Electronic Commerce in China

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Abstract Network transactions, electronic payments and on-line receipts are changing the traditional ways and pace of doing business in China. The new epoch of e-commerce is attracting the attention of Chinese governments and businesses alike with its characteristics high-efficiency, low-cost, high-profitability and global application. China has realised the potential of e-commerce, is absorbing the advanced technologies and management expertise from other countries, and is increasing domestic and international trade. In the course of trade, Chinese people will meet lots of issues, these issues need to be resolved. In order to answer the issues a number of aspects are examined. Firstly, the sphere outlining the present status of e-commerce development in China is examined. This is identified with analysis of the major issues concerning e-commerce adoption in China. Solutions to the problems raised by these issues are proposed. This focuses on the factors that led to current conditions and which will likely influence future development. The findings of this analysis will help Chinese policy makers to build up an electronic commerce strategy through a review of the issues.

Key words E-commerce, China, China Internet Network Information Center (CNNIC)

1. Introduction

Like many countries, China has considered the Internet a powerful tool for national development economically and socially. China has the resources, the means, and the motivation to be a central player in the global e-commerce business, but is lagging far behind other countries in terms of market size and scope. Particularly significant is the dearth of business-to-business transactions, which have been growing by leaps and bounds elsewhere. The key reasons for China's e-commerce problems include an insufficient grasp by entrepreneurs of the complexity and dynamics of e-business, obstacles to web access and e-banking, inadequate supply and delivery systems, and security concerns. Also included in this list is how to present the resources, expose the issues, and get relative strategies.

Research paper layout is as follows: Section 2 discusses the topics of what is electronic commerce, features of electronic commerce systems, basic requirements for electronic commerce and International trend for electronic commerce. Section 3 examines basic conditions of electronic commerce in China: the general development situation of China's Internet, telecommunications infrastructure and current status of e-commerce. Section 4 further examines Issues of e-commerce in China: security issues, supply and delivery systems, poor speed and expensive access, electronic payment systems, low level awareness of e-commerce. Section 5 outlines and suggests workable solutions of e-commerce issues in China, inclusive of how to establish a security system, how to improve access to the Internet, actions to enhance business perceptions of e-commerce, the legal environment for e-commerce and building up a favourable environment for e-commerce. A conclusion is provided in section 6.
2. Understanding Electronic Commerce

2.1 What Is Electronic Commerce?
Electronic commerce (e-commerce) is defined as transactions conducted over public and private computer networks. It is based on the electronic processing and transmission of data, text, sound, and video. E-commerce includes transactions within a global information economy, such as electronic trading of goods and services, online delivery of digital content, electronic fund transfers, electronic share trading, electronic bills of loading, collaborative design and engineering, on-line resourcing, public procurement, direct consumer marketing and after-sale services. It involves the application of multimedia technologies in the automation and re-design of transactions and workflow, aimed at increasing business competitiveness. It is divided into four groups: Business-to-Consumer (B-to-C), Business-to-Business (B-to-B), Consumer-to-Consumer (C-to-C), and Business-to-Government (B-to-G).

2.2 Features of Electronic Commerce Systems
Electronic commerce systems can be of significant value as a lever for new customer management strategies. These strategies are itemised:
- Directly connect buyers and sellers
- Support fully digital information exchange between them
- Suppress time and place limits
- Support interactivity and therefore can dynamically adapt to customer behaviour
- Can be updated in real-time, therefore always up-to-date. (Michael, 1996).

2.3 Basic Requirements for Electronic Commerce
The widespread adoption of electronic commerce requires widely available telecommunications infrastructures, affordable Internet access and efficient related services, as well as a critical mass of users who have basic IT skills.

2.4 International Trend for Electronic Commerce
Since the emergence of e-Commerce, it grows rapidly in the whole world with sales amount doubled. According to the report made by the Forrester Research (Chinese IT report, 2004), from year 2000 to 2004, total e-Commerce trade volume in European countries will increment 100% every year, and its total trade volume will hit the level of Euro 1600 billion in the following 4 years, accounting for 6% of total trade volume in Europe. For Japan, Singapore and South Korea with developed information industry in the Asia-Pacific region, their e-Commerce is also developing very rapidly. According to the E-Commerce Japanese and American Market Scale Investigation published by Japan in March 1999 (Chinese IT report, 2004): Japanese B2B scale is about the half of American scale, and will expand over 8 times by year 2003 by estimation, B2B e-Commerce ratio (ratio of e-Commerce in Final demand plus intermediate demand) will reach 11.2%.

