

A STUDY ON THE VIETNAM SOFTWARE INDUSTRY *

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Abstract

Since 1986, Viet Nam has embarked a comprehensive renovation of the changing the economy from a centrally planned economy to a socialist oriented market economy. This renovation was very successful and it helps Vietnamese economy growing quickly.

In the development of Vietnamese economy as well as in the age of globalization and information, software industry is considered as a key industry of the economy.

This paper attempts to explore the current situation of Vietnam Software Industry, identify the role of software industry from the viewpoint of developed countries as well as Vietnamese State. The paper also shows the target for developing the software industry of Vietnam as set by the government in the Resolution No. 07/2000/ND-CP on June 5, 2000. The difficulties and challenges with respect to market development, human resources, infrastructure, and investment environment are discussed. The advantages and opportunities are also highlighted.

This paper also discusses the prospects of Vietnam Software Industry via the planned software technology projects, and the Quang Trung Software City (QTSC) which are established as a model for developing the industry.

Finally the paper attempts to make some recommendations for further developing the industry utilizing various technology development theories including the four technology components *Technoware, Humanware, Inforware and Orgaware* and the Sources of Technology Learning for Newly Industrializing Countries.

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INTRODUCTION

The Indispensable Role of Software Industry

Starting from the IT revolution, USA becomes a leader in the Software Industry. To race with USA, other countries such as Japan, India, China identified software industry is a key industry, it contributed to the state budget a significant amount of total revenues from software products and services. In 1995, USA achieved US\$79.5billion, occupied 50% market share of the world software industry; Japan gained US\$35billion, occupied 20% market share of the world software and India also earned a significant amount of US\$0.85 billion.

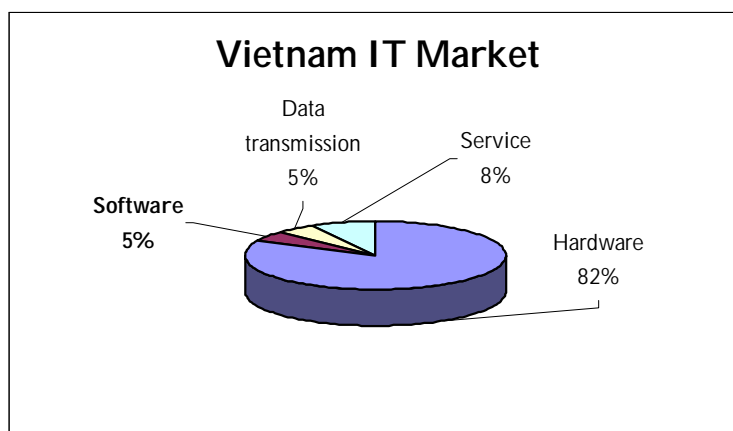
The Software Industry is an important industry of the Information Technology (IT). The Software Industry includes activities of manufacturing, trading and providing software services.

The role of software industry has been realized and greatly concerned by the Vietnamese Party and State.

Deputy Minister of Science, Technology and Environment Chu Hao emphasized the role of software industry by the such comparison as: "The coal industry, with millions of laborers, can generate US\$300 million a year in export turnover by exporting 10 million tonnes of coal. Meanwhile, with only 20,000 software designers, each of whom can generate US\$20,000 a year, the country would benefit to extent of US\$400,000 million. This prospect is in our hand,"

The software industry is a new economic branch with high added value and great prospect. Developing software industry is one of "shortcuts" and "interceptions" to carry out the industrialization and modernization of the country.





The Target for Developing Software Industry in Vietnam

Since the role of Software industry and its ever-growing, Vietnamese Government has set the target for building the software industry into a spearhead economic branch with high growth rate to reach the output value of about US\$500 million with 25,000 high-level experts and professional programmers and good skills at En-

glish by the year 2005.

CURRENT SITUATION OF DEVELOPING SOFTWARE INDUSTRY IN VIETNAM

Developing of software industry in Vietnam is facing numerous difficulties and challenges:

