

2000

An Object-Oriented Model for Successful Online Retail Operations in China

Jing Zhao

China University of Geosciences Wuhan, yuzp@cug.edu.cn

Follow this and additional works at: <http://aisel.aisnet.org/amcis2000>

Recommended Citation

Zhao, Jing, "An Object-Oriented Model for Successful Online Retail Operations in China" (2000). *AMCIS 2000 Proceedings*. 155.
<http://aisel.aisnet.org/amcis2000/155>

This material is brought to you by the Americas Conference on Information Systems (AMCIS) at AIS Electronic Library (AISeL). It has been accepted for inclusion in AMCIS 2000 Proceedings by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact elibrary@aisnet.org.

An Object-Oriented Model for Successful Online Retail Operations in China

Jing Zhao, The School of Management, China University of Geosciences,
Wuhan 430074 , P. R. China, yuzp@cug.edu.cn

Abstract

This paper serves to fill a void in empirical research on the business-to-consumer eCommerce in China. We propose a new model to study interactive eCommerce activities between consumers and EC managers, objects in the eCommerce process. The model breaks down the business-to-consumer eCommerce process in four phases: information, ordering, payment and delivery.

The model is applied to analyze one particularly successful online retailer in China, 8848.net. Through demographic surveys and data from 8848.net, we examine 8848.net's business strategy in each of the four phases. 8848.net's competitive advantage comes from its initiative and superior execution in the phases of payment and delivery. On the basis of insufficient infrastructure in China, 8848.net has been able to provide its customers a complete business-to-consumer process. 8848.net has greatly influenced the basis for competition, cost levels, value chains and retail markets structures in China. This paper presents an efficient approach for analyzing business-to-customer business activities and the key factors in the strategies under current condition of China.

Keywords: Object-oriented model, a successful online retailer, survey of online consumer behavior, online retail eCommerce business process in the Chinese market, B2C eCommerce strategy.

Introduction

International business community has utilized Internet with innovative strategies to expand their market and customer base. Electronic commerce (eCommerce) has profoundly impacted and changed the way businesses are conducted. It presents enormous opportunities for consumers and businesses in the world (Lee and Ahn,

1999). While business-to-consumer eCommerce has become an important issue with the growth of the Internet users, there are insufficient empirical research efforts concerning its status in China.

In China, where the macro-environment is characterized by lack of bank support for electronic payment, absence of legislation and tax code dealing with on-line commerce, inefficient transportation system and deficient professional distribution outsourcer, the development of business-to-consumer eCommerce has unique characteristics in eCommerce activities and business strategy, which are largely a function of the current industry structure, financial infrastructure and organization structure.

The paper presents a new object-oriented model in order to study the nature of business-to-consumer eCommerce in electronic market environment of China. The eCommerce process can be modeled by separating basic business activities into four phases. The model is significantly different from ordinary model because it stresses requirements from target customer and customer-oriented eCommerce activities performed by manager.

Based on survey of online consumer behavior, we use this model to illustrate the key factors in a successful online retail and to study the eCommerce activities and business strategies implemented by a successful online retailer. Our goal is to explore an approach to study and design online retail operation so that manager can meet consumers needs effectively in current market environment of China.

Model Framework

In this paper we present an object-oriented model for studying and planning online retail strategies in China. Before delving into the details of the model, it is instructive to lay out some background information on the unique business environment in China.

Background of B2C eCommerce in China

The development of full-scale business-to-consumer eCommerce in China faces many obstacles. First of all, despite the explosive annual growth rate of 300%, only 0.7% of the population is connected to the Internet. As of end of 1999, there were 8.9 million Internet users in China (China Internet Network Information Center, 2000), enough of a critical mass to drive the growth of business-to-consumer eCommerce. Secondly, electronic payment system and the associated regulations are not in place. Cash is the only accepted method of payment in vast majority of business transactions, especially those between small businesses and consumers (Zhao, 1999). Thirdly, inefficient transportation system and the absence of nationwide professional distribution outsourcer is preventing businesses from going completely on-line since they must provide distribution capabilities on their own. Lastly but most importantly, most businesses have long operated in the state planning mode. They tend to focus more on reaching production quota than meeting customer demand. It is only after the introduction of market economy that businesses have become more customer-oriented.

