

The Development of the Information Technology Industry in China

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1. IT Industry Promoting GDP Growth in China

The IT industry has played an important role in national economic restructuring, and it has become a vital pillar for the economic development of China. From 1996 to 2000, the IT industry was the fastest-growing sector with an average annual growth rate of 32%, which was three times the GDP growth rate in the same period. The industry's annual value added accounted for 4% of GDP. The accumulated capital investments in the industry (including telecom and electronic information products) amounted to 900 billion yuan, 7.4% of gross capital investment

**Table 1: The IT Industry's Contribution to China's Economy
1996-2000**

	Comparison with GDP
Annual growth rate (about 32%)	3 times GDP
Value added	4% of GDP
Capital investment (900 billion yuan)	7.4% of total capital investment
Export volume	20% of GDP

China has become the second largest telecom market in the world in terms of both network capacity and the number of subscribers. National telephone coverage had reached 20.1%. There are 144 million fixed-line telephone users, 85.28 million mobile phone users, and more than 100 million cable TV users. In 2000, the total revenue of the telecom industry reached 307.4 billion yuan (US\$37.2 billion).

Table 2: Telecommunications Capacity, year-end 2000

	Capacity
Total investment	800 billion yuan (US\$ 96.4 billion)
Fiber cable	1.25 million kilometers
Fixed-line telephone users	144 million
Mobile phone users	85.28 million
National telephone coverage	20.1%
Cable TV users	Over 100 million
Revenue	307.4 billion yuan (US\$37.2 billion)

The Internet has also undergone rapid development. By the end of the year 2000, the number of computers connected with the Internet reached to 8.92 million and the number of Internet users was about 22.5 million. China hosted 0.26 million websites and the total volume of e-trade through the Internet was about 77.2 billion yuan (US\$9.3 billion).

Table 3: Internet Capacity, year-end 2000

	Capacity
Computers connected with Internet	8.92 million
Internet users	22.5 million
Chinese websites	0.26 million
Total volume of e-trade	77.2 billion RMB yuan (US\$9.3 billion)

The manufacturing capacity of electronic and information products has grown rapidly. In 2000, the IT manufacturing industry became the manufacturing sector in China with the highest output value.

Table 4: Performance of IT Hardware Manufacturing, 1996-2000

	Capacity
Capital investment	100 billion yuan
Growth of value added	21% annually
Growth of sale income	22% annually
Exports (2000 year)	21% of the manufacturing industry

Source: Based on Lin Yuanfang, "The review of the electronic and information industry of China and recent project". <http://www.ceinet.gov.cn>

China's IT industry is in the stage of infrastructure construction. The application of IT technology and networks is at a lower level than in the developed countries and in some East Asia economies. By the end of year 2000, about 1.8% of China's population used the Internet compared to almost 60% in North America.

Table 5: Internet Population in North America, Europe, and Asia

	Internet Users' Share of Population
North America (1999)	58.3%
EU (1999)	25.7%
East -Asia (1999)	11.5%
China (2000)	1.8%

In China, there is a large gap between the coastal and west regions in the application of information technologies.

In the Tenth Five-Year Plan, the Chinese government will implement two important strategies: the urbanization and developing western area. These strategies will drive the development of the IT industry. According to the Tenth Five-Year Plan, the IT industry will maintain a growth rate of 20% per year.

Table 6: Outlook for IT Industry Development of China, year -end 2005

Telephone coverage	40%
Total telephone users	500 million
Computers connected with internet	40 million
Internet users	200 million
Telecom service revenue	1,000 billion yuan (US\$121billion)
Manufacturing revenue	150 billion yuan (US\$181billion)
Electronics and information product exports	US\$100 billion

Source: Speech by Wu Jichuan in the National IT Forum, *China Daily*, 17-18 Feb. 2001.

