

# Usage of Inter-Organizational Internet Communication in China

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## Abstract

This research examined the usage pattern of inter-organizational Internet communication in China. China is chosen as the context because China is emerging as the second largest economy in the world, with huge trading and business volumes, and it is still in the developing stage of Internet usage in business setting. On the other hand, inter-organizational communication is important in affecting the efficiency and effectiveness of supply chain management, and manufacturers in China had been frequently sourced by numerous global brands and retailers. Understanding how the manufacturing bases of most supply chains use a structured questionnaire survey of 362 business managers working in firms in China was conducted. From the result, email and IP phone/ IP conference are found to be the most frequently used Internet communication tools in the inter-organizational communication. It is no surprising to found email in the top of the usage list. IP phone and conference is used frequently because it provided a low cost alternative to facilitate the business communication and compensate the lower richness of the electronic media by showing the facial expression and body languages. Strategic plan, financial and production information are rarely transmitted through Internet to business contacts as they are confidential. Last but not least, it was found that gender and age is not a good differentiator in explaining the usage patterns. Contrary to the literatures suggested, a unisex pattern which usually happens when the usage of the Internet is mature in a society had already emerged in China. Implications for practitioners and future research were drawn.

## Keywords

Internet, China, communication, age difference, gender difference

## Background

Internet is new, loaded with content, and seemingly a great business prospect. Internet communications, defined as those communications take place on the global networks that use the TCP/IP protocol for data exchange (December, 1996: 14), speed up written communication media and complement spoken communication. It includes emails, websites, instant messenger tools (e.g. ICQ and MSN), IP phone, Extranet, EDI and other electronic communication tools.

While there has been many researches on the adoption and usage of Internet at individual level (Citrin et al 2000: 294), there has been only a few studies of Internet communication between organizations (Riquelme 2002: 3). It is important because the communication between buyers and sellers can improve inventory management and control as well as reducing costs for all participants (Wilson and Vlosky, 1998: 215). Kettinger and Grover

(1997: 3) had investigated the inter-organizational email but did not explore and compare the frequency of use of email to other communication options available. When newer Internet developments such as usage of instant messenger tools offer alternate forms of communication in inter-organizational context, it is significant to study the usage of various forms of Internet communications.

### **Gender and age**

Individual differences are germane to the acceptance of new information technologies. Previous research suggests that demographic variables affect the usage of Internet-related services. Festervand, Meinert and Vitell (1994: 13) found that mature adults appear receptive to select forms of computer-based facilities. Morris and Venkatesh (2000: 375) found that older and younger workers behave differently in technology adoption even after controlling for income, occupation and education levels.

Beside age, gender is also important in the decision (Morris, Venkatesh and Ackerman, 2005: 69). Younger male users tend to use more Internet communication (Sin & Tse 2002: 7). In China, female managers are found to feel a greater need to prove themselves and feel less familiar with their responsibilities (Leung, 2002: 602), as there are still gender inequality in management careers (Cooke, 2005: 149). It is proposed that younger, male Chinese managers are more likely to use Internet communication more frequently.

There is a lack of study of the usages of Internet communications by business managers, and the gender and age factors determining their usages. The findings of this research will be useful for marketing people of related products to locate their target customers. This research will also help managers communicate with their business contacts via the Internet more effectively.

### **Internet in China**

China is chosen as the context because China is emerging as the second largest economy in the world, with huge trading and business volumes, and it is still in the developing stage of Internet usage in business setting. The opening of China to international business for more than 20 years has boosted its economy to consistently grow fast. The total size of Chinese economy will be as large as that of US very soon. China's international trade volume totalled more than US\$1.1 trillion in 2004. The high growth in trade volume has led to high demands for efficient communication tools for firms in China. Inter-organizational communication is important in affecting the efficiency and effectiveness of supply chain management, and manufacturers in China had been frequently sourced by numerous global brands and retailers. On the other hand, Internet provides Chinese managers competitive edges because it can provide low-cost and efficient channels for detailed and clear transmitting of data and messages.

The first Internet connection in China started in educational sectors in 1994. After these years of high growth, now almost all cities in China provide Internet access services. According to CNNIC (China Internet Network Information Centre), the number of users in June of 2004 is 94 million, with the penetration rate reached 7.3% of the whole population. The figure has been more than quadrupled in five years time. Among them 43 millions are broadband subscribers.