The object-oriented model

The object-oriented model presented here is a useful way to study and understand the business-to-consumer eCommerce process in China. Objects refer to the users of the business-to-consumer eCommerce system. Two types of users are involved in the model, the end user and the system administrator. The end user is usually a customer; the system administrator is an eCommerce manager (EC manager). Interactive commerce activities between the

customer and the EC manager form a complete business-to-consumer eCommerce process. Internet has given consumers more power than they ever had. They have at their disposal a vast amount of information about products and pricing. They have become the focus of the business strategy. This model examines the requirement from the target customers and the interaction between customers and EC managers, objects in the business-to-consumer eCommerce process. In China, this model is especially useful because Chinese enterprises traditionally have not focused on the customers as much as the Western enterprises did.

As Figure 1 illustrates, the horizontal line represents the customer and the vertical line represents the EC manager. The plane signifies the interactive commerce activities between the customer and the EC manager. The activities divided into four sequential phases of business process: information, ordering, payment and delivery. Using the model, we can explore the Web strategies in B2C eCommerce activities.

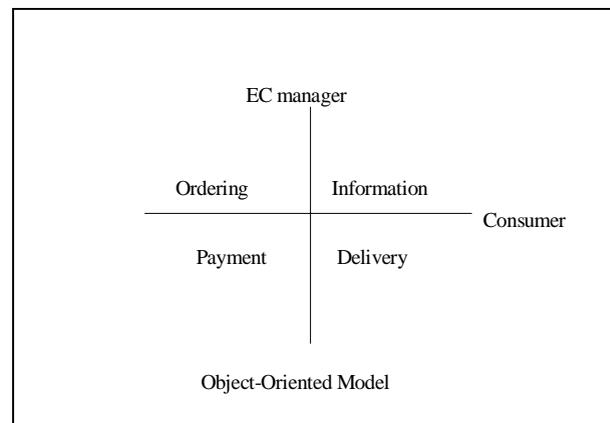


Fig.1 The object-oriented model

In the information phase, the EC manager uses various marketing strategies to lure visitors to its web site. The web site is designed to be user-friendly. The product information is laid out in a logical manner and easily accessible with only a few clicks of button. In the ordering phase, the EC manager integrates technologies such as shopping cart, electronic order process, shopping recorder and relative information to create an enjoyable and efficient shopping experience for the customers.

During this phase, the EC manager can put in incentives and discount to make the sale. In the payment phase, monetary transaction occurs between the customer and the manager. The transaction activity in the payment phase, with a great emphasis on secure electronic transaction, relies on the facilities for settlement of online purchase and ability for supporting range of payment methods offered by various financial institutions. In China, the financial system is being modernized, but most purchases are still made with cash. The EC manager's ability to implement a system that supports multiple payment methods often is the only differentiation among competitors. The delivery phase entails an end-to-end goods delivery to the customer. The current problem on the EC manager's side relates largely to lack of specialized nationwide delivery channels in China. The most critical challenge for EC managers has been capabilities to create their own delivery channels. Delivery time correlates with EC manager's creativity in putting together an ad hoc distribution network.

All of these phases are complete with respect to certain aspects of electronic commerce activities under current limiting conditions. This object-oriented model with the unique nature of electronic commerce of China is the conceptual basis for analyzing and understanding the innovative strategies of business-to-consumer electronic commerce.

Case study of a successful online retailer in China

8848.net is the largest online retailers in China. 8848.net was launched on May 18th, 1999 as a part of eCommerce initiative by its parent company, Federated Software. Prior to starting 8848.net, Federated Software had built a strong brand in the software retail industry and had a distribution network of 260 brick-and-mortar stores nationwide. In addition, Federated Software was one of the pioneers of eCommerce in China, having established its web presence two years ago. With the resources of Federated Software and consumer-oriented strategies, 8848.net has been a real success story in online retail market of China.

