Chinese culture and e-commerce: an exploratory study

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Abstract

Differing characteristics of local environments, both infrastructural and socio-economic, have created a significant level of variation in the acceptance and growth of e-commerce in different regions of the world. This paper focuses on the impact of these infrastructural and socio-economic factors on e-commerce development in China. The findings provide insights into the role of culture in e-commerce, and the factors that may impact a broader acceptance and development of e-commerce in China. In this paper, we present and discuss our findings, and identify changes that will be required for broader acceptance and diffusion of e-commerce in China. Cultural issues such as ‘socializing effect of commerce’, ‘transactional and institutional trust’, and ‘attitudes toward debt’ were determined to be the major impediments to e-commerce in China. However, our research also shows that, even though their means for payment are different, the most enlightened, able, and sophisticated consumers in China participate in e-commerce in the same frequencies as the mainstream e-commerce consumers in the US.

Keywords: Electronic commerce; China; Culture; Technology diffusion; Trust; Developing countries; Digital economy

1. Introduction

The number of Internet users around the world has been steadily growing and this growth has provided the impetus and the opportunities for global and regional e-commerce. However, with the Internet different characteristics of the local environment, both infrastructural and socio-economic, have created a significant level of variation in the acceptance and growth of e-commerce in different regions of the world.

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Our research reported in this paper focuses on the impact of these infrastructural and socio-economic factors on e-commerce development in China. In this paper, we present and discuss our findings, and identify changes that will be required for broader acceptance and diffusion of e-commerce in China.

Over time, various studies have been conducted and models have been developed to identify diffusion of e-commerce in different environments (e.g. Zwass, 1996; Wolcott et al., 2001; Travica, 2002). These models have looked at ‘infrastructure’ (e.g. connectivity hardware and software, telecommunications, product delivery and transportations systems) and ‘services’ (e.g. e-payment systems, secure messaging, electronic markets, etc.) as the primary diffusion factors. Of the three studies, Travica’s study is the only one that presents some discussion of the impact of social factors in e-commerce development, with its primary focus being Costa Rica.

We conducted the study reported in this paper to expand the findings of these previous studies and to explore and identify the impact of Chinese culture on diffusion and use of e-commerce in China. Furthermore, in an attempt to draw upon the findings of the previous studies, we combined the ‘infrastructure’ and ‘services’ categories into a broader infrastructure group and incorporated some of the concepts and characteristics identified in these models into our questionnaire, while focusing on cultural issues more so than these earlier researchers have in their studies and models.

In this paper, we will present and discuss our findings, with a primary focus on culture and its implications on e-commerce development in China. However, we do recognize the importance of infrastructure related issues and have collected some information on these issues as well. During our discussion of implications of culture, we will also present infrastructure related findings and discuss them as they relate to our primary focus: culture and e-commerce.

2. Background

We identify three primary infrastructure related elements that impact consumer participation in e-commerce. They are access to technology (computers, connectivity, and gateway to Internet), payment systems for enabling transfer of funds, and distribution systems for physical transfer of goods. The infrastructure issues, as important as they may be, are in a constant state of change and improvement, and we project that, in a relatively short time, they will cease to be a very significant impediment to e-commerce development in China. There are many examples of the rate of infrastructure change and we project that these developments will evolve at an accelerated rate, eventually becoming a minor issue for e-commerce development and diffusion in China. Governmental efforts have already been put in place to provide the impetus, facilitated by China’s entry and full membership in WTO, 2008 Olympics in Beijing, and 2010 World Expo in Shanghai. Furthermore, 16th National Congress (convened on November 8, 2002) showed that about half of the country’s top posts—ministers, provincial governors, city mayors—have been shuffled to replace those over 70 with so-called ‘fourth generation’ leaders, who are men in their 40 s and 50 s and are deeply committed to turning China into an aggressive, high-tech market economy.
To start this process, MOFTEC (Ministry of Trade and Economic Cooperation) established the China International Electronic Commerce Center in 1996 to research and promote digital business. The first pilot e-commerce project in China’s medical sector (China Golden Medicine Net) was launched in March 1999 to sharpen the market’s competitive edge and economic performance, and enable the pharmaceutical and health sectors to distribute information and settle accounts on-line (Reuters, 1999).

There is evidence that some of these changes are already taking hold. Access to technology has dramatically increased in China. According to the market researcher IDC, China’s PC sales of 11.3 million in 2002 will increase to 21.1 million in 2006 (Clendenin, 2003), making China the third largest market, for 2002, after US and Japan. The China Center of Information Industry Development (CCID) estimates that desktop PC sales in China will reach 17.4 million units in 2003. CCID further projects an annual growth rate of 18.8% over the next five years. If these growth rates are realized, China will become the second largest PC market in the world, surpassing Japan by 2007 (Magee, 2002). Currently about 30% of China’s 1.3 billion people are wealthy enough to afford PCs and this percentage of total population roughly translates into a population the size of US. Furthermore, according to WebSideStory’s Statmarket service July 2002 figures (StatMarket, 2002), US (42.65% of all users), China (6.63% of all users), and Japan (5.24% of all users) are the top three countries with largest percentage of worldwide Internet users (StatMarket, 2002). No actual figures for 2003 were available at the writing of this paper.

