MACROECONOMIC AND ADJUSTMENT POLICIES GENDER NETWORK (PHASE III)

GENDERED IMPACTS OF THE DEVELOPMENT OF INFORMATION AND COMMUNICATIONS TECHNOLOGIES IN VIET NAM:

A STUDY SUPPORTED BY SURVEYS OF ENTERPRISES AND HOUSEHOLDS IN HA NOI AND HO CHI MINH CITY

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This paper is one of the total four papers carried out by the Team in the completion of the Research Module on *"Gender and ICT in Viet Nam*", sponsored by IDRC.

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Abbreviations

ASEAN	Association of Southeast Asian
CAGR	Compound Annual Growth Rate
CPRGS	Comprehensive Poverty Reduction and Growth Strategy
DGPT	Department General for Post and Telecommunications
GDP	Gross Domestic Product
GSO	General Statistical Office
HCMC	Ho Chi Minh City
ICT	Information and Communication Technologies
IT	Information Technology
ITU	International Telecommunication Union
MARD	Ministry of Agriculture and Rural Development
MDG	Millennium Development Goals
MIMAP	Macroeconomic and Adjustment Policies
MOET	Ministry of Education and Training
MOSTE	Ministry of Science Technology and Environment
MOT	Ministry of Trade
R&D	Research and Development
SME	Small and Medium Enterprise
SRV	Socialist Republic of Viet Nam
UNDP	United Nations Development Program
UNFPA	United Nations Population Fund
USAID	U.S. Agency for International Development
USD	U.S. Dollars
VAB	Viet Nam Agriculture Bank
VAT	Value Added Tax
VCIT	Viet Nam-Canada Information Technology Project
VFLF	Vietnamese Farther Land Front
VHLSS	Viet Nam Household Living Standards Survey 2001-2002
VND	Viet Nam Dong
VNPT	Viet Nam Posts and Telecommunications Corporation
VTV	Viet Nam Television
VWU	Vietnamese Women's Union

EXECUTIVE SUMMARY

Information and Communication Technology (ICT) has developed rapidly in Viet Nam over the last two decades and brought about substantial impacts on lives of most of men and women in this country. Women have more opportunities in the participation of ICT-related jobs as well as in application of IT as users, etc. However, whether ICT development has narrowed the gender gap which prevails in most parts of Viet Nam's society and economy or not remains a question and that has important implication for the development policy of Viet Nam. This study is an attempt to shed light on the issue. The study summary report is based on four component-papers prepared by the Team in the completion of the research module on *"Gender and ICT in Viet Nam*", under the supervision by the Institute of Social Studies Trust (India).

The main objective of this study includes examination of gender gaps in skill generation and the access and use of ICT as well as the assessment of the gendered impacts of the development of ICT in Viet Nam. We are also to explore into the social-economic causes for the gaps or inequality. More specifically, we look at the perceptional and structural issues related to gender gaps in ICT use and access by household members, as well as the nature of gender differences in workplace.

The main source of evidence for this study is the data collected from two surveys: (i) 300 IT workers in ICT-related firms and (ii) 400 households on gender and ICT. These surveys use a direct interview method based on questionnaires (Appendix 1 and Appendix 2) and were conducted in Ha Noi and Ho Chi Minh City during October and November 2004. Another important source of data is the series of Viet Nam Household Living Standard Surveys. In addition, we use the Census data 1999 of Viet Nam and the literature on ICT and Gender by the World Bank and UNDP.

Having recognized the risk of being left behind too far from ICT advanced countries, the government of Viet Nam, made a strong commitment to remedy the situation. The Government has adopted a number of decisions, programs and strategies with goals of mobilization resources for ICT development. Most of the programs are very ambitious, but they have often been under-delivered. The development of ICT industry in Viet Nam over last two decades nearly coincided with at least three other major developments that have profound impacts on lives in this country, including that on gender aspects. First, the transition to market economy facilitates the economic

growth of relatively high rate, and at the result, GDP per capita increased by over two and half times in two decades (1985-2004). Secondly, the adoption of Open-Door Policy made it possible a greater exchange of information with the rest of the world. Finally, over a long period of time, the government and a large number of social organizations ran their campaign for family planning and population control. Individually, the effects of ICT revolution on gender issues might not be as strong as the others. Nevertheless, the growth of ICT bolstered the effects of the other. For instance, TVs and radio are an essential part of the campaign for population control. Likewise, there are clearly strong mutual supports between ICT revolution and the process of Open Door. Thus, the effects of the processes mixed together, and that makes it difficult to separate individual effects of ICT quantitatively.

While there are good reasons to hope that ICT development to be helpful to alleviate gender inequity, there have been challenge s to that view. The overall gendered effects of ICT will depend on two factors. First, if women and men have the same opportunity to exploit the power of ICT. Secondly, if women can take the advantage of ICT available to them as much as men do. It turns out that those may fail in practice just because people naturally accept some sort of gender gap. As the perception on disadvantage of female members in society make the gender gap persist. That may work through the way one makes decision on education, e.g. parents gave more opportunity to their sons than to their daughters, and girls were less likely than boys to choose science streams and that may lead to certain gender gap in future incomes.

The presence of ICT in rural areas of Viet Nam has been very little, and therefore the social and economic impacts have been very weak in those areas. To capture the impacts already on place, this paper will focus on Ha Noi and Ho Chi Minh City (two biggest cities of Viet Nam), which host nearly all the ICT related enterprises of Viet Nam. Likewise, the effects of ICT development on many economic sectors are insignificant, and therefore, our firm surveys work only with the ones with outputs in the ICT industry. Moreover, in the circumstance that the effect of ICT being mixed with those of other major reform taken at the same time in Viet Nam, we limit our task in this paper to analyse the channels, through which the ICT growth affects gender equality. Only in cases the effect of ICT is the same as the trend, which is the overall effect of the major processes descr ibed above, the effect of ICT is reflected on

data, which should be interpreted qualitatively.

The growth of ICT works on gender gap mainly through income, education and political empowerment of female members of society. The impact on the economic status of female member has been significant only for the people in the ICT industry. However, as the salary ratio between male to female employees is greater than that in the economy in general, and it does not imply the ICT has improved gender equity in income. Women in this sector are paid much less than men counterparts. Furthermore, female employees are holding shorter terms of labor contract and faced lower chances of promotion. A greater proportion of women than men felt a sense of economic insecurity, whic h is the threat of being laid off without notice. On basic education, the effect of Internet has not been very significant. More substantially, TVs and radio are effective in transmitting popular knowledge and teaching foreign languages, which is very helpful for many urban girls to have high paid jobs in enterprises with foreign partnership and that makes certain difference in gender gap. Furthermore, female access to ICT equipments such as mobile phones, internet, computers and other ICT related devices has been significantly less than that of males.

The social and political impacts of ICT on gender gap have been powerful. In fact, social opinion has changed much in direction in favor female members. It is easier now to elect women to public offices, and to accept women in managerial positions than ever before. However, if one leaves out the urban part of the country, ICT has had insignificant impact on women in the rest of the country. There were very limited number of examples of ICT being used to help the poor and the real effect of ICT on poverty reduction has not been statistically observed. The implication from this research does not support to the claim that the gender gap within the ICT sector had widened in Viet Nam over time. In fact, these surveys show that gender gap is narrower now than it was a few years ago.

Despite the obvious gender-differences in the ICT industry, with the positive attitudes of women towards ICTs emerged from our surveys, Vietnamese women seem to have a bright future. A majority of parents took a positive view on education per se and technical/ICT education for their daughters. Nearly all the parents regarded ICT employment as providing good work opportunities for their daughters. Urban boys and girls displayed almost the same degree of enthusiasm to ICTs and the uses of ICTs. Even if this is not the case in the vast rural areas of Viet Nam, the situation of

the two largest cities will have important spillover effects on a much greater part of population.

The main contents of this study are based on data of the ICT enterprise survey and the household survey conducted in Ha Noi and Ho Chi Minh City during October and November 2004. The main findings from these two surveys are summarized as follows. With respect to the ICT enterprise survey, it indicates that:

- ICT work force is relatively young. Most of them are younger than 30 years and very few of the older than 40 years.
- There was no gender gap in educational levels but in educational degrees between male and female IT workers, especially in Ha Noi;
- Employers in general are less committed to female employees. Female ICT workers faced a lack of job security and more stress than male counterparts;
- Both male and female IT workers, especially females, faced poor care from the organization. Fringe benefits for ICT employees are very limited ;
- There exists gender wage gap in ICT workers, even greater than that in whole economy;
- Education and job status of parents as well as education and the exposition to ICT of brothers/sisters had linkage with work/job of IT workers;
- Female employees have less opportunity for further trainings than the male counterparts do;
- Female ICT workers think that there are obstacles or delays in promotion for them; and
- Female ICT workers think that they are hired mostly to do the works with little demand in skills and low wages.

Data from household survey on gender and ICT reveal, among other things, that:

- Ownership of ICT-related assets differed between cities, areas and income groups but insignificant between gender of household heads;
- There was a gender gap in using advanced ICT-related assets;
- Parents think the attitude of gender equality has changed over their lives.
- Parents in Ha Noi and Ho Chi Minh City do not discriminate against their daughters in provision of education to their children;

- ? Purpose of the Internet usage for entertainment was different between boys and girls;
- ? Schools played a crucial role in teaching children to use computers;
- ? Children often went to Internet café to access the Internet;
- ? Both boys and girls had high awareness of ICT.

Even though the impacts of ICT on gender gap in Viet Nam are currently modest, there are reasons for optimism. First, the ICT sector of Viet Nam has been in its initial stage of development, and the scale of operation and the employment remain small. Secondly, the Government is not only supportive, but also making big investment, which seems to have crowding in effect in this sector. In fact, the sector rates of growth in recent years are very high. Finally, by its nature, the way ICT development affects the gender gap is accumulative, perhaps with lags, and therefore, one rationally expects more significant impact in the future.

The study recommends that while the household attitude toward gender equity is being changed slowly in right direction, there are measures that can be done in schools or in public place to remedy the disadvantage of girls and the young women in terms of their readiness to ICT. In schools, girls should be encouraged and assisted in career orientation. Moreover, parents should be held responsibility for any bias against their daughters in their provision of education to children.

The legal system of Viet Nam should be made more effective in its enforceability. It should be affecting the position of female job seekers in their negotiations with employers, who often have substantial market power, especially in the area with high technological contents, such as the ICTs. In fact, many of the reasonable benefits of many female employees in the sector of ICT have not been effectively protected by current laws dealing with labor market. Neither have the special benefits of women in the industry. A more operative labor law may deal with that and enterprises can be held responsibility is gender bias is found in their hiring practices. The government of Viet Nam has had slight tax incentives to the enterprises that employ large number of females, and the broader measures in that direction, however, should be taken. It is encouraging that the Land Law of Viet Nam requires that the names of both household head-spouses present in their Land Use Certificates. The application of that gender friendly piece of Law has been, at most fractional, and therefore the full enforcement has become urgent.

Provision Internet infrastructure to the vast rural areas, even if can be expensive, is necessary and urgent purchase for the Government of Viet Nam. Lack of information is an important part of the poverty, which exists mostly in rural areas, and Internet is the most effective way to assist the rural poor. The full benefit of the Internet, however, can not be realized without instruction staffs available to work with the rural people with limited education.

Gender gap persists because it is an element in a vicious circle, which includes household behavior with respect to the investment in education, inheritance, labor division, etc., and social behavior such as election for public office. To break the vicious circle, the gender neutral measures are likely to be ineffective, or slow. In order to speed up the progress in gender equality, some biased measures in favor of female members of the society are needed. The politic system should adopt special measures for giving women more of the tools brought about by the development of ICT and having more women elected in office of power.

PART I: DESCRIPTION OF SURVEYS AND DATA

I. THE APPROACH

The research focuses on two subject groups: (i) IT workers in ICT firms and ICT-related organizations, and (ii) households in relation with gender and ICT. Information was directly collected through questionnaires by enumerators from the Viet Nam Institute of Economics and its associates i.e. Ha Noi Statistical Office and Ho Chi Minh City Statistical Office. The surveys were conducted in Ha Noi and Ho Chi Minh City, the two biggest cities of Viet Nam. Each survey was conducted in two rounds. For the first round, 10 percent of the sample was selected and interviewed on the trial basis of the original questionnaire designed by ISST in order to get the experience and modify the questionnaire that is appropriate with Vietnamese IT workers and households. For the second round, the survey was conducted on the popular basis of the selected sample and the modified questionnaire. All enumerators have been trained in a number of previous surveys managed by the Viet Nam Institute of Economics.

Total sample size is 400 IT workers for the firm survey and 300 households for the household survey. In order to understand exactly the gender issue, the research tries to select at least a half of IT respondents are women and at least a third of households have both boys and girls. Both parents and their children are interviewees in the household survey.

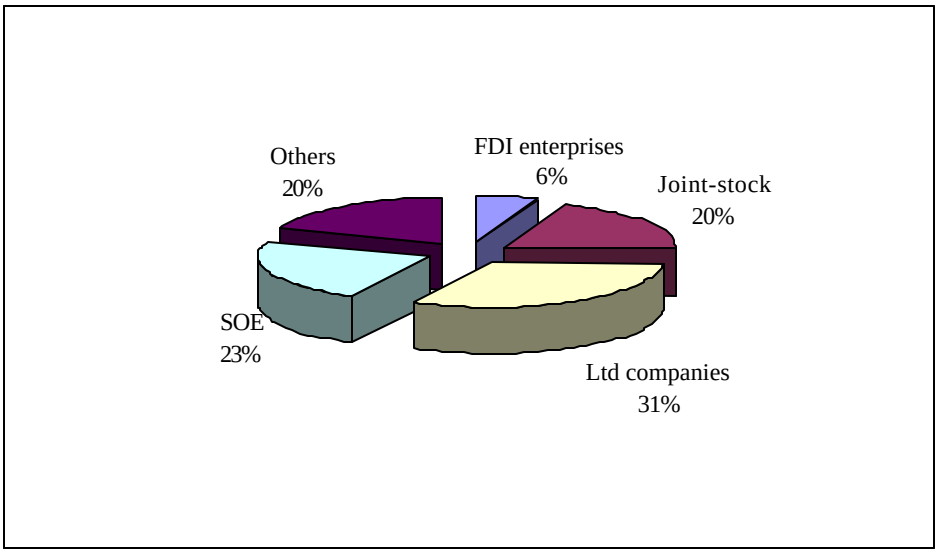
II. SAMPLE SELECTION

2.1. ICT Workers Survey

The sample of IT workers was selected based on the following criteria:

In each city, twenty six ICT firms/organizations which specify in software design, word processing, storing and processing data/information, communications, components production, computer assembly and maintenance and other ICT related services were chosen randomly. These firms/organizations include state-owned enterprises, limited companies, joint stock companies, foreign direct invested enterprises, ICT training centers/schools, IT departments of universities and mass media organizations which are located in both urban and suburb areas.