Difficulties and Challenges

The domestic information technology market

TITLE OF PROJECT	ESTIMATE CAPITAL	
	(Mil. VND)	# US\$
<i>Build a favorable legal environment for developing software industry:</i>		
▪ Create favorable legal climate	250	16,778
▪ Protect intellectual property of software	3,000	201,342
<i>Develop software market</i>	60,000	4,026,845
▪ Encourage computerization and use of Vietnamese software in all socio-economic activities		
<i>Provide infrastructure support for the software industry</i>	12,000	805,369
▪ Internet and telecommunications charges		
▪ Build national laboratories		
<i>Develop resources for the software industry</i>		
▪ Develop human resources	500	33,557
▪ Upgrade existing training and research centers	200	13,422
▪ Assist software companies to improve their service and product quality management systems	3,000	201,342
<i>Transfer technological through co-operation with foreign companies</i>	1,500	100,671
<i>Establish software industry development funds</i>		
▪ Software service development fund	30,000	2,013,422
▪ Software development venture fund	26,000	1,744,966
▪ Software creation assistance fund	1,000	67,114
▪ Training assistance fund	30,000	2,013,422
Total investment capital	167,450	11,238,255

Source: Ministry of Science Technology and Environment



is still narrow. Software market is occupied only at 5% in the structure of information technology market. Meanwhile, in the regional countries, USA, Japan and EU, software is occupied about 35% in the information technology market structure.

1. *The quantity of human resources is small and its quality is low*. Vietnam now has only about 20 information technology (IT) training centers in colleges throughout the country. The existing IT training programmers only provide students basic knowledge. There is no specialized curriculum on software programming. For instance, Southern colleges annually train 2,000 IT engineers, but only 200 of them or 10 percent have the ability or background to become professional programmers.
2. *Vietnamese telecommunication infrastructure is inadequate* to meet the requirement of the IT in general and the software industry in particular.
3. The investment environment for the Software Industry in Vietnam has not had enough favorable conditions as compared to that in the neighbor countries.
4. The entire society's general awareness of *protection of intellectual property rights*, especially the copyright of software products, is still low.

However, development of Vietnam Software Industry would benefit from the following fundamental advantages and opportunities.

Advantages and Opportunities

Advantages

- a. The Software industry market in the world is increasing daily.
- b. The software industry does not require large initial investment.
- c. Vietnamese people are capable of quickly absorbing this technology.
- d. In the Vietnamese overseas community, there are many experts who are experienced in the software industry and wish to establish cooperation and make investment in Vietnam.

Opportunities

Many opportunities would be arisen from the current difficulties and the objectives of building and developing the software industry in Vietnam.

a. Various markets for software industry

The software companies in Vietnam are smart to segment their markets; they export to foreign countries, at the same time export to the foreign companies in Vietnam as well as gradually exploit domestic market. The big domestic software companies such as FPT, VASC, Dolsoft, Hai Hoa, Lac Viet defined that they will focus on the foreign market. They think if the foreign market accepts their products, they will automatically be accepted and kept the high positions in the domestic market. They will promote to export their software products to the potential countries such as Korea, Japan, EU and North America.

b. Foreign market shortage of software programmers

On the worldwide basis, the demand for software programming currently outstrips the supply, US reports it lacks some 350,000 programmers. Germany, Canada & Australia report each of them needs some 30,000-35,000 programmers. Therefore, it is quite small risk and big opportunities in developing software industry.

c. Creation of a favorable investment environment

Current policy pursued by the Government of Vietnam with respect to the development of the software industry is exceptionally positive. Resolution No. 7/2000/ND-CP promulgated on June 5, 2000 about building and developing the Software Industry demonstrates the priority the government is putting on this industry. Excerpts include the following statements:

“The software industry is an industry in which investment is *particularly encouraged*. The State of Vietnam gives *preferences* to enterprises engaged in the software industry. Vietnamese software products and services provided for use within Vietnam will *not be liable to value added tax*. *If exported, no tax is charged and tax reimbursement* shall apply according the Law on Domestic Investment Promotion



(amended) and the Law on Foreign Investment in Vietnam. The State adapts the *policy of refunding* software enterprises with maximum amount equal to the income tax the enterprises have already paid to the State budget for re-investment and development. To apply for *preferential regime on personal income tax* for professional laborers directly engaged in the development of the software industry. The software industry enterprises shall be entitled to the *regime of highest credit preference* as well as *land use preference* as prescribed by law.”

“The Ministry of Planning and Investment (MPI) assumes the prime responsibility and coordinates with the Ministry of Finance, the Ministry of Science, Technology and Environment, other concerned Ministries, the People’s Committees of the provinces and centrally-run cities, for calculating and *channeling domestic and foreign capital sources* for annual and 5-year plans for software industry development and investment projects. They seek ways and means to attract foreign direct investment (FDI) capital and official development assistance (ODA) sources for software industry investment projects. To create favorable conditions for associations operating in the field of software industry to practically contribute to the process of building and developing the software industry and *protecting the applicable copyrights* associated therewith.”