In the beginning, 8848.net was only selling its parent company's main product -- software. Since then, 8848.net has expanded its offering to include more than 10 categories: IT related software and hardware product, books, audio-visual equipment, consumer electronics, consumer communications product, office equipment, event tickets, clothing, daily personal product, flowers, building material and tools, and miscellaneous communications services. Number of visitors per day has exceeded 500,000. Daily page views are almost 9 million. Month transaction volume reached \$1.56 million in November, 1999.

Survey of online consumer behavior at 8848.net

8848.net's success lies in its management's ability to adapt a strategy that addresses the unique business environment and demographics of China. Through a survey of 8848.net's customers, we will discuss the needs of Chinese online consumers and how 8848.net addresses these needs. The survey studies the customers from several aspects: the role of information in purchasing decision, types of goods purchased and payment methods. Data source is 8848.net's online sales database, encompassing all transactions completed between March 18, 1999 and June 18, 1999. Analysis of operating results is based on the aggregate sales figure of the period specified above. Analysis of the customer behavior is based on a random sample of transactions that occurred during the first and second week of June, 1999 (8848.net, 1999).

Visitors are not necessarily the buyers

Number of page views on 8848.net had increased dramatically in the first quarter of 1999. Visitors find the content of 8848.net's web site compelling even when not purchasing anything. Approximately 98% of visitors go to 8848.net for browsing the content; only 1.7% actually make purchases. The number of unique visitors and number of page views were not at a record level, but the daily average transaction volume and sales volume had been steadily growing. This indicates that effective purchase rate had been rising. It also undermines the validity one of the long-standing belief in the Chinese

Internet industry that the larger the traffic volume, the higher the revenue. The result of this survey suggests that high visitor volume does not necessarily translate into higher effective purchase rate.

What do consumers purchase online?

By far, the most popular merchandise sold online is computer software, which accounted for 42.41% of the total sales during the surveyed period. Books accounted for 14.1%; consumer electronics accounted for 22.27%; other accounted for 21.22%. Figure 2 shows types of merchandise sold online at 8848.net.

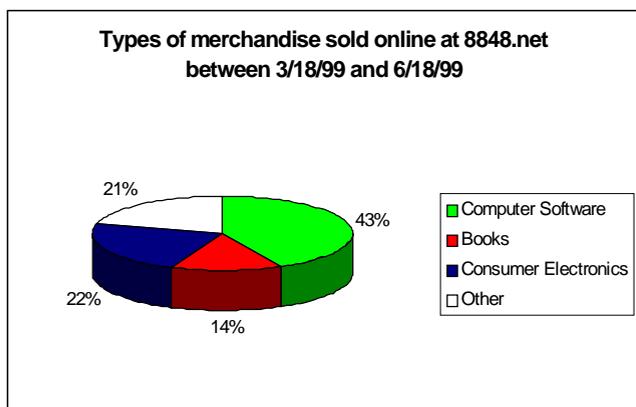


Fig.2 Types of merchandise sold online at 8848.net

Buy during the days, browse at nights

86.93% of purchases were made during the day between 9am and 6pm, while 13.07% of purchases were made at night.

The payment methods of online purchases

The payment methods of online purchases are shown in Fig.3. In terms of credit card 13.7% of consumers paid with Great Wall series card and 0.3% paid with Mu Dan card; 0.2% paid with certificate of deposit; 12.5% mailed payment through the postal service; 72.6% chose to pay upon delivery with cash; 0.7% used Mercantile Bank's special card for internet purchases.

