

# A Synopsis of Technology Transfer Issues<sup>1</sup>

By Jon D Kendall

*Division of Strategy and Information Systems*

*Nanyang Business School, Nanyang Technological University*

*kendall@pacific.net.sg , <http://www.quino.net/vitae.htm>*

## Introduction

It is often said that the best time for investment opportunities is during a period of change. If that is so, then the Vietnamese telecommunications and related sectors provide ample opportunity for investment. The next three chapters provide information critical for understanding the telecommunications climate, understanding what opportunities exist using telecommunication links, and understanding who in Vietnam can facilitate the technology transfer process required for these opportunities to be actualised.

The Vietnamese economy is undergoing tremendous structural change, sparked off ten years ago by the 'renovation' or 'doi moi.' Vietnam has changed from being solely an agricultural-based economy to one at the crossroads of rapid industrialisation. Macroeconomic variables reflect the results of this change. Yearly real GDP has grown from 6 percent in 1991 to 9 (estimated) percent in 1995 (Nguyen, 1995). Inflation has fallen from 67 percent in 1991 to an estimated 14 percent in 1995 (Nguyen, 1995). Urban unemployment, on the other hand, remained fairly high at around 8 (need better figure than this—is it not 20 percent?) percent in 1995 (Far Eastern Economic Review, 25 January 1996).

Since 1987, foreign investors have pledged US\$22 billion for 1525 licensed projects in Vietnam; around 25 percent of this amount has been released so far. Since the beginning of the year through to August, the government has licensed 198 projects for a total of US\$3.36 billion. (Dow Jones News Service, 9 Sept 1996) International organisations, such as the World Bank and Asian Development Bank, have agreed to contribute (over the next three years) at least US\$4 billion for projects ranging from the Saigon Port project to miscellaneous power projects (Business Week, 1 July 1996).

These figures help set the stage for the next three chapters. They provide the context in which to consider investment in telecommunications and related sectors.

---

<sup>1</sup> From *Business Opportunities in Vietnam*, Tan Teck Meng, et al, Prentice Hall, 1997.  
<http://www.nanyangbiz.com>

## **Telecommunications in Vietnam—the Current Status**

### ***Regulatory Framework***

The Vietnam telecommunications sector has experienced recent changes in the nature of regulation and structure of service provision. Indeed, until mid 1993, the Department General of Posts and Telecommunications (DGPT) regulated both postal services and telecommunications. It was part of Ministry of Transport and Telecommunications. In mid 1993 DGPT became an independent ministerial department, with the head reporting directly to the Prime Minister. DGPT, as the nation's telecommunications authority, has become the body responsible for the development of telecommunications infrastructure.

Trunk networks in Vietnam are managed by two operators—Vietnam Posts and Telecommunications (VNPT) and Vietnam Army Telecommunications Company (Vietel). Vietel concerns itself mainly with servicing the military sector. VNPT, on the other hand, exercises a virtual monopoly over telecommunications in the public arena through its numerous subsidiaries. Foreign investors investing in telecommunications must seek approval from VNPT or its subsidiaries. Joint ventures are usually carried out under business co-operation contracts. Such contracts are less well-defined than equity joint ventures and are used because the of Vietnamese policy maker concerns over allowing foreigners sectors which affect national security (*The Financial Times*, 9 May 1996).

At the present time approval is pending on changes to Vietnam's foreign investment law which may partially increase foreign companies' power in joint ventures. Currently, almost all decisions require unanimous approval of directors sitting on the joint venture's board (Dow Jones News Service, 21 August 1996 and *The Financial Times*, 22 August 1996). Other changes may also clarify certain legal issues as well as clarifying which sectors are vital to national security.

### ***Telecommunications Industry Profile***

In addition to providing more detail on telecommunications regulatory structure, Chapter 11 profiles the telecommunications industry. Detailed information about the telecommunications market such as the market value of public telecommunications equipment, mobile market, and transmission and accessories markets. Comparison of telecommunications profiles with other countries in the region is also made. It is noteworthy that Vietnam has the lowest telephone density—only 1 percent.

### ***Investment Opportunities***

This appallingly low density provides enormous potential in this industry as outlined in Chapter 11. Indeed, Hanoi has ambitious plans to increase the 1 percent figure to 5 percent by the year 2000. VNPT has, over the past

year, been in negotiations with Telstra (Australian owned), Cable and Wireless (UK owned), NTT International (Japanese owned), and France Telecom. These companies form a joint effort to install as well as operate land lines in Hanoi and Ho Chi Minh City. Negotiations are still pending. If successful, the investment (worth about US\$ 1.4 billion) would be the largest so far by foreigners in telecommunications in Vietnam. (*The Financial Times*, 9 May 1996).

Korea Telecom has recently received approval for its US\$40 million project in three provinces in the north of Vietnam to install and operate telephone lines. Again, this sort of joint venture (with VNPT) will be carried out under a business co-operation contract. Revenue is shared with VNPT for 7 years, after which equipment will belong to VNPT (*The Financial Times*, 16 May 1996).