There is also some evidence that support positive changes related to infrastructure issues, payment and distribution systems. In their report titled Consumer E-Commerce in China, BDA-China (BDA, 2000) argues that China has over 150 million bankcards and cash-on-delivery (COD) systems that are reliable and popular means of payment for online purchases, and lack of sophisticated payment systems do not pose as a major obstacle to e-commerce. A consultant at BDA, commented: “While payment mechanisms remain immature, payment is no longer a bottleneck in the industry’s development. COD and the patchwork of online payment systems already available in China are allowing entrepreneurs to build real businesses online”. However, there is no universal agreement on the wide availability of credit cards or electronic payment systems. A partner in the Beijing offices of accountants PricewaterhouseCoopers, states “… few Chinese have credit cards, the banking sector lacks a national clearing system and potential customers are suspicious of being cheated” (Hennock, 2002). On the physical distribution side, there are multiple private courier companies that have been established in major cities and China’s postal service has signed contracts with dozens of online merchants for regular or express delivery. These systems, once again may not be as sophisticated as in the US, never the less, substantially minimize the distribution challenge for the e-commerce merchants.

In our opinion, the unique social and cultural characteristics of China and the concepts associated with off-site exchange systems pose a much greater challenge and act as the major impediments to e-commerce development in China. On the positive side, according to the World Bank, the Chinese have the highest percentage of disposable household income in the world. Therefore, any continued increases in
the household incomes provide significant opportunities for families to purchase consumer goods and participate in on-site or e-commerce based consumer activities in increasing numbers. On the negative side, even though off-site exchange systems, such as catalog and telephone sales, have existed in the US and have been used by the public for an extended time period, such systems are new and novel approaches in China and may not be as suitable to its culture and way of doing business. Since the business foundation of e-commerce (B2C) is based on such a methodology, some of these local cultural characteristics might be serious impediments to e-commerce’s growth and wide scale acceptance. The three characteristics that most readily come to fore are:

- **Transaction trust (ordered goods will arrive, payment will be made):** Confucianism may have left a strong mark on much of the Chinese social life but it also left a business system more in tune with rule by an unpredictable authority rather than by dependence on a system of laws and obligations. For the Chinese, contracts are expected to change and promises may be broken; a strong individual relationship is often the only indispensable ingredient that is required for the implementation of a contract. This concept is described as *guanxi*, which refers to a particular kind of social networking based on trust. Counterfeiting and distribution of below par products is a major problem and increases the lack of transactional trust between parties that do not know each other personally. Chinese rely on face-to-face contact more so than other cultures (Davies and Howard, 1995).

- **One-upmanship (bargaining):** Chinese are formidable negotiators. They are aware of the ploys used by other negotiators and are tough-minded, always well prepared, and patient. During business negotiations, they are willing to employ a variety of tactics to get the best deal. For example, they are masters at pitting competitors against one another, convincing firms that other firms can provide the same product under much favorable terms (Chen, 1993; Moore, 1967).

- **Socialization effect of on-site commerce (friendly conversations between the vendor and the customer):** The success of doing business in China also depends heavily on the quality and sometimes the quantity of personal relationships. For the Chinese, a strong individual relationship and long term association between the parties provide a sense of community and enhances social bonding. Most of the business is conducted through small enterprises and it is local. The Chinese company is a socio-economic entity and not just a pure economic one.

Nevertheless, BDA-China (BDA, 2000) projects that China consumer e-commerce revenues will reach RMB 39.9 billion (USD 4.8 billion) by 2004. BDA defines consumer e-commerce as an order placed online which may or may not be paid for online, and involves an individual as the end consumer, and excludes from its forecasts online purchases of securities.) This is still a relatively small (when one takes into the country population) volume as compared to USD 17 billion e-commerce consumer sales in US for the first quarter of 2002.
3. The research study

Our objective was to find answers to two primary research questions. 

(A) If technological and transaction systems were available, would the Chinese customers use e-commerce?  
(B) Are there any differences in customer behaviors, between Chinese and other users, as they relate to e-commerce?

Since we wanted to narrow the focus of our research and focus primarily on the societal issues in China as they relate to commerce in general and to e-commerce in particular, we formulated research questions whose answers would provide us this opportunity. We also knew from first hand experience that the telecommunication and e-commerce infrastructure was not as developed in China as they were in US or Europe and wanted to minimize the negative implications and impact of such deficiency. As such, we formulated research questions that focused on the social and cultural issues and selected a study group that would be least likely to encounter the infrastructure impediments. 

To find answers to these questions and to identify the current infrastructure and socio-economic influences on the development and growth of e-commerce in China, a 20-question questionnaire was developed in English and translated to Chinese by one of the authors, and was initially administered as a pre-test to small group of participants. The actual study population consisted of a total of 252 individuals, located in Beijing, Shenzhen, Shanghai, Guangzhou, Wuhan, and Shandong during the time of the study, residing and working in different regions in China, and with different educational levels, professions, and gender. They also worked for different types of organizations.

