formed its initial business portfolio including cross-border B2B service center, connect cross-border brand trading center and OSELL Workshop cross-border e-commerce industrial park.

At last, OSELL has integrated resources and system operation to build “overseas mature channel circle” and “China overcapacity circle” and create “cross-border e-commerce online/offline service ecological circle”, realizing the sharing economy and interconnection through the mode of “Three Circles in One”.

4.2 BizArk

BizArk was established in 2005 and stepped into the cross-border e-commerce industry through the chance of virtual currency trades, completing the initial preparation of capital, technology and human resources to be a cross-border e-commerce business. Now the company has grown up into a cross-border e-commerce company offering a complete set of overseas marketing solution customized for Chinese enterprises including overseas market analysis, BizArk e-commerce platform structure, multi-channel marketing and operation support.

In 2009, BizArk elevated its investment in the technology to complete the IT system and initially proposed BizArk overall marketing solution. At the same year, they built an overseas research strategy center in Detroit, United States to keep leading the global ecommerce strategically. In 2011, they built the BizArk School— “the West Point in the cross-border e-commerce industry”, awarded “2011 the Best Commercial Mode of China in the 21st Century”.

The company now has set up research centers, execution headquarters and representative institutes in Beijing, Shanghai, Nanjing, Changzhou, Hangzhou, Ningbo and Shenzhen, along with operation centers and warehouse bases distributed in Los Angeles, Detroit, Hamburg, Portsmouth and other places. It is BizArk’s vision to become a leading cross-border e-commerce service platform.

4.3 LINCA

LINCA E-Commerce was established in October, 2014, located in Fuzhou, Fujian, China. The cross-border business division is based in Shenzhen with more than 200 employees. The company now is adopting the flat management and the businesses are separated into several segments according to the business degree, including marketing, cross-border B2B, B2C, incubation and support. With the opportunity of integrating and driving the upgrade of conventional medium and small businesses, LINCA has seized the two hit trends of “e-commerce” and “cross-border” and is expecting to build a hundred-billion-level all-channel-based e-commerce platform in 3 to 5 years.

The essential strengths of LINCA lie in platform support, product support, system

support, marketing and promotion, financial service and service support. NITAGO.COM, an online shopping mall under LINCA, is an all-channel based online mall covering both B2B and B2C, penetrating into the categories of mom & baby care, 3C smart products, beauty and daily consumption and groceries. Its monthly transaction volume has exceeded 400 million RMB and the over 5,000 businesses have joined as partnered online/offline distributers. In July, 2016, LINCA was listed in the top 100 China Internet Companies and ranked 47th, remaining the only one commercial trading O2O company in the list.

LINCA has followed the trend of the time to serve the upgrade of conventional businesses and is committed to building a hundred-billion-level e-commerce all-channel-based platform. Based on the strong commercial resources of LINCA Group and the benefits of free-trade policy in Fujian, LINCA is driven by the technology to pursue the innovation and realize a rapid growth.

4.4 Zongteng

Founded in November, 2007, Fujian Zongteng Network Co., Ltd. is based in Fuzhou, Fujian, Fuzhou, with over 1,000 employees. The office and storage area exceeds 100,000 square meters and the daily proceeded orders amounts to about 50,000. Their clients come from all post-communicable countries in the world and the sales volume of the group surpassed 1 billion in 2013.

Zongteng is one of the earliest enteprises engaged in the cross-border e-commerce and now has developed diversified and integrated operation pattern with a focus on the cross-border e-commerce integrating product R&D, purchase, sales, storage, logistics, client service and system R&D. They have invested fair effort in both the third-party e-commerce platforms (e.g., eBay, Amazon and Alibaba) and self-constructed B2C platform (www.tmart.com) and paced up their development in export businesses as well as their profession service of logistics and storage.

Zongteng is headquartered in Fuzhou with sales, software development, client service and functional management centers. Purchase bases have been distributed to Shenzhen, Guangzhou, Yiwu and Hong Kong while the storage and logistics centers have been penetrated into the U.S., the U.K., and Japan.

Based on the export businesses, Zongteng is pacing up their export business development. In March, 2014, “Tmart” global store landed on Tmall to sell imported mom & baby products, ensuring that clients could purchase the high-quality imported products at a preferable price. Meanwhile, the online O2O distribution business has been also implemented. After a year’s investment, “Tmall” global store has become a leading seller in the mom & baby category in Tmall and its distribution business has achieved noticeable outcomes, becoming a major supplier on many domestic top import e-commerce platforms.

5. Discussion

This section discusses and clarifies the findings of cross-case analysis by comparing the findings with the literature.

5.1 The relationship among information, logistics, and capital flows

5.1.1 The base role of information flow

There are many studies showing that information sharing among SC partners improve competitiveness and effectiveness of SCs. Information flow, which has a priority over the logistics flows and capital flows (Graham and Hardaker, 2000), is the foundation of any effective SC and can reduce the uncertainty that can make cross-border e-commerce SC risky and reactive (Ellram et al., 2004).

First, the logistics flow from upstream to the downstream SC entities must be supported by the information flow from downstream to upstream. From the four cases, we can find that information flow can affect the effectiveness of logistics distribution, logistics warehouse management, logistics orders, logistics visualization, the selection of transport ways and so on. For example, Osell can automatically match the corresponding logistics company in different countries according to data analysis. As Prajogo and Olhager (2012) suggest that the intensity of information sharing has a positive relationship with logistics integration, our cases provides support for this argument.