Other opportunities are occurring in, for example, global system for mobile (GSM) telephone networks. VNPT currently runs Mobifone GSM jointly with Comvik of Sweden. VNPT also plans to operate another GSM by itself using equipment supplied by Siemens of Germany. The equipment is worth US\$ 18 million. Currently mobile telephone ownership is around 35000 which is only a very small fraction of the total Vietnamese population of 74 million. (*The Financial Times*, 25 June 1996).

On the fibre optic front, a new international optical fibre telecommunications link was opened early this year, allowing the doubling of the number of simultaneous international calls from 11000 to 22000. Work was carried out by Alcatel (France) and Fujitsu (Japan). This represents tremendous growth, considering that, in 1986, there were only 9 international lines—to Moscow (*The Financial Times*, 9 February 1996).

Chapter 11 also discusses opportunities for telecommunications operators, equipment vendors and equipment manufacturers.

### ***Growth Impediments***

Chapter 11 rounds out its discussion of telecommunications by presenting the obstacles standing in the way of potential investment. These impediments include education and funding. Equally important are the problems occasioned by changing political climate, slow administrative reforms and an unclear and changing taxation system. Indeed, the politics surrounding the Communist Party Congress meetings in June and July 1996 in which party leaders showed signs of trying to maintain and consolidate power has not enhanced investor belief that reforms will continue at the same rate as before (*Business Week*, 1 July 1996). Vietnamese policy makers have been indecisive in completing negotiations with Telstra (Australian owned), Cable and Wireless (UK owned), NTT International (Japanese owned), and France Telecom to install and operate land lines (*The Financial Times*, 9 May 1996). Wavering in this way is a severe impediment as it discourages other companies from attempting to enter the

market. A combination of the authorities being more selective in number of projects licensed as well as companies not proposing as many projects may, in part, explain the diminished number of projects licensed (down 38 percent) for January to August this year relative to last year (Dow Jones News Service, 9 Sept 1996).

## **Internet in Vietnam**

### ***The Potential of Internet***

Whereas Chapter 11 focuses on basic telecommunications issues, Chapter 12 analyses, utilising Porter's model of five competitive forces, one of its up-and-coming uses—Internet service provision. At the present time the main thrust of telecommunications growth in Vietnam is for expanding voice, fax, paging, and mobile phone capacity. This could very well change in the not-too-distant future.

The Internet is only a recent entrant to Vietnam, and is presently limited in scope. It began in late 1994 with only 30 users in Hanoi—now there are more than 2000 users, located principally in Hanoi and Ho Chi Minh City (*The Wall Street Journal*, 6 September 1996). Service provided is limited in that only electronic mail connects users to the outside world. However, there is a local bulletin board service serving the business community. Provision for world wide web is in the offing which will create a kind of Vietnam-wide Intranet.

The Internet, with its phenomenal world-wide growth (see Table 12-1) over the past two years, presents an added dimension to expansion of telecommunications infrastructure. Once the telecommunications infrastructure is in place, the Internet has an ability to support communication, information and research, marketing, and electronic commerce faster and at lower cost than competing methods, particularly for technologically advanced small and medium-sized enterprises. Moreover, because the information is transported through use of packet-switching technology, better sharing (and thus, higher utilisation) of telecom lines can be achieved. Vietnam could be well-posed to exploit the Internet, both for internal connectivity, as well as for facilitating technology transfer.

### ***Surveys and Interviews***

Chapter 12 contains very useful and up-to-date information on current and potential Internet uses in Vietnam. Information was collected from surveys as well as from interviews of principals in the industry.

Surveys were conducted in Hanoi and Ho Chi Minh City for a total of 92 respondents. Respondents were classified into those 'Presently Using Internet,' and those 'Presently not Using Internet.' Findings on key problems facing Internet users in Vietnam, based on the surveys included high costs and limited range of services. Business people tended to

perceive the Internet as not secure for business transactions. Non-Internet users found lack of training, high cost, and lack of equipment as major impediments to using Internet. However, most non-users saw the Internet as potentially useful to them.

Interviews were conducted with principal government IT agencies, Internet service providers, as well as with a businessperson setting up a cyber cafe in Hanoi. Information relevant to investors was obtained on issues ranging from how the government was piloting an Intranet for selected ministries to problems faced in setting up businesses utilising the Internet.

### ***Market Supply and Demand for Internet Service Provision***

Chapter 12 rounds out its discussion with an assessment of the Internet industry using Porter's diamond of five forces. The result is a well-structured analysis, exploring the supply and demand of Internet services.

From the supplier perspective, there is scope for providers of hardware for data communications, computer and computer peripherals, and software necessary for Internet service provision, content, and security. Indeed, a number of companies are joining the rush to enter the Vietnam Internet market. Vietnam's Army Information Company, in conjunction with Sun Microsystems, Grand Pacific and Sembawang Media Pte. (a unit of Singaporean Sembawang Corporation) sponsored a seminar on Internet security. On the agenda was how Sun Microsystem's security software could be used to screen out undesirable information (*The Wall Street Journal*, 6 September 1996).

