

Letter from Rob Kling, Editor-in-Chief and Guest Editors Kenneth L. Kraemer and Jason Dedrick

This special issue of *The Information Society* on Globalization and E-Commerce edited by Professor Kenneth L. Kraemer, Director of the Center for Research on Information Technology and Organizations (CRITO) at the University of California, Irvine, and CRITO Research Fellows, Jennifer Gibbs and Jason Dedrick contains case studies of globalization and e-commerce in Brazil, Denmark, France, Korea, Mexico, Singapore and Taiwan, as well as a comparative study of those and other countries (China, Germany, Japan, United States). The issue ends with two book reviews.

One of the most significant economic trends of the past decade is the growing use of the Internet for conducting business—now commonly referred to as Internet-based e-commerce. According to enthusiasts, the constraints of time and distance are no longer barriers to businesses and consumers. As people around the world access the Internet, physical borders and time zones become increasingly irrelevant. Anyone with access to the Internet may, for instance, buy groceries, clothes, cars, and real estate, bid at on-line auctions, or manage banking affairs—on any day of the week, at any time of the day or night. Globalization of electronic commerce is supposedly bringing people, products, information, and capital together faster than traditional methods of the past. However, the studies in this special issue indicate that e-commerce is occurring much more slowly and with less profound impacts than predicted by the enthusiasts.

The articles in this special issue look at the relative influence of global forces, national environment and national policy factors in shaping the evolution of e-commerce in each country. It concludes that while there are common influences, the paths taken by individual countries are in large part a response to unique national environment and policy conditions.

The first article, **Environment and Policy Factors Shaping Global E-commerce Diffusion: A Cross-Country Comparison**, is based on systematic comparison of case studies from 10 countries: Brazil, China, Denmark, France, Germany, Mexico, Japan, Singapore, Taiwan, and the United States (six of these countries are also highlighted in individual articles in this issue). Jennifer Gibbs, Kenneth L. Kraemer and Jason Dedrick examine the key global, environmental and policy factors that act as deter-

minants of e-commerce diffusion. The authors find that there are different drivers and enablers, and barriers and inhibitors for business-to-business (B2B) and business-to-consumer (B2C) e-commerce. Drivers and enablers motivating B2B e-commerce include international competitive pressure, the need for cost reduction, trade and market liberalization, and government procurement and promotion. Barriers and inhibitors for B2B stem primarily from lack of IT resources and skills, especially among small firms, as well as engrained business and national cultures that are resistant to change and innovation.

Business-to-consumer e-commerce is growing, but more slowly than B2B. The studies show that consumers—particularly younger ones—desire the convenience and greater product or service selection available through e-commerce, while businesses are driven by the desire to expand or protect markets. Other key enablers are Internet diffusion and government promotion of IT literacy. On the other hand, consumer distrust of online purchases due to security and privacy concerns, lack of valuable local content, inequality in socioeconomic levels, competition from established retail networks, consumer shopping habits, and cultural or language differences act as barriers or inhibitors to consumers doing business on-line.

Further, the article finds that enabling policies such as increasing trade and telecommunications liberalization have the biggest impact on the adoption of e-commerce, by making Internet access more affordable to businesses and consumers and increasing competitive pressure on firms to adopt e-commerce. Specific e-commerce legislation does not appear to have big impact. Protection for both buyers and sellers, however, needs to be developed to ensure greater confidence in doing business on-line.

Global and National Factors Affecting E-Commerce Diffusion in Singapore, by Wong Poh-Kam, at the National University of Singapore, suggests that Singapore is likely to be a fast follower, adopting e-commerce applications that have proven successful in other advanced countries. Manufacturing clusters (for example, electronics) in Singapore with strong global supply chain links to advanced countries are likely to be the most aggressive in adopting such applications for B2B e-commerce. Singapore will probably be less likely to pioneer radically new e-commerce technologies or applications for

export because of its small local market and the inadequate IT entrepreneurial community. An exception might be e-government services. Singapore is also unlikely to be a leader in large-scale B2C e-commerce applications, although its strategic position as a major business hub for global MNCs in Southeast Asia has driven high IT investment and e-commerce adoption.