Figure 1: Distribution of surveyed ICT workers by category of companies

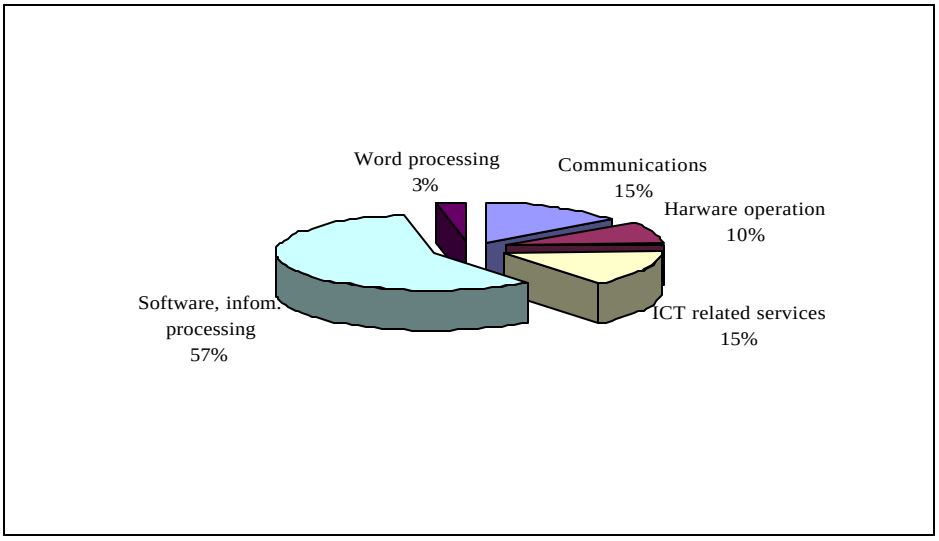


Source: MIMAP-Gender survey, 2004

? Firms/organizations sample was selected proportionally to both the type of ownership and ICT work of firms/organizations which are located in Ha Noi and Ho Chi Minh City. The sample had to cover both small and large ones.

? The number of IT workers within firms/organizations was selected to interview depends on the size of firms/organizations: eight for large firms/organizations and six for small ones. Furthermore, at least half of respondents in each firm/organization must be women.

Figure 2: Distribution of the surveyed ICT workers by type of operation



Source: MIMAP-Gender survey, 2004

As a result, 173 women among 400 IT workers of the total sample size of 53 firms/organizations were interviewed (Table 1). Finally, the sample size is distributed by type of organization and type of ICT work of organization as follows:

Table 1: Sample of IT workers survey by city and sex

City	IT workers		
	Male	Female	Total
Ha Noi	85	115	200
HCMC	142	58	200
Total	227	173	200

General information about informant: 82 percent of interviewees belong to 20 - 30 years old range, 95 percent are graduates and post graduates, 43 percent are female.

2.2. Household Survey

The sample of household was selected based on the following criteria:

- In each city, 150 households were randomly selected. Two-thirds of them must be located in six communes in three districts inside the city (two communes per district) and one-third in four communes in two districts outside the city (two communes per district).
- All households had at least one child in school age and at least a third of households have both boys and girls, the remaining is divided evenly between households have only boys and households have only girls.
- All households had to access to electricity.
- Both the rich and the poor households were interviewed.

As a result, 205 households in urban area and 95 households in suburb area were interviewed as presented in Table 2. 29 percent of the sample households had only boys, 24 percent had only girls and the rest had both boys and girls (Table 3).

Table 2: Sample of household survey by city and area

City	Area		
	Urban	Suburb	Total
Ha Noi	100	50	150
HCMC	105	45	150
Total	205	95	300

General information about informant: Some 62 percent of household heads belong to 40 - 50 years old range, 30 percent are graduates and post graduates, 29 percent are female and 32 percent have exposure to computer education.

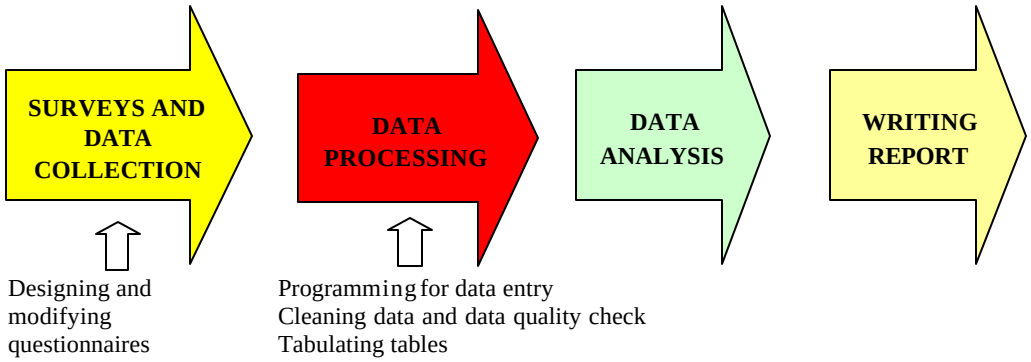
Table 3: Survey sample by household types

Type of household	City		Area		Total
	Ha Noi	HCM	Urban	Suburb	
Only boys	50	38	55	33	88
Only girls	50	21	52	19	71
Boys and girls	50	91	98	43	141
Total	150	150	205	95	300

III. DATA PROCESSING AND ANALYSIS

Figure 3 shows all the steps in the data processing and analysis of the surveys. All qualitative and quantitative data and information of surveys were stored in Excel and STATA files. Data processing and analysis was done by STATA software.

Figure 3: Data Processing and Analysis Process



In order to ensure about the quality and consistency of entry data, we have to implement the following steps:

- Developing a program for data entry:
  - Encoding and coding raw data
  - Creating variables and variable names
  - Defining range of value
  - Designing data entry program (in Access software)
- Converting all raw data inputted in Access software into Excel and STATA files by using Stat Transfer program.
- Using STATA program to clean data and improve raw data quality in the four following steps:
  - Identifying information that had not yet been entered or missed by data operators or enumerators and then have to be reentered or filled in.

- Checking skip patterns within different sections of the surveys and inconsistent codes. These have to be checked back with the information in the questionnaires and reentered of fixed value in STATA program (do file).
- Identifying outliers within each of the sections. The outliers i.e. incorrect unit codes or incorrect unit value have to be checked, identified and fixed in a separate data cleaning files.
- Calculating simple tables to find out other errors when new variables, averages and proportions are created and calculated. These errors have to be checked back with the questionnaires. Most interviewer errors or data entry errors have to be repaired directly in the data set by using STATA program (do file).

- Tabulating tables and drawing charts for analysis and writing reports.

By using the qualified results of the surveys including questionnaires, data entry program, STATA do files for cleaning data and tabulating tables, we can apply these results in other surveys with wider in the future.

IV. PRELIMINARY REMARKS ON DATA

Remark 1*: There was a distinct gender gap in terms of ICT education within the ICT employees, especially in Ha Noi*

General education is considered as a factor carrying on the gender inequality. The survey shows that educational level of both male and female IT workers is very high, with 90 percent holding (general) bachelor degrees, and 5 percent holding higher ones. Among these, IT/communication degrees constitute 64 percent. However, the percentage of women with such degrees was much lower than that of men (47 percent vs. 77 percent). A similar disparity is easily recognized in Ha Noi and Ho Chi Minh City.

There is a notable conflict in educational stream of female workers. About one third of them graduated from economics/commerce, which has limited linkage with the nature of work that they were engaged in. While three-fourths of IT workers in Ho Chi Minh City graduated from ICT, but there were only half of IT workers in Ha Noi. This implies that job orientation and its linkage with education stream in ICT field in Ho Chi Minh City is better than in Ha Noi.

Remark 2*: Female IT workers faced a lack of job security and more stress, especially in Ha Noi*

Though most of IT workers are employed full time, the percentage of women do their jobs based on a long contract is lower than that of men (43 percent vs. 62 percent). On the other hand, up to 47 percent of women work on a short contract while only 30 percent of men work as such. This issue occurs both in Ha Noi and Ho Chi Minh City.

A period of contract further reinforces the more security of men's jobs. While 48 percent of men had an above-one-year contract, but only 39 percent of women have such type. Again, the picture is nearly the same in Ha Noi and Ho Chi Minh City. However, the job is more secure for women in Ho Chi Minh City than these in Ha Noi when we observe that 33 percent of women in Ho Chi Minh City compared with 54 percent in Ha Noi had short-term contract.

In general, female IT workers suffered more work/job related stress and strain than male counterparts especially in Ha Noi when we find that 59 percent of women in Ha Noi compared with 33 percent of women in Ho Chi Minh City felt the threat of getting retrenchment without prior notice, 49 percent of women in Ha Noi compared with 54 percent of women in Ho Chi Minh City thought that they got social security benefit due to retrenchment and none of women in Ha Noi compared with 1.7 of women in Ho Chi Minh City got transport facility provided by firms/organizations. However, male IT workers suffered more physical stress and strain than female counterparts when we observe that one-fourth of male IT workers compared with one-eighth of female counterparts had to work on night shifts.

Remark 3: *IT workers, especially females, faced poor care from the firms or organizations where they work for, especially in Ho Chi Minh City and there was a gender wage gap in IT workers*

Like findings from other studies (McDonald 1999, UNDP 2003a), the survey reveals that women are more concentrated in low levels of remuneration compared to men. Majority of female IT workers were in the level less than VND 2 million, while distribution of male IT workers across remuneration groups was more even. Overall, nearly 34 percent of men got remuneration of more than VND 3 million compared with only 14 percent in the case of women. The average monthly income of male IT workers was 1.3 time higher than that of female counterparts. The average monthly

income of IT workers in Ho Chi Minh City was 1.7 time higher than that of counterparts in Ha Noi.

In general, the average monthly income of IT workers with ICT stream was 1.25 time higher than that of IT workers without ICT stream. However, this wage gap was strong for male IT workers only.

Despite the wage gender gap, women enjoy more gender equality in terms of work's allowances and leaves. However, from the point of Labor Code, the survey highlights certain disadvantages for IT workers: poor care of employees, as up to one third of them do not receive social security and health insurance, especially for short term contract workers where around 45 percent of them did not received any social security and health insurance and for IT workers in limited and private enterprises where around 45 percent and 55 percent of them did not received any social security and health insurance respectively. Similarly, more than 30 per cent of women are not provided reasonable maternity leave in general. The situation is more severe for female workers in Ho Chi Minh City, where the proportions of women benefited from social security, health insurance and maternity leave are 63.8%, 63.8%, and 39.0%, respectively. For other allowances, the proportions of IT workers subsidized from their organizations are even much lower.

Remark 4: *The parents' high education or being in government service, and the high education and the exposition to ICT of IT workers' brothers/sisters had strong linkage with work/job of IT workers*

Nearly 70 percent of IT workers' brothers and sisters were graduates and higher and 43 percent of them had exposure to ICT. The education level of IT workers' brothers and sisters who had exposure to ICT was even as high as nearly 90 percent of graduates and higher. This shows that the high education level and the exposition to ICT of IT workers' brothers/sisters had strong linkage with nature of work/job of IT workers.

There were 53 percent of IT workers' fathers and 36 percent IT workers' mothers with graduates and higher. Nearly 46 percent of IT workers' fathers and 33 percent IT workers' mothers were involved in government service. Survey data suggests that the high education and nature of government service of fathers and mothers of IT workers

had strong influence on the selection of ICT work of their children. This influence was stronger for female than male.

Remark 5: *The organization provided training opportunities for female workers less than that to male counterparts*

Training opportunities are considered as one of the most important factors for the advancement of women's career in the IT sector. However, up to 39 percent of female IT workers in the survey say that men got more opportunities compared to women in terms of training imparted by their organization (40 percent in Ha Noi and 37 percent in Ho Chi Minh City).

Remark 6: *Female IT workers themselves felt that being a woman was an obstacle for the ICT-related jobs*

Female IT workers were asked questions relating to obstacles at the work place. Nearly 5 percent said that they faced discrimination in the organization. However, about 30 percent thought that being a woman led to delays and barriers in promotion. Similarly, about 30 percent disagreed with the question "are ICT-related jobs better for women compared to other kinds of jobs?" And 19 percent felt that IT women were mostly employed in the low skilled and low wage jobs.

In addition, female IT women encountered family responsibilities. Only 31 percent accepted a promotion under a condition that moving to a different place and leaving back the family. And nearly a half faced troubles from the family if they would work on night shifts.

Remark 7: *Ownership of ICT-related assets differed between cities, areas and income groups but insignificant between genders of household heads*

As the household survey was taken in two big cities, the percentage of households owning ICT-related assets, especially more advanced ICT related assets, is very high and much higher than the average for Viet Nam. However, there was a disparity in ICT asset ownership between Ha Noi and Ho Chi Minh City and between urban and suburb areas. In general, the percentage of households who owned ICT-related assets in Ho Chi Minh City was higher than that in Ha Noi, and in the urban was higher than in the suburb, except two cases: (i) for TV, 100 percent of surveyed households had, and (ii) for cable/satellite TV connection, 33 percent of households in Ha Noi had but

only 11 percent of households in Ho Chi Minh City had, and 32 percent of ho useholds in the urban had but none of household in the suburb had.

Besides the disparity between cities and areas, there was also a disparity between male- and female-headed households but insignificant. Overall, female heads were a bit richer in terms of mobile phone, computer and radio.

The ownership disparity becomes more clearly between the poorest and the richest income groups. It is easy to see that households in richer quintiles tend to own more ICT related assets. And in the richest quintile, male-headed households were completely over represented in more advanced ICT assets such as mobile phone, Internet connection, and cable/satellite TV connection.