Other opportunities are arising for suppliers as private companies and even a provincial posts and telecommunications agency set up local Internet access networks. They hope to be ahead in the game to build up market share. There is speculation that an actual Internet link with the outside world will occur before the end of this year (*The Wall Street Journal*, 6 September 1996).

As noted in the surveys and interviews carried out in Hanoi and Ho Chi Minh City, there appears to be demand for Internet services, albeit limited mostly to businesses and a small number of individuals. The market to individuals will remain limited so long as incomes in Vietnam remain low.

Another impediment to the Internet is official hesitancy towards unregulated access to the rest of the world. Indeed, regulations drafted earlier this year by VNPT stipulate registration by users and Internet service providers. They must also report illegal activities (*The Wall Street Journal*, 6 September 1996).

Regulation of the Internet does, however, provide additional opportunities which Sun Microsystems and others are making use of. Internet service providers in Singapore could find an opportunity to provide technical expertise in how to filter out undesirable information.

## **Technology Linker Characteristics in Vietnam Business People**

### *The Role of the Technology Linker*

Chapter 13 is quite different from the first two chapters as it takes a step back to examine the technology transfer process from developed to developing countries. A key tenet of the piece is that acceptance or rejection of innovation and technology transfer depends crucially on the subjective judgement of the decision makers involved. The study draws on a body of literature from sociology which finds that effective technology transfer requires the existence of a 'technology linker'—an individual or a set of individuals whose attributes are likely to range from being innovative, to being oriented towards outside information sources.

### *Technology Transfer and Technology Linkers*

Vietnam has ambitious goals for future development which will require enormous technology transfer from developed countries. Thus, Vietnam is an ideal location to test applicability of the technology linker model. Chapter 13 does just that, conducting surveys on 36 managers, engineers, and supervisors from three different electronics firms. Although the sample set is too small to make meaningful statistical comparisons, it is possible to draw tentative inferences from cross-tabulated data. An interesting result is that both younger (less than 30 years old) and older workers (above 40 years old) with at least five years experience tend to be technology linkers. These findings were corroborated with other evidence collected during the business study mission to Vietnam. The chapter explains why this result is plausible.

From an investor perspective, the results, when combined with the collaborative evidence have tentative policy implications. If one is involved in bringing in technology, s/he should consider technology linker attributes when deciding the kind of people undertaking implementation of the project in Vietnam.

## **Conclusion**

Chapters 11 to 13 form a neat package for an investor interested in telecommunications in Vietnam. Chapter 11 provides a comprehensive overview of telecommunications infrastructure and its investment potential—both current and future—in Vietnam. Chapter 12 analyses, from several perspectives, Internet service provision in the socialist republic. Whilst the ISP and related markets for individuals will never be sizeable until income levels rise, there is still ample opportunity in business and government. Lastly, Chapter 13 provides tentative advice for firms involved in the actual transfer of technology to Vietnam. Technology linkers

may be the ingredient necessary to ensure a successful project in a country undergoing tremendous change.

## References

“Hanoi to Alter Investment Law”, *The Financial Times*, Jeremy Grant, London, 22 August 1996.

“Is Reform Alive in Vietnam?” *Business Week International Editions*, Frederik Balfour and Joyce Barnathan, Hanoi, 1 July 1996.

“Korea Telecom in Hanoi Deal”, *The Financial Times*, Jeremy Grant, London, 16 May 1996.

“New Vietnam Investment Law to Boost the Power of Foreign Cos”, Dow Jones News Service, Dow Jones and Company, Inc, 21 August 1996.

Nguyen Minh Tu, “Ten Years Economic Reform in Vietnam—Some Selected Macro-economic Key Issues”, Central Institute for Economic Management (CIEM), Hanoi, Vietnam, December 1995.

“Proletariat Blues: Both Woeful, Neither Workers nor Unions are Top Dogs”, *Far Eastern Economic Review*, Adam Schwarz in Hanoi in Ho Chi Minh City, 25 January 1996.

“Vietnam Faces an Internet Quandary: Desire for Data vs. Security Concerns”, *The Wall Street Journal*, Dow Jones and Company, Inc., Reginald Chua and Carey Zesiger, 6 September 1996

“Vietnam Licensed Foreign Investment Down 38 % on Year”, Dow Jones News Service, Dow Jones and Company, Inc, 9 Sept 1996.

“Vietnam Opens Fibre Optic Link” , *The Financial Times*, Jeremy Grant, London, 9 February 1996.

“Vietnam Plans Second GSM”, *The Financial Times*, Jeremy Grant, London, 25 June 1996.

“Vietnam puts Telecom Deals on Hold”, *The Financial Times*, Jeremy Grant, London, 9 May 1996.