INFORMATION TECHNOLOGY A DOOR TO THE KNOWLEDGE ECONOMY FOR DEVELOPING COUNTRIES

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1. Information technology and developing countries

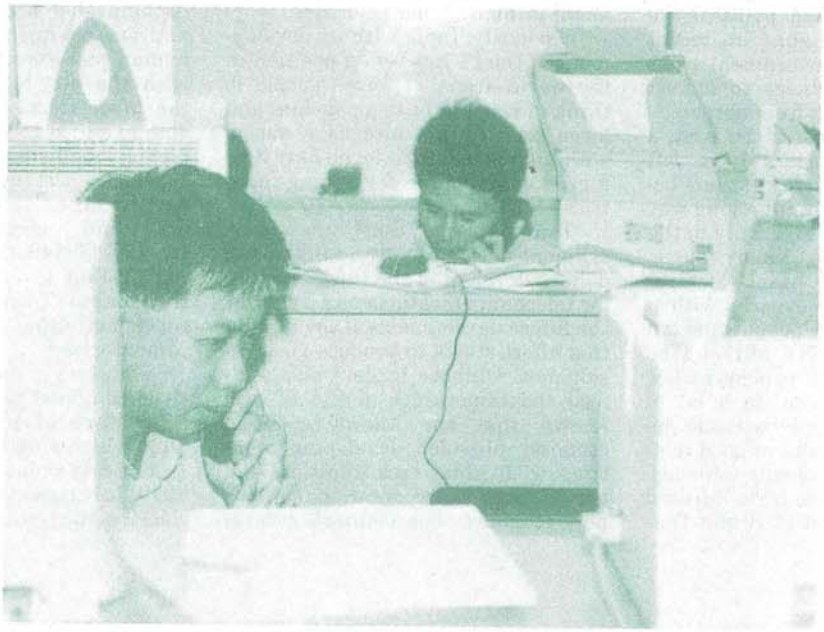
Developing the knowledge economy (KE) has become a focus of international attention. It could be seen as a great achievement of the humankind and an inevitable trend of productive forces. Only by developing the KE could the world escape from dependence of natural resources which are on the brink of exhaustion. In such a situation, what is the correct concept of the KE and what door one must take to enter it become practical questions to developing countries. It is also what we want to discuss in this article.

Most developing countries are in the transition from an agricultural to an industrial society, their economies depend largely on abundant natural resources and cheap labor with the result that they suffer a lot from exhaustion of natural resources, increasing pollution, falls in prices of; and demand for; minerals and farm products, increasing trade deficit, etc. Situation of developing countries goes from bad to worse, the gap between them and developed countries becomes wider and it seems that there was no exit from this vicious circle until the KE becomes a new trend in the world economy.

Developing the KE, however, requires a lot of preconditions (capital, technology, well-trained labor force, etc.) which most developing countries are short of. That is why many people are of the opinion that the KE in developing countries is an utopian idea beyond their reach and these countries had better accomplish the industrialization first because the KE is conceived as a much higher stage of development.

Some others, nevertheless, argue that the KE provides developing countries with an opportunity to take a shortcut and bridge the gap between rich and poor because the KE is based on human brain which is of great reserves in these countries and hasn't been fully tapped. Experience from some developing countries shows that they could success in tapping these reserves by making the best use of techno-scientific advances achieved by developed countries. In addition, they also realize that the development of the KE should be carried out in parallel with the industrialization instead of separating these two processes because this separation will make developing countries fall farther behind. The KE can help accelerate the industrialization. In fact, some developing countries have succeeded in implementing this strategy by increasing investment in high technologies, and in the information technology (IT) in particular. Developing the IT is one of good and effective approaches to the KE because the IT is the main dynamic of the world economic development now.

In developing the IT, these countries mean to go directly to the newest technology which is affecting greatly and directly all industries and sectors and also the most profitable business now. By developing the IT, developing countries could take part actively in the world trade through the Internet.



2. Experience of IT development in some developing countries

The first one to mention is India, the world's second most populous country. In its "green revolution" several decades ago, India has succeeded in applying technical advances to the agricultural production to defeat hunger and poverty. In recent years, India has become a new and notable player in the IT world. At present, India has some 280,000 IT experts and accounts for 2% of world's IT output. Although small, this percentage could be seen as a miracle for a developing country.

