

The Future of E-Commerce in China

DIETER ERNST
HE JIACHENG

Asia Pacific

I S S U E S

Analysis from the East-West Center

No. 46

October 2000

The U.S. Congress established the East-West Center in 1960 to foster mutual understanding and cooperation among the governments and peoples of the Asia Pacific region, including the United States. Funding for the Center comes from the U.S. government with additional support provided by private agencies, individuals, corporations, and Asian and Pacific governments.

The Asia Pacific Issues series contributes to the Center's role as a neutral forum for discussion of issues of regional concern. The views expressed are those of the author and not necessarily those of the Center.

S U M M A R Y China has the resources, the means, and the motivation to be a central player in the global e-commerce industry but is lagging far behind other countries in terms of market size and scope. Particularly significant is the dearth of business-to-business transactions, which have been growing by leaps and bounds elsewhere. The key reasons for China's e-commerce problems include an insufficient grasp by entrepreneurs of the complexity and dynamics of e-business, obstacles to web access and e-banking, inadequate supply and delivery systems, and security concerns. It is therefore imperative that the Chinese government provide high-level policy coordination and support for e-commerce development, and e-commerce must be a central element in future development strategies. Clear government policies and regulations are needed to address a host of emerging e-commerce issues, especially those surrounding commercial contracts, taxation, and new modes of foreign investment. Finally, government must institute training programs at national and local levels to provide computer-related education.

The number of Internet users in China is expected to exceed 17 million by the end of 2000

The global e-commerce industry has high expectations for China as a future market. This is not mere wishful thinking. Within China there is intense pressure for improvement in productivity and for industrial upgrading, which has in turn generated a growing demand for solutions from information and communication technologies. Furthermore, China has what is likely the world's largest untapped pool of information and communication technology skills, surpassing India and the United States. The experience of the United States and the Nordic countries has shown that a strong base of domestic skill and knowledge bodes well for rapid market growth and may provide a springboard for the development of reliable, innovative suppliers. One of the more impressive forecasts is that the number of Internet users in China is expected to exceed 17 million by the end of 2000. Finally, both the central and regional Chinese governments are strongly committed to providing the incentives and public goods needed to support e-commerce development.

Internet Users in China

Numbers of Users

1995	>50,000
1996	...
1997	...
1998	1.2 million
1999	4 million
2000	17 million

Source: Nua Internet Surveys and China Internet Information Centre

However, despite these encouraging features, e-commerce in China has so far made little progress with regard to either market size or scope. Most e-commerce activities remain focused on business-to-customer (B2C) transactions, but there is very little business-to-business (B2B) activity. This contrasts sharply with the global market, where the number of B2B transactions has surpassed B2C transactions and is growing by leaps and bounds.

The narrow size and scope of the Chinese market is apparent from a new e-commerce market survey, the first of its kind, conducted by the Ministry of Information Industry and focused on B2C online shopping and sales. The survey found that sales in 2000 for the first quarter alone surpassed total 1999 sales. However, this rapid growth is occurring at a very low absolute level: the survey predicts total e-commerce sales this year will reach only RMB 350 million (US\$42.27 million), which is a meager figure given the potentially huge market China offers.

The survey also documents other fundamental weaknesses. In most Chinese e-commerce companies, small sales must sustain over-extended product portfolios, and this lack of specialization helps explain why these companies are engaged in profitless growth. Equally important, the survey found that most of China's e-commerce vendors cannot provide the benefits that customers in other countries have learned to expect, such as reduced prices that are usually lower than those found in conventional stores; superior service, including 24-hour, seven-day-per-week hours as well as reliable delivery systems; and a better selection of merchandise, often accompanied by a no-risk return policy.

Possible Explanations

What explains these weaknesses in China's e-commerce industry? Why are sales still small, and why is growth locked into B2C transactions? To answer these questions, four interrelated issues need to be explored. First, who are the founders and the investors in this industry, and what factors in their profile have an effect on profitability? How does this affect the design and implementation of business plans? Second, what peculiar features of industry organization and firm behavior contribute to the lagging B2B market? Third, what bottlenecks are constraining the growth of China's B2B e-commerce linkages, and what are their root causes in terms of markets and institutions? Finally, what changes must be made in these markets and institutions in order to break the current impasse and allow for long-term expansion of e-commerce in China?

