

CURRENT STATUS AND PROSPECTS OF INFORMATION TECHNOLOGY INDUSTRY IN KOREA

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The Basis of the New Economy : IT Revolution

In recent years, the New Economy has become a hot issue. In the New Economy, the IT(Information Technology) revolution enabled rapid growth of the IT industry and improvement of productivity in the manufacturing industry. The innovative development of IT led to growth in the communication industry and Internet businesses, which are based on investment in the IT industry and the diffusion of electronic commerce. The application of IT to the manufacturing industry led to enhanced productivity and the development of networks in the business system helped cut management costs.

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From these facts, one can see that IT will be the key factor of growth in the 21st century. This article analyzes the development of Korea's IT industry and its effect on economic performance by comparing it to the IT industry in the US.

Figure 1. IT Revolution and Economic Growth

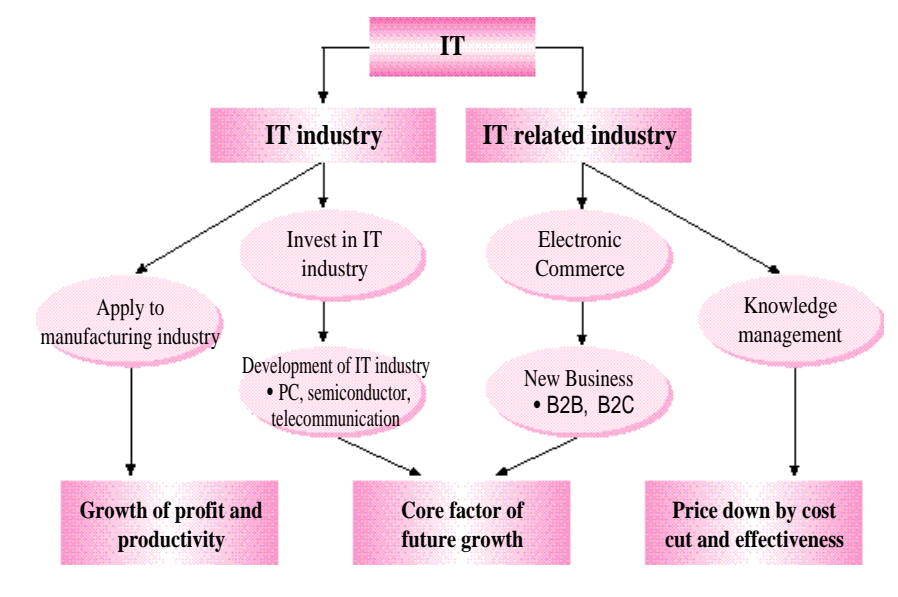
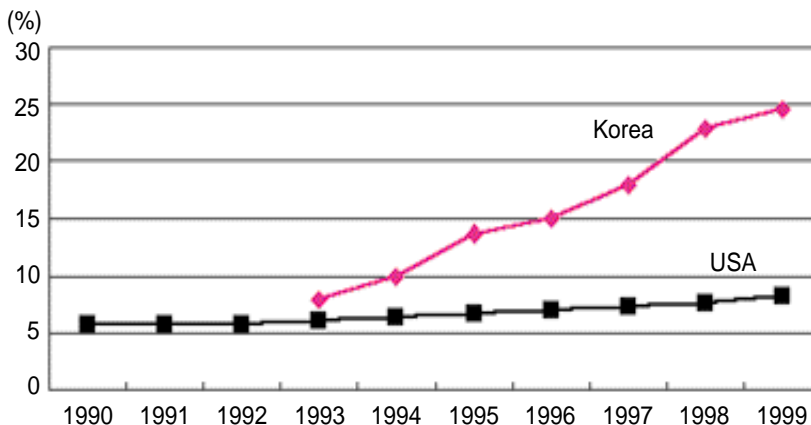


Figure 2. IT Industry's Specific Gravity in GDP



Source: The Korea Association of Information and Telecommunication(Korea), Digital Economy 2000(USA)

Note: The IT industry in USA contains hardware, software/services, communication and telecommunication equipment, and the telecommunication service industry. In Korea it contains information telecommunication service, telecommunication equipment, and software.