2. Characteristics of the IT Manufacturing Industry in China

China is becoming the world's major manufacturer of consumer electronic products and of some telecommunication equipment. The market share of products with Chinese brands has increased rapidly, but some high tech products are still dominated by the foreign brands.

Table 7: Market Share of Chinese Brands in China, 2000

	Share %
TVs	90
PCs	80
Switching	70
CMOS chips	<30
Color TV tubes	<50
Mobile phones	<10

Source: Based on Lin Yuanfang, Review of the electronic and information industry of China and

recent respect". <http://www.ceiinet.gov.cn>.

First, China's IT manufacturing industry has become an integral part of the world market. The export and import of IT products has grown quickly in the past years. China has become an important importer and exporter in the world market for IT products. Electronic products accounted for 23% of total imports and 21% of total exports in 2000.

Coastal areas, such as Dongguan region in Guangdong Province, have become the leading suppliers of electronic products to the world, because of cheap labor cost, convenient transportation, and market-oriented producers.

**Table 8: China's Trade in Electronics
Products, Jan.-Sept. 2000**

	%
Electronic products' share of total imports	23%
Of which	
Electronic spare parts	33%
Computer & peripheral equipment.	19%
Electronic elements	16%
Electronic products' share of total exports	21%
Of which	
Consumer electronics	21.8%
Electronic elements	16.1%
Electronic spare parts	9.1%

Source: <http://www.ceiinet.gov.cn>.

Second, foreign-invested companies have been playing an important role in the development of China's IT manufacturing industry. Foreign invested firms, especially large multinationals, dominate the local market share and manufacture of high-tech products. For example, Motorola, Nokia, and Ericsson control 70% of the total output of mobile phones.

**Table 9: Market Shares of
Foreign Mobile Phones,
first-half 2000**

	Share
Motorola	31.9%
Nokia	29.4%
Ericsson	21.4%
Siemens	7.3%
Philips	3.5%
Matsushita	3.3%
Others	3.2%

Source:
<http://www.peopledaily.com.cn/GB/channel15/31/20000730/>.

Third, the OEM-module has dominated the IT manufacturing industry. OEM products account for 90% of China's exports of electronics products. In recent years, imports of parts and materials have exceeded exports. Imported electronic parts and materials are high in added value while most exported parts have low added value.

Foreign investors have been attracted to China because of the huge market potential and low labor cost. The aim of foreign investment in China is not only to take over the domestic market but also to make China a low-cost manufacturing base for the Asian market. Firms from Europe and North America and also investors from East Asia have made huge investments in China. In addition to shifting manufacturing capability to China, some large foreign companies have established or are setting up research centers in China aimed at meeting local market demand.

3. IT Industry Production Networks in East Asian Economies

IT industry is a globalized industry. Currently, East Asian economies are forming a production network in the IT industry. Mutual reliance is more important than competition between them. In recent years, some East Asian economies have shifted IT manufacturing to China. Japan, for example, has increased investments in China's IT industry. In the past two years many IT firms from Taiwan have shifted production lines to the mainland. Meanwhile, China has

favorable trade balances with Europe and North America and trade deficits with most East Asian economies, including Japan, Korea, Singapore, Malaysia, and Taiwan. This situation shows that a vertical division in IT manufacturing has been forming among the East Asian economies and China.

Table 10: China's Trade Balance in IT Products, Jan. Sept. 2000

	Surplus		Deficit
	US\$ millions		US\$ millions
Hong Kong	+7,232	Japan	-4,497
USA	+4,570	Taiwan	-4,257
Holland	+1,016	Korea	-2,175
UK	+364	Malaysia, Singapore	—
Germany	+214		

Source: <http://www.ceiinet.gov.cn>.

For sustained development the IT industry needs to be linked closely with traditional industries. Information technology alone is a tool while the traditional industries are the vehicle. Most sectors of the IT industry, except for a small part, need to strengthen relations with traditional industries to expand the scope for IT development. The application of information technologies in traditional industries will bring about another IT industry boom.