The study has some unique characteristics when compared with similar studies done in China. The survey questions, developed in English, were translated to and administered in Chinese. The translation was done by one of the co-authors, who is very proficient in English and Chinese, Internet and E-Commerce terminology, and has a profound understanding of cultural nuances of the Chinese language. This is important because of the possible danger of lost meanings and incorrect interpretations of what is being asked when questionnaires are developed in one language and administered in another language (especially in Chinese) to a culturally different population. The questionnaires were administered by one of the authors personally, increasing the validity of the study by minimizing contamination that may be inserted into the mail or online surveys, increasing the participation rate, and decreasing the rejection of responses that were unclear or incomplete. The participants were asked to fill out the questionnaire without any inducements, such as prizes or money, as is the tradition in most of the mail in or electronic surveys conducted in China. The questionnaire contained questions designed to collect information on demographics, Internet usage, and e-commerce activities (frequency of commerce and type of purchase, means used for purchase, transaction experience, and perceptions of e-commerce in China). Because of the types of questions and groupings we created (e.g. multi-year age grouping vs. specific age, verbal measures vs. numeric, etc.) and used in our questionnaire, we have presented our findings using descriptive statistics.
However, in some circumstances, we were able to generate inferential statistics and have included these where appropriate.

Finally, the study group was specifically selected to represent a group of e-commerce users that would be considered ‘early adopters’ and was considered to be a close match to e-commerce users in developed countries. As researchers with previous research experience in China and knowing the degree of technological and economic development among the general populace, we selected these participants because we considered them to be the most likely users of e-commerce, with access to technology, significant purchasing power, exposure to concepts and practices outside China, and open to trying new/novel things. The study population was not intended to be a representative of the general populace in China. Since our primary focus was ‘impact of culture’, we wanted to get the opinions of actual participant/users of e-commerce and wanted to eliminate the infrastructure problems as much as possible.

3.1. Study population demographics

As can be see from Table 1, our study population of 252 participants had different characteristics than the studies conducted by the China Internet Network Information Center (CCNIC), which uses Internet to collect data for the Chinese government. CCNIC conducts these studies semi-annually to identify the development and progress of Internet in China. We have used the demographics of their latest survey as comparative statistics to our study.

There were also differences in the professions among our study participants as well as the differences between our study population and the CNNIC (China Internet Network Information Center) study. In our study, the largest representative professions were 40.87% management, 29.76% IT (Information Technology), 5.56% service, and 5.56% consulting. This characteristic of the population of our study is very different than the overall characteristics of China’s general populace and is also substantially different than the CNNIC study. Their study participants had a much broader sample of professions, including those who checked categories such as ‘military’, ‘peasants’, ‘agriculture, forestry, fishery’, real estate’, ‘wholesale and retail’, ‘culture and arts’, and ‘sports’, ‘unemployed men’ (4.00%), etc. professions which are of course not covered by our survey. We consolidated our study participants into three major categories (Table 2). Unfortunately, the organizational categories used by CNNIC were so numerous that we

<table>
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<tr>
<th>Table 1</th>
<th>Our study demographics vs. comparable study demographics</th>
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<tbody>
<tr>
<td></td>
<td>Gender</td>
</tr>
<tr>
<td></td>
<td>Male</td>
</tr>
<tr>
<td>Study</td>
<td>59.92%</td>
</tr>
<tr>
<td>CNNIC*</td>
<td>60.90%</td>
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</table>

could not effectively group them for comparison purposes. As we stated earlier, our study population was unique and was not representative of the overall population demographics of China. However, since CNNIC conducts their surveys using Internet and participants are self-selected, we are not sure how representative their study participants are of the general population demographics of China. Since theirs is the only large-scale study in China that presents reliable demographics, as well as technical data, we decided to use their findings to compare with our study results.

3.2. Findings

3.2.1. Internet usage

A set of questions asked our study participants about their Internet usage to identify their familiarity with technology and their access to Internet. Since the primary focus of our research was to identify the social issues associated with e-commerce in China, we wanted to eliminate access to technology as one of the constraints.

The 252 study participants, overall, had fairly complete and easy access to Internet enabling technology (e.g. access to a PC and telecommunication connection to an ISP) and used Internet regularly for multiple purposes/activities (e.g. email, search, etc.) Almost 37.70% of the respondents accessed both English and Chinese Internet sites and pages and the remaining 62.30% using only Chinese language sites and pages. The most popular Internet site accessed was www.sina.com (with 80.56% respondents) followed closely by www.sohu.com (with 54.76% respondents) and www.yahoo.com (with 39.29% of respondents). Sina and Sohu are Chinese web sites that have similar characteristics as yahoo and msn, each competing on all fronts—news, e-mail, games, advertisements, etc. Sina has pages with local interest content for different countries (e.g. Japan, Germany, Korea, US, etc.) and some pages in English. They also provide localized content for some of the largest cities in China. Sohu on the other hand is completely in Chinese and more generic in its presentations. In the type of Internet usage, we found significant differences between our study participants and the latest CNNIC survey findings. In our study, the three most popular Internet based activities were email, with 88.49% of respondents, reading news, with 80.95% of respondents, and search, with 58.33% of respondents. Other activity categories were downloads, chat, games, etc. The CNNIC survey data shows that 45.5% of their respondents engage in ‘online chatting’ and 18.6% in ‘online games and entertainment’, which may be attributable to their much younger (53.5% of

