Research on Service Modularization Mode of Cloud Logistics of STRESS EXPRESS

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Abstract. Based on the e-commerce logistics industry, the modularization mode of the cloud logistics platform of the STARS EXPRESS has been analyzed in this paper from 3 aspects of service through exploratory case analysis, which is called as service process modularization, service function modularization and service object modularization. By the exploratory case studies, we have analyzed the modularization service model of cloud logistics platform, and then put forward the realization method of modularization service mode of e-commerce logistics. As the discovery of research: E-commerce cloud logistics has begun to show the characteristics of service modularization, the service modularization and function aggregation effect of cloud logistics platform have begun to emerge; the network modularization structure led by the core enterprises of cloud logistics has been basically formed; the socialized logistics standards have been improved and promoted by the e-commerce logistics standards; and the logistics functions have been deconstructed by the service modularization. The purpose of this paper is to create a service modularization interface for cloud logistics platform, improve the information integration among the service modules and build a service modularization model for cloud logistics.

1. Introduction

In March 2009, holding the aura of "Cloud express", Beijing STARS EXPRESS Ltd. has soared across the sky. 50-year-old Chen Ming who knows the end of life has established the STARS EXPRESS company with the endless excitement, which has been invested by Alibaba for RMB30 million in March 2010.

The company is established by the ZJS Express ex President Chen Ping and several partners, which is merged with the Shenzhen XFH Express in October 2011 formally, it is called as "Star • XFH Express". By the end of 2011, the company owns more than 150 operation & distribution centers, more than 3,800 outlets, 28,100 employees, 5,000 motor vehicles and 19,000 motorcycles, and the daily business is 130,000pcs. In 2011, the entire network turnover amounts to RMB750, 000,000. The STARS EXPRESS is the first domestic professional courier company, dedicated in the e-commerce B2C and B2B services, which provides with domestic small parcel courier services for the majority of enterprises and e-commerce customers.

The STARS EXPRESS has built a "Cloud Logistics" service platform as the cloud computing theory, process the information on the large amount of waybills, unify the information collection, analysis and processing through a powerful platform of information management, and integrate the social transportation capacity, warehousing and distribution resources. The small franchise courier company can access the STARS EXPRESS "Cloud Logistics" platform by a computer only, arrange the flexible and reasonable transportation capacity through the released information, optimize the internal management, pick up and deliver through this platform.
In March 2013, the STARS EXPRESS, a cloud logistics service platform carrying the development direction of e-commerce logistics, has been bankrupted due to the poor management and funding problems overnight.

As far as the cloud logistics mode of the STARS EXPRESS concerned, we have begun to explore the innovative mode and developing direction of e-commerce logistics. The STARS EXPRESS is engaged in all of the public service part of the network terminal, that is, the computer host functions are completed by the STARS EXPRESS, and the display function is assigned to the joining terminals. Joining terminals are responsible only to two things: acquisition & delivery of cargos, development and maintenance of customers. All of the remaining public services are completed by the STARS EXPRESS. In the process of initial exploration of cloud logistics mode, a modularization trend similar to that of the computer industry begins to emerge, but the modularization of cloud logistics is more complicated than that of the computer industry. The research suggests that modularization ideas can be introduced into service design and service operation to solve the problem of service modularization.

The modularization organization mode of e-commerce cloud logistics is still in its infancy. The operators of cloud logistics platform have assumed the role of the core enterprise. Each module supplier undertakes the service suitable for its own function module and completes the order process finally. However, with the increasing obvious advantages of cloud logistics platform, the platform of e-commerce cloud logistics will be more and more in the future and a modularization clustering network organization mode will be gradually formed. Cloud logistics interface standardization will be coordinated between the logistics module integrators and suppliers. As a result, the logistics module suppliers can adapt to the new interface standards continuously, sometimes, they even participate in the creation of interface standards to promote the continuous improvement of system design rules and achieve a win-win situation actually. Faced with the overall trend of modularization development of logistics services, with the above questions, this paper has used the methods of exploratory case studies, select the STARS EXPRESS as a study case, and conduct case studies in combination with the developing Cainiao Network Company to discover several key elements of e-commerce cloud logistics services modularization design.