Remark 8: *There was a gender gap in using advanced ICT-related assets*

When we asked about the usage of ICT-related assets within households, we mostly received the common answer: both men and women use these, excluding the case of mobile phone, computer and Internet connection. Regarding to the remaining answers, there is a gender gap in access to ICT. Some distinction is as follows:

- For mobile phones, 57 percent of households said that only men used while 16 percent of households said that only women used. The gap was even larger in Ho Chi Minh City, where we observe the figures of 62 percent and 13 percent, respectively;
- For computers, 20 percent of households said that only men used while only 9 percent of households said that only women used;
- For Internet connection, these figures in general were 34 percent and 12 percent, respectively, and 43 percent and 11 percent in Ho Chi Minh City in particular;
- Gender gap was higher in suburb areas in computer and Internet connection but not for mobile phone.

Remark 9: *Most of the parents in the two biggest cities said that the idea of gender discrimination has changed over their lived.*

On the question if the things have changed in the present generation, nearly 82 per cent of male household heads said yes. The proportion is even higher in Ha Noi, where 87.5% responded positively. Likewise, 76% of all male household heads in the sample think that their attitudes regarding this are different from the earlier generations. The perception of the female household heads is even more encouraging,

as 89.5% of them think that have changed in the present generation, and 77.7% think that the attitude has changed.

Remark 10: *There was no discrimination in education between boys and girls from parents*.

We asked parents about the discrimination between boys and girls in the family. Some 81 percent of parents said that they would not make difference in educating a boy and a girl, while only 19 percent said they would. And 95 percent of parents said that they would not differentiate between their son and daughter in terms of technical/computer education, while only 5 percent say they would. Explanations were usually as such: they felt their children freely choose the educational field or they followed their children's abilities and hobbies.

With regard to a question on jobs in the ICT sector, 95 percent of parents thought that ICT-related jobs would provide opportunities for girls.

The survey indicates that there was insignificant difference between cities, areas and gender of heads of households in terms of perceptions of parents in educating their children.

Remark 11: *Both boys and girls had high awareness of ICT*

Children from surveyed households were asked information on accessing ICT and their attitudes on ICT-related jobs. In order to examine whether there was a distinct disparity between boys and girls in access to and perceptions of ICT, we divided responses of children into three groups: (i) households had only boys, (ii) households had only girls, and (iii) households had both boys and girls. Overall, boys and girls in these three groups responded in very similar fashion. The most common characteristics were as follows:

- High percentage of using computers;
- High percentage of awareness of the Internet;
- High percentage of accessing the Internet;
- Like to have a job in the ICT sector;
- High agreement with an opinion "Boys and girls are equally suited for computer jobs";
- No gender discrimination in the family;

- No opposition from their parents if they would pursue a ICT training or ICT-related job.

The conclusions as mentioned above are consistent if we make a comparison between cities, areas or gender of household heads.

Remark 12: *Schools played a crucial role in teaching children how to use computers*

More than 80 percent of both boys and girls have learnt how to use computers in schools. Institutes also made a significant contribution, with more than 10 percent in general. The percentage of self learning was very low, with only about 4 percent.

Remark 13: *Though children mainly learnt to use computers in schools, Internet kiosks/*café *were places they frequently accessed to the Internet*

As the popular case, children usually went to Internet kiosks/café for accessing. This is mainly because of the fact that computers and ICT-related equipment in schools, especially primary and secondary, were negligible and in shortage. Access to the Internet at home was the second common place but this mainly worked in the richest quintile and male-headed households where we observe the extreme high rate of more advanced ICT assets such as mobile phone, Internet connection, and cable/satellite TV connection. Other places were schools/colleges and friends' places. Difference between places where boys and girls used the Internet was quite low.

Remark 14: *Purpose of Internet usage for entertainment was different between boys and girls, other purposes remain the same*

Entertainment, learning and communication are the most common purposes that children usually use the Internet. While there was no difference in using the Internet for educational and communication purposes, there was a disparity between boys and girls in using the Internet as a tool of entertainment. In general, 42 percent of boys considered the Internet usage as entertainment purpose, compared to only 30 percent of girls used the Internet for such purpose. A similar disparity can be seen in each city and each area.

PART II: THE CHANGE OF GENDER INEQUALITY IN HISTORY OF VIET NAM

I. GENERAL PICTURE

1.1. History of gender equality in Viet Nam

The status of women in the Vietnamese society was not necessarily bad in the early days of Viet Nam's history. For instance, for many old years, women were well respected in society. Today women can be proud of the heritage of the ancient Vietnamese women. In 43 AD, the Trung Sisters, accompanied by female generals and lieutenants, led an army of 80,000 to overcome the Chinese occupation forces in Viet Nam. Even though the revolt was then gradually being suppressed and the Ladies Trungs were killed, they became the heroic symbol of Vietnamese women. Two centuries later, in 248 AD, Lady Trieu, a nineteen-year old peasant woman from the province of Thanh-Hoa led a rebellion, again ousting the Chinese invaders. Throughout the centuries these women have remained a strong part of Vietnamese legends.

A nearly-thousand-year period of Chinese occupation of the North of Viet Nam left a strong imprint on the social and cultural development of the country. The Confucianism was adopted as the official ideology of the Vietnamese feudalist state. It has a very strong effect on gender stance of Vietnamese society. According to Confucian doctrines, men are superior and women are inferior. Women are subjects to be ruled by their father, husband, eldest son and the King. This male domination was also reflected in the gender roles and division of labour in the society.

In the feudalist society of Viet Nam, one made one's carrier either in battle fields or by scoring highly in examinations. However, Vietnamese women, regardless of family background, the princesses and mandarins' daughters were not exception, never accepted in schools of formal education system, which is necessary for being able to take any of such an exam, and therefore had no chance for women being nominated for positions of powers. In families, under the feudalist customs, the economic connections between parents and married daughters is less important than that of married sons, and that explains for part of the discrimination against girls.

There is evidence of gendered argument in Vietnamese ancient society. The earliest document relating to equality between men and women is from the Le Dynasty. The

Hong Duc Code of 1483 provided women with equal inheritance rights, the right to divorce and protection from violence. The evolution of idea, however, not always worked in favor direction for women as the Confucianism spread during the years of Chinese occupation.

In practice, however, Confucianism in Viet Nam appears somewhat different from its Northern neighbor of China. Even during the Colonial period, French observers wrote eloquently about the strong position of Vietnamese women as opposed to Chinese women (Belanger et al. 2003; Frenier and Mancini, 1996; and Woodside, 1971). Vietnamese women appear to have a significant role in decision-making in areas ranging from household budgeting, to marriage, to children's education, suggesting a more egalitarian household division of labor. Even though Confucianism limits its activities within the household, Viet Nam women historically enjoyed greater freedom as compared to Chinese women. They actively participated in econo mic and social activities outside of the family, mainly due to the fact that men were usually absent from many families due to frequent war during the history of Viet Nam.

Confucian influence, however, diminished in the south of Viet Nam, due to the domination of other South-East Asian cultures. Central Viet Nam, where Cham culture (from the Kingdom of Champa, which is connected to Hindu civilization) dominated, the position of women was relatively high in the society. Even though, strong Confucian influence still exits among the communities of Chinese origin and highly educated groups in the South of Viet Nam.

French colonialism had brought in some western ideas in favor women, but the positive ideas had effect, if any at all, on tiny fraction of women. For instance, when the French education system replaced the Chinese model of education in Viet Nam in 1920s, schools accepted female students. However, only very few urban women had in fact the opportunity to receive formal education, so that in 1945, among around thousand college students of whole Viet Nam, there were only few of females. Overall, both men and women were terribly suffering the colonialism. At the result of exploitation of French colonialism, it made Vietnamese people harder to develop economically, and the poor country become even poorer. As it was always the case, women in all families bore the burden of economic hardship. Like before, under the colonial regime, most women were illiterate. French colonial rule contributed to an increased discussion on women's liberation and women's issues. Over one million

women in Viet Nam were active in the war resistance against the French. Only after the country was liberalized from colonialism, has the status of Vietnamese women been improved qualitatively.

1.2. Promotion of gender equality under socialism of Viet Nam

In 1930, the Vietnamese Communist Party was established under the leadership of Ho Chi Minh, who established in this same year, the Women's Emancipation Association (later re-named the Viet Nam Women's Union), making it the world's longest running national machinery for women. Ho Chi Minh identified gender equality as one of the ten main tasks of the Resolution in Viet Nam. With the advent of the Communist Party, socialist policy enshrined gender equity in the Constitution of Viet Nam and many policies if the Government.

The Communist Party gave strong support to women's advancement, and helped to create an institutional context for a type of feminism that supported many women's rights. This includes labour laws, extensive access to maternity benefits and child-care centers, access to education and employment, and legalized abortion. In the centrally planned economy, the Communist Party had substantial influence on the distribution of income, and therefore, biases against women were often avoided. In 1983, paid maternity leave in Viet Nam was extended from 60 days to 75 days. In December 1984, according to Resolution No. 176a, paid maternity leave and was extended to 180 days. More childcare facilities and kindergartens have been set up by the State, factories and cooperatives (VWU, 1985). Quite possibly, that those measures were feasible only under the socialist system of economic organization. In fact, after the adoption of Doi Moi (Vietnamese version of economic renovation), women have lost some of those benefits, particularly paid maternity leave that is seen as too expensive for private enterprises to bear.

Communist leadership in political system of Viet Nam has been facilitating election of women for public offices at all levels so that to meet certain targets, such as minimal ratios of female representation in those offices. In the past, it often works more through Vietnamese Farther Land Front's (VFLF) campaign rather than personal operation, but the influence of the VFLF has diminished after the Doi Moi, which led to political renovation as well.

1.3. Wars and their effects on Vietnamese women

Perhaps, few countries have as much war time as Viet Nam in the modern history. Over three fourths of the last century, Viet Nam was in constant wars and the legacy is significant on the way people live today. So what are important on the lives of women? In the war times, emotions were highly and sacrifices were huge, and that grew altruism of all members of society and women in particular and that affected the long pattern of gender equality.

For larger part of the twentieth century, most of the male part of Viet Nam's human resource was mobilized to serve in the wars, which took any thing the country could afford. Women had to take every responsibility behind the battlefields, but also serve directly or nearly directly in the fighting against enemies. The situation lasted for decades, and those war-serving women have set samples for strengthening certain characteristics of today Vietnamese women such as braveness, independent and responsibility. Over the American war, which was between 1964 and 1975, there was the movement of "Three Responsibilities". The goal of the movement was to call on Vietnamese women to assume responsibility for the household, production and fighting against aggressors, in their menfolk's place.

Wars have shaped certain image of Vietnamese women and left a legacy of energetic, dynamic women, who care for other members in families a society. That made them easier to participate in public life. In fact, there have been many heroines in the wars as well as in the subsequent economic activities in Viet Nam. The proportion of women in important positions of the society has been relatively high compared to that in other countries with comparative level of economic development.

II. DOI MOI IMPACTS ON POSITION OF WOMEN IN VIET NAM

2.1. Impact of Doi Moi on gender issue

By the resolution of the Communist Party National Congress in 1986, Viet Nam launched own version of economic renovation, called Doi Moi. Under the Doi Moi policy, it allowed private economy, in particular, de-collectivized agriculture, liberalized trade all form of trade and investment. A series of economic, social and legal reforms have led to market economy, in which competition has replaced the planned allocation by the government.

The adoption of market competition is believed to have brought a clear revitalization for Vietnamese economy, which performed poorly before the commencement of Doi Moi. No doubt, the Doi Moi benefits the society at whole, including women as a group. However, for the circumstance in the period it emerged, it does not necessarily improve the gender equity. In fact, market economy widens the gap between the rich and the poor, and men versus women. Doi Moi led to (a) change in employment opportunity, (b) change in access to resources, (c) change in access to public services and (d) change in women's position in the occupational structure. None of these changes is in favor women because of certain constraints, which are the consequences of past discriminatory factors.

The initial erosion of women's social position coincides with the shift of power from the state and collective entities to that of private agents. It seems the state and collective mechanism worked better for gender equality than private market does. Women were the main bearers of burdens in their household businesses, which are mostly agricultural and were formed after the collapse of agriculture cooperatives in the end of 1980s. Their work became more intense and invisible and old patterns of patriarchal control over women's labour re-emerged. Female labour in agriculture rose from 75.6 percent of all female labour in 1989 to 79.9 percent in 1992, while those of male labor changed little. Such intensification is also due to the growing rate of male migration to find paid employment in cities.

Some of the clearest post-Doi Moi differences include:

- Average farm run by female cultivates only half the land area of the average farm run by male, and farm profit of the former is only 62 percent of the later.
- Women's waged employment increased by 4 percent between 1993 and 1998, but the increase was 9 percent for men;
- The average hourly wage for women is 78 percent that of men, with the biggest differences among those with lowest educational levels (this however should be seen in the context that in most developed countries, the male/female wage gap is considerably *wider*);
- The number of girls dropping out of lower secondary school is 6 percentage points more than boys, and 11 points more in upper secondary school, while there is no gender gap for people with no more than primary education among

22-34 year olds (i.e., those attending primary school in the 1970's and 1980's), this gap has widened markedly since the onset of Doi Moi;

- Child malnutrition rates are significantly higher among girls than boys ; and.
- Women's representation in the National Assembly collapsed from 32 percent in 1975 to 17-18 percent over 1987-97, but increased again to 26-27 percent since then. Women's representation at Province/District/Commune levels fell from 28/19/19 percent in the 1980's to 12/12/13 percent in the early 1990's, rising again to 20/18/14 percent in the late of 1990s[1].

2.2. Widening gender gap under de-collectivization and privatization

The importance of this issue to gender equality arises from the fact that the old cooperative system, the extent by which men's labour was underpaid often more than that of women, and the operation of private market has reversed the benefit to women. Land concentration for some (more likely men) means little land or landlessness for others. Women's farms on average are half the size of men's, the quality of allocated land is often inferior and they are far more likely to become landless. While the land law itself is officially very equitable, women are often allocated less land than men, and therefore have to work more intensively, due to social and cultural prejudices. When unable to produce enough to meet their subsistence and to pay tax, they are much more likely than men end up transferring their land use rights and becoming waged workers on other farms.