Table 2
Organizational affiliation of study participants

<table>
<thead>
<tr>
<th></th>
<th>MNC</th>
<th>Domestic enterprises</th>
<th>Joint venture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participants in Sample</td>
<td>53</td>
<td>160</td>
<td>39</td>
</tr>
<tr>
<td>% of Participants</td>
<td>21.03%</td>
<td>63.49%</td>
<td>15.48%</td>
</tr>
</tbody>
</table>

MNC, multi-national corporation.

a Includes private enterprises, state owned enterprises (SOE), and university.
them <24 year old) population with lower education level (42% being of high school and lower) and to the diversity of the professions (or lack of any profession) of their respondents. (China Internet Network Information Center, 2002, 2003) Their average log-on time was identified as 8.3 h/week, which is also substantially lower than our findings.

3.2.2. Ecommerce activity

Next set of questions were designed to determine the ability (access to type of medium used for payment) of the respondents to pay (possession of credit cards) for e-commerce and whether they purchased any goods/services, using e-commerce, within the previous 12-month period. The respondents (166 study participants) that indicated that they had purchased goods/services were further asked about the frequency of their transactions during the previous 12- and 6-month periods, the products/services they purchased, highest total value of their single purchase, and their payment method (credit cards and other commonly used methods of payment in China) for these purchases. They were also asked to list their primary reasons for utilizing e-commerce and rate their overall satisfaction with the activity and to provide unstructured comments on what they consider to be impediments to the development of e-commerce in China and Chinese attitudes towards use technology as a means for commerce. The findings provide insights into the concept of commerce and its role in Chinese culture, and factors that may impact greater acceptance and development of e-commerce in China.

As can be seen from Table 3, a large number of our 252 respondents had participated (65.88%) in e-commerce transactions. For our research participants, ability to pay (access to credit cards) was not an impediment to e-commerce (86.51% had credit cards, with 69.84% having two or more credit cards), and we do not consider this finding to be representative for total Chinese population and attribute it to the composition of our sample population. However, what was surprising was the percent of respondents participating in e-commerce, 53.01%, that had made more than six purchases during the previous 12-months and 55.42% had purchased goods/services more than three times during the previous 6-months. These percentages are far greater than the findings of a recent Business Software Alliance survey, reporting around 38% of US Internet users that say they purchase products fairly or very often, using Internet. (Business Software Association, 2002) It was also quite surprising to find that our study respondents, that possessed credit cards, participated in e-commerce activity (86.75% of the credit card

<table>
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<th>Table 3</th>
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<tbody>
<tr>
<td>Sample population (n = 252) vs. e-commerce participants (n = 166)</td>
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<tr>
<td>Male</td>
</tr>
<tr>
<td>Total population (%)</td>
</tr>
<tr>
<td>E-commerce participants (%)</td>
</tr>
</tbody>
</table>

a Differences not statistically significant.
holders purchased goods/services via e-commerce) in rates similar to US Internet users (with 93% of Internet users who have bought online). Furthermore, our study results show that age might positively impact the propensity to use e-commerce (88.55% of the e-commerce participants were 35 years or younger in age as compared to 79.35% of the study population). If we consider the earning power that comes with age, this finding is also somewhat surprising for China, and might signal pervasiveness of technology acceptance, among younger age groups, that one finds in other societies. Generally, in any consumer society, ownership of increased number of credit cards translates into more frequent purchase patterns. Our findings did not support this general rule; having increased number of credit cards did not necessarily translate into increased frequency of purchases. Respondents with four or more credit cards constituted 21.03% of total respondents and 21.69% of e-commerce participants. Other credit card ownership ranges also had similar distributions between the study participants vs. e-commerce participants. We could not find comparable age, availability of credit cards, or frequency of purchases data in the CNNIC Semi-annual survey that conducts studies of broader Chinese Internet user populations. However, the latest CNNIC survey showed that 68.8% of the respondents had never made any online purchases, which is much higher than our findings that showed a 44.58% non-participation rate. (China Internet Network Information Center, 2002, 2003)

Our study also showed that the respondents that accessed Internet in both languages (English and Chinese) participated in e-commerce in higher frequencies (76.84%) than the ones that used only Chinese (59.24%) as the Internet language. It is widely accepted in the mass communication field that such effects are to be expected when multiple channels are available and we do not consider these usage statistics to be culturally based.

