

# Economic Impact of Internet in China<sup>\*</sup>

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**Abstract:** This paper examines the current status of Internet development in China; analyzes its contributions to Chinese economy from the perspective of economic structural changes, IT industry development, E-commerce, productivity growth, foreign investment, and labor market, etc.; suggests its direction in terms of government policy orientations; and proposes strategies toward greater success of Internet in China. To promote economic growth, it is important for Chinese government to establish sturdy e-environments to enable its industries to compete in the global economy and to bring about a greater cohesion within its societies.

**Key words:** Internet; E-commerce; productivity; labor market

## 1. Introduction

China's performance in economic growth has been remarkable. The driven force, Internet, has placed China on an inexorable path towards greatness, both economically and geo-politically in recent years. Although whether the Internet will be the engine of economic development in China is still questioned by skeptics, its positive contribution is evident, including the reform to the education system, increases in the standards of living for the nation's urbanites and farmers alike, attraction of more foreign investment, and greater openness.

China is now the fastest growing Internet market in Asia. With less than 6 million Internet users at the end of 1999, the number had soared to 111 million by December 31, 2005<sup>[7]</sup>. In view of the fact that this is less than 9% of the Chinese population, the potential for growth is undeniable. The government remains well aware of the enormous social and economic value of Internet and its importance in creating a prosperous nation. While the Internet is boosting business revenues, generating millions of new jobs, and enabling extraordinary gains in productivity, many still fear its economic impact. The new technologies will also generate some new and serious problems such as criminality and security. This paper looks at the booming Internet market in China and the range of economic effects it is presenting to those involved.

## 2. Economic Reconstructing and Emergence of New Economy

Rapid economic growth usually accompanied structural change. Since the beginning of the economic reforms, the Chinese economy has undergone a major economic and structural transformation. This takes the form of a change in the scale of the various sectors and industries and in the emergence of new industries, and this may be attributed to different causes: structural change can be due to technical change, to input substitution, to a change in

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consumers' tastes, to the growth of a market economy, or to a combination of all these elements.

Structural change in China between 1987 and 1995 denoted a substantial shift from agriculture and manufacturing activities to tertiary production. The high-tech sectors only played a minor role in Chinese structural change between 1987 and 1995 (Andreosso & Yue, 1998).<sup>[4]</sup> Towards the end of the 1990s, China's manufacturing sector was undergoing restructuring, with old, labor intensive industries steadily giving way to new and more sophisticated activities. The same has happened to its service sector, as higher value-added service activities emerged, particularly in its modern metropolises like Beijing and Shanghai.<sup>[8]</sup> By 2010, China will have established a comparatively sound socialist market economy, which will be comparatively mature by 2020.<sup>[3]</sup>

In recent years, the "digital economy", with information technology (IT) leading the way, has become preeminent driver of economic growth and social change world wide. In the United States, the digital economy has been acknowledged as the new economic system, or the "new economy". In China, as elsewhere, its nascent New Economy has been driven by rapid globalization and the rise of IT.

Indeed, China has kept its pace with the global process of the IT revolution. Because most countries worldwide are promoting IT industry as a top priority, the Chinese government also has invested heavily in its IT infrastructure. From 1996 to 2004, the investment has grown at about 24.72% annually on average; the gross industrial output value has increased about 24.2% every year.

China's information technology (IT) market, which has hoisted both employment and gross domestic product, is expected to grow another 14% in 2006 from last year, according to market research released yesterday. US technology research house International Data Corporation (IDC) projected IT spending in China will hit US\$34.8 billion this year, compared to US\$30.5 billion in 2005. Information technology is playing an increasingly important role in China's economic miracle. Since 1989, IT has accounted for just 2% of GDP growth in China. By 2005, the importance of IT had increased by almost 500%, accounting for almost 10% of GDP growth. The report said by the end of 2006, the IT sector will have added 1 million new jobs to the Chinese economy since 2003. By the end of 2006, those new jobs and IT spending will have pumped almost US\$3.2 billion into the economy since 2003. More than half of those new jobs created by the IT sector will be software-related. Though the software industry only accounted for 10% of China's IT spending in 2005, software-related jobs account for 21% of IT employment. Because software needs to be serviced and distributed, it drives more employment than its share of IT spending would indicate, said the report. IDC projected that China would have the sixth-largest five-year compound annual growth rate (CAGR) in IT investment from 2005 to 2009 among the 55 countries tracked by IDC. In addition, China is the only one of these countries that is expected to increase the rate of IT spending in the next five years.<sup>[15]</sup> Among provinces, Guangdong, Shanghai, Beijing, Tianjin and Fujian led the country in IT industry growth.<sup>[10]</sup>

### **3. The Internet and E-commerce as Driving Forces**

The Chinese Internet industry is growing at an unprecedented rate. Since its debut in 1994, Internet users grew exponentially from a mere 6 million in 1997 to 111 million in 2006. The total bandwidth of leased international connections has reached 136 106 M in 2006. Meanwhile, the numbers of computer hosts, registered domains, and web sites have also been increasing at similarly high rate. In January 2006, there were over 49.5 million computer hosts, 2 592 410 registered domains and 694 200 websites in China.

