The Conditions and Problems of Software Industry in Kathmandu*

MATSUSHITA Michiko

(College of Human and Environmental Studies, Kanto Gakuin University Yokohama 236-8503 Japan)

Abstract The information technology (IT) has the potentiality to narrow the economic gap between the advanced and the developing countries because of the less equipment than other industries. Although Nepal is one of the poorest countries with insufficient infrastructures, some software companies are trying to go out on the international market. In this paper, we focus on the possibility of business success of Nepali software industry and the problems to be solved for that purpose. Our approach is the way to go to the field, to watch the miscellaneous phenomena, to interview with the parties concerned and to construct the story. As the result we know that the biggest problem for the Nepali software industry is not the technical situation of software science but the lack of the real experiences of the business.

Key words Kathmandu; map digitizing; software industry

Today’s rapid expansion of the information technology (IT) has a great influence on every country. Some Asian countries succeeded in the manufacturing of personal computers or parts, computer software and the Internet services. This new technology gives the even chance also for the small companies in the developing countries where the preparation of infrastructures is not enough, because we do not need the big equipment in the industry of software or the Internet service. The Nepal is very famous for the Himalayas and well known as the one of the poorest country in the world[1,2]. They have no valuable industry except the tourism. But, in the capital city Kathmandu, the ordinary life of citizen is not so bad because many industrial products including personal computers are coming from India and other Asian countries. Any Nepali can go to the neighboring country India without restriction and vice versa. India is the most succeeded Asian country in IT area. Some Japanese and US companies have interests for Nepal as the promising center of the computer software development. I researched the actual situations of software companies in Kathmandu in February 2003 and March 2004.

1 The IT Environments in Kathmandu

It is very hard for us to get the accurate data of Nepal especially from abroad, because unfortunately the statistics of Nepal aren’t correct or comprehensive. During the research in Kathmandu, I collected much information about the current IT situations in Nepal. Many of them are obtained from the interviews, observations or inside information rather than published books, journals or booklets.

1.1 Telephones and Mobile Phones

In Nepal, only a government-affiliated company, the Nepal Telecommunications Corporation (NTC), supplies the domestic and international telephones and mobile phone services. The number of telephone lines and the mobile phone users in Nepal are shown in Tab.1. The both scribers are steadily increasing during a year from 2002 to 2003, but the ratio of diffusion is still very low. The Tab.2 shows the telephone and mobile scribers in Kathmandu that is the capital and the biggest city of this country. More than 57% of the total telephone lines in Nepal are distributed in Kathmandu. Also about 89% of mobile telephone scribers are concentrated in Kathmandu.

Received 2004-06-18

* Supported by the project of the Institute of Human and Environment of Kanto Gakuin University in 2002 and 2003.
1.2 Internet and E-mail

From the materials given by the Japanese embassy in Nepal, there are 14 Internet service providers (ISPs) in Nepal and the number of the Internet users is 25000 all over the country, the 45% of them have the account of E-mail. The data of NTC shows that the Internet subscribers of NTC are only 2007 persons as Tab.3, because the Internet users of NTC are governmental offices or official facilities like the relational organizations of the United Nations. Many general citizens utilize the service of private ISP companies, for example Mercantile or World Link that supplies the same service by lower price than NTC. Tab.4 and Tab.5 show the charge of each company\(^{5,6}\). The management staff of Mercantile told me that the number of the Internet subscriber of the company is almost 6000 and that of E-mail subscribers is 2000 in the February of 2003. The market of the Internet service is so competitive in Kathmandu. Some companies participate in the price down campaign. The World Link published that 10,000 Rs (136.7US$, US$1=Rs.73.14) per year for the unlimited Internet offer and the other side the Everest Net advertised the free E-mail account for 6 month, in the ‘e-book’ that is the first guidebook of WWW sites in Nepal\(^7\). There are many Internet cafés in the downtown; we anytime utilize the Internet service and e-mail service. The fee of use of the Internet, E-mail or PC is about 30 Rs (0.4 US$) per hour. The speed of the access to the Internet is very slow in the daytime because the accesses from the companies are concentrated. The Nepal is the mountain country and use VSAT (Very Small Aperture Terminal) where the lines are very thin, the access speed is slow (56kbps), and the cost is very high.