Paulo Bastos Tigre, Professor of Industrial Economics at the Universidade Federal de Rio de Janeiro, gives us **Brazil in the Age of Electronic Commerce**. His analysis indicates that e-commerce diffusion in Brazil has been relatively fast compared to other developing countries. Brazilian liberalization of investment and trade has promoted e-commerce development in several ways: it has advanced on-line shopping by liberalizing import taxes, opened up the use of international credit cards to support 90% of payments for on-line purchases, rescinded restrictions on foreign direct investments and profits, and strengthened international supply chain links. IT and e-commerce use is being driven by information- and transaction-intensive sectors such as finance, manufacturing, and retail/wholesale trade. Government promotion and policy also play an important role in stimulating e-commerce activity in the private sector through Internet use for procurement, tax collection, and providing Internet access to social institutions. E-commerce legislation is just now being developed, and decisions on taxation are being negotiated in the context of international agreements.

Brazil presents market potential, yet also steep barriers to reaching effective B2C e-commerce. Brazil's highly uneven income distribution is a major barrier for B2C diffusion. To provide greater access, national policies that support infrastructure expansion and use of public, shared facilities must be maintained. Language barriers must also be overcome, and multinational Internet service providers must be willing to invest in local content and distribution services to attract more Brazilian consumers.

The Development of E-commerce in Mexico: A Business-led Passing Boom or a Step Toward the Emergence of a Digital Economy? Juan J. Palacios, at the University of Guadalajara, Mexico, notes that e-commerce has grown swiftly in Mexico, making inroads into some of the most dynamic sectors of the Mexican economy. As in Brazil, private businesses are driving e-commerce through B2B transactions, while B2C remains limited by unequal income distribution and lack of IT access. E-commerce diffusion is hindered by both the low income levels of most Mexican households and the fact that the overwhelming majority of business establishments are very small, lacking the resources to invest in computers and the business culture to go on-line.

Palacios argues that the main drivers of the process have been the initiatives of large private firms and industry associations, working as a complement to the Mexican gov-

ernment. The government has also played a large role by initiating enabling programs, such as e-Mexico within the government, and providing technical and financial support to small and medium size firms. Large firms, such as IBM and Microsoft, along with specialized industry organizations have pressed important issues like passing legislation to regulate and provide security for on-line transactions, as well as promoting expansion of the electronic infrastructure and e-commerce.

E-Commerce in France: Did Early Adoption Prevent its Development? by Professor Eric Brousseau, at the University of Paris X, France, emphasizes that France's early adoption of Minitel and Electronic Data Interchange (EDI) in the 1980s was both a stimulus to and an inhibitor of Internet-based e-commerce. As a result of its history of electronic transactions, both B2B (through EDI) and B2C (through Minitel), France has established a strong ICT infrastructure, high digital literacy, and developed online banking and electronic payment methods. However, the existence of such viable electronic alternatives to the Internet, as well as initial resistance to the Internet, made France a late adopter. The government that came to power in 1997 promoted the "information society" as key to the modernization of France. Privatization replaced government subsidized enterprises, and deregulation of telecommunications to boost competition helped lower tariffs making favorable conditions for the upswing in Internet connections.

B2B e-commerce is driven by increased global competitive pressure due to the internationalization of French firms, as well as the recent government policy initiatives. B2C e-commerce is driven by France's high education, high income, and large market size. However, France faces barriers to B2C e-commerce development, namely, its dense and efficient retail networks, as well as resistance to buying online and using credit cards. The French distribution system is highly centralized and demand for long distance commerce is lower than in the United States. However, France has been a major adopter of electronic communications and the potential for e-commerce remains open.

