Structural Influences on Global E-Commerce Activity

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INTRODUCTION

IS research interest in the global aspects of IT use is growing, partly owing to the efforts of publications like JGIM. A popular type of study examines the effect of national culture on IT development, operations, management and use (Gallupe and Tan, 1999), where national culture is frequently understood in terms of Hofstede’s (1983, 1991) concepts and operationalizations (Davison, 1996).

This essay reminds the IS community not to neglect the structural conditions related to business-to-business and business-to-consumer e-commerce activity. Structural conditions are physical, social and economic arrangements that shape e-commerce business models and influence individual and organizational use of the Internet. Examples include geography (which affects the physical distribution of goods purchased online), space (which influences the choice of access technology for e-commerce) and financial infrastructure (which is related to credit card use). Structural conditions differ from country to country—and even from location to location within country, but they are not necessarily related to dimensions of natural culture. Therefore, valid explanations of global differences in e-commerce activity require a careful assessment of relevant structural factors.

BUSINESS-TO-CONSUMER ELECTRONIC COMMERCE

In this section, we address the adoption of B2C e-commerce by individuals and the development of B2C e-commerce business models by firms.

Structural Factors in Individual B2C e-Commerce Adoption

One structural factor likely to affect IT adoption and e-readiness is the urban-rural distribution of a country’s population. People in rural districts generally have lower levels of access to the IT infrastructure necessary to sustain ordering over the Web; long distances may make “delivery to order” difficult, if not impossible. In North America urban dwellers comprise 77% of the population; in Asia as a whole the figure is 37% (United Nations Population Division, 1998). But within Asia, there are huge differences. The percent urban is 100% in Singapore, 95% in Hong Kong, 81% in South Korea, 78% in Japan, 54% in Malaysia, 30% in China, 27% in India, and 20% in Thailand (http://www.xist.org/global/urban.htm).

It is not surprising therefore that the latest Economist Intelligence Unit’s survey ranks largely urban countries or territories like Singapore and Hong Kong high on e-readiness while...
relatively developed countries with a greater proportion of rural population like Taiwan, Japan, and South Korea rank lower (Yang, 2001). Similarly, A. Chen (2001) points out that “while packages in the US can be shipped cross-country in a matter of days…, in China the roads—or lack thereof—mean that, even if B2B e-commerce were to take off, there is no efficient way to deliver products.” (The same holds true for B2C.)

By contrast, the big cities of Asia—Hong Kong, Singapore, Taipei, Tokyo, Seoul—differ from most western urban areas in another dimension that inhibits the proliferation of B2C e-commerce—the vertical dimension. Most people in Asian cities are housed in high-rise building complexes that are miniature cities. (The Mongkok district of Hong Kong is said to be the most densely populated place on earth.) At the base of residential and office buildings, people have access to public transportation and a myriad of conveniences—restaurants and stores selling food, sundries, entertainment items (reading matter, music, videos), clothing, housewares, furniture, jewelry, and more. People hardly need to travel at all to obtain either the necessities or the luxuries of life. And when they do, the businesses they buy from will usually deliver—a practice made practical by the geographic compactness of many Asian cities.

The homes in which Asian people live are, on average, extremely small by US standards. In Hong Kong the typical government-provided flat is a mere 300 square feet—and that flat may accommodate a family of three generations. Even when family income is sufficient to buy a PC, there is often no place at home to put one. Anyway, for obvious reasons, people don’t spend much time in their homes. In Singapore, for example, many families take most of their meals in the public eating houses on the ground floors of their housing estates. As a result of such living arrangements, home PC penetration in parts of Asia is low (Dedrick and Kraemer, 2000), and Internet use is often more likely to occur in public places than in the home. About half of the people with Internet access in China, for example, log on from Internet cafes (a big business in Beijing!) or other public places—a factor believed likely to dampen prospects for online purchasing (Smith, 2001).

Even in Singapore, where 44% of the population has access to the Internet, only 16% of Internet users have conducted purchase transactions online (Kuo et al., 2001). In the US, where almost two-thirds have access to the Internet, over 50% have transacted online (Cole et al., 2000). The ease of access to most shopping facilities in compact Asian cities reduces the impact of the convenience afforded by Internet shopping. The lack of prior experience with traditional catalog shopping also makes online catalog shopping an unfamiliar proposition. Martinsons (forthcoming) describes the case of Medcox Lane, a Shanghai-based online retailer: the company was founded in 1996 as one of the first mail order businesses in China.

Other structural dimensions contribute to low levels of online purchasing in Asia. By comparison to the US, credit cards are used much less in Asia (Dedrick and Kraemer, 2000). In Hong Kong, for example, the generally poor consumer protection regime extends to credit cards: Many Hong Kong consumers are liable for the entire amount charged to a stolen credit card before it is reported; there is no $50 limit as in the US. (This is also the case in China.) In Hong Kong stores that accept credit cards, the buyer is often asked if she will pay by cash even when the amount far exceeds what most American consumers would carry on their person. Daily cash withdrawal limits on Hong Kong ATMs are HK$20,000 (roughly US$2,500)—far higher than they are in the US. Ironic, for many small purchases, Asians are much more likely to use electronic payments than people in the US. Smart card use for public transportation is widespread in both Hong Kong and Singapore. In Singapore, “Cashcards” are used in all vehicles as part of the country’s electronic road pricing scheme where readers mounted on road gantries automatically make deductions from the Cashcard based on the time of day and traffic flow. The ubiquity of Cashcards for both private and public transportation has led to businesses finding other uses for the card, such as for payment in public parking facilities. Hong Kong is also seeking alternative uses for its Octopus transportation payments card, e.g., for food and sundries in transportation-adjacent shopping facilities.

While consumption taxes are increasingly being levied in Asia (Australia and Singapore are two recent examples), electronic purchasing does not confer the same tax advantages that it does in the US. Both Australia and Singapore, for example, collect GST on Internet purchases from abroad over a certain amount, and, within Australia, all electronic purchases are subject to GST (Jordan, 2000). The costs of shipping to Asia from the US and within Asia are also much higher than within the US. Typically, shipping costs for consumer purchases from the US to Singapore add another 20% to 25% to the purchase cost. In Hong Kong, Internet purchases also have no tax advantages, but for a different reason: there is no sales tax on purchases in retail outlets.

Another important structural dimension is the distribution of education levels across age groups. The developed countries in the West have a more even distribution of education across age groups, while in Asia people 40 and older often did not have the opportunity to pursue tertiary education. In Singapore, for example, the proportion of those above 40 years old with a tertiary education is about 5%, compared to 25% for the developed countries in the West. Hence, when we compare Internet use across age groups between Singapore and the US, we find that, for the 18-24 age group, usage rates are quite similar, around 85% for both countries. However, when we compare the 45-55 age group, usage rates are 14% for Singapore and about 70% for the U.S. (Kuo et al., 2001; Cole et al., 2001).

In contrast to the adoption of PCs and the Internet, the penetration of mobile technology is much higher in Asia than