

# THE INFORMATION SYSTEM OF BANK UNDER THE E-COMMERCE ENVIRONMENT

Lili Zhu

*School of Economics and Management, Beijing Jiaotong University  
No.3 Shang yuan Vallage, Haidian District, Beijing, China*

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Abstract: This paper based on the analysis of the E-commerce demanding for the banks and the operating environment, investigates the effects of electronic commerce on the marketing campaigns of banks. The final result is as follows: to set up electronic commerce systems, communication between information system of banks and each entity is essentially necessary. Moreover, banks need to improve the inner requirements for EC and create the better supporting environment to develop E-commerce. In addition, to establish bank information system under the E-commerce, the key point, however, is to put emphasis on the set-up between internet network system and open-ended but integrated information system of banks.

## 1 INTRODUCTION

With the development of information technology and E-commerce, the traditional framework of information system is challenged. With the introduction of E-commerce, banks are facing the environment transfer from traditional circuit to present marketing open-ended. Moreover, the corresponding enterprise information management framework is also developed from traditional closing MIS type into related marketing E-commerce type. To survive and acquire the competitive advantages, banks have to take information and network technology as bases, rebuild business process and redesign information system.

## 2 REQUIREMENTS OF BANK'S INFORMATION SYSTEM FOR E-COMMERCE

E-commerce cannot exist without the information system, it itself is the application of new information technologies; which is bound to expand and develop the information systems. Information system also fails its adherence to the original framework; it is obliged to include e-commerce so as to make a new face based on the original system. Thus, the e-commerce and information systems are penetrated

and connected, forming the most competitive integral part of business in the information age. E-commerce usually refers as commercial activities that business is promoted via the network and advanced digital media technologies among the various entities (production enterprises, commercial enterprises, financial institutions, government agencies, individual consumers and so on). To put it simply, e-commerce is one kind of effective and efficient commercial activity through the use of network and information technology. Generally, to develop e-commerce, banks need to address four main core issues: information flow, capital flow, logistics and security. Information flow is the biggest advantage of e-commerce. It can be quickly passed through the transport information of network technology. In compassion, the traditional business of information communication takes a lot of time and effort, resulting in high transaction costs. Cash flow is a challenge to E-commerce; we need online banking and electronic money settlement to deal with business. Logistic flow can be divided into two categories, one is logistics of digital products that can be done through the network, and the other one is non-digital that cannot be resolved by information technology. Security is the bottleneck of e-commerce development. E-commerce is difficult to extensively be developed if we cannot solve security issues. Therefore, bank's information system construction must make a smooth flow of real-time

transmission for business information, capital flow and logistics. In addition, the safety of specific business activities is especially necessary.

Specific requirements:

- The exchange of information needs to be achieved rapidly and extensionally among the within and the outside of the entity, the internal equipment sector and the different levels.
- The real-time subsystem must be included to achieve the cash flow of the transmission in the enterprise information systems.
- The ancient security features should be achieved to ensure the security of e-commerce activities.

### 3 OPERATING ENVIROMENT OF BANKS FOR ELEC TRONIC COMMERCE

E-commerce relates with customers,cardholders, banks and various aspects. Special Network is a necessity among different banks. E-commerce is done on the Internet. Financial private network communicates with payment gateways though network. Therefore, payment gateways of pay internets take a security work here.

#### 3.1 Process

Courses of dealing:

- The consumer (cardholder) issued a purchase request to the merchants
- Merchants sent consumer's payment instructions to the merchant acquirer.
- Acquirer sent the authorization information back to acquirer through the payment gateway after getting the authorization from issuers (consumer's opening bank) through the financial private network.
- Merchant acquirer sent feedback information to consumers after getting the authorization. If payment and authorization didn't finish at the same time, the merchant acquirer need to send a request to the acquirer through the payment gateway to transfer the amount of the transaction to the merchant's account.

Banks complete their settlements by the inter-bank payment system.

#### 3.2 Two Basic Elements

Banks develop e-commerce relies on two basic elements:

- Develop the internal demand of the enterprise for promoting EC.
- Support the external environment of the development of e-commerce, such as the sound laws and regulations, system (the legality of digital signatures, the validity of electronic documents, the appropriate tax incentives of e-commerce, etc.), sound norms and standards (the normative of security payments, etc.), safe and reliable authentication system, a strong network environment ( including public and private networks), and the efficient and secure payment systems. The network topology diagram, as shown:

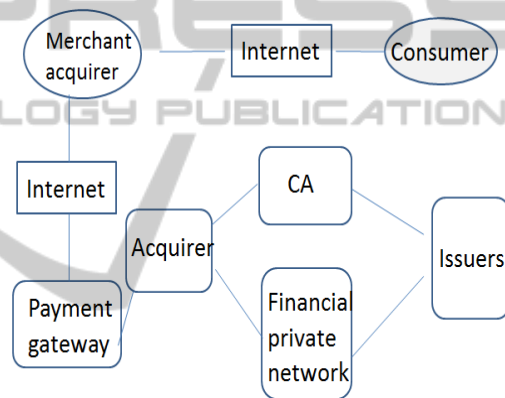


Figure 1: E-commerce's network topology.

### 4 E-COMMERCE IMPACT TO MARKETING ACTIVITIES OF BANK

With the development of enterprise information and business activities, an extensive e-commerce become more and more important in the economic life, it will become the inevitable choice of individuals and enterprises, in particular, enterprises will be the biggest beneficiaries. E-Commerce provides the opportunity to take part in global competition, increased marketing opportunities, reduce trading costs and improve trade efficiency for banks, e-commerce will have a tremendous and profound impact on bank's marketing activities.