The land use rights certificate often bears the name of the household head, which in practice is usually a man. While officially, the wife is entitled to half in a divorce in any case, in practice, the lack of her name has been shown to cause great difficulties and may be another cause of female landlessness. A legislative provision to ensure both names are on the land use rights certificate is called for by the CPRGS is an important reform. However, current data indicate that women run small farms while men do the large ones. The number of women having less than 2000 square meters of land is double of that for men, while the number of men having over 18000 square meters of land is three times as many as that of women.

[1] Macro policy analysis on trade liberalization agriculture and gender in Vietnam, by Pham Tuong Vi and Michael Karadjis with contribution from Han, Tuyet Mai - Center for Natural Resources and Environmental Studies, National University, Ha Noi. March 2003, in the *Report for Gender and Trade Workshop*, Phnom Penh, June 23-30 2003, p 22.

Laborers on farms are more female than male. Women account for 70 percent of the labour force in the informal sector, small household trading enterprises, characterized by "a high degree of fragmentation in the production process with limited training, little coordination, lack of supportive services, irregular working hours and remuneration by piece of work," while control over labour and income is rooted in traditional patriarchal structures. While such household enterprises offer women many avenues for badly needed extra cash, it is difficult to go up the ladder. Men have more choices available to them that include those requires larger capital and more advanced technology.

2.3. Recent Government policy toward gender equality

The National Committee for the Advancement of Women is the Government policy making mechanism for women's and gender issues. The National Strategy for the Advancement of Vietnamese Women by the year 2000, signed by the Prime Minister in October 1997, is the current national policy on women. This policy covers eleven critical areas including employment, poverty alleviation and huger eradication, equal opportunities in education and training, improved health care, the role and position of women in leadership structures and decision making, the protection and promotion of women's rights, the role of the family, the role of women in environmental issues and sustainable development, information and communication activities on equal rights, women's contribution to peace, an enhanced national system of public administration, and protection of the girls.

The National Strategy for the Advancement of Vietnamese Women to 2010, which was approved by the Government in January 2002, plays a crucial role in the Government's overall framework to achieve and sustain gender equality. The strategy reflects the government's on-going commitment to sustainable and equitable development across all fields. It involves the coordination and support of key line ministries. The National Strategy for the Advancement of Vietnamese Women includes five key objectives with discrete targets in each field to be reached by 2010, which are: 1) labour and employment; 2) Education; 3) Health care; 4) leadership at all levels in all sectors; 5) Capacity of the organization for woman advancement.

There are also other policies of government that that aim at protecting women. In the area of financial assistance, for instance, Vietnamese Women Union is an important benevolent intermediary between microfinance organizations and female head of

households. There about 50 thousands of for-women microfinance organizations in Viet Nam. Under a program by UNFPA, half million of USD was deposited in the Viet Nam Agriculture Bank (VAB), which is a state commercial bank, so that VAB provides loans to poor women with out any collateral. Female heads of households, especially those of ethnic minority, are the targets of other governmental antipoverty programs, which are many recently. The assistances often involve credits or transfers of knowledge on farming and cattle breeding. In some cases, they help the women purchasing their products. Another pro-women financial measure by the government is the design of social security of Viet Nam, which is the system of annuities. Experts in the area say there is factor favoring female employees in the social security system.

The Government approved the Comprehensive Poverty Reduction and Growth Strategy (CPRGS) in 2002, in which there is a platform for strengthening the monitoring and evaluation gender equality and women empowerment. The major gender-related aspects of the CPRGS include ensuring the names of both husband and wife are on land-use certificates by 2005, increasing the participation of women in "all agencies, sectors and enterprises by 3-5 percent by 2010, and establishing a Learning Promotion Fund and set targets for women at different levels in training and disciplines. The CPRGS aims to reduce women's overburden in domestic work through investing in small-scale technologies to serve family needs in clean water and energy, by greatly expanding the kindergarten and nursery school system, and by "launching campaigns to propagate and educate about family responsibility sharing."

2.4. Current achievements in gender equality

Vietnam has achieved a significant progress in gender equality. According to CPRGS there are 11 goals (the Vietnam Development Goals –the VDGs) with 32 targets and 136 indicators. In accordance with goal #3, which is ensure gender equality and women empowerment, the target of increase of the percentage of women in elective bodies at all levels was set up from 18 in 1992 to 27 in 2002. Recently effort were made to increase the proportion of women elected to People's Councils at the provincial, district and commune levels within 17 provinces for the May 2004 elections. Based on results, there are increases in the number of women elected to People's Councils in 65% of provinces, 76% of districts, and 82% of communes. However the proportion of elected women has not met National Strategy for the Advancement of Women targets, which are set at 28% for provincial, 23% for district,

and 18% for the commune levels. Neither the government targets of minimum 25% at all three levels are met. In addition in November 2003, the 9th Session of the National Assembly issued a resolution on the body's law making agenda for 2004, which included the Law on Gender Equality. The first draft of the law is expected to be submitted to the National Assembly in late 2005, and the final draft law, submitted for National Assembly approval in the 2nd quarter of 2006.

The issue of Land Tenure Certificate (LTC) carrying the names of both husband and wife is extremely important. LTC has a fundamental role of access to and awareness of land in income generation, access to formal credit, shared wealth ownership and the security of women and children. The Law on Marriage and Family requires that the names of both spouses be mentioned on land use right certificates, as land acquired after marriage is considered to be a common asset. The revised land law approved by Viet Nam's National Assembly in November 2003 also required so the land belongs to both of them. If the wife's name is stated on the certificate, the law protects her and she maintains to the land in case of separation, divorce or widowhood.

However, these laws have not been implemented. The Ministry of Natural Resources and Environment (MoNRE) also issue supporting legislation on how to process and implement the new Land Law. Land ownership is a key component of agricultural productivity and increased income. To ensure gender equity in land use for women, it is necessary to promote the registration of land use rights under the names of both husband and wife.

The Communist Party of Vietnam has had a long commitment to women's equality, enshrined in highly progressive legislation. Its four months' paid maternity leave created better condition for Vietnamese women than those in many developed countries. With twenty seven percent in National Assembly, it makes representation of Vietnamese women the highest in Asia and 9th highest in the world. The women representation at commune, district and provincial levels is lower (14-20 percent). Vietnam has the highest female participation in the labour force in the region, at 80 per cent, and has preferential policies for women's employment.

Vietnam is relatively poor country with a per capita GDP of 440 USD in 2002 (Asian Development Bank – Key indicators 2003, www.adb.org/st). Gender equity indicators of Vietnam are rather good as compared to other countries (see Table 4). Vietnam

ranked 109 out of 173 countries in terms of the Human Development Index (HDI). Its Gender related Development Index (GDI) is ranked at 89 out of 146 countries.

Table 4: Regional indexes of human and gender development

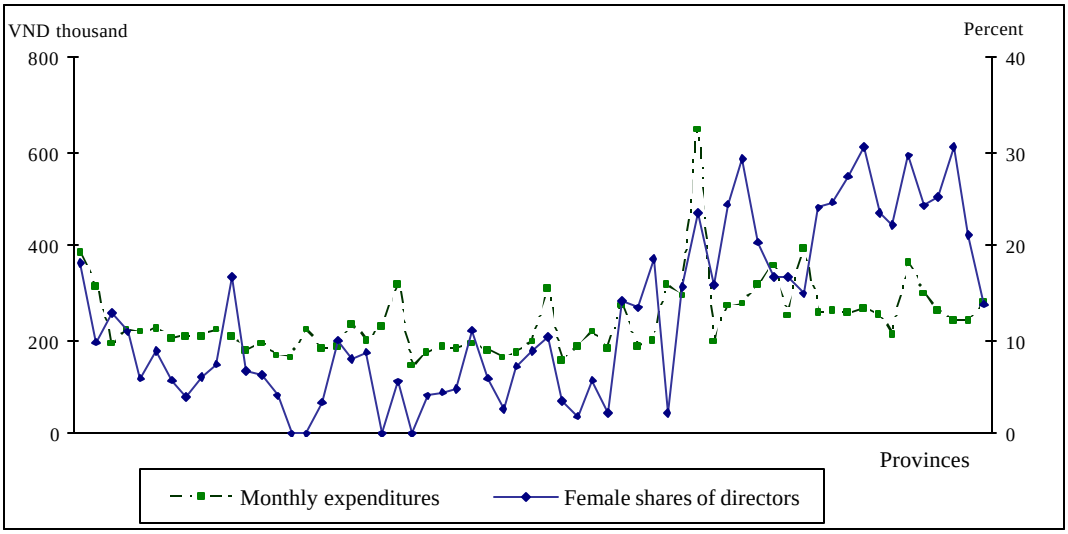
	Human Development Index rank among 173 nations	Gender Development Index rank among 146 nations
Vietnam	109	89
Cambodia	130	109
Lao PDR	143	119
Myanmar	127	107
Thailand	70	58

Source: United Nations, 2002

Looking at the women as whole in Viet Nam, the biggest factor for gender inequality is their economic dependence, which is more often partial than full, on their spouses. The poorer is a household, the worse is the female spouse treated in the family if her earning power is less than her spouse. Thus, economic growth can be a factor alleviating gender inequality. For illustration, we look at the share of female in total number of enterprises as an indication of feminism achievement in provinces. Statistics show that there is a positive correlation between provincial average expenditures (see Appendix 5) and the female share of enterprise directors, but the coefficient of correlation is not very high (0.49). On Figure 4, the left hand side vertical axis measures the average expenditures of provinces and the right hand side axis present the female percentage in enterprises. One can observe that the correlation is not strong enough.

Even if gender inequity remains clear and Vietnamese women still need further measures for alleviation the inequity, the gender status in Viet Nam has been better than in the countries with comparative level of economic development. Many of the government policies are believed to facilitate gender equity, but have not been fully realized. As market competition has become to dominate the performance of the economy, Vietnamese women are facing many constraints.

Figure 4: Correlation between income and shares of female directors across provinces



Source: Poverty survey 1999 and Industrial complete survey of 1998

III. CONSTRAINTS TO WOMEN

The total population of Vietnam is 80.9 million, of which 49.1% are male and 50.9% are female. The majority of men and women live in rural arrears, accounting for 74.2%. (GSO, 2004, www.gso.gov.vn). The 1999 census show that women dominate in the areas of trading, hotel and restaurant, finance, education and training, and health care. Men dominate in the areas such as fishery, mining, energy, construction, transport, communications, and science and technology.

The World Bank's Country Assistance Strategy (CAF) saw little difference in men's and women's social indicators and access to social services does reflect the fact that the position of Vietnamese women is relatively good compared to many other developing countries. This is largely a legacy of its socialist past with its strong ideological commitment to women's equality. However, there still some constraints of women compared to men.

3.1. Opportunity to education for women

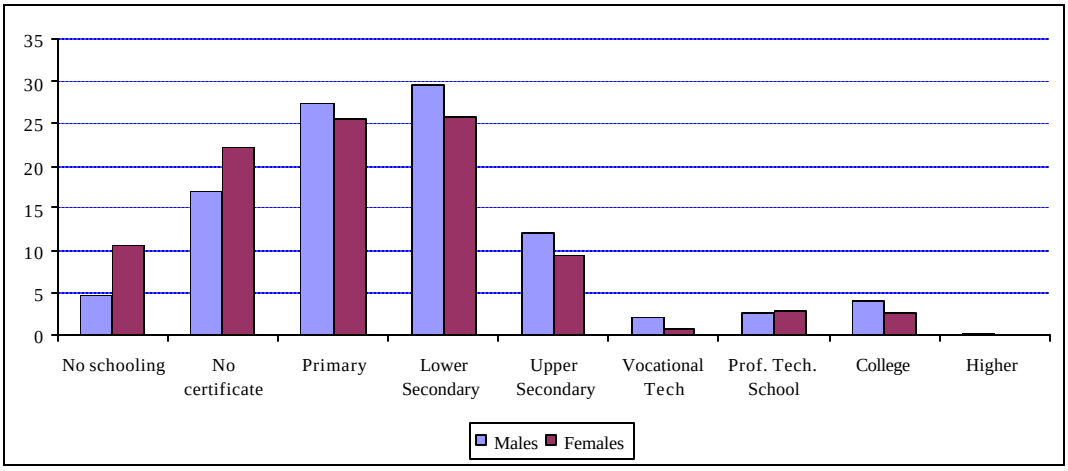
Education is one of major factors making gender inequity. Who made the difference in the education attainment between sexes, and why? The answer on the first part of the question is fairly easy, but that to the second part is not so. It is the household decisions that made girls ha ve generally less education than boys. But why the girls' parents or other members in the households limit the girls' education can be traced to history of cultural and social development. That forms the general perception on the

role of female member in households and the connections of married women to their parents in the sense that an investment in education of women does not well pay off to their parents. For the pattern of three-generation families in Viet Nam, sons will be taking care of parents when they are old, not their married daughters. Thus, if parents can not afford advanced education for all of their children, they would prefer giving the preference to their sons rather than to daughters.

It was reported that in 1999, of 5.3 million illiterate people all over the country, of whom 69% were female. Although the rate of female literacy has improved in the last decades, there remains a gap of around twelve per cent between the two sexes for people over forty years of age. The rural women are often not aware of their legal rights because of their low education levels (compared to their urban counterparts) and lack of access to information. Since rural women work long days, on average of 14 hours per day, it leaves women very little time to attend community meetings, listen to the radio or read books to increase their knowledge of their rights and learn about agricultural extension skills that are usually directed toward men (UNDP).

Figure 5: Distribution of education attainment by genders

Unit: percent



Source: VHLSS 2002

Data from Viet Nam Household Living Standard Survey (VHLSS) 2002 indicate that the portion with less than primary school among females of 15 years or older is nearly one third (32.8%) and that of males is 21.8%. The portion with high school, vocational school or higher for males is 21.4%, while that of females is 15.8%. Except for the Vocational Technical education, the disadvantage of girls is clear (see Figure 5).

Inequality in the opportunity to education subsequently leads to disadvantage of women in their carrier development. That at least partly explains for the majority of women in agriculture and in household retailing businesses, which generate lower income than other industries. Lower education and altruism make women more likely to work hard.