Its success comes from its human resources: Indians have long been accustomed to English, many Indian students graduated from famous universities in Europe and North America and worked for leading software companies, the Indian political life has been rather stable in recent years and its government has adopted suitable policies to attract students and experts from abroad.

For many reasons in the past, a lot of Indian engineers have left their countries and many of them became IT experts and went a long way in foreign countries, especially in the U.S. In the Silicon Valley alone, there are some 750 hi-tech companies run by Indian experts with a workforce of 16,000 people and an annual sales of US$3.5 billion. The reform in government policies makes them believe they can do a lot of things for their people without depending on great wealth or good relations with government officials. Suhel Seth, a graduate from Harvard and Director-General of Brand Dotcom, says: "To succeed in India today, we only need knowledge and skills, instead of property or good relations inherited from our parents." Preferential treatment and favors offered by the government encouraged them to return to home country and help develop the IT in India.

In the 1990s, export of software from India increased by 50% a year, a head-spinning speed. According to the National Association of Software and Service Companies (Nasscom) of India, the sales of software industry in the next fiscal year (ending in March 2002) will reach US$13 billion, increasing by 30% in comparison with this year, and US$9.5 billion of which from export. It's estimated that the export earnings will amount to US$87 billion by 2008. It's really an impressive figure because it equals the export value found in many other countries.

Obviously, India with its development of the IT has won a position in the world arena. It forces people to think of it not only as a populous and large country, but also as a nation with high intellectual level. May it be a good example for developing countries?

Ten years ago, the Chinese government decided to spend billions of dollars developing the infrastructure for telecommunications as a basis for the future development of the IT, and this effort starts to produce good result now. Chinese leaders also realized the importance of the IT and known that the knowledge-based economy provided developing countries with great opportunities, and the IT was a precondition for this new economy. The Chinese government paid full attention to the use of Internet, considering it as a key to the new economy. At present, there are 10 million Internet users in China, making it the nation second only to the U.S. in terms of the amount of Internet users. The Government planned that by the end of 2001, 80% of Chinese companies would be on-line. In addition, to ensure fair competition for the information industry, the government decided to put an end to the monopoly by China Telecom, a state-owned company, in the supply of telecommunication services.

With a population of only three million and almost no natural resources, Singapore has emerged as a highly competitive economy in recent years. This results partly from its policy on human resources development. At the end of 1998, the CSC (Commission for Singaporean Competition) set forth the plan to develop human resources for the next decade with the aim of "intellectualizing" the labor force, that is, to make it able to adjust to technologies used in biology, medicine, new materials and especially the information technology. As far as 1994, sales of computers and electronic equipment reached US$49.35 billion, representing 42% of the Singaporean industrial output. Today, all economic and social activities in this country are computerized.

Malaysia is in the last year of its seventh 5-year plan (1996-2000), the first stage of its Strategic Vision 2020 which aims at making Malaysia an entirely industrialized country by 2020. It is considered as a developing country that gains both social and

economic efficiency. Its success depends on excellent direction of the government. Malaysian PM Mahathir Mohamad paid full attention to the development of new technologies. As for the IT, his visit to the U.S. as a businessperson who wanted to build an "information corridor" for Malaysia in the 21st century reflected his concern about this field. At present, the ability to use IT products get information from the Internet is a criterion set by the National Commission for Vocational Training for estimating skills of a laborer.

Taiwan is now one of the world's leading producers of PC and spare parts. The e-commerce is one of springboard for better performance of small and medium enterprises that control the best part of Taiwanese production. It's planned that the e-commerce sales would reach US$18.5 billion by the end of 2001.

In Thailand, one of important measures to get access to the KE is to develop the labor force highly suitable to the globalization. That is why a plan to equip all schools with computers is made. According to the plan, 70% of Thai schools will be online by the end of this year. Thai government has also made plan to develop a local "Silicon Valley" in the near future.

IT development is not only a focus of attention for each developing country but also part of the action program adopted by organizations of these countries on their way to the globalization. In the Unofficial ASEAN Summit in Singapore on Nov. 24 and 25, 2000, an e-ASEAN Agreement was discussed and it is expected, after being ratified in the near future, to come into effect as from 2010. This agreement proposes a common policy for all members on Internet, measures to develop infrastructure and human resources, cuts in taxes on IT products and services, etc. This agreement will help the ASEAN integrate fuller into the world economy.