| Tab.1 The situations of telephone lines in the whole of Nepal, data from NTC (2003) |
|--------------------------------------|------------------|-----------------|-----------------|
|                                      | Poush 2058       | Poush 2059       | Ratio of growth (%) | Ratio of diffusion (%) |
| Telephone Lines: Installed Capacity  | 372,856          | 409,741          | 10                | 1.6105              |
| Telephone Lines: Distributed Lines  | 302,111          | 348,887          | 15                | 1.3049              |
| Telephone Lines: Number of Waiters  | 299,699          | 305,406          | 2                 | 1.2945              |
| Mobile Telephone Subscriber         | 18,102           | 27,103           | 50                | 0.0782              |

Population of Nepal in 2001 = 23,151,423 from ICIMOD&CBS (2003)\(^3\)
Poush 2058 of Nepali calendar = from December 16 in 2001 to January 13 in 2002\(^4\)
Poush 2059 of Nepali calendar = from December 16 in 2002 to January 14 in 2003\(^4\)

| Tab.2 The situations of telephone lines in Kathmandu, data from NTC (2003) |
|--------------------------------------|------------------|-----------------|-----------------|-----------------|
|                                      | Mangsir 2059     | Poush 2059      | Ratio of growth (%) | Ratio of diffusion (%) | percentage in Nepal (%) |
| Telephone Lines: Installed Capacity  | 221,664          | 221,646         | 0.00             | 20.4878          | 54.09             |
| Telephone Lines: Distributed Lines  | 198,064          | 200,059         | 1.01             | 18.3080          | 57.34             |
| Telephone Lines: Number of Waiters  | 132,667          | 132,590         | -0.06            | 12.2630          | 43.41             |
| Mobile Telephone Subscriber         | 22,775           | 24,098          | 5.81             | 2.1052           | 88.91             |

Population of Kathmandu in 2001 = 1,081,845 from ICIMOD&CBS (2003)\(^7\)
Mangsir 2059 of Nepali calendar = from December 16 in 2001 to January 13 in 2002\(^4\)
Poush 2059 of Nepali calendar = from December 16 in 2002 to January 14 in 2003\(^4\)

| Tab.3 The Internet & e-mail subscriber in the whole of Nepal, data from NTC (2003) |
|--------------------------------------|------------------|-----------------|-----------------|
|                                      | Poush 2058       | Poush 2059       | Ratio of growth (%) | Ratio of diffusion (%) |
| Internet Subscriber                 | 1,750            | 2,007            | 15               | 0.0076              |
| E-mail Subscriber                   | 776              | 1,073            | 38               | 0.0034              |
1.3 PCs

It is also difficult to get the statistics about the amount of personal computers’ (PC) sales. There are some PC shops on the main street in Kathmandu, but few shops have the stocks. In the show window, the package boxes of PC or printer are decorated. The PC sets are generally assembled after order. The parts of PC are imported from India or other Asian countries formally or informally. The prices of these assembled PCs are cheaper than that of the pure bland goods, but the quality is worse. Many sorts of merchandise in Nepal do not have fixed price and the negotiation for price down is necessary for us. A volunteer staff of Japan International Cooperation Agency (JICA) told me that more expensive good was better in Nepal. When she bought the Compaq brand-new PC set, the price of that, including the display and keyboard, was 91,300 Rs (1248 US$) in April 2002. The PC is very expensive for the ordinary people, even for the workers in the IT area, whose average salary is from 4000 to 8000 Rs (54.7 – 109.4 US$).

1.4 Common Problems

The most serious problems in Nepal are a supply of electric power, the quality of goods and the dust. Nowadays, there are few blackouts in Kathmandu, but the situation of electricity is not so good and the voltage is not stable. A JICA staff had an experience that the stabilizer was burned and melted down in the room. Fortunately the PC was not damaged owing to the stabilizer, but all of other electric household appliances had broken. Another person told me that the voltage of electricity was low in the daytime and high in the midnight because of the change of the number of electric power users. They said that in Nepal, it is usual that the socket on the wall is slightly different from the shape of the plug. The industrial goods of same product number are not precisely the same. The dust gives the people in Kathmandu many troubles in the daily life. It is so difficult to save or use the data on the floppy disks because the dust gets into the slit of the FD drive. Some people said that CD-ROM was even scratched by the dust in the drive.