When we asked what was bought online, the responses we received were in categories that were similar to purchases made by US online customers and the findings of the latest CNNIC survey. As can be seen from Table 4, the most popular item in our study was books (34.83% of respondents stated purchasing books), followed by video-CD and travel. In US, books and videos are the most common online purchases, followed by music CDs, clothing or accessories, and computer software or hardware. The top five online purchases in the CNNIC survey were books and magazines (37.0%), computer appliances (27.6%) and communication/AV equipment/electrical appliances, each ranging around 19.5%. However, the high preferences for online purchases of books and VCDs (Video CD) were surprising findings in a country where normal as well as pirated books and VCDs are sold in local markets for very low prices. Unfortunately, we did not have an opportunity to focus more on this preference by our respondents to determine possible reasons and explanations for this behavior seemingly contradictory to general and popular beliefs. In one of our questions, trying to identify popular Internet sites, including e-commerce sites,

<table>
<thead>
<tr>
<th>Books</th>
<th>VCD</th>
<th>Travel</th>
<th>Computers</th>
<th>Stocks</th>
<th>Electronic consumer goods</th>
<th>Cosmetics</th>
</tr>
</thead>
<tbody>
<tr>
<td>34.83%</td>
<td>26.39%</td>
<td>15.57%</td>
<td>6.33%</td>
<td>5.80%</td>
<td>5.54%</td>
<td>5.54%</td>
</tr>
</tbody>
</table>
we listed www.Amazon.com as one of the options. To our surprise, www.Amazon.com was selected by only one of the respondents, with others indicating Chinese e-commerce sites as ‘www.dangdang.com’ and ‘www.joyo.com’ (web sites similar to www.Amazon.com), and the German media giant ‘www.Bertelsmann.com’ as their main choices for e-commerce. We thought the high frequency of online book and VCD purchases in our sample was an interesting finding; until further inquiries showed that www.Amazon.com did not sell any Chinese titles, and a majority of the online book purchases were made through Chinese e-commerce sites.

The value of single purchases ranged from less than RMB50 ($6.00) to over RMB1000 ($80.00), with majority of the purchases (83.73%) ranging in value from RMB50 to RMB500 ($6.00–$60). Table 5 shows the highest single transaction amounts and the percent of e-commerce participants associated with a given transaction amount.

The respondents paid for these purchases in four major ways, cash/check (travel related purchases were paid at the time of use, e.g. hotel stay), COD, credit card, and bank transfer. As can be seen in Table 6, in our study group, contrary to purchases made in US, credit card was not the most common payment method. The latest CNNIC survey shows the top three payment methods as cash and carry (33.1%), online payment (30.7%), and post office transfer (30.0%). (China Internet Network Information Center, 2002, 2003)

US e-commerce vendors would require credit card information before accepting any requests for online purchases and have set up infrastructure (secure servers to collect credit card information) to accommodate and enable this payment method. They would be very unlikely to accept COD shipments, cash or money orders. However, lack of such infrastructure and unavailability of personal credit cards in China has created transaction payment systems that use other methods, such as COD, cash, and postal order (money order). Furthermore, because the product return policies in China are not as generous as the ones practiced in the US, the use of COD actually allows customers to refuse goods if found unsuitable upon delivery. Generally, Chinese vendors charge 10% for purchases up to RMB800 ($100) for deliveries and do not charge anything above this amount. This cost did not seem excessive for our respondents, especially for COD payments. These prevalent transaction systems also identify two additional unique Chinese cultural characteristics,

| Table 5 | Highest single transaction value (RMB, n = 166) |
|-----------------------------------------------|
| Value of purchase | < 50  | 51–100 | 101–200 | 201–500 | 501–1000 | > 1000 |
| Percent of respondents (%) | 8.43  | 23.49  | 27.11  | 24.70  | 7.23    | 9.04    |

| Table 6 | Payment method (n = 166) |
|-----------------------------------------------|
| Bank transfer | Cash/check | COD | Credit card |
|-----------------------------------------------|
| 8.43% | 33.13% | 39.16% | 19.28% |
‘guanxi’ and ‘moral obligation to return a favor’. On one hand, even though Chinese vendors bear the cost of returns, they are willing to accept this cost because of the business/transaction culture which values ‘guanxi’, development of long lasting business relationship. On the other hand, Chinese customers feel bad and a ‘moral obligation’ to buy again from the same merchant to make up for the ‘loss of face’ on both sides, caused by the rejected purchase.

We also asked questions to determine the level of satisfaction that the e-commerce users experienced while making online purchases. Our scale used categories ‘very unsatisfactory’, ‘unsatisfactory’, ‘average’, ‘satisfactory’, and ‘very satisfactory’ to solicit responses, without assigning any number value to each category. One of the most important attributes of the Chinese culture is to act humbly and take the middle of the road and understate their ideas, as compared to take a position that is clearly identifiable. Unfortunately, most of our respondents exhibited this cultural trait and selected ‘average’ (‘Yi Ban’ in Chinese) as their response. Never the less, we had some responses that presented clear ‘satisfaction’ or ‘dissatisfaction’ with their online purchase experience.

Our findings, summarized in Table 7, show that frequent users of e-commerce were satisfied or very satisfied with their experience in larger numbers as compared to the least frequent users. The ‘unsatisfied’ and ‘very unsatisfied’ responses were selected in very low frequencies. We attribute this finding to the affinity of the user with technology and more experience with the online transaction process, through increased usage. Except for the least frequent users, the transactional experiences during the most recent 6-months were more satisfying than the previous 6-month period. Even though, the vendors might have made changes in their presence and processes, this improvement most likely was the result of learning that came with repetition.