Rapid growth of IT Industry

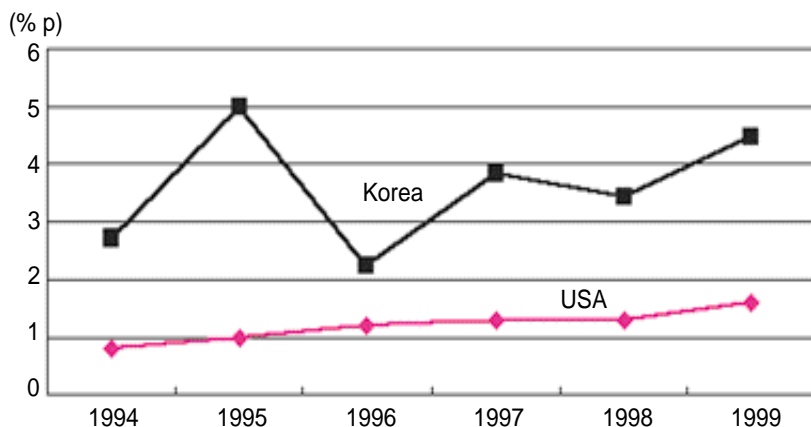
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In Korea, the growth rate of IT related industries is very high, and the specific gravity of the IT industry in GDP is also high. The gross output of information and telecommunication was 107,000 billion won in 1999, or 22.2% of GDP. This shows the rapid growth of the IT industry since 1993.

In both the US and Korea, IT industries have greatly contributed to economic growth. There is a difference between the two countries, however.

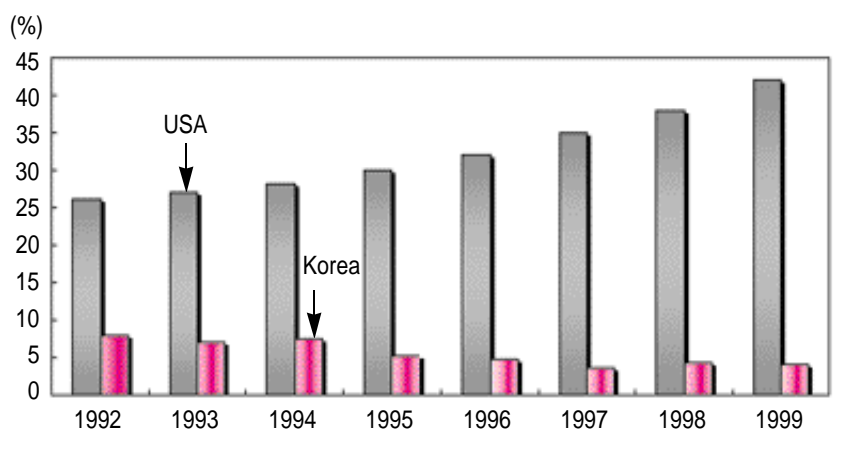
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Figure 3. Contribution to Economic Growth



Source: The Korea Association of Information and Telecommunication(Korea), Digital Economy 2000(USA)

— Figure 4. Specific Gravity of IT-Related Investment in Facility Investment —



Source: Survey of Facility Investment Plan, The Korea Development Bank, Korea.
Survey of Current Business, DOC, USA

contribution rate has been growing steadily. In Korea, while the contribution rate has been higher than in the US, sharp fluctuation can be seen.

IT investment in existing manufacturing industries has been frustrated in both scale and specific gravity. IT-related investment trends, such as specific gravity or the growth rate of IT investment in facility investment are lower in Korea than in the US. The specific gravity of IT-related investment in the US rapidly grew from 20% in 1992 to 40% in 1999. This means that IT has prevailed through all industries. In Korea however, the specific gravity of IT-related investment in facility investment has declined steeply, from 8% in 1992 to 4.2% in 1999.

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Potential growth of IT-related Industries

In Korea, the growth possibilities for industries that demand IT are very promising. First, the subscription rate for mobile cellular phones is higher in Korea than in the US. Although the indexes of PCs, Internet hosts and Internet users are lower than in the US, it is expected that IT-related industries will grow since Internet-

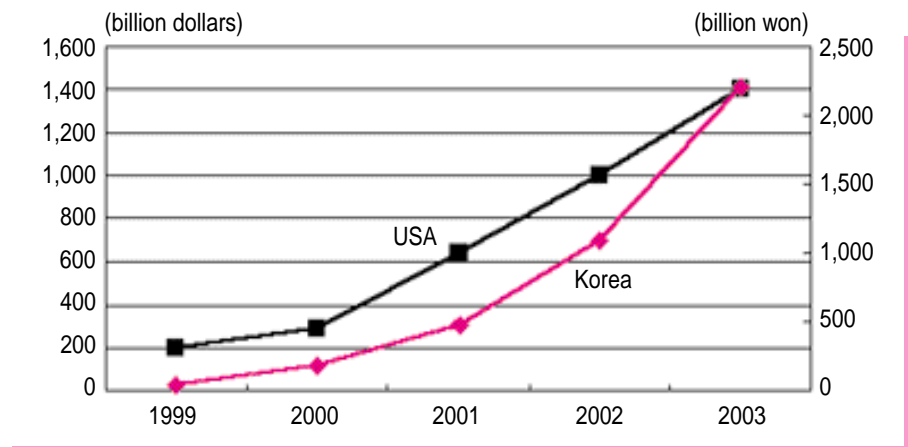
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Table 1. IT-Related Industries

	Mobile cellular, Subscribers per 100 people		Number of PCs per 100 people		Internet hosts per 10,000 people		Internet users per 10,000 people	
	USA	Korea	USA	Korea	USA	Korea	USA	Korea
1998	25.4	30.1	45.8	15.6	1,925.1	40.1	3,982.3	668.3
1999	31.1	50.4	51.0	18.3	1,925.1	60.9	3,982.3	1,467.9

Source: Telecommunication Industry at a glance, ITU.