2. Cloud Logistics Mode of the STARS EXPRESS
The STARS EXPRESS president Chen Ping has adhered to the concept of cloud computing, and put forward to the logistics industry mode operated by the cloud computing mode, which is the called "cloud logistics" industry. The STARS EXPRESS has set up an open "cloud logistics" platform, the company's operating ports, distribution, shuttle and other transit resources are fully opened to the public, the direct customers, the peers and the joining terminals can achieve the national distribution of goods on the "cloud express" platform. Basically, all of the core contents of the B2B and B2C e-commerce express have been covered to meet the service demands of end users on the "cloud platform". The platform can process information from many national shipping companies and massive waybills. Small courier companies can get customers through a computer on the "cloud logistics" platform, pick up and deliver through this platform. The "Cloud Logistics" platform has integrated many functions such as network, operation, quality, customer, goods tracking, fund monitoring, settlement, platform classification. It covers all the core contents of B2B and B2C e-commerce basically, which can meet the end-user service needs (Chen Ping, 2011).

To a certain extent, the emergence of the star urgency has broken the participation mode of whole traditional process of the express logistics from "acquisition" to "delivery". Consequently, the STARS EXPRESS, as platform operator and module integrator, controls the various functional nodes. Each member module serves as a platform participant to share the detailed classified functions and partial links. This information collaboration platform based on industrial modularization will be detailed to match the service modules, such as JIT, combination of light and heavy goods, seamless cooperation among the distributing terminals, and terminal delivery of COD companies.
3. Service Process Modularization and Interface of the STARS EXPRESS Cloud Logistics

The embedded interface is characterized by one-way penetration and flow, in the cloud logistics platform, information sharing and order requirements are unidirectional to release, the universal module suppliers can only choose to take orders according to their own ability, and make information feedback only after the completion of the business. In the cloud logistics platform built by the STARS EXPRESS, there are interfaces between the STARS EXPRESS and the joining franchisee terminals for acquisition & delivery service, customer's warm reminder service, SMS notification service, regular customer service and other service environment, the carrier includes the external service representation and form of courier (such as service attitude and timeliness), the tangible service facilities and equipment (such as uniform packaging, transport vehicles, dispatching vehicles), and the intangible service output (such as shipment breakage rate). The specific includes two dimensions: the first is the variety of contact points between the courier companies as service terminal delivery generic module suppliers and customers, such as the process of acquisition & delivery; the second is the variety of self-service access channels, such as third-party collection point, E-mail cabinet, property. The service interfaces from the STARS EXPRESS to customers are colorful: night delivery, COD (cash on delivery) etc.

In the cloud logistics service platform of the STARS EXPRESS, the joining franchisee terminals access platform standards are developed by the STARS EXPRESS, it is necessary to meet the interfaces and standards in order to become the joining franchisee terminals, provide the functional modules, and undertake orders and business through the platform. The design rules of the cloud logistics platform are also formulated by the platform operator the STARS EXPRESS.

4. Service Function Modularization of the STARS EXPRESS Cloud Logistics

On the cloud logistics platform of the STARS EXPRESS, the service function modularization includes: 1. Innovative service module. Based on the innovation of customer demand, the STARS EXPRESS has integrated the virtual warehouse, night delivery and cash on delivery as an innovative service module into the cloud logistics system. 2. Information service module includes three meanings: the first is the information inquiry service that the STARS EXPRESS has made based on the information of the market and customers; the second is the information service module to provide sufficient, accurate and complete information for the e-commerce clients; the third is the business-related matching information to provide for the joining franchisee terminals. 3. Outsourcing service module. The STARS EXPRESS has taken the terminal delivery and customer service as an outsourcing service module by the way of the joining franchisee terminals. On the one hand, Outsourcing of cloud logistics has facilitate the joining franchisee terminals, it is enough to take orders only to access the cloud logistics platform through the computer interface, and it is necessary only to complete the terminal delivery and customer maintenance. On the other hand, the STARS EXPRESS as the platform operator can also focus on the core business, develop the markets and connect with the new e-commerce customers etc.