3. Basic Conditions of Electronic Commerce in China

3.1 The General Development Situation of China's Internet
According to China Internet Network Information Center (CNNIC) issued the "16th Statistical Report on Internet Development in China" in Beijing (CNNIC, 2005). The report indicates that up to June 30th, China's number of internet users was 103 million, 53 million of which are broadband users. Its number of netizens and broadband users rank No. 2 in the world, next to the United States. According to this survey report, 45.6 million computers in China have been linked to the internet, up 25.6% year on year. Total bandwidth of leased international connections amounted to 82,617M and total websites reached 677,000. China's IP addresses are growing rapidly in number in recent years, totaling 68.3 million, and there are over four A-grade addresses, making China rank fourth in the world.
It can be seen from the report that after one decade rapid development, China Internet has been developed in scope, and that the application of the Internet is becoming diversified. People are using Internet more and more, on their work, study and lives. The whole society has taken on the express train of Internet, branded the mark of Internet. Internet has evolved from an isolated industry to the one popular for the masses of different professions.

3.2 Telecommunications Infrastructure
John Horvath (Horvath, 1999), a correspondent, has noted that China has built up a telecommunications net centered around 16 optical cable lines and accompanied by multiple means of communications...
networks such as microwave, satellite, telephone, mobile phone, digital communications, and multi-media communications. The optical cable trunk line totals one million kilometers and reaches all provincial capitals and 70% of China’s big cities. The digital data communications network reaches 90% of the cities and counties throughout the country, and the public computer network covers 239 cities. But there is still much need for expansion and improvement. It is forecast that China will install more access lines than any other country over the years leading up to the 2008 Beijing Olympics. China Netcom plans to use around 50% of the proceeds from its November 2004 IPO toward infrastructure. The total investment in fixed assets by all Chinese telcos is expected to reach 210 billion yuan (US$25.4 billion) in 2005, equalling that in 2004. China is turning a great deal of attention toward international and satellite solutions for its expanding telecommunications infrastructure. China’s satellite communications market is expected to be worth US$2.8 billion by 2005 (web report, 2005).

3.3 Current Status of E-commerce
A Nationwide survey found that China had more than 221988 consumer related e-commerce websites by the end of the first quarter this year. Though China's e-retailing sales volume totalled 55 million yuan (US$6.63 million) last year, accounting for merely 0.018 per thousand of the country's total retail sales, the survey predicted a 500 percent growth this year (Sci-Edu, 2000a).
Among all the e-retailing websites (Sci-Edu, 2000b), 8848.net is the most popular among Chinese Internet users, and more than 300,000 varieties of commodities are available at the site. Its sales volume last November was 12.5 million yuan (US$1.51 million) and the figure was increasing month by month. Many computer and software manufacturers are also taking the opportunity to present their latest e-commerce products in China. Since last September when Microsoft unveiled its e-commerce strategy in China, it has launched a series of promotional activities here.
What can be seen with our own eyes confirms this. Every day there are two or three new websites conducting e-commerce, extending the scope of their services, from the economically developed south and coastal China to the inland areas? Though expecting a bright future, Chinese experts warn that e-commerce is still at the very preliminary stages and still face bottlenecks, such as authentication, payment, delivery, related laws and regulations, and so on.

4. Issues of E-commerce in China
4.1 Security Issues
One important consideration for any e-commerce is the security of the environment under which payments are made. Many consumers have fears about displaying their credit card number out over the Internet. This is because the Internet is an open network without any basic security provisions built in. A Chinese survey (CNNIC, 2005) showed that a “Most Serious Problem in China's Internet was that of being unable to protect personal privacy, (13.6%). It was to further note that the primary obstacles of online purchase (26.9%) is that security can not be guaranteed. Unreliable Information online is quoted as being (7.7%)”.

4.2 Supply and Delivery Systems
E-commerce faces further problems in the realm of China's supply and delivery systems. In the United States, efficient private delivery companies such as FedEx and UPS offer not only B2B linkages, but also door-to-door services from businesses to their customers (Dieter, 2000). China currently relies on hybrids of online shopping and traditional labour-intensive delivery systems, even employing bicycles in some areas. But these will be inadequate if the e-commerce system continues to expand.