E-commerce enterprises fare best when they are not state owned and when they possess strong international linkages

Growth and Sales

The first commercial transaction online in China was conducted as recently as March 1998. Since then, e-commerce sites have proliferated. At present there are some 48,000 registered domain names in China, and the majority of them are commercial sites. On average, two e-commerce sites per day are being registered. However, a new survey conducted by the Chinese government's Ministry of Information Industry indicates that only a very small number of e-commerce companies in China show a satisfactory record of sales and growth; out of the wide array of products and services offered online, most do not attract consumers.

- *8848.com* offers over 200,000 items, including books, electronic appliances, CDs, office equipment, clothing, fresh flowers, hotel bookings, and air and train tickets. 85% of sales, however, come from computers and software.
- Although *leyou.com* offers more than 10,000 products online, actual sales come from 1,000 items in three categories: toys, children's books, and infant products.
- *scvan.online.sh* sells medicines, vitamin supplements, health foods, gold and silver jewelry, and airline tickets. In cooperation with China Eastern Airline, it has offered online ticketing for the past year. Only 60 tickets have been sold, all within the first few months of its operation, and 50 of which were sold to employees.

A more focused product line and targeted market would benefit most e-commerce companies, which tend simply to transfer the inventory of their conventional stores online. Unless e-commerce companies can develop sales strategies that give them a competitive advantage over conventional shopping, they will not be able to increase sales.

Investors and Opportunities

Most Chinese firms do not fully grasp the complexity and dynamics of e-commerce or what they must do to compete within it. This is hardly surprising given the industry's short history in China. Furthermore, company founders who have an information technology background typically have little under-

standing of the actual nuts and bolts of manufacturing or the demanding requirements of supply-chain management. Established companies now trying to expand into e-commerce often encounter the opposite problem: they do not understand the changes that e-commerce necessitates in firm organization and management.

Overall, in the development of e-commerce, information technology-based enterprises fare best when they are not state owned and when they possess strong international linkages. Company founders who have studied or worked overseas (especially in the United States) have already engaged with the global knowledge circuit shared by the industry's transnational technical community, and they have acquired first-hand knowledge of technology and market trends. This facilitates their access to venture capital. Of particular importance is access to venture capital that carries with it invaluable insider knowledge of global industry trends and competitive dynamics. Venture capital is also more likely to induce local management to design realistic business plans and to develop effective and transparent ways of implementing them.

In stark contrast is domestic capital, which has made only a slight contribution to e-commerce development. Very few Chinese enterprises invested in e-commerce companies until the beginning of this year, when, in line with the global Internet bubble, there was a short-lived run on dot.com companies. However, these investments were based more upon blind enthusiasm than on any real understanding of these markets, indicating the high volatility of domestic capital and its limited capacity for providing informed guidance and control.

The most important aspect of international linkages is that they facilitate and accelerate access to information, knowledge, and learning—areas in which speed is of the essence, given China's narrow domestic knowledge base. Chinese firms must gain rapid access to information and knowledge in order to maintain growth in an environment of high uncertainty and in order to adjust to disruptive changes in technologies and markets. Thus, industry background and ownership patterns are important and

China's under-developed B2B market is its greatest weakness

international linkages are essential within this rapidly evolving, highly volatile industry.

Industry Organization

The greatest weakness in the Chinese market is the embryonic state of B2B development. This is due primarily to peculiar features of national institutions and the industry organization and firm behavior that results. First of all, China's state-controlled or "command" economy has led to a system of hierarchical firm organizations and centralized management structures that are incompatible with the requirements of web design and management. To make such hierarchies work, state-owned enterprises have had to develop informal social networks through which problems can be sorted out by means of personal, face-to-face contacts. The pervasiveness of these informal networks is a hindrance to the development of formalized Internet-based B2B networks.

A related problem is that China is working with poorly developed information technology systems and management. At the most basic level, there are far too few computers to work with: among state-owned enterprises, 65 percent have fewer than 30 computers per 100 employees, and a full 40 percent

have only 10 computers per 100 employees. This dearth of equipment is found in tandem with outdated application patterns. In most state-owned enterprises, office automation continues to predominate, and few companies are using information technology for enterprise resource management, client-based data analysis, or supply-chain management.

China must give high priority to developing a strong B2B market for two reasons. First, domestically, only a solid B2B market can act as a catalyst for breaking the current impasse in B2C development. Second, China's future economic development will increasingly depend upon international linkages for both investment and knowledge, and the country can therefore ill afford to remain outside of the emerging global B2B networks. Indeed, China should be playing an active role in shaping the architecture of these networks, but this will be possible only if sufficient knowledge and management skills have been developed and applied to Web sites and B2B networks at home.

