

Analysis on Mobile E-Commerce Value-Chain

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Abstract

This paper introduces the content, characteristics and current situation of mobile e-commerce, and points out that building the mobile e-commerce value chain is a practical problem in the development of mobile e-commerce. Using Porter's value-chain theory, it tries to construct a mobile e-commerce value-chain. Then through analyzing the value-chain by SWOT, we can find the strategy of mobile e-commerce's development, which would benefit the economic development greatly.

Keywords-mobile electronic commerce, mobile e-commerce value-chain, SWOT

1. Introduction

Mobile e-commerce (MEC) refers to a certain e-commerce using mobile communication equipments such as cell phones, PDA, pager, combined with internet organically. It is defined as all activities related to a (potential) commercial transaction conducted through communications networks that interface with wireless (or mobile) devices.^[1] These include mobile payoff, wireless customer relationship management, mobile stock market, mobile bank, and mobile office and so on. Along with the rapid development of mobile communication technology, mobile network evolves from 2.5G to 3G; 25% of data business was transmitted by mobile communication equipments in 2005; there are more than 400 million cell phone users and a large number of PDAs in China, of which the terminals constitute the huge potential market of MEC. MEC is an important trend in the development of e-commerce, and the trade and payoff using the mobile terminals such as cell phones, PDAs. will be more flexible. The report from Frost & Sullivan in America, which is one of the world's famous

research companies, shows that current MEC has begun to take shape and the future of MEC market is very bright^[2]. The era of MEC is coming.

The main features of MEC are flexibility, simplicity and convenience. It can be designed specifically by customers' particular requirements and preferences, and the selection of equipments and methods to provide service or information are both completely controlled by users themselves. Unlimited terminal equipments of MEC are born with lightness, portability, customization and many other advantages, which allow users to access the service, application, information and entertainment they need anytime, anywhere. MEC can also complete the payoff of the trade by a variety of methods. Mobile terminals trade have no limitation in respect of time or space, leading to the necessity that e-commerce evolves into the field of mobile information.

Therefore, MEC is likely to be achieved undoubtedly, despite that it is still at the initial stage and restricted by the condition of each part in the value chain. How to break through the bottlenecks in the implementation, promotion, application, etc., and how to construct a value chain system to achieve multi-win, are the real issue which must be solved in the development of e-commerce.

2. Traditional value-chain & e-commerce value-chain

2.1. Porter's value-chain model

Michael Porter proposed the concept of "value chain" firstly in 1985 in his book *The Competitive Advantage*. He thinks that "every enterprise is an assembly which includes various kinds of activities in the process of design, production, sale, delivery and support of its products. All the activities can be indicated as a value chain." He regards the value chain as a series activity which completes consecutively, and a process which can realize the value-adding. In order

^[1] Peter Tarasewich, Robert C. Nickerson, and Merrill Warkentin.
"Issues in Mobile E-Commerce," *Communications of the Association for Information Systems*, vol. 8, pp. 41-64, 2002.

^[2] <http://publish.it168.com/2005/1216/20051216013804.shtml>
(2008-1-3).

to analyze the relationship among all the parts in the business activities of enterprises, Porter raised the enterprise's value chain model^[3], as shown (Figure 1). From Figure 1, we can see that the business activities of enterprise include nine types which are divided into two parts - primary activities and support activities. Primary activities can achieve value-adding, but support activities can not. However, it could support primary activities to achieve value-adding. The goal of enterprise is to gain more profits.

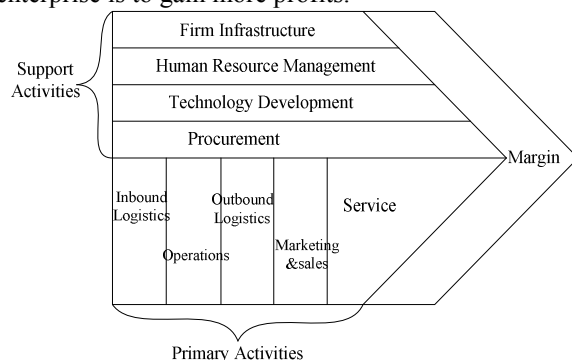


Figure 1. Porter's value-chain model

Although this model is established from the point of view of the manufacturing industry, it has very important reference value to all industries and all other fields.

2.2. E-commerce affection on value-chain

Since the 1990s, with the rapid development, information technology has begun to be applied in the management of value chain and made every part in value chain optimized, making the entire value chain have the highest efficiency. At this time, the traditional value chain has changed: on the one hand, it extends vertically, and brings customers into the management of value chain, providing not only goods but also satisfactory service for them; on the other hand, it extends horizontally that enterprises merge together to form the strategic alliances winning the advantage in a certain industry or field. The relationship of every enterprise in the value chain has changed. Not only the physical value chain, but also the transmission, processing and sharing all base on business information, maintain the relationships among enterprises. E-commerce is becoming the operation mode of enterprises.