Inter-organizational communication takes place within a social context consisting of economic, political, and behavioural factors which differ greatly between societies. Chau et al (2002: 138) found that consumers in different countries use the Internet for different purposes. It is suggested that the incongruent cultural practice is one of the key difficulty for Asian firms to adopt B2B e-commerce (Hsiao, 2001:181). Although Chinese firms are found in general enthusiastic for e-commerce, they may not yet ready to re-engineer and implement it (Lai, Humphreys and Sculli, 2001:281) It is a good time to study the Chinese managers' usage of Internet communication when it is 25 years since its opening to international business, 10 years since the Internet first appeared in China, and 4 years after the burst of Internet bubble in USA. It will show how much and in what ways managers have embraced it for business communication. Recommendations will be made, and a good understanding of these will definitely help the practitioners to improve their market penetration and communication with managers in China.

## **Methodology**

A structured questionnaire survey of Chinese business managers working in firms in Mainland China was conducted. The questionnaire measured respondents' current usage state of inter-organizational communication, as well as their individual demographics. Usage of different forms of Internet communication tools were measured in a five-point scale (1=none to 5=very frequent) while demographics were measured in dual-choice (e.g. gender) or multiple-choice category questions.

Samples were taken randomly from a list of Chinese managers living in one of the following three major cities in China: Beijing, Shanghai and Guangzhou (including Pearl River Delta region), maintained by a business research firm. Their job titles contain the wording "manager" or similar level, and they are working in business or administration department which are involved in the business transactions of the company. 356 managers completed and returned the questionnaire.

## **Results**

Majority of the respondents were male (72%) aged under 34 (60%), This sample is similar to that used by Spector et al (2004: 119) in their analysis of the Chinese managers' stress, and is reflecting the general pattern of working population of firms in China.

### **Usage of Internet communication tools**

Frequency of each of the six most common Internet communication tools was examined. It was found that in general they use various forms of Internet communication in inter-organizational context in a great extent and not limited to Email, despite it is still the form most frequently used. Summary of the finding is in Table 1.

Table 1. Usage of Internet Communication tools (in mean scores, 1=None and 5=Very Frequent)

TOOLS	Age		Gender	
	34 or less (N=235)	35 or above (N=121)	Male (N=256)	Female (N=100)
<b>Email</b>	4.06	4.04	4.04	4.09
Business contact's web site	3.54	3.45	3.55	3.41
Firm's web site	3.51	3.34	3.40	3.58
Instant messenger tools	3.44	3.20	3.35	3.37
<b>IP phone/ IP conference</b>	3.97	3.84	3.80	4.23
Intra-firm network	3.68	3.73	3.62	3.87

It is found that *IP phone/ IP conference* is the second most frequently used Internet communication tool, and significantly used more than the other tools. It is highly used because it is perceived cheaper than the traditional international calls, despite it does not offer the same quality of telephone service as direct telephone connections. It is no surprising to found email in the top of the usage list. IP phone and conference is used frequently because it provided a low cost alternative to facilitate the business communication and compensate the lower richness of the electronic media by showing the facial expression and body languages.

*Instant Messenger Tools* are not common in business context, in spite of the fact that it is very popular in personal communication in China. There were 62.72 million Instant Messenger users in China in 2004 (iResearch, 2005) that is almost two third of the total Internet users. However, many companies do not allow using this tool in their network for security reason. *Web Sites* and *Firm Networks* which are essential tools for a mature B2B e-commerce are those least used. The result shows that the readiness in China in this aspect is not satisfactory.

On contrary to the literatures suggested, the usage among age and gender groups are not significant. It is somewhat attributed to the fact that usage of Internet communication is not a discrete decision for the managers, but they are subject to the norms, guidelines and rules of the company, practice of the industry, and the requirements from their business contacts.

### **Contents of inter-organizational Internet communication**

Chinese managers most often convey *Sales and Marketing Information, Product Design and Specifications, Inventory* or even *Contract terms* through Internet to their business contacts. However, sensitive and confidential information like *Strategic Plan* and *Financial Information* are least likely conveyed in Internet communication. Details as shown in Table 2.

Table 2. Contents of Internet communication (in mean scores, 1=None and 5 =Very Frequent)

CONTENTS	Age		Gender	
	34 or less (N=235)	35 or above (N=121)	Male (N=256)	Female (N=100)
<b>Strategic Plan</b>	2.00	2.00	2.01	1.98
Sales/ Marketing	3.01	2.80	2.91	3.03
<b>Financial</b>	2.28	2.06	2.27	2.07
<b>Production</b>	2.63	2.61	2.66	2.54
Product Design/ Specifications	3.04	3.01	3.05	2.99
Inventory	<b>3.09*</b>	<b>2.77*</b>	3.00	2.97
<b>Contract</b>	<b>3.03*</b>	<b>2.68*</b>	2.83	3.11

Note: \* = significant difference at 0.05 level, as per paired samples and independent samples t-tests.