VIETNAM SOFTWARE INDUSTRY PROSPECTS

Many software projects are planned and established such as Hoa Lac Hi-tech Park, Sai Gon Software Park (SSP), Quang Trung Software City (QTSC) which are directly connected to the internet system, so that software enterprises can fully and easily use high-quality internet services at competitive prices with the regional countries.

The followings are the planned software technology projects with its estimated capital, and brief introduction of QTSC.

The Planned Software Technology Projects

Quang Trung Software City (QTSC) – A Model for Developing Software Industry in Vietnam

Quang Trung Software City (QTSC) is established to become the largest software production hub of southern Vietnam. The ground for the development of the QTSC includes:

1. Providing infrastructure and services of international standards for both existing and future demands for research, development, production and export of software;
2. Continuously incubating and founding new software companies, training software experts and business administrators to meet demands, both at home and abroad, inclusive of the export of senior software experts;
3. Providing high-standard, round - the - clock working and living environment for software experts;
4. Establishing an advanced institute of Mathematics – Physics – Informatics inside the QTSC;
5. Encouraging investments of overseas Vietnamese by a multitude of incentives; and
6. Promoting cooperation between the State and the private sector, and international cooperation.

Five national incentives to be enjoyed by entities at the QTSC

1. Corporate income tax: 25% tax exemption during the first four years for foreign - invested entities and the first two years for domestic entities; 50% tax reduction for the four following years for foreign-invested entities and the two following years for domestic entities.
 - Investments by overseas Vietnamese: a 20% reduction further from the above tax rate is applicable.
 - A 50% reduction of tax levied on income from export in the first year.
 - No supplementary income tax.
2. No value-added tax
3. Attractive personal income tax rate
4. Export income tax rate: 10%
5. Telecommunications: separate Internet gateway for the QTSC.

Eight incentives from HCM City government to be enjoyed by entities at the QTSC



1. Low Internet charge (lower than the average rate of Thailand, Malaysia, China, Singapore and India)
2. Each young, start-up business operating at the QTSC in the program to incubate young businesses will be granted US\$2,000 in the form of consultation on business strategy and management, working in groups and new tools for software development.
3. One thousand young, potential software programmers will be granted a US\$500 scholarship each for training to earn international certificates.
4. Rental for the existing 10,000m² estate