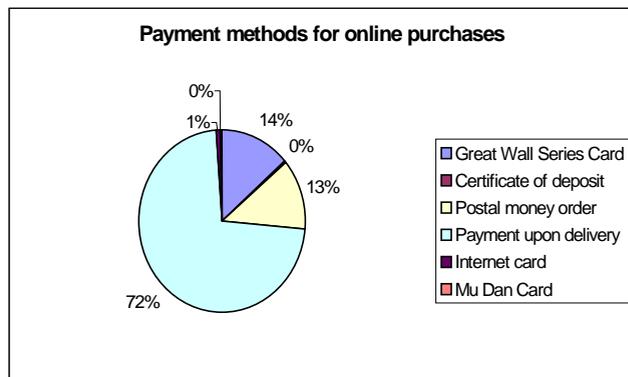


Fig.3 Payment methods for online purchases at 8848.net

Consumers prefer credit card with functionality for online shopping

The lack of facilities for settlement of online purchases has always impeded the progress of electronic commerce in China. Currently, 8848.net is one of the best equipped web site in China in terms of the ability to support the multiple payment methods. Purchases made with Great Wall series card can be settled within one business day. Using regional settlement system, purchases made with Internet card from Mercantile Bank and electronic wallet in FuJian Province can be settled within one business day as well. On the other hand, purchases made with credit card like Mu Dan Card and Eastern Card take ten days and fifteen days to settle, respectively. In many cases, even though the money has already be debited from the customer's credit card account, when the customer inquires about the payment on 8848.net, the money is yet to be credited to 8848.net account. Both the consumers and 8848.net are frustrated by the delay.

Key lessons from the survey

As opposed to the product-focused approach taken by many enterprises during the days of the state planning economy, adapting a customer-oriented perspective is crucial to the operation of online retailer.

- Offer compelling content beyond the basic product information is important to online retailers because it not only brings more potential shoppers to the site but

also generates a critical mass of visitors for other revenue opportunities such as advertising.

- Chinese Internet users are mostly well educated, technical-oriented professionals between the age of 20 and 40. It is commonly assumed that their purchases would consist mostly of IT-related product, however, the survey shows that consumer electronics are also very much in demand among the Internet users.
- The lack of electronic fund transfer infrastructure in China behooves the online retailers to support a variety of payment methods both electronic and paper. More options translate into higher customer satisfaction. However, credit card is the payment method of the future. Online retailers must work with banks to implement the necessary infrastructure.
- 8848.net uses EMS to deliver to 450 cities in China and UPS to deliver worldwide. However, EMS does not reach majority of China's population. The absence of a nationwide specialized delivery service provider is slowing the growth of online retail in China. Potential customers are lost in the process.

Application of the object-oriented model in online retail strategy

At this point, we will apply the object-oriented model to analyze 8848.net. Figure 4 illustrates 8848.net's key success factors within the context of the four phases of the object-oriented model -- information, ordering, payment, and delivery. Based on analysis of eCommerce activity in every phase, we find the value-added offerings of the customer-oriented strategies implemented by 8848.net's manager. This provides an insight on how 8848.net has executed a customer-oriented strategy utilizing the existing value chain of eCommerce in China. Using this model, we can assess a firm's Web strategy and design a firm's online retail activities. As a result, successful online retail model like 8848.net will change the basis for competition, cost levels, value chains and retail markets structures in China.

EC manager	
90% goods at discount shopping cart, order list tracking, Return merchandise, ordering service is integrated with electronic payment methods and <u>shipping information.</u>	Targeted Customers: 4-8.9 million based old customers, Products:200,000 items, Discount:20 to 40 percent , Gross margin: 20% , Consumer Community: BBS Sites Register Members. 300,000.
Eight payment methods, Electronic payment channel Supported by parties relationship with banks, relative government ministries and financial institutions,	Consumer Delivery time:2-7 days Delivery cost: free at home Delivery Channels: 8848net's distribution network + manufacturers' distribution channels +postal system
Object-Oriented Model for 8848net	

Fig.4 The object-oriented model for 8848.net

Information Phase

8848.net provides a variety of information and services to visitors and customers. The categories include product information, discussion forum on products, consumer communities, free email, free electronic greeting cards, software, music and book downloads. The content is also customized for different geographic region with localized promotions and marketing campaigns.