Constraints on the Current System

Four constraints within the current Chinese system must be addressed before the nation can properly

Delivering the Goods

The development of new e-commerce companies and their supply and delivery requirements have resulted in some uniquely Chinese adaptations to meet these needs. Like most e-commerce companies elsewhere, companies in China usually sign contracts with a number of delivery firms. But while national couriers such as China Post or EMS are regularly used, e-commerce companies also rely on their own door-to-door delivery teams or on the services of smaller, specialized, local delivery systems.

- *leyou.com*, which realizes the bulk of its online sales in toys, children's books, and infant products, has received orders from over 100 cities throughout China. It relies exclusively on small, specialized delivery companies. Only one delivery error has occurred since *leyou.com* opened in January 2000.

- The distribution system of *85818.com* in Shanghai consists of 100 delivery stations equipped with 200 minivans, 1,000 three-wheeled bikes, and over 1,000 employees.

- *Eguo.com* set up eight delivery stations around Beijing and guarantees one-hour delivery within central Beijing. It delivers large or more distant orders by truck and smaller local orders by bicycle.

This combination of high-tech online shopping with traditional delivery methods is a creative approach to the development of e-commerce in China, but it is a short-term solution at best. The rapid growth of e-commerce in the United States owes much to the well-designed information infrastructure in place, which enables businesses to provide efficient order confirmation and precise tracking and billing details. Distribution systems in China remain a bottleneck to further development.

A main constraint to e-commerce development is the low speed and high cost of online access

develop e-commerce. The first is the low speed and the high cost of online access. Recently service charges have been considerably reduced, leading to substantial improvements in the telecom infrastructure, but such charges still remain far too high to allow for a rapid expansion of e-commerce. Service charges for renting frequency bands of sufficient width for Web sites are so high that most e-commerce providers can only afford to rent narrower bands, leading to long waiting times for downloading. Further, access charges are very high. In the United States, Internet users spend roughly 1–2 percent of their monthly incomes for unlimited access to the Web and for their monthly telephone charges. Compare this to the average Internet user in China, who has to spend 20 percent of monthly income to get online for only one hour each day.

This creates a vicious circle. The narrow frequency bands provided by e-commerce companies mean that customers can do very little during one hour. A pricing policy that charges a high per minute rate, in turn, limits the time that Internet users can stay online and hampers their ability to learn about particular Web sites and their services. The result is that companies have little motivation to expand the share of their business that they conduct online.

A second constraint is that people have little incentive for making payments online. Some Chinese banks have started to introduce services for online payments, but so far there has been very little demand for them, and the share of online payments for e-commerce remains below 50 percent. Most companies continue to employ off-line payment methods such as cash-on-delivery, account transfers through banks, or remissions through banks or post offices. The main reasons for this weak demand are that banking services are expensive and inefficient, and that banks impose burdensome restrictions upon electronic payments. Such restrictions include low limits on the size of online payments and specifications that online services can only be used in designated cities.

Third, e-commerce faces further problems in the realm of China's supply and delivery systems. In the United States, efficient private delivery companies

such as FedEx and UPS offer not only B2B linkages, but also door-to-door services from businesses to their customers. China currently relies on hybrids of online shopping and traditional labor-intensive delivery systems, even employing bicycles in some areas. But these will be inadequate if the e-commerce system continues to expand. Moreover, advanced logistical systems like those in the United States require sophisticated, Internet-based information systems to operate—China must advance on both fronts simultaneously.

Finally, a fourth set of problems facing China's e-commerce industry is concerned with online security and opportunistic business practices. Over one-third of respondents to the Ministry of Information Industry survey reported that security was their biggest concern in conducting business online. On the one hand, companies worry about protecting their electronic business systems from hackers. On the other, there are problems of commercial credibility: e-commerce presents new opportunities for unethical business practices, and these are only exacerbated in China by the abundance of counterfeit and low-quality products already on the market. In other instances it is the legal status of an electronic signature or electronic contract that is at issue. China must devise both technological and legal tools to deal with these kinds of problems.