When one looks at the level of satisfaction as it relates to the amount of purchase (Table 8), respondents with RMB201–RMB500 (USD25.00–USD65.00) value level (46.34% of respondents) had the highest satisfaction level, as well as the highest level of dissatisfaction. Neither finding was statistically significant.

Convenience was identified as the most selected reason for conducting an online transaction, with price, delivery, and speed as being next three reasons with almost equal frequencies (Table 9). Given that our study participants were all working adults, it is somewhat understandable to find ‘convenience’ as the overwhelming choice within the study group, and this finding reflects similar finding in US, where a large

<table>
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<tr>
<th>Table 7</th>
<th>E-commerce transaction frequency and satisfaction (n = 166)</th>
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<tbody>
<tr>
<td>Frequency of purchase (times)</td>
<td>Satisfied/very satisfied</td>
</tr>
<tr>
<td>Purchases during last 6 months</td>
<td>24.32%</td>
</tr>
<tr>
<td>Purchase during last 12 months</td>
<td>24.32%</td>
</tr>
<tr>
<td>Very unsatisfied/unsatisfied</td>
<td>≤ 3</td>
</tr>
<tr>
<td>Purchases during last 6 months</td>
<td>1.20%</td>
</tr>
<tr>
<td>Purchase during last 12 months</td>
<td>1.20%</td>
</tr>
</tbody>
</table>

*p *Last 6 months p < 0.05; **p *Last 12 months p < 0.08.
number of e-commerce participants work. We were not surprised by the fairly similar frequencies of choice among ‘price’, ‘delivery’, and ‘speed’. We can explain this as another specific finding based on the composition of our sample group, working adults, with relatively good earnings, and in valued professions. Give this, it is no surprise that ‘price’ is not the most preferred reason (high income level), and ‘delivery’ and ‘speed’ are as important (different types of convenience preferred by busy professionals). No data was provided by the CNNIC survey related to satisfaction with online transaction process/activity.

We also included a section for unstructured comments on the questionnaire and conducted brief unstructured interviews to identify perceptions on positive and negative aspects of e-commerce in China as it currently exits, future of e-commerce in China, and any other issues that we might have neglected to categorize and include in our questionnaire. These comments, in some cases, provided additional information, and in others, reinforced the previous responses and strengthened the data we collected through other questions.

As we had assumed and previously identified as unique to our study group, the lack of credit cards or the deficiencies in the payment mechanisms was not an issue or a finding of our study. Neither did the lack of brand named products or the quality of the products. In our study group, the primary obstacles, in the order of importance, were ‘Internet security’, ‘lack of feel-and-touch associated with online purchases’, ‘problems in returning products’, and ‘selection’ (product breadth). CNNIC survey identified the top five obstacles to be Internet security, inconvenient payment method, quality of products and trustworthiness of merchant, late delivery, and unattractive price. (China Internet Network Information Center, 2002, 2003). There are some overlaps and some contradictions between our findings and the CNNIC’s findings.

Our study participants also identified some infrastructure and social issues that will restrain and be obstacles to full development of e-commerce in China in the near future.

<table>
<thead>
<tr>
<th>Value of purchase (RMB)</th>
<th>≤ 100</th>
<th>101–200</th>
<th>201–500</th>
<th>&gt; 500</th>
<th>Group average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satisfied/very satisfied</td>
<td>26.42%</td>
<td>40.00%</td>
<td>46.34%</td>
<td>37.04%</td>
<td>36.75%</td>
</tr>
<tr>
<td>Very unsatisfied/unsatisfied</td>
<td>5.66%</td>
<td>2.22%</td>
<td>7.32%</td>
<td>0.00%</td>
<td>4.22%</td>
</tr>
</tbody>
</table>

\[ p < 0.001. \]

Table 9
Main reasons (multiple responses accepted) for using e-commerce and satisfaction

<table>
<thead>
<tr>
<th>Convenience</th>
<th>Price</th>
<th>Delivery</th>
<th>Speed</th>
<th>Selection</th>
<th>Privacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stated as main reason</td>
<td>128</td>
<td>96</td>
<td>75</td>
<td>65</td>
<td>18</td>
</tr>
<tr>
<td>Satisfied/very satisfied</td>
<td>39.06%</td>
<td>40.63%</td>
<td>33.33%</td>
<td>44.62%</td>
<td>33.33%</td>
</tr>
<tr>
<td>Very Unsatisfied/unsatisfied</td>
<td>2.34%</td>
<td>2.08%</td>
<td>4.00%</td>
<td>1.54%</td>
<td>11.11%</td>
</tr>
</tbody>
</table>
Among the most identified and repeatedly mentioned issues were lack of credit cards (wide availability of them for the general public in China) and convenient payment means, poor distribution logistics, lack of specialized, trust-worthy online merchants of reasonable size (too many small players facing many bottlenecks and without necessary resources to set up e-commerce systems), imperfect legal system, and lack of large scale telecommunication transmission capability (broadband). Overall, the respondents were reasonably positive about the availability of hardware/software, government and industry support for IT in China, but were slightly less positive when asked if the Chinese culture ‘supports’ the propagation of IT and e-commerce. The group thought the Chinese consumer society was not quite ready for e-commerce and the conditions were not ‘ripe’ (lack of confidence in technology and off-site transactions, online culture, and overall sophistication of the general public). The group members realized the potential for e-commerce, but stated that it needs time to realize its potential in China. They also insisted that, once a particular stage is reached, e-commerce will progress at great speed and will drastically change people’s lives.