#### **4.1 Electronic Commerce's Impact on Business**

E-commerce thoroughly changed the method of operation of the bank's business. E-commerce enables the transfers of information flow, capital flow and part of the information logistics to network, so that the network become the main space of economic activities and create the new growth point, and gradually completed the transition from the industrial economy to new economy ( Network Economy).

#### **4.2 E-commerce's Impact on Bank's Market**

E-commerce shorten the distance between banks and customers. Through the establishment of an electronic store or the website's home page, customers are allowed to transfer their business needs directly and quickly converted to the production order.

#### **4.3 E-commerce's Impact on Production**

E-commerce's the largest impact of the bank's marketing activities is reflected on the production area. Mainly as follows:

- Reduce procurement costs.
- Reduce business inventory.
- Increase their trading opportunities.

#### **4.4 E-commerce's Impact on Bank's Management**

E-commerce promote the implementation of information resources management. Banks adopt effective methods of information resources management, and use the advantages of e-business information to improve bank's management level, thus greatly reducing friction, and increasing efficiency. Timely and accurate exchange of information make the contract management more orderly, allocation of resources become more rational, and marketing decisions turn to more scientific. Multinational organizations' global business and cross-border management become possible by the establishment of e-commerce system.

#### **4.5 E-commerce's Impacts on Bank's Organizations**

The development of electronic commerce will result in the organizational structure of banks violently, prompting banks to accelerate the pace of change and restructuring. With the development of electronic commerce, the old boundaries between the various units of the bank will be broken and re-combination of a team which provide services for customers directly. The Closed pyramid structure will turn into a new network-type organization which is more convenient to communicate with each other and learn from each other. E-commerce will create a large number of virtual enterprise, besides, enterprise's organizational and its management are required to relocate.

#### **4.6 E-commerce's Impact on Bank Professionals**

The impacts of e-commerce to bank's marketing activities above will enable banks to adapt to profound changes. To meet the requirements of business change in the information age, human resources will become the focus of competition. The decision-makers of the bank will become younger, high-quality, interdisciplinary and cross-cultural Business, financial, information management, computer networks and other professionals, will become the minion under the e-commerce environment.

### **5 SEVERAL PROBLEMS IN THE IMPLEMENTATION OF THE NEW BANKING INFORMATION SYSTEM UNDER THE E-COMMERCE ENVIRONMENT**

Banks in the overall strategy should be designed to adapt to each other by considering the establishment and development of e-business goals, business systems and organizational structure. Trying to be value-oriented and efficient, and create a stronger competitive advantage on the enterprise value chain to improve competitiveness and strategic image of the bank. In order to adapt science and technology's rapidly changing, business strategy must be changed, and to be flexible and agile, all should face the global market and oriented to the customer

satisfaction. Under the e-commerce environment, the following two issues worthy of drawing attention in the implementation of new bank management information system.

### 5.1 Bank's Computer Network System

Bank's computer network system includes an internal network system (Intranet), external network system (Extranet) and the intelligent network management system. Intranet and Extranet are used to organize internal or external internet, the intelligent network management system can manage the network resources to ensure the security of enterprise information resources and achieve the automation of the operation of the enterprise Web site management and maintenance.

Intranet / Extranet can connect all departments of the bank in real-time and improve management's efficiency and the rate of feedback. Create a NIS system which comprehensive involved in production, supply and production, operation, management and several other major aspects and improve the quality and efficiency of management not only is the measures to establish internal management, but also is the key to the electronic commerce.

### 5.2 The building of Bank's Open Integrated Information System

The rapid development of computer networks and e-commerce technology has brought great opportunities and challenges to the business model of traditional business organizations, they are changing almost every aspect of business. At present, many companies are establishing their own e-commerce systems. Therefore, we must implement the integration of the e-commerce and information system in order to form an open integrated information system.

Through the internal network system, we can combine management data with external data, and combine bank's e-commerce systems EC, management information systems MIS, decision support system DSS, OA office automation systems together. We can integrate the data warehousing, data mining technology to from product marketing, business development, new product development, production planning, product processing to other aspects of information resources, and apply them in deeply, forming a new sound information system in finally. Bank's new information system finish a low-cost, immediate and direct data transmission and

sharing through the bank's intranet and extrane which are based on browser .According to market demand, we can make the production planning, material supply arrangements, organization of production and processing together for all departments within the bank and the bank's joint ventures which are on supply chain.

Because of the information within the enterprise and all partners are transparent, so in the process of the plan's development and implementing, the plan can be adjusted according to actual conditions, to ensure the program's effectiveness. Currently, bank's integrated information system is a closed automated system, we need to translate them into information systems which are based on unified chain of web, in order to achieve the effective coordination operations with all partners in the supply chain.

Complete integrated information system should include all internal and external customers and market-related information, it not only includes the production task information, equipment information, management information, quality information, stock information, material and financial information, etc, but also including suppliers, customers and market information.

For businesses, there will be no information be devided as inside information and outside information, but only as a link of the corporate's information chain. The application of new information system, is not only a technical implementation of the process, but also a process of management's restructuring and technical knowledge' innovation. To enhance the competitive advantage in supply chain management, it's necessary to reform the entire supply chain and restructure the organization.

## 6 CONCLUSIONS

The information system of enterprise is related to the E-commerce's which established on the communication of each entity. To set up electronic commerce systems, communication between information system of banks and each entity is essentially necessary. Moreover, banks need to improve the inner requirements for EC and create the better supporting environment to develop E-commerce. The E-commerce would influence banks on aspects of Economics, Marketing, Production, Management, Organization, Talents, etc.

In addition, to establish bank information system under the E-commerce, the key point, however; is to

put emphasis on the set-up between internet network system and open-ended but integrated information system of banks.

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