3.2. Overload work to women

For a number of reasons, majority of Vietnamese women have very heavy work loads. The 1997-1998 Vietnam Living Standards Survey shows that for all age groups, women work almost twice as long doing housework much as men. In depth studies have shown that women in rural Vietnam are typically working about 16 to 18 hours per day. That means on average, women work about 6 to 8 hours longer than men per day. Many women carry double responsibilities because they not only earn a living from work, but also fulfill traditional roles of mother and wife at home (United Nations, 2002). A recent time allocation survey conducted in Ho Chi Minh City found that urban women spend almost six hours on housework a day and men spend 1.5 a day; in rural areas women spend 7.5 hours and men a mere 30 minutes[2].

Nowadays, labour migration of men (in the absence of local employment opportunities) may place more household and productive burdens on women. Women's responsibility has increased, as it concerns more things, but most difficult for them often in conjunction to financial matter. Children dropping out of school are also women's great concern. Girls often bear more economic burdens than boys. In case families lack money for sending children to school, girls must be the first to stay at home to help with the housework. Poor women also reveal that they have to take part in all sorts of activities to earn more money.

While men and women record similar amount of hours spent in income-generating work, women spend almost twice as much as men undertaking housework, completing household chores for which they are not remunerated. As a result, women consistently work significantly more hours than men at each point in the life cycle. Their leisure hours therefore are substantially less than those of men. Between the ages of 25-64 years, a woman spends on average, 13.6 hours a week in housework,

[2] Vietnam News, January 30, 1999

compared to a man who contributed 6 hours a week to household chores, including cooking, cleaning, household repair, etc. (UNDP, 2002).

3.3. Less access to formal credit, information and knowledge

The majority of credit is obtained through the informal sector, with women less likely to access formal loans than men. Two-third of credits of all funds borrowers are male, only 33% of whom access loans from government banks. For women, only 18% of loans are provided through the formal sector, and the most common sources of credit are from relatives and other individuals. The use of private money lenders involved higher interest rates and for women it reflects a lack of collateral based lending. While 41% of loans accessed by men require collateral, only 27% of women's loans are of this nature. Women's lack of collateral is related to their frequent absence from Land Use Certificates.

Gender-based inequalities in control over resources such as land, credit and knowledge not only hinder the ability of women to take advantage of new opportunities presented by reform process. Gender inequality in households acts to constrain output capacity. In the CPRGS, the Government pledges to maintain subsidized credit for the poor and "create conditions for targeted groups, with priority given to women, to access credit at reasonable rates", but "in the longer term" to shift to "improving access" by simplifying procedures and providing training "rather than apply current preferential system."

3.4. Gender biases in labour market

While it is hard to say of any gender discrimination in labor market, it is clear that there exists wage disparity between male and female employees. Table 5 presents the monthly income of employees, divided by sexes and categories of their jobs. Overall, the wages to female employees are about 85% of male ones. In the area of technologies, the gender gap in wage is more significant. So is the sub-sample of unskilled labor. With only exception of services and office staff, in which average wages of female employees virtually the same as male coworkers, men's wages are substantially higher than that of women.

Table 5: Average monthly wage by job categories and sexes

Unit: VND Thousand

	Males	Females	Female/Male
Overall	875.62	747.85	85.4%
Management	1040.37	936.13	90.0%
High Technologies	1795.88	1425.89	79.4%
Medium Technologies	1154.49	938.76	81.3%
Office Staff	1271.10	1292.05	101.6%
Service Staff	961.33	971.21	101.0%
Skilled Labor in Prim. Sector	745.18	718.78	96.5%
Unskilled Labor	590.73	460.29	77.9%

Source: VHLSS 2002

With respect to the division into sectors, Table 6 says that gender gap in salary is also significant in all sectors. The gender inequality in salary consists of at least two factors. First, the concentration of women in low income sectors, and secondly, within the same sector, the earning of female employees are lower than that of male employees in average.

Table 6: Average monthly income by sectors and gender

Unit: VND Thousand

	Males	Females	Female/Male
Overall	875.62	747.85	85.4%
Primary Sector,	468.85	308.15	65.7%
Agriculture	403.39	293.66	72.8%
Non-Primary Sector	978.01	868.02	88.8%
Industry	1000.28	738.43	73.8%
Commerce	1238.27	1050.52	84.8%
Service Staff	1101.27	932.58	84.7%

Source: VHLSS 2002

3.5. Institutional and social constraints

There is no evidence of gender discrimination in formal charter or statutes of any public institution in Viet Nam. The discrimination may exist within households, or in informal organization. However, the gender inequity is felt in many places in society. In fact, women's voices are even heard less than their presentation in public offices. It remains to be studied why it is so. Traditional way of thinking does not encouraged women to be active in social affaires. That explains partly for woman participation less than average, and that means less than that of men. In particular, many husbands are less than encouraging their wives to hold position in the system of public

management. The women themselves often prioritize family happiness, and more likely than men to forgo opportunity in social activity (see Box 1).

Box 1: Women and management

When asked if he liked his wife to be a boss, almost every man would say "no". Why is the reluctance common? What's wrong with women holding a job of management?

Ms. Le Thi Quang, President of Tuyen Quang province, says that she, like other Vietnamese women, in the same role in the "traditional image of household" in which the wife cooks dinner while the husband reads newspaper. Despite constantly occupied by meetings and official trips, when ever it is allowed by her public duty, she spends her time for housework. That is why she feels her disadvantage in having information, which is essential for managing her province.

The Minister of Labor, Invalids and Social Affaires, Ms. Nguyen Thi Hang, shares Ms. Quang's hardship in sharing their time between public duties and housework. At her home, she always tries to be a good wife and mother. When ever time permits, she cooks the meals with her family recipe. She whishes she can do that more often. It is a real tradeoff between career and family. Ms. Tran Thi Kim Van, the deputy President of Binh Duong province, has been called three times for an arrangement for a deputy Minister position, and declined every time of possible promotion because she is not able to bring family to Ha Noi. Husbands don't follow wives that way.

Current target set by the Communist Party Central Committee is that the share of women in National Assembly and Provincial People Council to be between 20% and 30%. However, they are reported not to be able to have enough female candidates meeting reasonable criteria. A brief survey of men indicates that while they do not have problems having women holding important positions in government, nearly none wanted one's wife to do management job. Because of lack of encouragement by members in family, women often reluctant in acceptance job in public services and more important less likely to aim at the public positions when working to build their carriers. Thus, there remains substantial impediment in empowering women.

Women do not always have full control over their own labour or the income they earn. In some cases, men may forbid their wives from working outside the household. Even it not a common practice, family violence remains an issue in agenda of activities for all organizations in the Vietnamese Women Union. Economic hardship has been the cause for a number of social evils related to girls in Viet Nam, and that leave long term consequences in status of women. Thus, to facilitate gender equity, it is very important to ensure economic independence of girls and women.

Finally, it is said that Vietnamese women have the virtue of altruism. That seems nothing wrong with the perception, and is certain degree of reality. However, it does matter if people get used to it and expect women to behave that way. For many

generations, it has formed an altruist image of Vietnamese women, who take happiness of husband and children as their own happiness. Given the conditions many families are in, that is to struggle for surviving, it means to expect to work hard and even sacrifice. That kind of expectation is unfair and perhaps holds on the gender equity (see Box 2).

Box 2: Vietnamese women and altruism

An interview of Ms. Nguyen Thanh Hoa, Deputy President of Vietnamese Women Union:

For many generations, the Vietnamese women got used to being so altruist, taking their husband or children' achievements for their own. They have been doing so voluntarily, and it has become the whole society's way of thinking. Altruism is a great virtue of Vietnamese women, it served glowingly in both recent (French and American) wars and it should continue to be honored.

Nowadays, Vietnamese women carry "burdens on both shoulders", social works and family obligation, which includes the functions of a mother and a wife. While their time is the same as men's, they are not as strong as men are, Vietnamese women have to work really hard. In practice there is a fraction of males do not share the burdens of their women, who are in disadvantageous position. The mutual altruism will be fairer.

Source: Daily Newspaper Nhan dan, March 4th, 2005

PART III: A REVIEW OF POLICIES AND STRATEGIES CONCERNING ICT

The Information and Communications Technologies, as sector of the economy, was not developed in Viet Nam until the 80s of last century. However, over two decades of growth, it has demonstrated to have powerful impacts on many aspects of lives in this country. Although Viet Nam is currently in low stage of the development, Government of Viet Nam has made a strong commitment to upgrade the nation ICT capability and promulgated a number of important ICT policies and strategies over last two decades. The government ICT-related agencies and private enterprises have built a substantial infrastructure and human resources for the industry, and created a fair amount of jobs for women in the industry and IT-based services.

This part of study aims at providing an overview on ICT policies and strategies that have been implemented in Viet Nam over the last two decades. It also discusses some constraints in the current ICT policies and regulations and their implementation in practice.

I. REVIEW OF ICT POLICIES AND STRATEGIES

1.1. Information Technology

The government of Viet Nam has recognized the risk of being left behind too far from ICT advanced countries, and made a strong commitment to remedy the situation. Back in 1993, the Government's Resolution 49/CP on Information Technology Development in Viet Nam in 1990s and the National Program on Information Technology for 1995-2000 (First Master Plan) which was approved by the Prime Minister in its decision 211/TTg in 1995 outlined the task of building up a firm foundation of the ICT infrastructure at the same time, developing an information industry into a leading industry of the economy. The program also focused on major issues such as the IT application in public and other socio-economic management. It set the human resource and infrastructure development targets enabling Viet Nam's ICT to successfully implement projects in this field, and to bring the benefits of this new technology in social and economic activities of this country. Furthermore, the program also called for development of IT industry.

Current National Strategy is articulated by the Policy Directive 58-CT/TW of the Communist Party's Politburo in 2000. The purposes of the Directive are to set national

priority for accelerating IT and create foundations for establishing policy on the use and development of IT to support the modernization for period 2001-2005. This Directive marks the turning point in IT industry in Viet Nam. Subsequently, a series of legal documents were issued for implementation of the Directive. Of which the most important document is the Prime Minister's Decision 81/2001/TTg in 2001 on ratification of the action plan for realization of the Policy Directive over the period of 2001-2010. It establishes national IT targets for deploying and applying ICTs in four program areas for 2001-2010 to implement the Party Directive 58-CT/TW. To this end, a number of plans and legal documents of the Prime Minister have been issued in the following issues:

- computerization and automation of government management and administration to improve public service delivery which was approved by the Prime Minister's Decisions 112/2001/QD-TTg and 136/2001/QD-TTg in 2001;
- approval of National IT Development and Application Master Plan for the Period 2002- 2005 in the Prime Minister's Decision 95/2002/QD-TTg in 2002 (Box 3). A number of IT programs and projects have been developed at ministry and provincial levels to support for the established goals (e.g. MOET for education and training, MARD for agriculture and rural development, DGPT for telecommunication and Hanoi and Ho Chi Minh Peoples' Committees for public administration);
- establishement of a National IT Steering Committee and Secretariat based in MOSTE in the Prime Minister's Decision 176/2002/ND-CP in 2002. Its functions are to provide guidlines for implementation of the Party Directive 58-CT/TW and the National IT Master Plan and to explore policy and structural reforms, including one entity to govern ICTs in the future; and
- approval of a Program on IT Human Resource Development to 2010 in the Prime Minister's Decision 331/TTg in 2004. The program provides training on IT development and application in universities and IT management for officials in charge, popularizes computer and Internet skills and knowledge for 100 percent of students in universities, colleges, technical and vocational

schools, upper-secondary schools, civil servants and 50 percent of pupils in secondary schools and others;

? establishment of a Department for IT Application under Ministry of Post and Telecommunications in the Prime Minister's Decision 1120/QD-TTg in 2004 to assist Minister of Post and Telecommunications perform the functions of State management over and organize the implementation of IT application throughout the country.

Box 3: National Master Plan of IT Development and Application

The plan set goals for the development of the sector by 2005, namely:

- The average IT applied level and effectiveness all over the country will be of medium level as compared with that of other countries in the region;
- Internet and telecommunications networks will be developed with modern technologies, higher bandwidth, speed and quality to provide the society and consumers with variety of services;
- All provinces and cities over all country will be linked by fiber cables and the rate of Internet users will be of 4 or 5% of the total population;
- The average annual growth rate if IT industry will be 20-25 percent;
- 50,000 IT experts at different levels will be trained more and half of them are experts or professional programmers.

Major contents of the plan include: (i) promoting IT utilization in prioritized sectors; (ii) developing the national network of telecommunications and Internet; (iii) developing the IT industry in terms of software and hardware; (iv) building up the IT-related capacity of Vietnam's human resource; (v) accelerating R&D activities in IT industry; (vi) improving the legal and regulatory environment to attract more foreign and domestic investment and to facilitate growth of the IT sector and streamlining state management system in IT industry; and (vii) raising the awareness on IT in the society, especially for the State managers and leaders of businesses and political and social organizations.

While the overall aim of the plan is to create an environment enabling growth of all IT-related sectors, the biggest motivation of the government remains to focus on fostering IT industry, which is hoped to become a major earner of foreign currencies to meet the demand of industrialization and on mobilizing resources for IT utilization and development which is aimed to achieve about 2 percent of GDP, mainly from domestic and foreign businesses and socio-economic organizations.

A number of IT programs and projects have been developed at ministry and provincial levels to support for the established goals (e.g. MOET for developing IT human resources, MARD for agriculture and rural development, DGPT for developing and improving telecommunications and Internet infrastructure; MOSTE for establishing and developing the IT software industry; MOI for establishing and developing the hardware industry; OoG for computerization of the state administrative management; Hanoi and Ho Chi Minh Peoples' Committees for public administration).

Major contents of the National IT Development and Application Master Plan (second Master Plan) include: (i) expanding national information infrastructure; (ii) building up the IT-related capacity of Viet Nam's human resource; and (iii) improving the legal and regulatory environment to attract more foreign investment and to facilitate growth of the IT sector. While the overall aim of the Master Plan is to create an

environment enabling growth of all IT-related sectors, the biggest motivation of the government remains to focus on fostering IT industry, which is hoped to become a major earner of foreign currencies to meet the demand of industrialization.

1.2. Telecommunication and Internet

There has been an increased movement towards greater liberalization of both telecommunications and Internet services recently, by allowing more service providers including private enterprises to enter the market as well as allowing an increasingly liberalized pricing system for new market entrants since the promulgation of the Governmental Decree 55/2001/ND-CP on Internet and the Prime Minister's Decisions 158/2001/QD-TTg in 2001 on telecommunications development strategy up to 2010 and 33/2002/QD-TTg in 2002 on Internet Development Plan for the period of 2001 - 2005 (see Box 4 and Box 5).

