China's Information Revolution: Managing the Economic and Social Transformation

STATISTICS

Infrastructure/Access
- There were more than 740 million fixed and mobile telephones by the end of 2005, or around 50 per 100 inhabitants, according to the National Bureau of Statistics (NBS 2005).
- Close to 50 million computers were connected to the Internet, serving 111 million users—including more than 64 million broadband users (CNNIC 2006).
- Internet has also developed rapidly, with nearly 50 million computer hosts and 694,000 websites in 2005 (CNNIC 2006).
- There exists a stark urban-rural divide. In 2003, the fixed phone line penetration rate was 3 times higher in urban than rural areas; Internet penetration was nearly 40 times higher. In the same year, about 28 percent of urban Chinese households owned a PC, contrasted with slightly more than 1 percent of rural households.

IT Industry
- The Chinese ICT sector has grown rapidly. The domestic ICT market was valued at $156 billion in 2004, up 13.2 percent over the previous year.
- China's hardware market was valued at $23.6 billion in 2004. Sales revenues for the domestic IT industry reached $6.7 billion. PC hardware production jumped from $6 billion in 1995 to $84 billion in 2004.
- By the end of 2005 there were 8,000 software companies registered in China (McKinsey Quarterly 2005). Most of these companies are private, foreign, and located in Beijing, Guangdong, Zhejiang, and Shanghai.
- China's software industry reached $25.3 billion in 2004, nearly 30 percent more than in 2003 (Software Industry Association). Software products accounted for 51 percent of revenue, system integration for 33 percent, and software and IT services for 16 percent.
- Software exports, including software outsourcing, are estimated to have totaled $3.2 billion in 2004, accounting for just 1–2 percent of IT industry exports. This reflects China's comparative strength in IT manufacturing and weakness in software.
- Between 2001 and 2005, China's digital media market jumped from $0.5 billion to more than $12 billion. Short Message Service (SMS) and Multimedia Messaging Service (MMS)—attracted more than 240 million mobile telephone users in 2005, up 49 percent from 2004.

ICT Human Resources
- In 2004, computer coverage at primary and secondary schools was 36 percent, and only 16 percent of teachers had taken ICT training.
- There are large regional gaps. In 2001, the ratio of students to computers was 17:1 in Shanghai and 186:1 in Yunnan.
- By 2010 the Chinese government aims to provide 90 percent of elementary and secondary schools with Internet access and for them to offer at least one ICT course for all students.
- According to one definition, about 4 million workers were employed in China's information industry in 2003. This was 11 percent more than in 2002—much faster growth than in national employment (0.9 percent) and urban employment (3.5 percent). Among these workers, 3.5 million were in the manufacturing industry (7 percent more than in 2002) and 0.6 million in the software industry (18 percent more) (MII 2004). These 4 million workers accounted for less than 1 percent of China's labor force—an extremely small share, especially relative to developed countries.

e-Government

- China started to push the Government Online project in 2000, encouraging government departments at all levels to establish Web sites. As of June 2005, China had 19,800 domain names and 11,750 Web sites under gov.cn (CNNIC 2005).

- A 2003 survey found that 98 percent of responding government organizations had deployed some type of e-government project.

- Government departments have generally adopted internal informatization appropriate to their functional objectives. The most widely used applications involve financial management systems (83 percent), network security systems (76 percent), Web site development (75 percent), and office automation (69 percent).

- More than 90 percent of municipal governments have established Web sites, and many large cities have developed applications that enable online interactions and business transactions.

- Only 11 percent of Internet users were satisfied with the e-government information available (CNNIC 2005).

- China ranked 57 of 179 countries on the United Nations e-government index in 2005, up 10 positions from 2004 (UN2005). This ranking suggests that while China continues to improve in terms of the number of government Web sites, it lags behind many countries on the number of e-transactions and the level of intra-government connectivity.

e-Business

- Chinese firms' investments in informatization have grown steadily in recent years. A 2004 survey by the Ministry of Commerce looked at 838 firms with annual sales above $400 million and found that 43 percent increased such investments by about 20 percent between 2002 and 2003. Furthermore, 38 percent of the firms maintained their ICT investment levels, and only 7 percent reduced them (Ministry of Commerce 2004).

- Among industries, wholesale and retail firms invested the most in ICT hardware, with an annual average of $430,000 per firm, followed by mining firms at just over $400,000. Wholesale and retail firms also spent the most on Web site construction and maintenance, averaging $260,000. For software, the social services industry invested the most, followed by wholesale and retail and transport and logistics.

- Some 80 percent of Chinese medium-size and large enterprises now conduct online transactions in some form.

- In 2005, B2B revenues in China totaled $80 billion (the rest B2C), or 95 percent of the e-commerce market.

- In 2004, China was home to more than 4,000 e-commerce Web sites, mostly supporting B2B activities. This number is increasing more than 10 percent a year. These sites help businesses link to suppliers and clients, providing opportunities to improve product supply chains and reach potential clients. The 2004 Ministry of Commerce survey of 838 firms found that 58 percent of those that had participated in e-commerce increased their number of supplier contacts, while 70 percent increased their number of client contacts.

- Although B2C e-commerce in China has experienced considerable growth in revenue, the number of online shoppers is still relatively small. Only 7 percent of the country's 111 million Internet users made purchases online—much less than used other online services such as e-mail (91 percent), news retrieval (79 percent), Web searches (65 percent), or online music (46 percent) (CNNIC 2005).

- Among consumers who did shop online, more than half had made just one to three purchases and spent less than $60 in the past six months. After-sale services, e-security, and the uncertain reliability of producers and online information were cited as major drawbacks to online shopping.