4.3 Poor Speed and Expensive Access
Recently service charges have been considerably reduced, leading to substantial improvements in the telecom infrastructure, but such charges still remain far too high to allow for a rapid expansion of e-commerce. In the United States, Internet users spend roughly 1-2 percent of their monthly incomes for unlimited access to the Web and for their monthly telephone charges. Compare this to the average Internet user in China, who has to spend 20 percent of monthly income to get online for only one hour each day (Dieter, 2000). Internet users have listed “Speed is too low” (22.6%) and “Price is too high” (36.6%) as the top two disappointing aspects of Internet (CNNIC, 2005).
4.4 Electronic Payment Systems

One of the weakest e-commerce links in China is that of the electronic payment systems. Indeed, Chinese banks are only at the early stages of developing consumer debit and credit cards. Many of the Chinese banks are developing online banking transaction services with Internet Service Provider (ISP) or Internet Content Provider (ICP). But security issues remain a major concern. China Merchants Banks, the largest commercial Bank in China, uses a 40-byte SSL encryption standard which is lower than the international standard (128-byte SSL) (South China Morning Post, 1999). In the CNNIC's report of 2002, the number of bank cards issued in China reached 469 million by the end of September 2002, which means every one out of three people in China has a bank card. However, over 90% of those bank cards are debit cards (X. Wong, D. Yen, and X. Fang, 2004). Debit cards, compared to credit cards, have more risk exposure related to online transactions. That is one of the reasons that only a few people use online payment, although many online shops do accept debit card or credit card payment.

4.5 Low Level Awareness of E-commerce

CNNIC (1999) surveyed more than 22,000 Internet users in China in 1999, asking their opinion on Internet shopping. Only 23.4% of users think buying things online is convenient, 16% think online shopping is promising and 15% use Internet for e-commerce. Most of the users do not use the Internet for e-commerce. A newly released survey by CNNIC confirmed that 91.21% of the respondents of Internet users did not use Internet to buy online in Jan 2000. Although the majority of registered domains are in the .com sector, it does not mean that the majority of businesses in China are putting business on the Internet. 90% of business web sites have no "transactive content" except for the photos of the general manager and products. Recent players in China in Internet commerce mainly are portals such as China-enterprise.com. Netease.com, Sina.com and Sohu.com.

4.6 Other factors influencing E-Commerce

There are three important factors that play important roles in the development of China’s e-commerce: uneven economic development, the traditional business model, and users’ behavior and perceptions. Due to the uneven economic development, the majority of Internet users live in the north, east and south of China. The Internet penetration around the big cities in these areas, such as Beijing, Shanghai, Guangzhou and Hong Kong, is much higher than that in the rest of the country. The traditional business model also influences what people purchase online. Under the traditional business model, consumers get physical contact with the products. They try products within the shops, and they can return them to shops if they do not work properly. For electronics such as digital cameras, DVD players and televisions, once the products leave the store, the shops usually hand over all responsibility to the customer. That means that after you take a product home, if it has problem, you normally need to call the customer service department of the manufacturer to have it fixed. Therefore people put more emphasis on getting the physical contact with the products. Since the most often bought products online are low value items, people usually choose low price delivery method. Therefore, the postal delivery seems to be the best alternative for consumers. According to the CNNIC (2003) January 2003 survey, 38.8% of consumers chose postal delivery. Home delivery is another favored delivery method for the consumers.

5. Solution of E-commerce Issues in China

5.1 Establishment a Security System

How to build a security system? Several methods can be recommended as follows. One method would be to allow the customer to take the transaction off-line. This means, in many cases, that the customer must log off the Internet in order to actually make a purchase. Another method that is currently used by many sites involves hosting the WWW site on a secure server. A secure server is one that uses a protocol to transmit data between the browser and the server. These protocols encrypt the data being transmitted, so when a customer submits his credit card number on the order form, it travels to the server encrypted. This method does help ease people's fear, but it still does not go far enough for many people to feel comfortable using their credit card. Other ways to make the Web server secure may involve authenticating employees, customers, remote
offices, suppliers and panners. A growing number of organisations are building public key infrastructures (PKI) to solve these e-commerce security issues. PKIs are a system of digital certificates, certificate authorities, and other registration authorities that verify and authenticate the validity of each party involved in an Internet transaction. As a merchant, the safest way to distribute your public key to your correspondents, or customers, is through a certificate authority (CA). CAs is trusted third-party organisations or companies that issue digital certificates, digital signatures and public-private key pairs. For e-commerce, these certificates can serve as validation that a company is in fact what they claim to be, and in doing so, eliminates impostors. CAs can also issue digital certificates to individuals. Digital certificates are the electronic equivalent of a business license or a passport. Many companies are turning to digital certificates as a secure means of communicating and doing business with customers, employees and suppliers.(Brenda,2000).