At 8848.net, the focus of the marketing strategy has been expanded from the existing customers of Federated Software to include all 8.9 million Internet users in China. 8848.net 's management has extensive knowledge of the characteristics of Chinese Internet users. They have conducted sophisticated customer segmentation studies on the group. As a result, they excluded senior citizens and under-18 youth from the targeted segment. Senior citizens are excluded because they are slow to adopt new technology. Under-18 youth are excluded because they are under strict control of their parents in terms of Internet usage. In addition, both groups have limited purchasing power. 8848.net further breaks down the target segment to study the variation of habits and requirements among the sub-segments.

In terms of the types of products, as of March 30th, 8848.net had more than 200,000 items of goods for sale, including 20,000 software products, 150,000 different titles of book, 20,000 titles of audio/video products, several hundred kinds of computer component and accessories and several ten thousands of consumer

electronics, office products, flowers. Thus far, other online merchants in China have largely limited themselves to the online sale of computer software and books, and have enjoyed great success. They are more reluctant to expand into other kind of goods. But as the experimentation with online sale of consumer electronic appliances has quietly turned in growing profit, EC manager at 8848.net realizes that there is indeed no limit to what kind of goods is suitable for online sale, and that innovation is the key for finding the next profitable opportunity.

Another strategy is to build 8848.net consumer community containing various types of BBS sites and to register members that the number of registered users totaled more than 300,000. The short-term goals of 8848.net is that its consumers' numbers reach to 1.5-2 million.

The revenue of 8848.net has grown more than tenfold within half of a year, from \$75,000 in May, 1999 to \$1.5 million in November, 1999. The growth rate of 8848.net exceeded even the most optimistic forecast about China's electronic commerce. 8848.net projects revenue of \$37.5 million for the year 2000. It is interesting to notice that 8848.net had lower price of commodity goods than conventional channels while it can make profit from reduction in intermediary cost like brokerage and inventory.

Ordering phase:

8848.net utilizes numerous incentives to close sales that would not be closed otherwise. It also instituted group discount, auction, reverse auction to increase sales. 8848.net is leveraging its brand awareness to experiment with online B2B exchange and community.

8848.net sells 90% of its goods at a discount. For example, books are sold at 20% to 40% discounts. However, the gross margin of 8848.net is higher than most offline stores. According to a study by the Ministry of Internal Commerce, similar-sized stores in big cities in China generate 17% gross margin. 8848.net, on the other hand, generates gross margin of 20%. Back to the example of books: 40% of inventory held by traditional offline bookstores in China are never purchased. In other words,

for every \$1.2 consumer spends on a book, \$0.5 pay for the books that never will be sold. Traditional offline bookstores pocketed undue profit by taking advantage the inefficiency in the supply chain of China's retail system.

In addition to current ordering services including online catalogue and shopping cart 8848.net have bundled some customized services. The customer can check order status with a tracking service. Repeated customers can set up an account for ease of shopping. 8848.net also gives customers a chance to return merchandise if it is not up to their standard, something very few Chinese retailers allow. Its ordering service is integrated with electronic payment methods and shipping information, which results in a more efficient and demand-sensitive services across the entire value chain to enhance customer care.

Payment phase:

8848.net supports eight payment methods. Currently, It is one of the best equipped web site in China in terms of the ability to support the multiple payment methods including cash, credit cards, Internet card, electronic wallet, certificate of deposit, payment through post and payment upon delivery etc. From the experience of 8848.net, credit card provided by financial institutions with nationwide electronic payment processing capability will grab a significant share of the online shopping market. Issuers with regional capability only will be pressured to expand their coverage in order to stay competitive as online shopping is projected to growth even more rapidly in the near future.

The electronic payment infrastructure in China has a long way to go before it can effectively support electronic commerce. Under current condition the implementation of electronic payment channel must be a concerted effort among all interested parties that include the banks, relative government ministries, financial institutions, the ICPs and online retail web sites. So 8848.net are mostly concerned with relationships of the parties in payment channel.

Delivery phase:

8848.net has gradually pieced together fragmented regional distribution networks into one ad hoc nationwide

distribution network to deliver the goods to the customer's homes and offices.