4. Sociological and cultural impediments to e-commerce

The results of the study and the associated research point out to two major areas that continue to impede and constrain the development of e-commerce in China: the economic and technological developments in China, and the unique characteristics of Chinese culture. As was discussed in Section 1, there are significant impetus and some concrete examples that support our observation that economic and basic technological infrastructure related issues can and will be overcome relatively quickly, especially with the governmental efforts that have already been put in place. However, cultural acceptance of online transactions (e-commerce) will take much longer and will require major transformations in Chinese society. Similar transformations have taken place in other societies over substantially extended time periods, by first becoming a true consumer society (a transition that took over four decades in US) and then eventually accepting e-commerce (a transition that has been taking place in US for the past decade). Even after years of being a consumer society and developing technological sophistication among general populace (very high levels of penetration of computers at work, school and home, and over 55 percent of population accessing Internet from home), only around 38 percent of US Internet users say they purchase products from the Net fairly or very often, and 55 percent who buy occasionally (Nua Internet Surveys, 2002).

4.1. Off-site/online transaction systems

Even after so many years of catalog sales and extensive acceptance of Internet and e-commerce, and availability of infrastructure that is functional and reliable, there are still concerns of security and ‘touch and feel’ issues among US online consumers. Our research shows that these are also the major areas of concern among our study participants. The idea of buying goods (unless they are of homogenous quality such as books, VCDs, hotel rooms and airplane tickets) that one cannot see and touch, and from sellers thousands of
kilometers away may take some ‘getting used to’ for an ancient culture such as the Chinese, who are used to face-to-face transactions, familiarity with the other party (strong individual relationship and long term association between the parties), and getting satisfaction from winning business negotiations (they are willing to employ a variety of tactics to get the best deal). As one person stated “I like buying over the Internet, but it does not beat going to an actual shop where you can see what you are buying and make sure it’s what you want.” All of these long standing cultural traits are undermined by and are contrary to the depersonalization associated with e-commerce and business systems designed to sell products online. Latest CNNIC (official data collector for the Chinese government) figures show that 2.1% of China’s 45 million web users have bought online. (China Internet Network Information Center, 2002, 2003) However, according to the CFO of www.Eachnet.com (Hennock, 2002), about 40% of the sellers using this online auction site pick a buyer in their hometown so that they can swap the goods for cash face-to-face, while using the website as an electronic advertisement and bidding, keep actual transactions localized. (Eachnet is very much like eBay, a B2C through which people transact. However, it is different than eBay in the way that, when a transaction is completed, people physically meet to exchange goods and money. It only operates in large cities like Shanghai and Beijing and does not have as broad coverage as eBay.) Currently, this combination (virtual storefront and physical distribution center) business model may be the only way for businesses to participate in e-commerce in China. This business setup not only overcomes the ‘touch-and-feel’ concerns, but also helps develop a physical relationship between the two parties (buyer and the seller) involved in the transaction, addressing the two most cultural characteristics of the Chinese consumers.

4.2. Trust

Even though the percentage of Americans using Internet more frequently has risen over the many years that the reliable and secure technology has been available, consumers are still highly concerned with privacy issues. According to October 2002 Consumer Internet Barometer (produced by NFO WorldGroup, Forrester Research, and the Conference Board), despite the fact that the percentage of online shoppers who trust that their personal information will be safe rose from 27 percent to 31 percent over the past year, only 21 percent of Internet users believe that online purchasing data transactions are secure, a decrease over the past year. (Nua Internet Surveys, 2002)

Our research findings also show that these same concerns are major issues for Chinese consumers conducting online transactions, and are even amplified as a result of Chinese cultural characteristics. Our respondents complained about existence of trust-worthy online merchants, and Internet security and credit card security. Two incidents provide excellent examples as cases in point. A 24-year-old woman from Beijing said ‘Online buying is fun and interesting’, but she added there were a number of problems. She continued saying “I recently tried to buy a book online because the price was cheap. But I first had to register and then they asked me details about myself, so I just gave up”. She also said she would be reluctant to use a credit card to buy online. “I personally like to pay in cash when my goods arrive and only pay if they arrive and I can check the quality before handing over any money”. Another one stated ‘I like buying over the Internet, but it does
not beat going to an actual shop where you can see what you are buying and make sure it’s what you want”. These statements are a reflection of the Chinese culture and the prevailing attitudes among Chinese consumers. The experience of one of the authors is also noteworthy and also demonstrates the point. One of the authors, when he tried to buy an airline ticket, was subjected to three price changes, within a two-hour period, by a travel agent as she mysteriously and continuously ‘discovered’ more restrictions and conditions. These incidents may very well be caused by the existing inadequate infrastructure and business transactions systems; however, they continue to reinforce the mistrust Chinese have developed against unseen institutions and transaction partners, over the many centuries. As one Chinese gentleman, who has traveled extensively and conducted business outside of China put ‘History and reality told us not to trust the system or the people’s honor! E-commerce is a radical behavior that goes contrary to experience and culture. There is no ‘western honor system’ in China.’ This statement is an excellent representation of the level of trust in and cultural attitude towards commerce in China.