Box 4: Post and Telecommunications Development Strategy

The underlying principles for development of the post and telecommunications in Vietnam set out in the Strategy are quite liberal. It is stated that the second main principle is "to make full use of all resources of the country, to facilitate and make conducive conditions for all economic sectors (in term of ownership) to participate in the development of post and telecommunications in a transparent, competitive and fair environment administered by the State with appropriate mechanism". The third principle is "to actively make international integration and development in parallel with ensuring national security and information security".

The Strategy set strategic objectives for the development of the sector, notably:

- Develop the national information infrastructure with advanced technology. The NII should have high capacity, high service quality, and nation-wide coverage.
- Provide a wide range of postal and telecommunications services to satisfy the demand of society. The service charges should be comparable to that of other countries in the region. Services will be provided to both urban & rural areas. By the year 2010, the telephone/Internet penetration rate should reach the average rate of the region.
- Build the post and telecommunications industry to become a leading sector, contributing an increasing portion to the overall GDP of the country.

The Strategy states that the government shall "continue to eliminate enterprise monopoly, actively move to a competitive environment", so that new telecommunications companies outside the dominant operator can gain a share of 25-30% of the whole telecommunications market by the year 2005, and 40 - 50% by the year 2010.

In term of the specific action plan, it is stated as "to quickly issue policy and regulatory documents... so as to allow domestic enterprises which meet necessary requirements to participate in the supply of basic, value-added and IT service for both local and international markets", "to issue regulatory environment for the smooth operation of market mechanism", "to reform the tariff and charge regime so as to create a really well functioning competitive environment, enabling enterprises to enhance production efficiency and lower the cost of products and services".

The Strategy set strategic objectives for the development of the sector, namely: (i) develop the national information infrastructure with advanced technology which has high capacity, high service quality, and nation-wide coverage; (ii) provide a wide range of postal and telecommunications services to satisfy the demand of society. The service charges should be comparable to that of other countries in the region. Services will be provided to both urban & rural areas. By the year 2010, the telephone/Internet penetration rate should reach the average rate of the region; (iii) build the post and telecommunications industry to become a leading sector, contributing an increasing portion to the overall GDP of the country.

Box 5: Internet Development Plan for the period of 2001-2005

The overall objectives of the plan are:

- To speed up the Internet universalization in all economic, cultural, social, security and defense, activities with good quality and affordable charges;
- To develop Internet infrastructure into an application environment conducive to all forms of on-line electronic services related to trade, administration, press, post, telecommunications, finance, banking, distance education and training, health... in service of national industrialization and modernization.
- To create a competitive environment for many enterprises engaged in providing Internet exchange services (IXP), access services (ISP), and on-line services (OSP).

To this end, a number of major measures are proposed including (i) perfecting the legal system, enhancing the capability of state management over the Internet; (ii) developing telecommunication infrastructures in service of Internet development; (iii) developing Internet access application services; and (iv) raising awareness and forming habits of using information technology and the Internet.

Resources are mobilized by:

- Encouraging all economic sectors to invest in developing Internet application and access services as well as public Internet agents. Telecommunication enterprises shall make rational investment in developing telecommunication networks in service of the Internet universalization with the support of the State for remote areas;
- Investing with appropriate amounts from budget and ODA capital sources, and enterprises' capital in community Internet access networks, such as education and training and health networks; the computerized state administrative management network, prioritizing the allocation of the budget source to the schemes on institution building as well as setting up of databases in service of education and training.

Concrete tasks of implementing the plan were assigned to different ministries, institutions and enterprises such as DGPT for coordinating the implementation of the plan, directing telecommunication and Internet enterprises to develop Internet network infrastructure and formulating supporting policies; MOSTE for promulgating a system of IT standards and unifying the standardization of the Vietnamese language on the computer networks; MOET for implementing Edu.net; MOH for implementing Health.net; MOT for promoting the development of e-commerce; MARD for building up agricultural electronic databases.

The substantial changes on telecommunications policy and market actually happen when the Ordinance on Post and Telecommunications was passed and came into effect in 2002 and the Governmental Decree 160/2004/ND-CP on the implementation of "Ordinance on Post and Telecommunications" was issued in 2004, providing

guidelines in details on telecommunications. These make the regulatory framework on telecommunications more transparent and more predictable. The regulation separates policy, regulatory and operational functions, introduces a measure of liberalization, establishes a separate ministry to coordinate the ICT sector, and clarifies the roles of different players already licensed and stipulates provisions for the increased private sector participation in the telecommunications sector.

The Ordinance is relatively liberal and supportive of competition that is one of the policy principles stated in the Strategy. This is elaborated in the Governmental Decree 160/2004/ND-CP in three areas including the definitions of essential facilities and dominant shares, the interconnection regime and the setting of tariffs. The Ordinance also creates the fundamental ICT institutional reform by establishing the Ministry of Post and Telecommunications in 2002 to replace Department General of Posts and Telecommunications. The ministry has main responsibility for developing policies, laws and standards and performing the functions of state management over telecommunications, postal and Internet services, IT, electronics, transmission and broadcast, radio frequencies and national information infrastructure; regulating tariffs and fees; and issuing licenses for all services throughout the country.

As the results, the cost of telecommunications and Internet services is gradually reduced despite this the telecommunications and Internet service provision market remains dominated by Viet Nam Post and Telecommunications - a state-owned enterprise.

1.3. Incentives

Regarding to the incentives for foreign and domestic investment in ICT sector, the Government has promulgated a number of legal documents such as Governmental Decree 10/1998/ND-CP, Governmental Resolution 07/2000/NQ-CP, Governmental Decree 51/1999/ND-CP, Prime Minister's Decision 128/2000/QD-TTg, Prime Minister's Decision 19/2001/QD-TTg, Governmental Decree 35/2002/ND-CP and Governmental Decree 164/2003/ND-CP. These investment incentives include highest corporate income tax exemption and reduction, import tax and VAT exemption for imported fixed assets, access to soft loan borrowing and credit guarantee, VAT refund, land rent exemption and reduction etc. Currently foreign and domestic investment in manufacturing computers, software products, IT and Internet equipment

and providing services on IT research and development as well as for human resources training is eligible for these investment incentives.

II. ICT POLICY AND REGULATORY CONSTRAINTS

2.1. Incomplete independence of government's regulator

The overlapping functions and authority shared among different government agencies obscures a transparent and objective rulemaking process. Policy development and regulatory functions under MPT have not been separated. Although MPT has been created independent of the dominant VNPT, there is still widespread concern that MPT is still "influenced" by VNPT because of the long standing close relation between staffs of VNPT with MPT and many of them being switched between each other. MPT is still handicapped by its shortage of some capabilities and expertise essential for performing its roles, especially expertise and capability to fairly intervene in areas of disputes and disagreements between the dominant players with other companies.

Another aspect of being an independent regulator is the process and extent of public consultation. However, most of the decisions are made internally by MPT or by discussion with other Government agencies, with little consultation with the public and industry.

2.2. Restrictive licensing policies

The sector remains very much dominated by the state, especially for facility-based operators (FBO). Private participation is limited only to value-added services and services-based operators (SBO). According to the Ordinance, licenses for FBO services are only granted to fully state owned enterprises (SOEs) or enterprises in which the state has controlling shares. So far 6 companies have gotten FBO licenses.

Current licensing policies and procedures restrict competition and growth. The licensing criteria are not sufficiently clear in the relevant regulations. Therefore, it is open to interpretation and the discretionary decision of the officials in charge, as well as to potential abuse. The licensing process has been very much discretionary, with cumbersome procedures and a too long consideration process. The time needed to get a license is much longer than that stipulated in official regulations.

Several requirements that deter foreign investment in the IT sector include the policy that foreign firms use a local distributor to market their products, absent an investment

license; dual pricing policies that discriminate against foreigners; and restrictions on local hiring policies, which require recruitment through the State labor service. The restricted number of ISPs allowed to operate further inhibits a competitive environment and limits investment. The total number of 10 ISPs is still far below the norm in most countries.

While the government Decree 55 managing Internet service opens up the sector to competition from the private sector, new licensing requirements imposed on the operation of Internet cafes will slow down deployment and use of ICTs in the broader population. The control of content by the national firewall and the licensing requirements for ICPs also deters growth, especially in website and local content development. Restrictions on content by the national firewall also prevent the use of more advanced Internet services and business applications (e.g., Lotus notes).

2.3. Lack of universal service policy

Government targets to reach the global average in Internet density by 2010 lack a supporting policy for equitable service delivery to underserved rural areas outside the current telecommunications backbone. Legislative measures are needed to ensure equitable and universal service delivery in underserved rural areas, which may require government subsidies and incentives. For example, widespread deployment of ICTs could be supported through incentives for network expansion in rural areas and subsidized access for rural communities and formal educational institutions. A strategic plan is needed to develop "the last mile" in connectivity and access for underserved rural areas outside the current telecommunications backbone.

2.4. Government incentives and subsidies

The disproportionate emphasis on developing the software industry over hardware through special incentives and tax benefits (i.e., specific zones for IT and software parks) ignores an important opportunity for growth and FDI in the hardware industry. Viet Nam's comparative advantage to develop its hardware industry beyond PCs and peripherals includes the availability of low cost labor and the lack of language and other barriers faced in the software industry (e.g., copyright protection). In addition, the business community needs to accelerate ICT usage to improve management, productivity and competitiveness.

2.5. Tax reform

Current tax structures inhibit growth of the ICT sector, especially VAT and income tax laws. Presently, hardware manufacturers pay a larger VAT tax than what they can charge buyers on components. Getting refund on the difference requires considerable paperwork and long delays. Computer peripherals are taxed unless sold on the same invoice as a computer. Computer and other telecom equipment are also subject to an import tax (considered to be the highest in the region,) although this is expected to change under the BTA. Income tax rates also undercut national goals for IT professional development. Income tax laws discriminate against senior level Vietnamese employees in favor of foreign experts, which constrain the development of Vietnamese management expertise. It is the fact that the current taxation rates for high income earners of Viet Nam are among the highest rate in the world, making the Viet Nam market less attractive and competitive for the high-skilled labor force.

PART IV: ICT INDUSTRY DEVELOPMENT AND ICT ACCESS

Economists believe that ICT can have strong effects on economic integration, growth, poverty reduction, and others. This is confirmed by UNDP (2003) that ICT have been used to different degrees in achieving specific Millennium Development Goals (MDGs) such as poverty alleviation, education and learning, gender equality, healthcare and environment protection and points out that without ICT, these MDGs and target of human development would not be achieved in Viet Nam.

This part of study aims at providing an overview on ICT industry development and ICT access of households in Viet Nam over the last decade. It also discusses some constraints in the current ICT development trend.

I. ICT INDUSTRY DEVELOPMENT AND ICT ACCESS

1.1. Overview of ICT industry development in Viet Nam

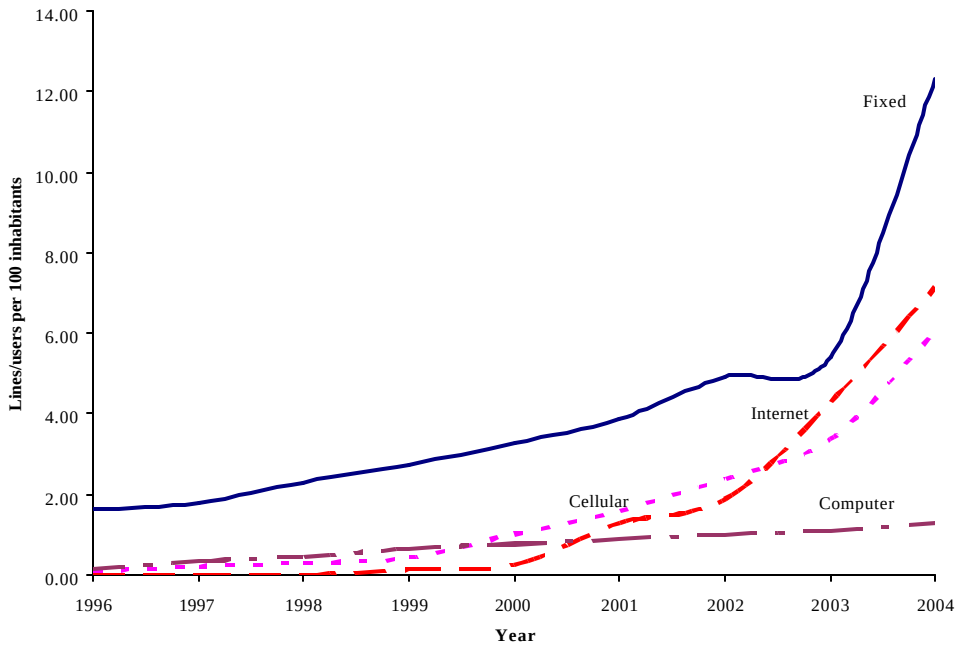
As Figure 6 shows the ICT Industry in Viet Nam has been growing very rapidly over the last decade. The number of main telephone lines grew from 1.62 per 100 inhabitants in 1996 to 12.34 in 2004, at a compound annual growth rate (CAGR) of 28.9 percent, which is one of the highest in the world. The number of mobile cellular subscribers grew from 0.09 per 100 inhabitants in 1996 to 6.05 in 2004 with a CAGR of 68.2 percent. Computing and the Internet are catching on slowly in Viet Nam as evidenced by the rise in IT users over the past few years. The Internet only came to be in Viet Nam in 1997 and has steadily increased its user base from 1.28 per 100 inhabitants in 2001 to 7.16 in 2004. In 2004 there were one million computers and 1.27 percent of the population owing computers. Although home Internet connections are still slow, at an average connection time of 37 seconds compared to the international average of 10 seconds, many more people gain access to the Internet in a different way. Despite recent developments in the sector, Viet Nam's ICT indicators still lag behind many other countries in the region (Figure 7 and Figure 8).