2 The Conditions of Software Industry in Kathmandu

2.1 The Background: Business Association and Education System

The number of the software companies in Nepal was almost 180 in 2001, from the materials given by the members of the Japanese embassy staff working in the economic area in Nepal. Now the member of Computer Association of Nepal (CAN) is more than 200 companies over the miscellaneous categories including software companies, PC shops, PC schools, colleges in IT area, etc. The CAN holds the only IT exhibition in Nepal ‘Info-Tech’ every year, and occasionally the IT workshops and seminars. This organization is managed by a few of clerical
employees and the volunteers from the member companies. The CAN also has an academic researching group ‘IT Professional Forum’ that publishes the technical journal in IT area [9]. The IT skill talent is supplied from 3 national universities (Tribhuvan, Pokhara and Purbanchal) and one private university (Kathmandu University). The faculties of IT area of these universities produce about 5000 of IT engineers every year. In addition to these domestic education programs, more than 2000 students of the top level go abroad, for example India, USA, China, etc [10]. The best merit of software business in Nepal is the low labor costs. The common salary of software engineers or workers is about 4000-8000 Rs (54.7–109.4 US$) per month.

2.2 Map Digitizing

The digitizing the analog map papers and aerial photographs is one of the most successful IT areas in Nepal. In February of 2003, I visited the big 4 companies working for the digitizing of Japanese city maps or water pipelines’ maps [11~15]. The needs for digital maps are increasing because of the popularization of the car navigation system and the Internet where we can search for our destinations on the map. The operation of map digitizing requires so big manpower that the cost is very expensive if these works were done in Japan. The president of a corporation said that a blue print of 1/2500 map needs about 20-30 man-days in order to digitize.

More than 10 years ago, one Japanese company advanced in Nepal and established a foreign-affiliated firm as the branch office. 3 of above 4 map digitizing companies are invested capital from the Japanese companies. These 3 companies have the similar characteristics: having Japanese speaking president or manager, employment of Japanese staff and using Japanese application software.

The business style of 4 companies is almost same. The analog data of papers are sent by the international delivery service from Japan taking 3 days. The digital map data are sent through the Internet, and CD-ROMs or hard disk as the backup by the international delivery service. Each company has 20~50 PCs and a scanner for the whole sheet in the office and employs 15~40 of contracted operators. 3 companies utilize the working shift; the morning operators work from 6 am to 1 pm, in the other hand the afternoon operators work from 1 pm to 8 pm. The 70-80% of staffs are female. The training for the beginners takes about 1 month. Nowadays the supply of experienced staffs is already abundant, because many operators often change the job for the higher wages even if the new job is not in IT area. 2 companies provide the training program in Japan for the upper technical staffs, which puts a big motivation for their jobs.

These 4 companies have two impressive characteristics in common. One is the very clean office room where we must put off the shoes at the entrance. It is a miracle in Kathmandu, the city of dust. Another is the word of the president; they said me that the deadline was the most important for their business. These two features distinguish the 4 companies from other Nepali firms.

2.3 Medical Transcription

One of the above map digitizing companies also has succeeded in the area of medical transcription. They type out the voice data of doctors’ medical examinations to clients, sent from the hospitals in Los Angeles through the Internet. This business utilizes the time difference between Nepal and USA. The sound data sent in the evening in the USA after closing the hospital reach in the early morning in Nepal. The text data are returned to the USA in the afternoon of Nepal, by the morning in the USA before starting the hospital. The most important point of this business is to keep the deadline. The training of this work needs about 6 months because it is necessary the high level of English listening skill and the knowledge of the medical terms.

2.4 Software Development

Elite is one of the Nepali software companies that started the business from the vendor of the US PC hardware makers today constructs the mobile banking system for the Nepali branch of a bank of the United Kingdom. This company is also working for the network construction for the projects of the United Nations Population Fund (UNFPA). In Nepal, there are many international agencies for example UN related organizations, the offices of official development assistance (ODA) from foreign countries and international NGO offices. Although many software
companies desire to gain the order from these international organizations, there are only few corporations that obtain the chance.

The Nepali domestic market of software developing and network structuring is still very small because the electric data processing (EDP) has just started in the Nepali business. In Kathmandu there are branches of foreign and domestic banks; some of them are open by the night and some have the cash dispenser machines working 24 hours. There are some international-class hotels. The operations in these banks, hotels and government offices are performed by EDP system. However almost all the shops use only the book of numbering sales slip that is the obligation for the private company from the tax law. The cash registers are introduced into few shops as some big supermarkets on the main street. The growth of the software industries is closely related to the spread of EDP system in the country.