These websites cover a wide range of fields. There are leading portals like sina.com and sohu.com; websites

specializing in E-commerce such as ccec.com; and websites specifically designed for news, tourism, employment, medical care, electronics, fashion, transportation and community services. These websites become popular for developers, game players, job seekers, advertisers, shoppers, and many others to do business. Stepping on a new stage of Internet revolution, the Chinese people find their life more colorful and their outlook broader.

By the end of 2002, China had boasted over 3 804 E-commerce websites, increased by 12% from 2001. Compared with 108.9 billion Yuan in 2001, E-commerce transactions registered a total volume of 180.9 billion Yuan in 2002, wherein B2B transaction reached 178.4 billion Yuan and B2C was 1.315 billion Yuan, increased by 60% and 90% respectively. The volume of B2B transaction was expected to grow to 346.4 billion Yuan in 2003, while that of B2C is anticipated for 9.2 billion Yuan in 2003. Over 10% transactions of the 160 billion dollar national foreign exchange reserve of the import and export are done through EDI (electronic data interchange) in 2001.<sup>[5]</sup>

Considering the increasing number of potential Internet users in China, the possibility of current E-commerce platforms, and the uniqueness of the E-commerce solution in China, it seems that E-commerce has a bright future. The potential for E-business to bring new markets to Chinese companies, improve market information and transparency of pricing, and to improve distribution of goods and services is widely acknowledged. Admittedly, the two main crucial driving forces behind the Chinese New Economy are the Internet and E-commerce. E-commerce has become an economic phenomenon that broadly affects the production, exchange, distribution, and consumption of products and services. However, compared to the US and Europe, E-commerce remains in an embryonic state in China. When compared to the overall economy, E-commerce in China is hampered by the fact that there were only 111 million Internet users in China by 2005, comprising less than 9% of the total population. Furthermore, only 10% of China's large and medium-sized state-owned enterprises (SOEs) have computer networks that have previously done business electronically, according to the data of the Trade Department under the State Economic and Trade Commission.<sup>[1]</sup>

#### **4. Impacts of Internet on Reconstructing**

The Internet provides standards for worldwide connectivity and as the above shows that its impact on economic structure, GDP growth, industry, business, and commerce has been dramatic in China. Besides that, the impact of Internet on economy-wide measures of productivity and other indicators are worth of our attention. On the other side, we have to notice Internet also has some negative influence on different areas of economy.

##### **4.1 Internet and productivity growth**

Despite the growing evidence of Internet influence on economy, doubts have been raised about its impact on productivity. The debate has evolved as to whether IT can explain the acceleration in productivity growth. Studies of industrial countries suggest that productivity gains from computer use have thus far been limited. The aggregate impact of information technology on productivity in developing countries has been disappointing.<sup>[2]</sup>

From 1996 to 2005, the overall productivity of China grew at an average rate of 8.05% annually, while the productivity of electronic and telecommunication industry increased at 21.25% on average.<sup>[6]</sup> In light of this discrepancy in views, it's interesting to note that while IT sectors are increasing productivity and creating new and higher paying jobs faster than any other sector of the economy E-commerce still represents less than 2% of the retail portion of the economy. Additionally, the high acceleration in productivity since 1995 happened not across the economy as a whole but in computer manufacturing which represents barely 2% of the economy. Elsewhere

growth in productivity has stalled or fallen. Thus it is possible that while the Internet in China does have an economic impact, it is not yet of such a magnitude to allow for accurate definition and description. There are three main positions among economists to explain the “productivity paradox”: (1) There is a mis-measurement problem. (2) There is nothing paradoxical. (3) The observation of positive macroeconomic efforts requires decades rather than years, as the economy is in a process of transition.<sup>[13]</sup> As China is still in economic transition period from a plan economy to market economy, our explanation may fall into the third reason.

#### **4.2 Labor markets**

As IT and Internet based industries expand their employee demand will increase. Additionally, expanding Internet usage and E-commerce will increase the demand for “core” IT workers, generate new IT occupations, change skill requirements for some previously non-IT jobs, and raise the minimum skill requirements for many low-skill jobs. In 1997, there were only about 15 million people employed in electronic information industry. The number increased to 62 million people in 2002. IT and IT related industry have absorbed about 160 million people for employment, 6.7% of the total number of urban employed persons. (WEN & DENG, 2002)<sup>[11]</sup> For most IT-related jobs, applicants need bachelor’s degrees or software certification, along with work experience. Due to the continuing growing of IT market in China, the need for new hiring in IT areas is expected to intensify in next five years.