There are some important factors that have been contributing to the rapid development of ICT industry in Viet Nam over the last decade namely:

- GDP per capita increased by over two and half times in two decades of 1985-2004;

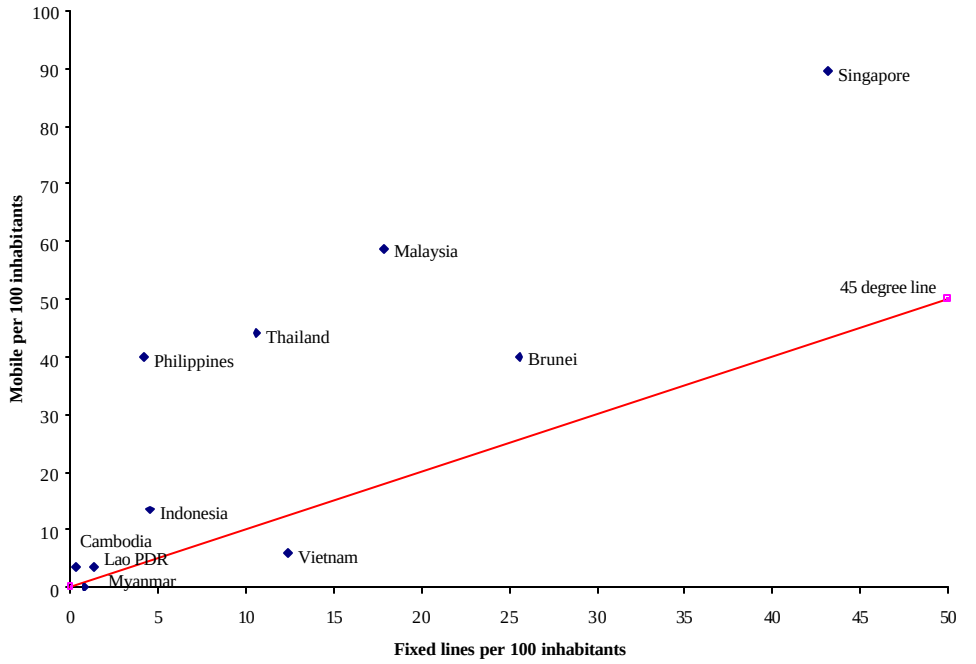
- Viet Nam now has a fairly good physical infrastructure. New and advanced technologies have been recently and quickly adopted. All switching systems have been recently digitized and most telecom services, including new services such as GPRS, VPN, Wi-Fi Internet, etc are now available;
- Telecom tariffs have been reduced substantially in the last 4 years, and tariffs of many telecom services, especially Internet related services, are now lower than the average level of ASEAN countries;
- The competition regime is also improving, although at a very measured pace. Following key regulatory changes in the mid-late 1990s the dominant position of the government owned monopoly VNPT has been dismantled to a certain extent by the entry of other state owned players and private sector participation has been allowed in certain markets, notably in value-added services, albeit on a limited basis.

Figure 6: Selected ICT indicators in Viet Nam



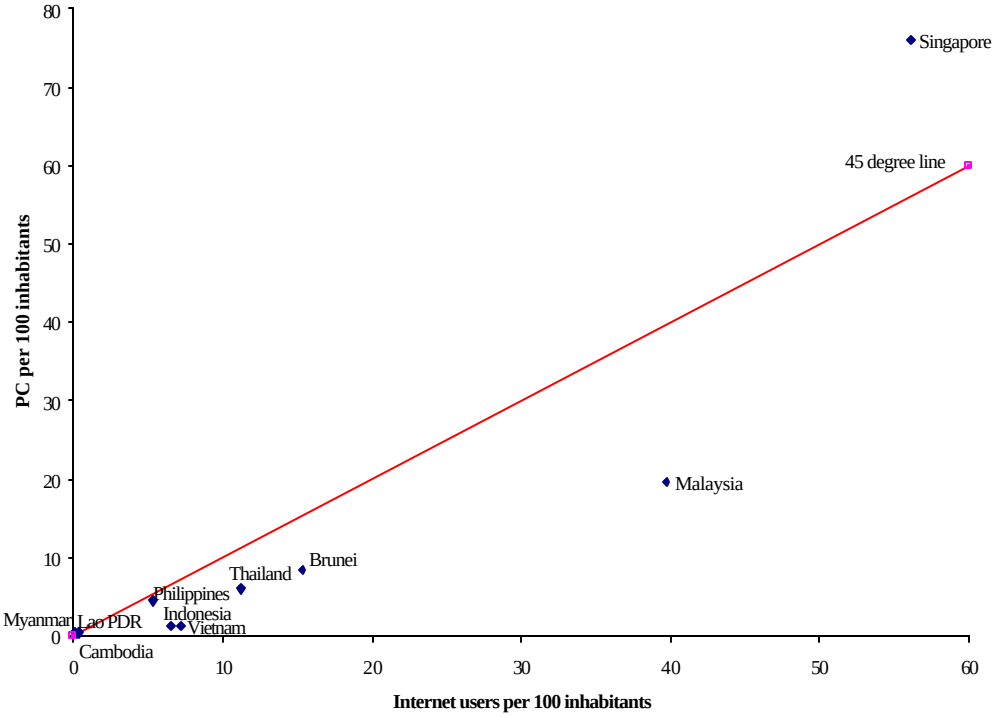
Source: http://www.itu.int/ITU-D/ict/statistics/

Figure 7: Mobile and fixed lines in ASEAN member countries in 2004



Source: http://www.itu.int/ITU-D/ict/statistics/

Figure 8: Computer and Internet in ASEAN member countries in 2004



Source: http://www.itu.int/ITU-D/ict/statistics/

As a result of the rapid development, the contribution of ICT industry in Viet Nam to GDP increased from 2.3 percent in 2001 to 2.7 percent in 2003. The ICT industry employed 112 thousand persons in 2003. Total capital of the ICT industry increased substantially from USD 2.4 billions in 2001 to USD 3.5 billions in 2003. Total revenues of ICT industry reached nearly USD 2 billions in 2003 (Table 7). However, the Vietnamese IT sector still accounts for a relatively small proportion within ICT industry and is characterized by hardware production. More recently, thanks to strong commitments and high incentives of the Government including software parks (Box 6), the IT software production increased and achieved around USD 120 millions in 2003.

Box 6: Ho Chi Minh City Software Park

Software development has been identified as one of the four key areas in Vietnam's IT Master Plan (along with infrastructure, hardware development and human resources). The logic is compelling. Computer programming is basically brainpower and thus requires relatively little investment. Funds that are needed could come from local private companies as well as foreign ones. A software development industry would also build up Vietnamese expertise in computing, helping to make ICT sustainable and driving the country into a knowledge-based economy.

The strategy of the government is to promote software development sites around the country rather than one specific zone. The Ministry of Science and Technology has been charged with spearheading software development. A number of incentives are provided to companies locating at the sites such as tax breaks, low rent, etc. So far, a few so-called "Software Parks" have been established in Ho Chi Minh City and Hanoi.

One of the first was Ho Chi Min City Software Park (SSP) where is actually located in a new building albeit in a relatively quiet residential district of HCMC. It opened for business in July 2000 with 30 companies. SSP has around two dozen management staff and over 600 people are working there. This includes established companies as well as new ones. Most are Vietnamese but there are also a few foreign ones. SSP is fully occupied and has been looking for another building close by.

SSP has a two Mbps Internet connection, strong server systems of IBN, SUN, HP and network equipments of CISCO, NORTEL and provides all Internet services (optical cable, xDSL), web hosting, mail-offline.… The price for Internet connection here is discounted 50 per cent as part of a government policy to promote software development. Companies in SSP typically do one portion of software coding in Vietnam; this is usually part of a larger project. Accounting, management, and education applications are among those being developed for the local market. Softwares that have been developed include a job market application and an electronic catalogue for a business.

Vietnam's main advantage appears to be labour costs with the average programmer earning about US$ 200/month. SSP has a training and education centre to instruct software engineers on following international standards. It is also working with the University of Ho Chi Minh City to train software engineers. SSP also hosts the first Cisco Networking Academy in Vietnam. Nonetheless Vietnam currently only churns out around 2'000 graduates in IT a year and it will need to accelerate this if it is to meet the target of IT Master Plan. The country is also working with overseas partners to develop training programs. India appears to be a model for the Vietnamese with several agreements made with that country for human resource development.

Table 7: Selected indicators of ICT industry in Viet Nam, 2001 - 2003

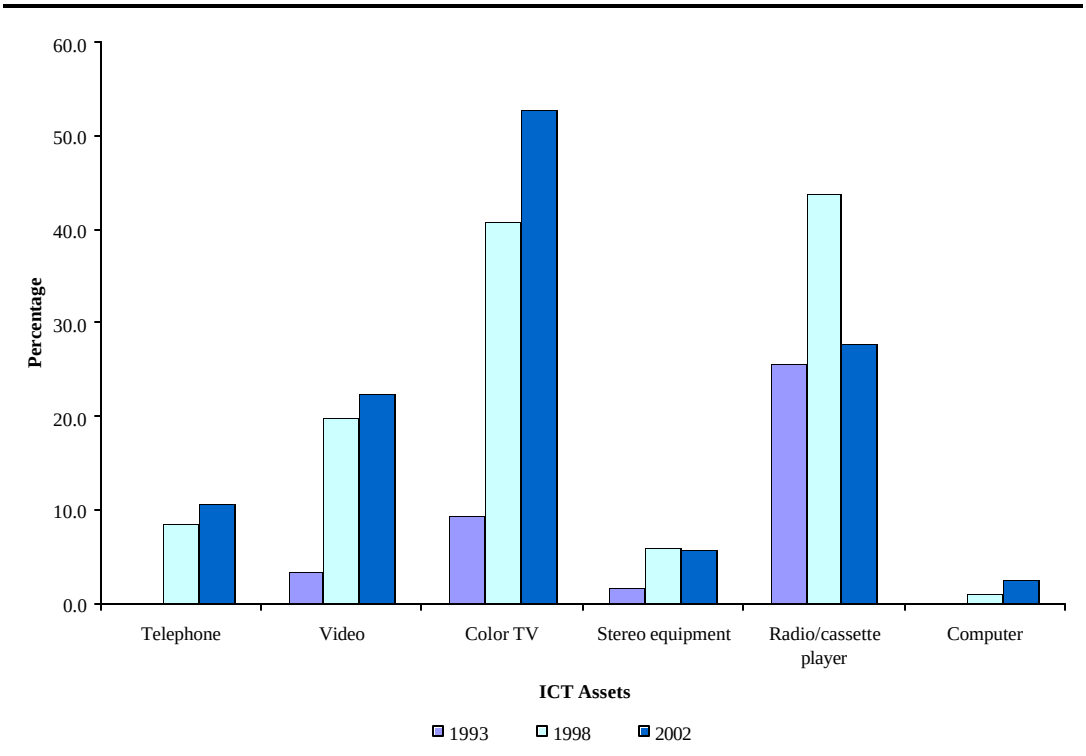
	Unit	2001	2002	2003
ICT industry as % of GDP	%	2.3	2.6	2.7
Number of enterprises	Enterprise	212	338	468
Number of employees	Persons	101493	105648	112362
Total capital	VND bill.	36111	43085	56738
Total turnover	"	18924	22728	30541
Profit before taxes	"	6085	8332	9457
Taxes and fees	"	3590	4244	5281

Source: GSO , 2005, The Real Situation of Enterprises through the Results of Surveys in 2002-2003-2004.

1.2. ICT access of households

The economy of Viet Nam remains in its low level of development, and ICT of Viet Nam is even more so. As the results of Viet Nam Living Standard Surveys conducted in 1993, 1998 and 2002 show that the proportion of households having different types of ICT assets (including telephone, video, color TV, stereo equipment, radio/cassette player and computer) has increased especially for video and color TV over the last ten years (Figure 9).

Figure 9: Share of households having different types of ICT assets, 1993 - 2002



Source: GSO, 1993, 2000 and 2004

According to Viet Nam Household Living Standard Survey (VHLSS) 2002, in whole country, slightly over half of households have color TV sets. However, the economy of Viet Nam remains in its low level of development, and ICT of Viet Nam is even more so. For example for telephone and computers, less than 11 percent and 2.5 percent of households own them respectively (Table 8). On the household base, there are five from each thousand households are Internet connected.

Table 8: Share of households having different types of ICT assets in 2002 (%)

	Total	Area		Sex of household head	
		Urban	Rural	Male	Female
Telephone	10.7	32.5	3.7	9.0	15.7
Video	22.5	46.7	14.7	21.6	25.2
Color TV	52.7	81.2	43.6	52.2	54.4
Stereo equipment	5.8	14.6	2.9	5.4	6.8
Radio/cassette player	27.7	29.0	27.3	28.6	24.9
Computer	2.4	8.9	0.4	2.0	3.8

Source: GSO, 2004, Result of the Survey on Households Living Standards 2002

II. ICT DEVELOPMENT CONSTRAINTS

2.1. Lack of market competition

The regulatory framework remains incomplete and does not fully address all aspects of the policy principles that have been decided on by the Party and the Government nor does it deal with all of the competition issues that have arisen. It also does not fully reflect all of the commitments on telecom liberalization that Viet Nam has made internationally.

Obstacles faced in the telecommunications and Internet sector are exacerbated by a legacy of heavy centralized control and limited number of operators. Present arrangements for private participation through Business Cooperation Contracts (BCCs) deter foreign investment since companies have no operational control over their investments. Limited competition in fixed line and cellular telecommunications services also inhibits investment and growth of the ICT sector.

While signs of dismantling VNPT's monopoly are most recently reflected, the particular allegations made about anti-competitive practices by VNPT include the following: unfair allocation of network facilities; high prices for use of network facilities (i.e. pricing interconnection at a level that preserves monopoly rents for VNPT and/or limits use of the interconnected service); cross-subsidization among its

certain subsidiaries (i.e. mobile phone services of GPC and Internet services of VDC); refusal of providing some services to its clients such as Viettel and SPT; forced use of VNPT services by having a practice of forcing its subsidiaries' agents to sell only VNPT services; abuse of technical measures to block competitors' services (i.e. turning off the trunk side to block telephone calls through the 177 and 178 VoIP services of Viettel and SPT) or claim of technical problems that prevent or delay interconnection (VNCI, 2004)

VNPT still dominates the telecommunications and Internet market with its market share of over 90 percent by the end of 2003. It is the country's largest Internet Service Provider (ISP) that presents a conflict of interest between VNPT's role as main supplier and competitor.