3 The Problems of Software Industry in Kathmandu

Nepali companies already got the success in the genres of geometrical data processing and medical transcription. Both of them are the labor-intensive business and the wage of workers tends to be cut down expenses. This type of business pays because of the great gap in price levels between Nepal and Japan or other countries. The companies working in these fields gain the stable income from the long time relationships with the foreign partners, but hardly have a chance to go into the business of software developing because the accumulation of the knowledge is very difficult for the firms only doing the digitizing works.

On the other hand there are some success companies in the software developing area. Some of them have the experience as PC vendors and good relationship with the foreign companies. But the majority of their projects are depending on the budgets of UN organizations, ODA offices or international NGOs. The domestic demand for this genre is so small then many corporations expect the orders from abroad. A president of the biggest distributor in Nepal of the famous US computer makers desires to start the new business of software developing with any Japanese companies. He and his staffs work hard and attended the exhibition planned by Japan External Trade Organization (JETRO) in Tokyo paying very expensive cost, but they had no chance to start it.

The Nepali government has a project to build the IT Park in the suburbs of Kathmandu, but it is not progressing well for a year. In this chapter, we consider the reason why the Nepali software companies cannot get the big business in the international market.

3.1 Infrastructures

As we saw above, the building of infrastructures is not perfect in Kathmandu. To supply the stable electric power, to increase telephone lines or mobile phones, to improve the environment of the Internet access are urgent business. There is a high-class tenant office building where one of the map digitizing companies rents a room with the expensive fee equips the independent electric power plant in preparation for the blackout.

Many support programs and projects are progressing in Nepal by the UN, foreign ODA and NGO in the various areas; supply of the electrical power, the drinking water, roads of good condition, a literacy campaign, public health, etc. From the viewpoint of economic development, the priority of the foreign support may be shifted to the IT area, for example the improvement of the Internet environment.

3.2 Organized Work and Management

The second problem of the Nepali companies is the insufficiency of the manager. The presidents of 2 map digitizing companies work as the manager, making a working plan for the operators, monitoring the progress of each operator and check of the job of them. In other 2 companies, the Japanese stuff was in charge of management work. Many Japanese I had interviews in Kathmandu said that there is little concept of managing in the Nepal. Nepali people are good at personal specialized work as the mandara painting, but they are not so strong in the behavior in the organizations. The size of the Nepali companies succeeded in the international business is not so big, even the bigger one has only 40 full-fledged employees. The chief of a branch office of Japanese governmental organization said me that it was very difficult for the Nepali staffs to keep the rules; to report everything to the boss, to communicate with the staffs in the same office and to transfer the job to the
The training of the managers is necessary for the Nepali business society.

3.3 Business Ways and Quality Control

Some Japanese businesspersons in Kathmandu told me that the Nepali companies have less experience of real business that is to pay the costs and efforts in order to gain the profit. There have been few competitions in the Nepali business till now because of the huge foreign financial aid. Large donation and foreign supporting fund have been dropped on this poorest country of the world for long time[1]. Some persons said me that these situations had a bad influence upon the Nepali business manners. It is not only companies but also the government are waiting for any support from abroad rather than acting with the positive attitude.

Nowadays the capitalistic economy has come to this small city and some of positive Nepali business persons appeared. The idea of quality control, customer services and advertisement has started to consider during these several years. The Nepali companies will be able to learn much of business ways from the many international organizations or offices that exist in Kathmandu[16]. We cannot disregard the relationship between Nepal and India. The software industry in Nepal has a potential power to succeed

4 Conclusions

The software companies in Kathmandu have some problems of infrastructures, the insufficiency of managers and less experience of international business, but some companies are starting the business in the worldwide market. In order to get the business chance from the foreign companies, it is necessary to train how to manage the organizations and the means and rules of international business.

References


Brief Introduction to Author

MATSUSHITA Michiko is an associate professor of the Department of Modern Communications, College of Human and Environmental Studies, Kanto Gakuin University, Japan. Her research interests include economic development using IT industries, qualitative measurement of economic growth and the system analysis using the qualitative research methods. She received her M.S. degree in Economics from Chuo University, Japan in 1986.