#### **4.3 Foreign investment**

“The E-commerce and Development Report 2001” issued by the United Nations Conference on Trade and Development (UNCTAD) says “China’s entry into the WTO...will open the market for foreign investment and create a competitive environment that should bring down the access cost and improve service quality. It will also provide Chinese enterprises with opportunities for cooperation, leading to faster adoption of E-commerce practice.”<sup>[14]</sup> In 2000, Sina, Sohu and Netease, the top three portals in China, were listed on the NASDAQ stock market and received venture capital investment. This seems to show that foreign capital can go directly into Internet information services in China. However, the fact that there are no specific and clear regulations on foreign direct investment into the industry is still present. It was asserted that Internet-related business (ISPs and ICPs) in China falls into the category of value-added telecom services which cannot be financed or operated by foreign entities. Consequently, foreign investment or involvement in China’s ISP/ICP services must be banned.<sup>[9]</sup> At the same time, a variety of Chinese regulators recognize the economic potential of E-commerce, and are considering a number of policy initiatives designed to encourage the development of commercial websites in China. The Chinese government has also committed to liberalize rules governing foreign investment in telecommunications and other restrictions on market access relevant to E-commerce and the Internet, under an agreement with the United States on China’s accession to the World Trade Organization.

#### **4.4 Flow of talent**

China needs well-educated and well-experienced professionals to bring along their knowledge and skills. This will change the structure and flow of human talent in China. To attract intelligence, the central and local governments have introduced different human resource policies including the gradual elimination the “Hu Ji” system. China also has a huge overseas talent pool. To appeal to the oversea scholars, the governments have offered special packages and treatments to them. Statistics indicate that since reform and opening up policies began in 1978, China has sent more than 300 000 people to study in 103 countries and regions. Around 100 000 have returned to the motherland and have been an important force in pushing forward China’s development in all aspects. The need for talent people also happens within the county.

The need for talent people results into a strong inter-dependence between the flow of people and the Internet. Headhunter firms grow rapidly in China. Headhunting services have become an important channel for companies seeking high-level talent and for the flow of such talented individuals. For many college students, the first action to find a job is to do on-line searching. Jumping back and forth among companies for better off salaries is now very common for young people.

#### **4.5 Opportunities in traveling and tourism service**

Tourism is considered as a major boost to Chinese economy as it can ignite other relevant industries, such as banking and insurance as well as transportation and communications. China was picked by the WTO as one of the world's 15 most popular tourism destinations. The WTO also predicts that by 2020, China will be the world's number one tourism destination and the fourth major source of tourists.<sup>[12]</sup> There is no doubt that E-commerce will play an important role in the travel industry. E-commerce is bound to bring a revolution to China's tourism sector. The tourism industry is transformed by Internet. The computerized reservation system is now accessible for customers directly via the Internet. Car rental also starts to appear in some metropolitan cities like Beijing and Shanghai. Travel superstores, which will provide many products, services, and entertainment, could enter the industry, as well as innovative individuals who will operate from their homes.

Internet technology impacts many areas in negative ways as well. How the negative impact of the Internet needs to be addressed through laws/regulations and new technologies is the main topic that should be noted by the Chinese government legislature and policy makers. (1) Internet may bring security and privacy threats. Web's vulnerable security can introduce easy access and criminal action into electronic transactions, financial cryptography, and hackers to business. (2) Insufficient use of Internet can also cause information flooding and waster of resources and time so as to decrease efficiency. (3) According to statistics, about 55% of Internet users in China are under the age of 25, and their on-line time is mostly spent on entertaining and information gathering. Due to their young age and low level of immunity to negative Internet information, it may have potential harm to their study and health. (4) Internet could encourage invasion to government national security and national sovereignty as countries have different opinions and ideologies. (5) Internet could also lead to problems in issues such as property rights and copy rights.

With the emergence of New Economy in China, in the future Internet may also have profound influences on market mechanism, inflation, consumption, and other factors in Chinese economy. For now, the years rather than decades of development of Internet is not giving us sufficient information to have a precise view on its determinism to the Chinese Economy.

### **5. Epilogue**

With the theory of propelling industrialization with information, the road to new-type industrialization in China objectively requires adjustment and optimization of the industrial structure. By realizing the impact of Internet to economy, in the course of adjustment the Chinese government should correctly handle the relations between the development of high and new industries and traditional industries, between capital-intensive and technology-intensive industries and labor-intensive industries, and between virtual economy and entity economy. The policy makers should form an industrial pattern that takes high and new technological industries as the lead and basic industries and manufacturing industry as the support, and that ensures the all-round development of the service industry. Because Chinese human resources are particularly rich which generate tremendous pressure on

employment, therefore we should not give up traditional industries and labor-intensive industries even for the coming dozens of years.

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