E-commerce to Protect the Network Relationships: The Case of Taiwan's PC Industry is authored by Tain-Jy Chen, Department of Economics, at National Taiwan University. Chen finds that although Taiwan is one of the world's leading producers of information products, it lags behind advanced countries in the application of information technologies. Taiwan is characterized by high exposure to the international market and a dense distribution network. B2B e-commerce is driven by international competitive pressure on Taiwanese manufacturers who must adopt the technology in order to maintain their position in global production networks. In light of a massive relocation of production activities to China, the Taiwanese

government is now trying to prevent the hollowing out of domestic industry by encouraging local firms to embrace new information technologies to strengthen their ties to multinational firms. A major obstacle, however, is the dominance of SMEs, which lack the resources to invest in computer equipment to conduct on-line transactions. The government has advocated a network approach by encouraging SMEs in the PC industry to adopt B2B technologies in association with larger companies. B2C e-commerce depends on establishment of a legal environment for secure and convenient Internet payment mechanisms as well as Internet-based product innovations.

The Growth of Broadband and Electronic Commerce in South Korea: Contributing Factors, is written by Heejin Lee and Robert M. O'Keefe, at Brunel University in the United Kingdom; and Kyounglim Yun, at the Asia Pacific Research Center, Stanford University, California. South Korea has witnessed remarkable growth in broadband Internet connections since 1998 as a result of government policies to stimulate competition, a growing privatized and liberalized telecommunications market and government promotion of IT use. The authors suggest that the matching of demand and supply is the most important factor in the fast diffusion of broadband in Korea. Infrastructure competition has led to very high quality Internet services at low fixed prices. Social and cultural drivers have created Internet demand: Koreans are reportedly competitive about their children's education, feel social pressure to keep up with their neighbors and use the Internet for social communication. In addition, penetration of financial services, particularly banking and stock trading, and the popularity of online gaming have helped drive broadband adoption to the highest levels of any country in the world.

Governance Initiatives Creating a Demand-Driven E-commerce Approach: The Case of Denmark, by Kim Viborg Andersen and Niels Bjørn-Andersen, at the Copenhagen Business School in Denmark; and Jason Dedrick, University of California, Irvine, studies the Danish e-commerce strategy—a highly ambitious effort to become the world's leading IT nation. Instead of a production-led approach aimed at stimulating domestic hardware and software production, like in Taiwan, Denmark has pursued a demand-oriented approach focused on promoting the widespread adoption of e-commerce in the Danish society. The Danish government has developed a number of e-commerce initiatives via public-private sector partnerships—an approach they refer to as “governance.” The authors note that data point

to Denmark as a front-runner in the development of its information infrastructure and use of the Internet, when compared with the rest of Europe. Denmark has been successful in promoting B2B e-commerce, which is being driven by IT use (mainly EDI) in strong integrated industry clusters as well as government implementation of public e-procurement. On the other hand, Denmark has had less success in achieving widespread use of B2C e-commerce, despite high IT literacy, wealth, ICT use, and digital trust among consumers.

Taken together, this collection of articles shows that the diffusion of e-commerce is varied and complex across countries. It is significantly influenced by features of each country's national environment and national policy, although it appears to be less influenced by specific e-commerce policy. As with earlier ICTs, e-commerce is occurring in a more evolutionary than revolutionary manner, as it is closely intertwined with broader business, socioeconomic and political change. Consequently, the near term impacts of e-commerce are likely to be more incremental than transformational.

This issue ends with Eileen Trauth's review of the book *Cases on Global IT Applications and Management: Successes and Pitfalls* edited by Felix Tan and William Aspray's review of *Technologies of Power: Essays in Honor of Thomas Parke Hughes and Agatha Chipley Hughes* edited by Michael Thad Allen and Gabrielle Hecht.

TIS 19(3) will be another special issue about “Information and Communications Technologies (ICTs) and Community Networking” that was Guest Edited by Professor Murali Venkatesh.

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