Figure 5. Growth of B2B E-Commerce



Source: Anderson Consulting

related venture businesses in Korea are developing rapidly.

Although Korea has a smaller e-commerce market than the US, Korea is expected to have a higher growth rate of B2B e-commerce.

In the electronic commerce market, the core sector of the IT revolution, the growth of the B2B market will be very high. Although Korea has a smaller e-commerce market than the US, Korea is expected to have a higher growth rate of B2B e-commerce. The size of Korea's B2B market for the years 1999, 2001, and 2003 are forecast at 40, 480, and 2,200 billion won.

The productivity growth effect

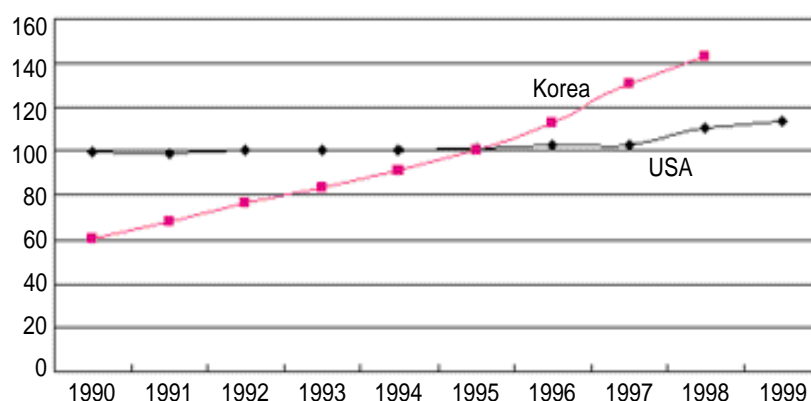
In Korea, the rise in productivity seems to be based on facility investment rather than on the IT revolution.

In figure 6, the growth of labor productivity shows similar trends in both the US and Korea. In the US however, the growth rate of labor productivity recorded an average annual percentage of 1.4% and 2.8% during 1973-95 and 1995-99 respectively. This seems to be the result of the IT revolution's effect because the growth rate in the latter period is twice as large as in the former period. In Korea, labor productivity has grown rapidly, and the steepness of growth was higher after 1996. In Korea, the rise in productivity seems to be based on facility investment rather than on the IT revolution. This is because IT-related investment has been lacking and IT infrastructure is still weak in Korea.

Active IT investment is needed

Korea's IT industry has both positive and negative aspects. On the positive side, the IT industry carries significant weight in the Korean economy as shown by the rapid growth of IT-related industries and the specific gravity of IT industries in GDP. Thanks to active investment, IT-related industries (especially telecommunications) have grown, and have greatly contributed to economic growth. This has caused the

Figure 6. Index of Labor Productivity (1995=100)



Source: Ministry of Labor(Korea), Department of Labor(USA)

Note: The index of labor productivity indicates the non-farm business sector for the US, and the manufacturing industry sector for Korea.

share of IT-related industries in exports to also increase. As a result, IT-related industries, which include semiconductors, cellular phones, software, and computer related services, have become the core sector of Korean exports.

Meanwhile, there are some negative factors in Korea's IT industry. First, IT investment in existing manufacturing industries is very poor, and the effect of IT investment on productivity is uncertain in Korea. The manufacturing sector, which still leads Korea's economic performance, lacks investment in IT facilities and R&D. Therefore, these industries have not experienced improved management effectiveness, productivity growth, or price cuts. A second factor is Korea's relative weakness in PC and Internet related indexes (the core factor of circulation of information in company and electronic commerce) compared to the US. In the New Economy, applying IT to manufacturing industries leads to productivity growth and management effectiveness, and IT-related investment is essential. Such actions will enhance the performance of the entire economy.

For this there is some problem awaiting solution. First, investment in IT and Internet businesses should be continued. The dramatic development of the telecommunication industry in Korea is known all over the world. By continuing this trend, it will be possible to expand the Internet business. Second, companies need to maximize productivity growth in existing manufacturing industries through IT facility investment and R&D investment. Applying IT to the existing industries improves management effectiveness and allows lower prices through cost reductions. **VIP**

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