Interestingly, *Production Information* is perceived more sensitive than *Sales/ Marketing Information* and *Product Design/ Specifications*. As China being named “World’s Factory”, most Chinese firms are in manufacturing sector that mainly involved in production rather than marketing activities. They are mainly OEM (Original Equipment Manufacturer) that obtained the product design and specifications from their buyers. For the receiving side, they do not have the same high level of sensitivity to the confidentiality of this information as their business contacts.

Again, except that younger Chinese managers slightly more frequently talk about *inventory information* and *contract terms* in Internet communication with their business contacts, no other significant difference was found between male and female managers in contents of their Internet communication.

Last but not least, it was found that gender and age is not a good differentiator in explaining the usage patterns. Contrary to the literatures suggested, a unisex pattern which usually happens when the usage of the Internet is mature in a society had already emerged in China.

## Discussion

This study has identified that email and IP phone/ IP conference are the most important Internet communication tools used between organizations in China. In general all tools listed are used to some extent. Now the Internet communication is not only limited to email, but also new forms and tools that are to be used to help boost the work efficiencies.

Strategic plan and financial information are perceived as too sensitive to be conveyed in Internet. Actually there are technologies like the Virtual Private Network (VPN), e-certificates and other security devices that can ensure the information will not be exposed. To change the attitude that Internet is only for casual talk and unimportant information, more education is needed from vendors of security technologies.

The present study also examined the effects of individual users’ genders and ages on the usage of Internet communication in inter-organizational context. In so doing, the present work

help managers understand that the impact of age and gender on the usage in the workplace in China is not as strong as suggested by previous literatures. Specifically, in China gender and age are not important in explaining the decision of using which Internet communication tool, and conveying what kind of message content through Internet. Unisex pattern observed may be because the socializations of women and men in China are more similar than those in Western countries. In Mainland China, contrasting to traditional Chinese culture, women are rarely stereotyped and they become more career-focused.

It is found that in general managers in China are neutral on the communication effectiveness of using the Internet tools. They appreciate more about the Internet raise the efficiency of their operations. It signifies the early stage of information technology implementation. However, in longer term Chinese firms may start to learn how to improve the quality of products and their work by using the Internet.

This paper's finding is important to the practitioners in the IT industry and provided implications for them in formulating their marketing strategies. The opportunities opened from the SME market in China are attractive given its numbers of firms. Despite they may not have a big budget for IT, in the long run when the firms become larger the spending may rocket. In Chinese society long term relationship should be built before the other party prosper, and can only be built when they are not powerful.

For academics this paper extended the investigation of Internet communication effectiveness with the findings from a different cultural context. It is believed that China is different and worthwhile to be further investigated. On the other hand, researchers may find this study useful as it extended the understanding of relative importance of different groups of factors.

## **Conclusion**

This paper tested the understanding build on previous literatures and found that they are not all supported in China. There are several ways in which this research could be extended to help improve the generalizability of the study to other sample populations. Firstly, the insignificant gender and age differences implied that there are factors other than these to be explored and identified to explain the usage behaviours. They include users' computer and Internet experience, location of workplaces, longevity in work, and more importantly their attitudes towards Internet communication can also be explored. Adding to these, the institutional factors such as firm sizes in terms of sales and employee number, industries, location of business contacts and frequency of transactions may also have effect on the subject. The study can also be repeated in other countries of in different stage of economic development to contrast if it is an important factor. The possible moderating and mediating effects should be identified in order to have a full picture of the mechanism that determines the communication effectiveness of using the Internet. Besides these, other organizational factors like the subjective norms, how mandatory the adoption decisions are, and the other personal factors like the individual cultural inclinations and values are advisable to be included in the future research.

Last but not least, another suggestion for future research to improve is having a longitudinal study on the perception changes in a prolonged period of time. When factors changed in the

time period, a more valid relationship between dependent and independent variables in the model will be established.

Several limitations are evident in the study. First, the samples were located in three major cities in China that firms in other smaller cities and regions of China are excluded. China is a large country that the difference of sub-culture, commercial practices and operating environments among regions are significant. Secondly, the research findings might only reflect unique characteristics of Chinese managers that may not be able to generalize to other nations. Future research on cross-cultural issues is advised to test the proposed model.

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