3. IT development in Vietnam

In Vietnam, the IT is also considered as a springboard for development and better competitiveness of each company and the whole economy as well. The Resolution of the VCP 8th National Congress called for "application of IT to all economic activities in order to fundamentally change productivity, quality and efficiency of the economy... and form a nationwide information network which is connected to the Internet." The VCP and Government have issued many resolutions, instructions and decrees relating to the IT development, such as Resolution 26-NQ/TW dated March 30, 1991 issued by the Politburo on "the role of sciences and technologies in the economic reform", Resolution 49/CP issued by the Government on Aug.4, 1993 on "the task of developing the IT in the 1990s". Resolutions of the VCP 7th and 8th National Congresses also referred to the importance of the IT to the economic development. Particularly, the Resolution 07/2000 – NQ-CP issued by the Government on June 5, 2000 on "development of the software industry for the period 2000-2005" and Instruction 58-CT/TW of the Politburo dated Oct. 17, 2000 on "the task of beefing up application and development of the IT for industrialization and modernization" could be considered as efforts by the leadership to concentrate necessary resources on the IT.

This industry, however, is still at a low level in comparison with surrounding countries and fails to accelerate the industrialization and modernization. According to Chu Tuấn Nhạ, Minister of Science- Technology and Environment, the ratio of telephone per 100 person in Vietnam is 3.7 (the world average is 14.4); of computer: 0.5 (world average 5.8); of mobile phone: 0.2 (world average 4); and Internet user 0.1 (APEC average 15 and the U.S. 23). A survey by Acnielsen Company of 7,700 students of the 7- 18 age bracket in 29 cities in 14 Asia- Pacific countries shows that no student in Vietnam has ever surfed the web. The software industry hasn't developed although the potential is great. The number of persons involved in this industry in Vietnam is 15 while this figure is 60 in India and over 100 in China.

The main cause of this situation is the public awareness of the importance of this industry, especially the attitude of local governments to this problem. The central government gives almost no help to this industry. Some software companies, however, have tried to find a foothold in the market. Dolsoft Company for example, has produced the Wingis (a program about geography) and been able to export it to Europe. Some others, such as Tương Quan, Quantic, PSV, TMA, ASA, etc., do subcontract work for foreign companies and try to develop their business. Many foreign investors remarked that the environment for the IT development in Vietnam wasn't favorable (data transmitting speed is low, service fees are high, etc.) and their businesses in Vietnam are also affected by this situation.

To develop the IT in Vietnam, the Government should offer more incentives and favors in terms of taxes, expenditure on education and soft loans, etc. The targets set for this industry by the Government are: output value of US$500 million and export earnings of US$300 million by 2005. These targets require an investment of US$120 million (half of this sum is put in education and training) for the period 2000- 05 because human resources are the decisive factor that determines success in the IT. To have 50,000 IT experts by 2005 as required by the Instruction 58-CT/TW is a real challenge in current conditions. That is why the task of persuading Vietnamese expatriates to come back to the fatherland is of great importance, and a suitable strategy should be worked out as soon as possible.

At present, there are 12,000 Vietnamese experts working in the Silicon Valley, many of them are real talent. The Government had better adopt suitable policies to encourage them to come back to help develop the national economy.

With the formation of Hoà Lạc and Quang Trung Software Parks and the target of extending the Internet to all schools by 2010, the IT in Vietnam has made a good start. It is planned that the Quang Trung Software Park in HCMC will employ some 20,000 workers and raise its sales to somewhere between US$400 and 600 million by 2010. We hope that these efforts and recent policies adopted by the Government will boost this industry in the coming years with a view to catch up with neighboring countries.

Thus, in developing countries that want to enter the KE, to develop the IT becomes a must when the information revolution is spreading fast all over the world. The IT should be considered as the principle dynamic of the new economy in developing countries in facing the globalization. Development of other technologies based on the IT are also important and will be determined by conditions in each country. In recent years, health care business and medical technology have been developed remarkably in Singapore and this island has become a health resort for people from all over the region. In 1999, the gross receipts of this business reached Sing$90.5 billion (over US$60 billion). This is an amazing result of how the application of IT could affect a business.■