Policy Recommendations

The Web economy will be the engine of economic growth in the twenty-first century and is now regarded as the key to future productivity improvements and competitiveness. Given the rapid transformations of production and information systems in industrialized countries, no developing country can afford to remain on the sidelines. Further, because the Internet is such a powerful enabling technology, China must be prepared to address significant social and economic disruptions that it will bring about. These may include declines in once-thriving industries and regions, unemployment, and an erosion of skill and knowledge bases. Within the major industrialized countries of the Organization for Economic Cooperation and Development (OECD), there

Comparison of Internet Users as a Percentage of Total Population

	Total Population	Internet Users	Internet Users as % of Total Population
Mainland China	1.3 billion	16.9 million	1.3
Hong Kong	7 million	1.9 million	27
Taiwan	22 million	6.4 million	29
Chinese in the U.S.	3 million	2.1 million	70

Source: Nua Internet Surveys (July 2000)

This table shows that China's 16.9 million Internet users, while an impressive figure, is actually only 1.3 percent of the total population. When the percentage grows to equal Taiwan's 29 percent of total population, the number of mainland Chinese online will rise to 377 million.

is a growing consensus that future success depends largely on how these issues are addressed.

To facilitate an Internet-enabled industrial upgrading in China, important changes are needed both in policies and support institutions. It is crucial that the Chinese government offer more high-level policy coordination and support for e-commerce development, and that it treat this as a central element in overall development strategies. This will require an explicit commitment by the political leadership. A key step in this direction should be the designation of an authoritative central government organization responsible for overall e-commerce development. Currently, this task is divided among various ministries and departments, making effective policy coordination impossible. A more centralized system will facilitate policy implementation, government-business dialogue, and the development of intermediate support institutions.

Policies need to move beyond an exclusive concern with incentives, whether through tariffs, taxes, or subsidies. The big issue is not investment but rather policies and legislation. By its nature e-commerce can be in tension or conflict with existing policies concerning such things as intellectual property rights, taxation, foreign investment policy, and the flotation of Chinese companies on overseas stock markets. Current policies, if left unchanged, could slow

down or derail China's participation in the emerging Web economy. Adjustments in legal frameworks, regulations, and policies will be necessary.

Competition policy is of critical importance. Firms will invest in productivity-enhancing technology such as B2B e-commerce only if competition and regulatory reform force them to do so. Competition may also help to lower costs, which, in the case of access charges for telecommunications and Internet services, will have a significant impact on the diffusion of knowledge. The key to success is to catalyze, not replace, the private sector; it is important to monitor firms and to hold them accountable for their use of incentives and subsidies. Once the initial foundation has been laid, equal treatment should be provided to domestic and foreign firms, subject, however, to one important exception: risk-taking and innovative smaller domestic companies should be actively promoted.

Globalization, paradoxically enough, has increased the necessity for such policies. But there is also now more opportunity for national policy and politics to be flexible and to make a difference. Recently, there has been a growing consensus that liberalization of trade and investment flows should not be regarded as equivalent to a retreat of the state. Liberalization needs to be complemented with proactive and sophisticated industrial, innovation, and investment policies. Without such policies, liberalization may

The big issue is not investment but rather policies and legislation

Without proactive government policies, market liberalization may produce negative results

well produce negative results: instead of improving allocation efficiency and growth, liberalization may increase a country's vulnerability to highly volatile international finance and currency markets, and it may divert attempts to strengthen local capabilities and innovation. As the example of small Nordic countries and the Netherlands demonstrates, the scope for proactive technological and industrial policies in a liberal ownership regime is far greater than commonly assumed. Developments in Taiwan, Singapore, and more recently Korea also illustrate that many policy alternatives are possible, involving a variety of interesting hybrids and combinations. There are many more choices than normally assumed.

Finally, a crucial step will be increasing investment in training programs to teach officials in government organizations and executives in large companies what e-commerce is all about. Similar programs should also be established at the provincial level to train lower-level cadres and state-owned enterprise executives. Of the many issues and debates surrounding e-commerce development, the most fundamental challenge will be to develop a broad base of Chinese knowledge, skills, and capabilities through aggressive human resource development policies. Only this will allow China to become a full participant in the global e-commerce industry.

Resources

Cheskin Research. "Greater E-China Insights: Online Behaviors and Attitudes in Greater China." Redwood Shores, 2000.

Ernst, Dieter. "Placing the Networks on the Web: Challenges and Opportunities for Managing in Developing Asia." East-West Center Working Papers, Economics Series, No. 5. Honolulu, 2000.

Organization for Economic Cooperation and Development (OECD). "A New Economy? The Changing Role of Innovation and Information Technology in Growth." Paris, 2000.

U.S. Department of Commerce. "Digital Economy 2000." National Technical Information Service (NTIS): Washington, D.C., 2000.