Second, the capital flow in the SC can be managed depending information flow management. The Osell case shows that information flow would prevent financial risks. The information provided by anti-fraud system, including the customer's landing IP address, credit card address, and computer login time zone, plays a vital role in warning and control financial risks. Thus, we propose that:

P1a. Information flow forms the foundation for logistics and capital flows.

5.1.2 The relationship between logistics and capital flow

In order to implement SC finance, these firms tended to combine with the logistics management. Osell mortgaged the inventory in logistics to carry out the cross-border e-commerce logistics finance business. As the Zeng and Rossetti (2003) point out, logistics controls a significant amount assets and has a direct impact on capital flow. Furthermore, capital flow can guarantee the smooth operation of logistics in turn (Lee and Chang, 2007). Thus, we propose that:

P1b. Logistics flow and capital flow interact with each other.

5.1.3 Three flows integration in cross-border e-commerce SC

From the timetable for the four firms to carry out business, build logistics systems and conduct financial business, we find that the cross-border e-commerce SC system is interwoven with information flow, logistics flow, and capital flow. In addition, as the co-founder and vice president in OSELL found, cross-border e-commerce companies do the basis channels first, then develop the logistics, customs clearance, overseas warehouses, and SC finance. The four cases provide support for this argument. We find that they map their business following such sequence, first construct the sales channel, then build the logistics systems, and last focus on conducting the financial business.

We can see that from the view of e-commerce platforms, platforms credit stems from data, and the uncertainty of the credits of both supplier and demander and the poor credit

appraisal systems in the early stages bring large transactions risks to cross-border e-commerce (Fu and Noche, 2011). As cross-border e-commerce enterprises are gradually developing into comprehensive e-commerce platforms, after the information processing, the data becomes one of the sources of enterprise credit, reducing the risk of cross-border e-commerce enterprises. Overall information flow management is the cornerstone of an enterprise, and the logistics operation is even more so. Capital flows are at the top of the three flows, which communicate with each other and support each other relying on data. Based on above arguments, we propose that:

P1c. Cross-border e-commerce firms tend to build capacities for information flow management (information processing), then the logistics flow management and last the capital flow management.

5.2 Relationship between three flows and supply chain service capabilities

In order to enhance service capabilities delivered to customers, these cross-border e-commerce firms tended to integrate the three flows no matter whether their value propositions are the same. We find that the level of service capabilities mainly determined by the rating of information flow. OSELL and BizArk with high ratings of information flow lead to high service capabilities, while Zongteng and LINCA are on the contrary. This supports the foundational premises in service-dominant logic that knowledge is the fundamental source of competitive advantage (Vargo and Lusch, 2004).

As Evans and Wurster (1997) point out, every business is an information business. The differential use of information or knowledge, applied in concert with the knowledge of other members of the service chain that the firm can make value propositions to the consumer and gain competitive advantage (Vargo and Lusch, 2004). Information flow supports the shift from goods-dominant logic to service-dominant logic, such as from highlighting the strategic advantages of asymmetric information to the advantages of symmetric information. Thus, we propose that:

P2a. The basis for supply chain services provided by cross-border e-commerce firms is built on the integration of information flow, logistics flow and capital flow.

P2b. Information flow can improve service capabilities through logistics flow and capital flow.

5.3 Relationship between SC service capabilities and SC relationship quality

Along with the enhancement of SC service capabilities, the cross-case analysis suggest that SC relationship quality also tended to improvement. According to Walter et al. (2003) and Jia and Rutherford (2010), we divide relationship quality into commitment, trust, satisfaction, and risk mitigation.

For instance, based on the information system's special-purpose transportation and direct shipment from overseas warehouses in Zongteng, the goods in transit information can be inspected throughout and the timeliness and stability are greatly guaranteed. In December 2017, the effective verification rate reached 99.2%. OSELL with the high service capabilities show strong ambitions to commit in business relationships. They establish cross-border e-commerce industrial park to attract firms to enter to embrace further cooperation. The high service capabilities provided by Zongteng are recognized

by e-commerce platforms, such as Amazon, WISH, and JOOM, increasing the satisfaction of them. Furthermore, OSELL provides the SC finance service tailored to cross-border e-commerce small and medium sellers to control the financial risk. Zongteng can reducing the logistics risk by building overseas warehouses and self-owned major international transport lines. Thus, we propose that:

P3. Supply chain service capabilities can improve relationship quality (trust, commitment and satisfaction improvement, and risk mitigation) at last.

6. Conclusion

By applying a multiple case study method, this research has examined four typical cross-border e-commerce companies in China. This study answers a key question of how do cross-border e-commerce firms provide services to e-tailors and other platform users from the view of three flows, i.e. information flow, logistics flow, and capital flow. The three sets of propositions provided answer to this question. By answering this question, several important contributions could be drawn.

To begin with, it discovered that the key issue in future company development mode is more about the ability to effectively provide clients with plausible solutions than the merely transition from product-dominant logic to the service-dominant logic (Ostrom et al., 2010). Furthermore, its analysis and illustration of the basic hierarchy of the three flows in cross-border e-commerce companies would be very helpful to the future development of this industry in China.

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