Jeffery F. Rayport and John J. Sviokla realized this change and raised the concept of "virtual value chain" in 1995^[4]. They point out that any enterprise which has

entered into information era is competing in two worlds: one is the Marketplace which is the material world everyone can see and touch; another is the virtual world composed of information which is called Marketspace. Rayport and Sviokla think each value-adding activity in the value chain can be divided into two parts, value-adding activity based on material resource in Marketplace which composes the traditional value chain or physical value chain, and value-add activity based on information resource in Marketspace which compose the virtual value chain. In virtual value chain, information is not only used for supporting, but also it can produce new value by collection, organization, choosing and distribution^[5]. Virtual value chain is the extension of traditional value chain in Marketspace and the new development of traditional value chain in information field. It is based on traditional value chain but improved in the theory, and changes the competition from the consumption of material resource to the increase of utility efficiency of information among enterprises^[6].

2.3. E-commerce value-chain

E-commerce describes the process of purchase, sales and exchange of goods, service, and information by network including internet, and provides the concrete operation modes of business basic activities. With the emergence of e-commerce, value prefers to establish on the infrastructure of data, information and knowledge. The process of value-adding reflects the different attributes between the past and present in the e-commerce environment. E-commerce value chain is the innovation and development of the value chain.

E-commerce value chain has three parts (Figure 2): one is the value-oriented of e-commerce, which is about the issues of the e-commerce's existence and development. E-commerce can provide more value to enterprise but is restricted by the development of enterprise itself. Another is the basic activities of e-commerce. E-commerce roots in business activities and its value are reflected in all these basic activities. The last one is the operation mode of e-commerce, about how e-commerce creates value in basic activities by organizational model, operational model, based on practical supporting.

^[3] Michael. Porter, Chen Xiaoyue translated. *The Competitive Advantage*. Beijing: China Publishing House, 1997, p. 60 (Chinese).

^[4] Rayport J F, Sviokla J J. "Exploiting the Virtual Value Chain,"

Harvard Business Review, pp. 75-99, September-December, 1995.

^[5] Liu Bin. "Analysis on Virtual Value Chain in E-Commerce," *Economic Manager*, pp. 86-87, February 2003 (Chinese).

^[6] Bengam inr W. "Electronic markets and virtual value chains on the information super highway," *Sloan Management Review*, pp. 62-72, winter 1995.

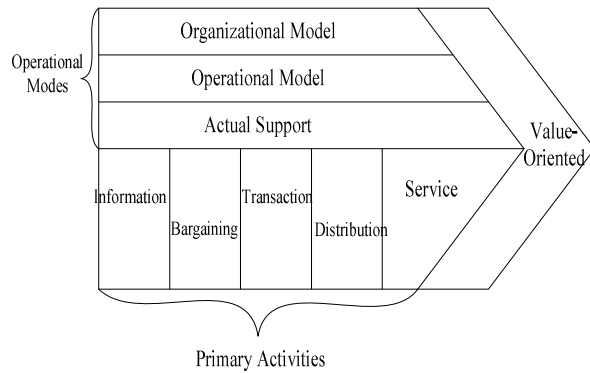


Figure 2. Ecommerce value-chain model^[7]

E-commerce has a very important influence on traditional value chain, such as changing the traditional modes of procurement, marketing and service after sale, changing the production methods in enterprise, shorten the link of value chain, realizing the value-adding. All these influences have brought out the new characteristics of e-commerce value chain. Firstly, the objects of e-commerce external value chain has changed, and e-commerce reduced the middle link of the sale which makes the value chain short and avoids the existence of channel value chain, leading to connect with customer directly. Secondly, the cooperation in e-commerce internal value chain has been strengthened, and the information communication is not restricted by time and space, so the cooperation among all parts of enterprise has been brought into full play. Thirdly, information plays as a strategic role which can create value and it creates new value through collecting, organizing, choosing, integrating and distributing. Lastly, enterprise can connect with customers directly in e-commerce value chain that makes the production cost saved.

3. Analysis on mobile e-commerce value-chain

3.1. Definition & model of mobile e-commerce value-chain

With emergence of MEC, the value increasing of enterprise is not only depending on itself or some others, but also needs enterprises' or individuals' coordination and efforts which are in different parts in the value-chain, to realize win together. By studying on the MEC value-chain, it is good for each part of the value-chain to make sure the position and effect, and it is also good for enterprise to find its own place when it

enters into the field of MEC just in time. Through analyzing on the value-chain and solving the problem in the value-chain, it is useful for MEC to develop and apply rapidly, and the MEC value-chain will be filled with energy.

Based on Porter's value-chain and e-commerce value-chain, we try to build a MEC value-chain (Figure 3). Because all parts of the value-chain participate in trade are based on the platform of MEC, we can define the MEC value-chain as a dynamic course which can create value by mobile network carrier, payoff service agency, logistics company, content and service application provider, mobile terminal manufacturer and so on together^[8]. Besides this, in the backstage, chips manufacturer, software provider, equipment provider etc. can provide software and hardware to support the realization of the trade, but they don't take part in the trade directly. So we can find the relationships among all participants in MEC, and we can build a model to see the relationship (Figure 4).