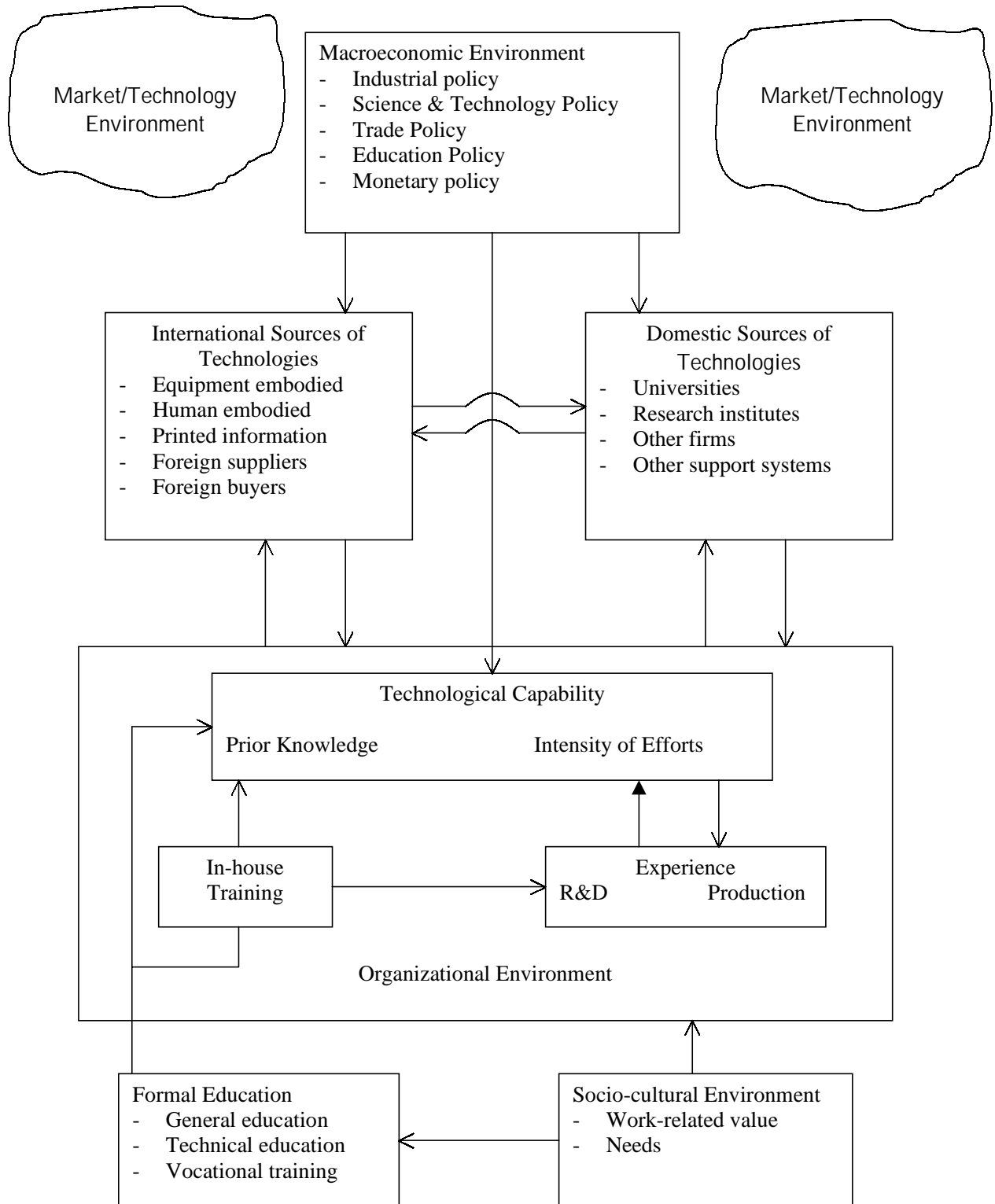


Figure 1 Sources of Technological Learning in Newly Industrializing Countries

with structure at the QTSC is US\$2/m²/month. Rental for estate with structure built after 2003 will be possibly not higher than US\$7/m²/month.

5. Land rental for entities, which build their own premises, is US\$0.35/m²/year.
6. Under the Start-up Loan Program, loans worth of up to VND100million (US\$7,000) can be available to each young start-up business (with a 3% annual interest rate).
7. The first ten businesses to join the QTSC will enjoy a one-year exemption of estate rental.
8. The QTSC provides free services for contacting, organizing training and export of internationally – qualified software programmers.

Ten advantages for foreign-invested business at the QTSC

1. Conveniences for continuous work due to time difference between HCM City and the West of the U.S. (12 hours) and Central Europe (6 hours).
2. QTSC strictly abides by the protection of intellectual rights.
3. Quality services (with international-qualified programmers).
4. Reliable services (Internet access through ground satellite station used exclusively for the QTSC, back-up power source, 24-hour services).
5. Low costs with national and city-level incentives.
6. A host of partners to choose from (about 300 software companies)
7. Project managers and programmers with excellent command of English
8. Close relations with research institutes
9. A convenient conduit to the IT market in HCM City.
10. Direct support from the scientific circle in HCM City (26 universities and colleges, and many research institutes).

CONCLUSION

Software industry plays very important role in carrying out the national industrialization and modernization and contributes to ensure the national security.

There are difficulties and challenges in developing software industry. However, at the same

time, there are many advantages and opportunities, especially supported by State in combination with various Ministries for developing software industry. Moreover, as the ever-growing trend of software industry, Vietnam Software Industry would be developed quickly to reach the output target and step by step gain its position in the world market.

RECOMMENDATIONS

Vietnam Software Industry should be promoted in *combination of the four interrelated components of technology*. It comprises of *Technoware, Humanware, Inforware and Orgaware*.

Technoware consists of tools, equipment, machines, vehicles, physical facilities etc.; Humanware refers to experiences, skills, knowledge, wisdom, creativity, etc.; Inforware includes all kinds of documentation pertaining to process specifications, procedures, theories, observations, etc.; Orgaware is to facilitate the effective integration of Technoware, Humanware, Inforware, and Consists of management practices, linkages etc.

Furthermore, the sources of technological learning should be utilized. It includes a complex learning process at all levels of society. They may be grossly categorized into three groups: the international community, the domestic community, and in-house efforts at the firm level. There are also five important factors that significantly influence the learning process: market and technology environment, public policy, formal education, socio-culture, and organizational structure. Figure 1 depicts the major sources of technological learning, the firm's interactions with these sources, and the factors influencing the interactive process.

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