4.3. ‘Debt is not good’

With estimated RMB410billion (USD50billion) in savings stashed away, China still exhibits the characteristics of a cash society. This societal characteristic provides some evidence that Chinese adhere to a way of thinking that says debt is not good and as such, even if good credit card facilities existed, they may be wary of using credit (credit card) to buy goods on the Internet. Our findings also support this cultural characteristic. Even though 86.51% of our study group (218 respondents) had credit cards, only 19.28% of the e-commerce participants (32 out of 166 respondents) paid for their purchases using a credit card. Both authors, during their extensive travels in China, rarely encountered credit cards being used for any daily purchases, including some very expensive entertainment events hosted by high level managers and individuals that have significant economic means, and, without any doubt, have multiple credit cards. We speculate that there are three primary foundations for the cultural belief ‘debt is not good’. They are: (a) Piracy/Fraud and prevailing legal structure, (b) Role of Chinese financial institutions in Chinese society, and (c) Society’s general attitude toward Chinese government.

(a) Piracy/Fraud and prevailing legal structure: Chinese culture does not condemn piracy and copying, and legal infrastructure is not sophisticated or organized enough to deal with some illegal activities, especially fraud. Understanding and experiencing these societal characteristics have made Chinese cynical consumers and reinforced exchange mechanisms where customer can see and check the product and the seller can get paid in cash, without any ambiguities or collection problems that may accompany credit based payment systems.

(b) Role of Chinese financial institutions in Chinese society: The current Chinese banking system is primarily designed to accommodate businesses, especially State Owned Enterprises (SOE), and banks are primarily owned and used as tools by the Chinese government to further its economic and social aims. As such, these institutions have not developed, encouraged or supported consumer lending
practices and reinforced the concept of ‘buy when you have cash to pay’, further contributing and enhancing the negative connotations associated with debt.

(c) Society’s general attitude toward Chinese government: Finally, Chinese have a general mistrust of government and its organizations, and stay away from them as much as possible (most of the personal savings are kept on premises and not in banks), further creating and reinforcing cash based economic system.

5. Conclusions

As we stated earlier, our research objective was to answer two questions

• If technological and transaction systems were available, would the Chinese customers use e-commerce?
• Are there any differences in customer behaviors, between Chinese and other users, as they relate to e-commerce?

The answers to these questions in simple terms are

• Yes some Chinese will use e-commerce if technological and transaction systems were available. However, there are significant questions as to how much Chinese culture and the foundations of its society will impede its wide range application and its timely and broad based acceptance.
• Yes there are some differences in e-commerce customer usage behaviors. However, these differences are not significant when one compares the most sophisticated users and ‘early adopters’ to mainstream consumer groups in western societies and economically more advanced countries.

For the past few years, number of Internet users in China has been increasing in a dramatic rate, especially access from home. According to Nielsen/NetRatings, in April 2002, China moved to second place with 57 million people having web access at home. The top five countries with the highest number of home web users were identified as US (166million), China (57million), Japan (51 million), Germany (32 million) and UK (29 million). This means that just over 5% of China’s more than one billion people were able to use Internet from home. Nielsen/NetRatings further projects 5–6% growth rate/month and expects 25% of the population to have Internet access in just three or four years, translating to more than 250 million people. (Juliussen, 2002; Rose and Rosin, 2002) On November 27, 2002, The Xinhua News Agency reported that the number of Internet users in China reached 54.35million at the end of September. (Xinhua, 2002) Shenzhen Economics Daily reported that the portion of Internet users who made online purchases rose to 31.67% while the overall dissatisfaction of online experience decreasing from 52.8 to 21.04%. (Shenzhen Economics Daily, 2002) Shenzhen is similar to our study population in some ways as it is one of the most prosperous cities in China (has the highest per capita income) and has the youngest average age population. Never the less, if
the cultural impediments can be overcome on a broader scale, all these developments, numbers and projections bode very well for future development of e-commerce in China. However, if the banking reforms are instituted and free exchange of RMB can be achieved, B2B systems might develop at a much faster rate than B2C systems. B2B is not constrained by the same cultural impediments as B2C, electronic payment is more acceptable (it is company funds and not personal) and other credit based (letters of credit, etc.) payment methods are widely used and accepted in the business transactions. These are very encouraging developments in a country that is still evolving economically and technologically, one that has significant cultural impediments to online (B2C) and credit based transaction systems. As more and more infrastructure is put in place, changes in the legal and financial sectors (in banking institutions and foreign exchange mechanisms) are instituted and reformed, and B2B becomes widely accepted and used; we might witness changes in the current cultural norms and associated behaviors, and a more pervasive diffusion of e-commerce in China.

References