5. Service Object Modularization of the STARS EXPRESS Cloud Logistics

The STARS EXPRESS cloud logistics platform has set up a special service module targeted for different service objects, including two types of internal and external: for the e-commerce business of upstream and for the end customers of downstream. They provide the upstream e-commerce enterprises mainly with the dedicated service modules targeted for their special needs, such as special transportation, warehousing logistics and cold chain logistics. Of course, the future development directions include also the modules such as aviation logistics, international logistics and financial logistics, as well as some special required service. For the downstream terminal customers, they mainly provide enterprise customer service module, general customer service module and high-end customer service module, according to different customer’s demands, customize the corresponding service module, such as cash on delivery, inspection out of the box, refusal to return cargo, night delivery and other services from the STARS EXPRESS.
6. Case Inspiration
The direction of exploration of the service modularization mode of cloud logistics of the STARS EXPRESS is correct, but it has been failed at the end, which makes us think a lot of. The first is that the service modularization mode of Star Express cloud logistics has some problems in the operation:

6.1. The STARS EXPRESS’s Cloud Logistics Services Modularization Construction is Imperfect.
The service modularization mode of the STARS EXPRESS cloud logistics is not complete at all, the exclusive logistics services are not in their platforms, such as the large enterprises dedicated to provide trunk transport and logistics & financial modules, especially, it does not include the financial services module. At the same time, it is also the potential risk of bankruptcy due to the collapse of the capital chain.

6.2. Module Integrators do not Play a Leading Role as Core Business in the Service Modularization Platform of Cloud Logistics
The STARS EXPRESS courier, as a courier company, a platform operator and module integrator, seems to be overwhelmed. First of all, the several failures to find upstream cooperative clients indicate that it is lack of resources integration capability and it can not provide the special logistics services required by customers, such as cross-border logistics module. Second, all of technical support modules are developed entirely from the technical part of the own company. To a certain extent, the pressure on funds and potential risks are increased; Third, the management to the joining franchisee terminals is out of control, indicating the problems to develop and unify the basic service module standards.

6.3. Develop the Blind Innovative Service Module Based on the Imperfect Service Module
It is commendable that the STARS EXPRESS provides the customer with the cash on delivery, inspection out of the box, refusal to return cargo, night delivery, and other traditional logistics services as an innovative service module, but it has undoubtedly expanded the blind spot of the management and control. As the quality of delivery can not be guaranteed, the customer return rate is on the rise increasingly. The cash on delivery mode not only causes the STARS EXPRESS to lose the stable cash flow, but also increases the secondary logistics costs greatly, and even generates the third logistics costs.

Finally, the research methods in this paper are mostly qualitative experience type and conceptual type, and the empirical application type research is insufficient; the future research direction is to combine the normative and empirical research methods, and analyze the service modularization of e-commerce cloud logistics from the multi-dimensional perspective, such as macroscopic industrial organization and microscopic service system, which is the research trend of future.

7. References
[1] Baldwin,C.Y.Clark,K.B.(1997). Managing in an Age of Modularity [J]. Harvard Business Review,(September-October)75(5): 84-93
[2] Langlois,R.N., Robertson, P.(1992). Networks and Innovation in a Modular System: Lesson from Microcomputer and Stereo Components Industries[j]. Research Policy,21 (4):11-23
[3] Sanchez, R., Mahoney, J.T. (1996). Modularity, Flexibility, and Knowledge Management in Product and Organization Design[J], Strategic Management Journal,17: 63-76
[4] Li Jinghua. Mechanism Analysis to Realize Service Mass Customization: Perspective Integration of Manufacturing & Service Industry [J].Science & Technology Management Research, 2008, (2): 143-145.
[5] Xu Hongling. Modularization Organization Research [M]. Chengdu: Southwestern University of Finance and Economics Press, 2006.
[6] Wu Zhaoyun, Yu Changchun, Yin Yi. Research Status & Development Trend of Service Modularization [J]. Business Economics & Management 2012 (03): 36-43
[7] Wu Zhaoyun, Yu Changchun, Yin Yi. Review of Theory Research of Service Modularization [J]. Contemporary Finance & Economics.2012 (03): 122-130
[8] Rui Mingjie, Zhang Yan. Review of Theory Research of Modularization Organization [J].
Contemporary Finance & Economics. 2008 (03): 122-132

[9] Yu Donghua, Modularization Enterprise Value Network - Formation Mechanism Competitive Advantage & Governance Structure [M]. Shanghai: People's Publishing House, 2008.

[10] Wang Qifeng. Study on Innovation Mode of Logistics Industrial Cluster Service Based on Cloud Logistics [J]. Logistics Technology, 2013, 32 (2): 24-26