5.2 Improve Access Level
In order to develop electronic payment systems, improve access, lower prices, and supply and delivery systems, China has taken a series of actions, these actions including:

5.2.1 Golden Projects
Golden Bridge-- National public economic information communication network aims to connect ministries and state owned enterprises and to build the infrastructure backbone over which other information services will run.
Golden card---electronic money project which aims at setting up a credit card verification scheme and an interbank, inter-region clearing system.
Golden Customs---National foreign economic trade information network project.
Golden Intelligence--- China education and research Network (CERNET).

5.2.2 Government Online Project
Government use can play a crucial catalytic role in promoting Internet diffusion in China. The Ministry of Information Industry and China Telecom jointly launched the Government Online Project in 1999. This project aims to put government information online, increase the transparency of government work, reduce office costs and encourage vendors to do business with the government electronically.

5.3 Actions to Enhance Business Perceptions of E-commerce
Because three important factors play important roles in the development of China’s e-commerce, the traditional retail model will still dominate the consumer market in China. However, as the number of Internet user increases, companies can use the Internet to publish product information and to help build their brand recognition and awareness. Some services can actually be provided online, such as self-service technical support. This can save the support expense as well as improve customers’ satisfaction.

In July 1998, the Ministry of Foreign Trade and Economic Cooperation established the web site chinamarket.com, which was the first official export-oriented business-to-business e-commerce site. The Ministry of Foreign Trade and Economic Co-operation stipulates that all import and export companies must use the China international e-commerce network to apply for a quota license by 2000.

The State Council marked the Year 2000 for developing e-commerce and many provincial governments have set development of e-commerce as the top priority in 2000. The state Council also is drafting an e-commerce development framework. The Chinese Government is planning to promote e-commerce to all enterprises within 5 years (South China Morning Post, 2000).

5.4 Legal Environment for E-commerce
In some areas, government agreements may prove necessary to facilitate electronic commerce and protect consumers. In these cases, governments should establish a predictable and simple legal environment based on a decentralised, contractual model of law rather than one based on top-down regulation. This may involve states as well as national governments. Where government intervention is necessary to facilitate electronic commerce, its goal should be to ensure competition, protect intellectual property and privacy, prevent fraud, foster transparency, support commercial transactions, and facilitate dispute resolution.

5.5 Building up a Favorable Environment for E-commerce
A further challenge facing China is to build up a favourable business environment for commerce. The
government should take actions to create public and business awareness and confidence in e-commerce, in particular, to support and encourage small business to adopt new business methods, techniques and innovations and understand the potential benefits of e-commerce in terms of cost savings, opening up of new markets and opportunities for new products and services. Development of relevant skills and widespread network literacy is needed. China Internet Network Information Centre survey found that 5.42% people are hard-pressed to show many computer skills. This was noted as a result of a survey into the most serious problems in China's Internet. (CNNIC, 2001). In order to improve Chinese knowledge, computer skills and aware of e-commerce, education and training should be done, investment in training programs should be increased. Besides these, China should get ready to meet WTO requirements and remove foreign exchange control to allow international payment.

6. Conclusion
As one of the most populous countries in the world with the largest potential market for commodities, technology and services, e-commerce provides enormous opportunities for Chinese economic growth, but many challenges still remain. It is therefore imperative that the Chinese government provide high-level policy co-ordination and support for e-commerce development, and e-commerce must be a central element in future development strategies. Besides this, China would have to work on improving telecommunication infrastructure and accessibility. Government involvement is definitely needed in China, but if e-commerce is to flourish it cannot be based on top-down regulation. Therefore, it is far more important for enterprises to take a lead in developing Internet commerce, rather than government. Now government should institute training programs at national and local levels to provide computer-related education. Much attention should be paid to building user and consumer trusts in information systems and electronic transactions and improving logistic systems.

References