<http://www.ultrachina.com>

<http://www.scmp.com> (*South China Morning Post*)

<http://www.ecommercetimes.com>

This paper was published to coincide with the Asia Pacific Conference on E-Commerce, held at the East-West Center, October 30–November 1, 2000, and co-sponsored by the East-West Seminars program of the East-West Center and Pennsylvania State University's Institute for Information Policy. Conference sessions focused on e-commerce and regional development, implementing e-commerce, and implications and prospects for the Asia Pacific region. The conference brought together representatives from e-commerce, telecommunications, and information technology industries in Asia, the Pacific, and North America for three days of intensive discussions on the challenges of the new economy. Information about East-West Seminars is available at the Center's website.

About this Publication

The *AsiaPacific Issues* series reports on topics of regional concern.

The contents of this paper may be reproduced for personal use. Single copies may be downloaded from the Center's website. Copies are also available for \$2.50 plus shipping. For information or to order copies, please contact the Publications Office, East-West Center, 1601 East-West Road, Burns Hall Rm. 1079, Honolulu, Hawaii 96848-1601.

Telephone: (808) 944-7145

Facsimile: (808) 944-7376

Email: ewcbooks@EastWestCenter.org

Website: www.EastWestCenter.org

ISSN: 1522-0966

Series Editor: Elisa W. Johnston

Issues Editor: Sharon F. Yamamoto

Recent AsiaPacific Issues

No. 45 "Multilateralism and Regional Security: Can the ASEAN Regional Forum Really Make a Difference?" by G. V. C. Naidu. August 2000.

No. 44 "Natural Gas: The Fuel of the Future in Asia" by Fereidun Fesharaki, Kang Wu, and Sara Banaszak. June 2000.

No. 43 "Domestic Politics Fuels Northeast Asian Maritime Disputes" by Mark J. Valencia. April 2000.

No. 42 "Potential Partners: India and the United States" by Mohammed Ayoob. December 1999.

No. 41 "Japan at the Crossroads" by Gerald L. Curtis. September 1999.

No. 40 "The Struggle for Free Trade" by Michael J. Delaney. June 1999.

No. 39 "Strapped for Cash, Asians Plunder their Forests and Endanger their Future" by Deanna G. Donovan. April 1999.

About the Author

Dieter Ernst is a senior fellow and theme leader in economic studies at the East-West Center. His previous affiliations include the OECD, Paris, as senior advisor; the Berkeley Roundtable on the International Economy; the University of California at Berkeley as senior fellow; and the Copenhagen Business School as professor of international management. He is coeditor of *International Production Networks in Asia: Rivalry or Riches?* (2000). He can be reached at: East-West Center

Telephone: (808) 944-7321

Email: ErnstD@EastWestCenter.org

He Jiacheng is vice president of the State Internal Trade Administration in China. He has also served as director general of the Laws and Regulation Sector of the Ministry of Internal Trade and as the vice mayor of Wuxi, Jiangsu Province in China. A graduate in economics from Nanjing University, he received his M.A. and Ph.D. in economics from the Chinese Academy of Social Sciences.

Contemporary Issues in Asia and the Pacific
An East-West Center series published by Stanford University Press, series editor, Muthiah Alagappa

This series addresses contemporary issues of policy and scholarly concern in Asia and the Pacific. It is focused on political, social, economic, cultural, demographic, environmental, and technological change and the problems related to such change.

Preference is given to comparative or regional studies that are conceptual in orientation and emphasize underlying processes and to works on a single country that address issues in a comparative or regional context.

The Center invites prospective authors to send proposals describing potential manuscripts to Sharon F. Yamamoto, senior editor, East-West Center. Address: 1601 East-West Road, Honolulu, Hawaii 96848-1601. Email: YamamotoS@EastWestCenter.org

Recent books in the series

Population Change and Economic Development in East Asia: Challenges Met, Opportunities Seized, edited by Andrew Mason. 450 pp., forthcoming 2001. \$29.95, paper.

Capital, Coercion, and Crime: Bossism in the Philippines, by John T. Sidel. 316 pp., 1999. \$18.95, paper.

"A superb piece of scholarship . . . Probing beneath the superficialities of election rituals, Sidel discovers the dynamics of a political-economic process of systemic coercion and corruption that may trouble the democratic transition in many newer nations and regimes for decades to come. These conclusions should command wide attention from the many scholars and policy specialists concerned with the recent wave of democratization across the globe."

—Alfred W. McCoy,
University of Wisconsin–Madison

Stanford University Press books are distributed by Cambridge University Press. To place an order, use any of the following methods.

online: www.sup.org
 telephone: (800) 872-7423
 (914) 937-4712
 fax: Cambridge University Press
 Distribution Center
 110 Midland Avenue
 Port Chester, NY 10573-4930