- ✧ 8848.net has regional distribution centers in Beijing, Shanghai, Guangzhou, Fuzhou. These centers cover Northern, Central and Southern provinces of China.
- ✧ 8848.net partners with local professional delivery service providers to offer door-to-door cash on delivery service in 29 cities.
- ✧ 8848.net uses EMS to deliver (cash on delivery) to 450 cities in China.
- ✧ 8848.net partners with UPS, the U.S. shipping giant to deliver overseas
- ✧ Numerous national retail chains have alliance relationship with 8848.net. They have agreement to cross-serve each other's customers.

8848.net's proprietary distribution networks is consisted of 260 shops in 200 cities. In addition, 8848.net also works with 3000 distributors in 2000 cities. The value of all goods delivered has reached \$50 million. Regular delivery, which could take anywhere from 2 days to a week, does not require extra charge. In Beijing, in addition to partnering with three express courier service providers, 8848.net also provisions three automobiles available for emergency delivery. In Shanghai, 8848.net maintains a fleet of delivery vehicles that includes automobiles, motorcycles, and even bicycles. 8848.net has actively sought alliances with manufacturers' distribution channels and the postal system. A delivery channel based original distribution network has been extended to cover the entire country. Its low shipping cost and shorter delivery time has earned customers' trust and repeated business. 8848.net's delivery capability is its most powerful competitive advantage.

The online retail eCommerce business process in the Chinese market

Based the analysis of 8848.net, we have presented an overview of the online retail eCommerce process in China. From 8848.net's key success factors in its implementation of business-to-consumer eCommerce strategy, we find the execution in the payment and delivery phases to be the

differentiation between a successful online retailer and a not so successful one. A business-to-consumer eCommerce process would not be complete until a customer is able to pay for purchase online and get delivery at the door. Even though the current stage of economic development in China is not ready to provide the necessary infrastructure for such process, 8848.net has surmounted the various difficulties and delivered a convenient and reliable shopping experience to its customers. At the same time, majority of online retailers in China still only has an electronic storefront and customers must go to the conventional shops or wholesale outlets to get their orders fulfilled. This is an incomplete eCommerce process. The customers can't benefit from electronic shopping except easily accessible information. Therefore, in the current stage of development in business-to-consumer eCommerce in China, payment and delivery are two important business activities that reflect the effectiveness of the business strategies.

Conclusion

8848.net's sources of competitive advantage are moving from initial brand in the software industry and customer base into a truly powerful eCommerce process where efficiency improvement and value creation can be realized. 90 percent customers who had electronic shopping experience on 8848.net are satisfied with competitive prices, delivery time, wante product/services and assurance of the quality. Combined its own distribution network and existing traditional infrastructure 8848.net both creates and depends upon an extend value chain consisted of the customer channel, commodity channel, payment channels, and delivery channel. The focus of value creation move to relationship with targeted customers, supplier, government ministries, financial institutions and delivery firms. These abilities are the key to achieving and sustaining a new level of performance, and a more competitive position in a rapidly changing business-to-consumer eCommerce marketplace of China.

Our main contribution is the proposal of a new object-oriented model based on four dimensions, namely, information, ordering, payment, and delivery. It takes into

account not only consumer and EC manager in current electronic market environment of China, but also core activities in the business process. We also proposed an approach for analyzing eCommerce business activities and illustrating the key factors in the strategies.

Reference

Lee, D. and Ahn, J. "An Exploratory Study on the Different Factors in Customer Satisfaction with E-commerce between in the United States and in Korea," *proceedings of the Second International Conference on Telecommunications and Electronic Commerce*, Nashville, TN, 1999, pp.261-273.

China Internet Network Information Center "Statistical Report on the State of Development of the Internet in China," www.cnnic.net.cn, 2000.

Zhao, J. "Intermediary Electronic Commerce Model in China: Infrastructure, Role and Strategy," *Proceedings of the 2nd International Conference IeC'99*, Manchester, UK, 1999, pp.300-306.

8848.net, www.8848.net, 1999.