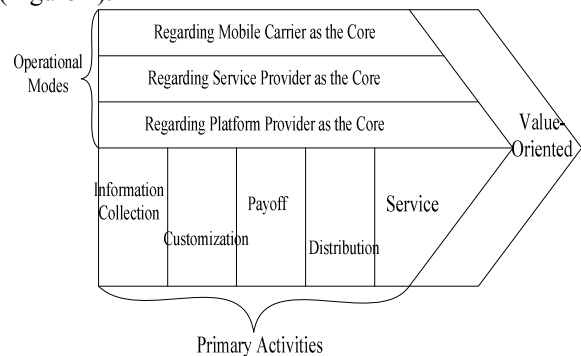


Figure 3. MEC value-chain model

3.2. SWOT analysis on value-chain

From Figure 4, we can see that based on the platform of MEC, each part in the MEC value-chain makes the whole trade come true. And in the course of trade's realization, the mobile network carrier who grasps the resources of network and customers is the core of the value-chain, which connects other parts to realize the whole trade. We can also clearly see that MEC value-chain is composed of mobile network carrier, content and service application provider, mobile terminal manufacturer, payoff service agency, Logistics Company and so on. Although it only points out that mobile network carrier is the provider of the MEC trade's platform in the picture, some others such as software provider, service application provider are

^[7] Dong Heng, Zeng Youxin. "Discussing on E-Commerce Value Chain," *Market Modernization*, pp. 85-87, December 2006 (Chinese).

^[8] Zhao ganfu. *The study of Chinese mobile electronic commerce value chain, Ms D Thesis*. Beijing: Beijing University of Posts and Telecommunications, 2006 (Chinese).

also can be the provider of the platform in reality. From Figure 4, we know that mobile network carrier is the core of the whole value-chain. There is no mobile network carrier; there is no basis for value creating in MEC.

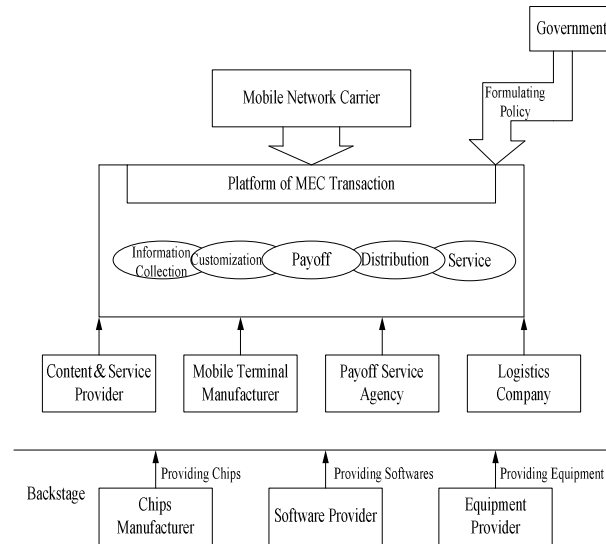


Figure 4. mobile e-commerce value-chain model of composition

Then we choose the SWOT analysis to analyze the strength, weakness, threat and opportunity in MEC value-chain, and discuss how to choose suitable strategy making the value-chain realize the value increasing (Table 1).

Table 1. SWOT analysis on MEC value-chain

External Environment	Threat	Opportunity
	<ul style="list-style-type: none"> Lacking supervision from government and some relevant apartments Honesty and credit in MEC 	<ul style="list-style-type: none"> Strong support from network technology by 3G Increasing customers
Internal Environment	Strength	Weakness
	<ul style="list-style-type: none"> Mobile network carriers acuminate a lot of experience in prepayment and after-payment business, which can be borrowed in mobile payoff Mobile network carriers put huge money to build communication network, which makes him to get the profits back 	<ul style="list-style-type: none"> Lacking cooperation among each parts in MEC value-chain Lacking new and useful modes in the MEC value-chain Mobile network carrier hasn't develop the function of linking

From the table above, we can see that if the MEC value-chain wants to get more competitive advance, it must use strength-opportunity strategy(SO strategy) to develop the core function of mobile network carrier

and catch the opportunity actively, and then it can make e-commerce more prosperous.

3.3. Advantages of applying mobile e-commerce value-chain

MEC value-chain is the product of the time's development, and it reflects the emergence of new competitive energy and new economic environment. It can complete the integration of firms or person in the value-chain much better, leading them to achieve the value maximization.

And also, MEC value-chain can satisfy the habit, the payment methods and the business demand of different users, which may bring much more profits.

Through the integration of MEC value-chain, each part in MEC value-chain can realize the complementarities of each other's strengths and profits.

4. Conclusion

MEC is the inevitable outcome of the digital networking age, also the inevitable trend of e-commerce. From the angle of value-chain, constructing the MEC value-chain, developing the business of mobile network carrier, and realizing the value-chain integration will be good for the progress of the economy.

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