The radio and television services are totally controlled by the State own enterprise or institution. There are three major radio stations and one national broadcaster, Voice of Viet Nam (VOV). VOV is the official network of the Vietnamese Government. It broadcasts on AM, FM and shortwave. VOV has 61 provincial radio stations primarily using AM while Hanoi and HCMC also have FM stations.

State-owned Viet Nam Television (VTV) has monopoly on over-the-air television. It has three nationwide channels (VTV1, VTV2, VTV3) as well as a local channel in each province. In addition there is a satellite channel, VTV4, aimed at overseas Vietnamese and carried by Thaicom 3 (Thailand), Viasat 1 (Malaysia) and Telstar 5 (United States). Multi-channel television is available through satellite reception, VTV's MMDS wireless cable service, VTV's cable service or VTV's digital service, but multi-channel television penetration is still limited.

2.2. High telecommunications and Internet cost

A recent survey of 150 enterprises conducted by VNCI shows that service price levels were very high according to users surveyed. This is particularly the case for international calls, domestic long distance calls, internet dial-up service, cellular telephone calls and leased line. Fixed line local telephone calls, ADSL and VoIP were perceived to be more reasonably priced.

High interconnection rates for the Internet and leased lines as well as international and domestic long distance tariff structures limit the growth of telecommunications and Internet usage, which in turn constrains national goals of creating a vibrant ICT

sector. High costs not only deter foreign investors from establishing offices in Viet Nam in favor of other countries within the region, but also preclude domestic industry from utilizing ICTs to improve management, realize productivity gains, and increase competitiveness.

2.3. Gender biases in ICT employees

ICT industry is very attractive industry for employees in terms of wage income. Wage of employees working in the sector in average is much higher than that for employees working in other industries. However there exists a gender wage gap within ICT sector. This will be explored in more details in the next section based on MIMAP-Gender Network Survey.

In the telecommunication sector, employment structure by sex is approaching the balance where we observe that nearly half of employees were female in 2003. However, in the IT sector, the men still dominate the sector where women only accounted for less than one third of total number of employees in 2003 (Table 9).

Table 9: ICT employment in Viet Nam, 2001 - 2003

	Unit	2001	2002	2003
Telecom sector				
Number of employees	Persons	98208	100429	105643
Percentage of female employees	%	43.8	42.3	47.4
Average monthly wage income per person	VND thous.	2013	2110	2613
IT sector				
Number of employees	Persons	3285	5219	6719
Average monthly wage income per person	VND thous.	3020	2917	3151
Percentage of female employees	%	29.8	31.2	30.6

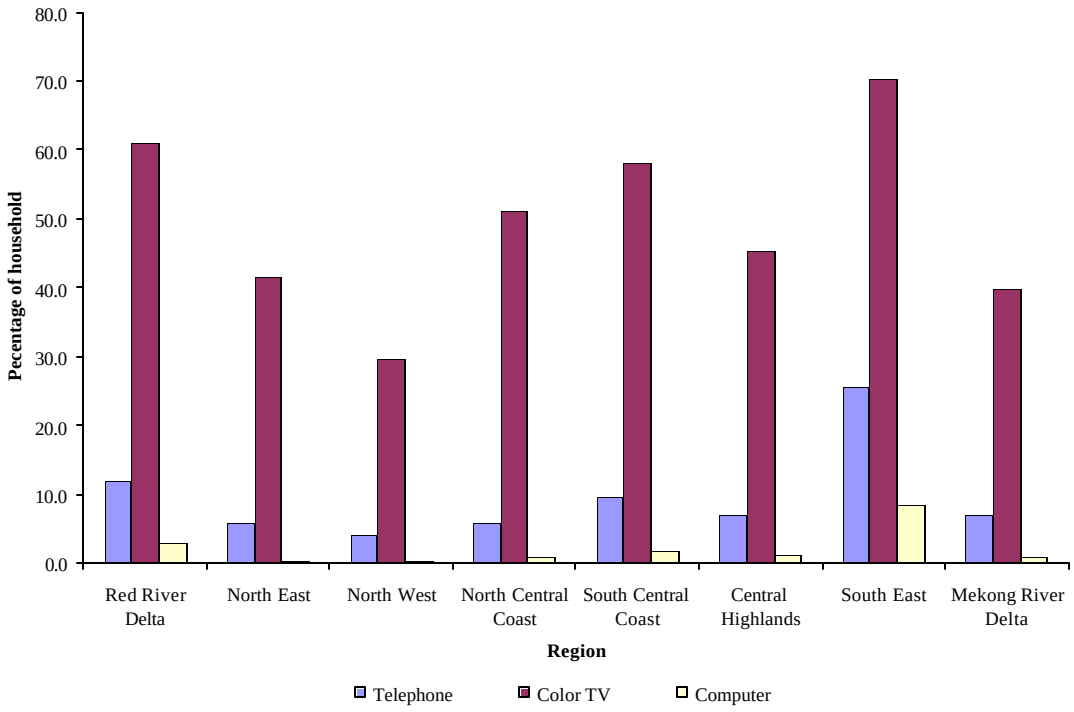
Source: GSO, 2005, The Real Situation of Enterprises through the Results of Surveys Conducted in 2002, 2003 and 2004.

2.4. Inequality of ICT access of households among regions and between rural and urban areas

According to Viet Nam Household Living Standard Survey (VHLSS) 2002, inequality of ICT access of households among regions is observed with less than 11 percent of households own telephones and even much lower in some regions such as the North Western, North Eastern, and North Central Coast, where the densities are 4.0, 5.7, and 5.8 per cent respectively (Figure 10). For computers, less than 2.5 percent of households own them, but they concentrate mostly in urban area. In the

rural areas, only 0.43 percent of households have the computers. On the household base, there are five from each thousand households are Internet connected. For the rural households less than four of ten thousand of them are connected to Internet. The disparity ICT access of households between rural and urban is still high and does not change much (Table 10). Therefore, on such a background one can not expected the ICT industry to have an important impact on general level of income of Vietnamese.

Figure 10: Share of households having different types of ICT assets by region in 2002



Source: GSO, 2004, Result of the Survey on Households Living Standar ds 2002

Table 10: Inequality of ICT access of households by urban and rural, 1993 - 2002

Unit: percent

ICT asset	1993		1998		2002	
	Urban	Rural	Urban	Rural	Urban	Rural
Telephone	-	-	25.4	2.1	32.5	3.7
Video	13.7	0.7	47.3	9.7	46.7	14.7
Color TV	33.3	3.2	74.2	28.5	81.2	43.6
Stereo equipment	4.8	0.8	12.9	3.4	14.6	2.9
Radio/cassette player	43.9	21.1	49.7	41.8	29.0	27.3
Computer	-	-	3.1	0.1	8.9	0.4

Note: (-) data is not collected
Source: GSO, 1993, 2000 and 2004

PART V: EFFECT OF ICT IN NARROWING GENDER GAP

In Viet Nam, gender equality is an ideal, which there remains much to fight for. As the feminists have been working hard toward the ideal, they have tried every means to overcome the obstacles on the way to gender equality. Any time a new tool become available to the feminists, it may provide another way to solve problem. In that regard, the development of Information and Communications Technologies (ICT) seems very promising.

ICT have been growing continuously in Viet Nam for over two decades. That coincides with at least three other major developments that have profound impacts on lives in this country, including that on gender equality. First, the transition to market economy facilitates the economic growth of relatively high rate, and at the result, GNP per capita increased by over two and half times in two decade (1985-2004). Secondly, the adoption of Open-Door Policy made it possible a greater exchange of information with people over the world. Finally, over a big part of the period, the government and a number of social organizations ran their campaign for family planning and population control. Individually, the effects of ICT revolution on gender issues might not be as strong as the others. Nevertheless, the growth of ICT bolstered the effects of the other. For instance, TVs and radio are an essential part of the campaign for population control. Likewise, there are clearly strong mutual supports between ICT revolution and the process of Open Door. Thus, the effects of the processes mixed together, and that makes it difficult to separate individual effect of ICT quantitatively.

While there is good reason to hope that ICT development is helpful to alleviate gender inequity, there exists challenge for feminism as well. The overall gendered effect of ICT will depend on two factors. First, if women and men have the same opportunity to exploit the power of ICT. Secondly, if women can take the advantage of ICT available to them as much as men do. The presence of ICT in rural areas of Viet Nam has been very little, and therefore the social and economic impacts have been very weak. Likewise, the effects of ICT development on many economic sectors are insignificant. That does not necessarily mean it will be so in the future. For sure, the scope of application of ICT is growing, but that goes beyond the framework of this study, which is on what has taken place. To capture the impacts already on place, this

paper will focus on urban area of Ha Noi and Ho Chi Minh City, where surveys were carried out. Moreover, the discussion concerns only the sections, in which the applications have already been substantial.

I. DEVELOPMENT OF ICT AND GENDER GAP IN INCOMES

The economy of Viet Nam remains in its low level of development, and ICT of Viet Nam is even more so. According to Viet Nam Living Standard Survey (VLSS) 2002, less than 11% of households own telephones and some areas have even lower, for instance in the North West, the ratio is merely 4%. In whole country, slightly over half of households have color TV sets. For computers, less than 2.6% of households own them, but they concentrate mostly in urbanized provinces, so in the rural areas, the computer owners count for only 0.43% of households. Of all the privately owned computers, 19% are connected up to Internet. On the household base, there are five from each thousand households are Internet connected. For the rural households less than four of ten thousand of them are connected to Internet. With such a background it is expected that the impact of ICT on general level of income to be modest.

One of the important substances in gender gap is in economic aspect. Literature on the gender inequality has widely addressed this issue, not only in Viet Nam, but also in all the other countries. It is the income that makes the most of the way women are in disadvantageous position compared to men in virtually any region of the world. This section, however, will not elaborate on the reason for women being in that position. We focus, instead on the mechanism and the practice of the ICT on the change in the economic gap between the male and female employees.

Looking at the women as whole in Viet Nam, the biggest factor for gender inequality is their economic dependence, which is more often partial than full, on their spouses. The poorer a household is, the worse is the female spouse treated in the family if her earning power is less than her spouse. Thus, the impact of ICT on the gender equality may work in either of two following ways. First, it is through the overall prosperity of the household; and secondly, it raises the income by the female member comparatively to that of male member. For the first count, the impacts have been very slight in Viet Nam, for ICT has virtually no income effect on poor families. In fact only the fractional group of urban wealthy people has got benefit from information and telecommunications technologies.

1.1. Impact of ICT development on income of rural women

Most of the poor are in rural areas, and the rural women bear the more hardship of poverty than men, and more gender inequality than urban women. A research on rural poverty in Viet Nam carried out by Le et al. (2004) find that "female factors are found to have associated with poverty. Not only female ratio in households and household head being female increase the incidence of poverty, but also being female, the poverty reduction effect of her participation foreign sector is less significant than that of a male counterpart". Le et al. (2004) also find that one of factors explaining poverty is the degree of inaccessibility to major centers in general and in information in particular.

Even the effect of Viet Nam relatively young sector of ICT on the vast rural population has been sparse there is evidence for optimism on the issue. ICT can help to reduce market failures, which often borne by farmers with certain disadvantages, many of them are women.

VLSS 2002's data shows a slight gendered difference in accession to ICT. While 70% households with male heads own TVs, only 64.5% of the households with female heads own TVs. With respect to radios, the ownership ratio is 30% and 25.5% respectively. The source also reveals that the male household heads are more likely tune in central broadcastings, while the female household heads tune in local broadcastings more than male counterparts. The households with female heads watch more movies and music show compared to the households with male household heads, who watch/listen more news. Between rural and urban areas of the country, data indicate the seriousness in disadvantage of rural poor. Human Development Report 2001 indicates that 39% of telephone subscribers were situated in Ha Noi and Ho Chi Minh City, areas which have only 10% of the countries populations.

Price fluctuation cost farmer dearly, especially the poor women who often not knowledgeable of things beyond their job of growing crops. For instances, in response to the fluctuation in world price of coffee, farmers in Dak-Lak province cut down their coffee trees and that cost them enormously. Likewise, farmers in Dong-Thap-Muoi, not knowing the planning of local land use, switched from growing rice to that of cajuputs (in response to market prices) and then cut down the cajuputs and back to rice, even if their cajuput have no t been grown high enough to cover their costs. There

are many other examples of how the poor women have become poorer just because of the lack of assistance in the information with necessary for them. Together with the agricultural extension services[3], the availability of ICT can be very helpful in alleviating the market failures in conjunction to the middlemen. In addition, ICT can also help women to improve resource management efficiency in terms of increasing labor productivity, reducing costs and so on. A survey by Ministry of Agriculture and Rural Development (MARD) and UNDP found that many farmers to be completely dependent upon middlemen for commodity price information, which may adversely affect their production and sales choices. Price manipulation by the middlemen is particularly harmful for poor women, who are less knowledgeable of trading.

The MARD has developed a website and information management system to gather both market information and disseminate important crop maintenance information to farmers and provincial Departments for Agriculture and Rural Development. Moreover MARD has linked the information gathered and accessible via their website with print material, a medium often both more trusted and accessible to the majority of farmers and rural populations (UNDP, 2003). In practice, farmers can have access to Internet through their communes' Post and Cultural points. According to VNPT's plan, by the end of 2005 the number of Post and Culture Centers with computers (and Internet) should have reached four thousands[4], and that means nearly half of all communes can access to the facility of Internet. This source of information can prevent part of market failures related to the shortage of information.

There are also a number of other web facilities to assist small and medium enterprises (SMEs) in Viet Nam. For instance, the newly established www.vietnam-directory.com is a virtual marketplace, through which enterprises may post the products for exports and imports. This website is also helpful for those seeking information for transactions within domestic market as well as for trade promotion services. Like many other ICT facility in Viet Nam, it is free to the users and therefore it is helpful to the poor rural poor. The impacts of such public web facilities are, however, not necessarily gender neutral because the web based tradability of the products has already reflected gender bias.

[3] The government of Viet Nam has been providing this service for over a decade. The purposes of the agricultural extension services include facilitating farmers' access to information or production techniques and market developments.
[4] *Source*: www.vnnic.net.vn/thongke, 15 August, 2005

In reality, however, the benefit of rural Internet provision has been very limited, and the main reason for that is in poor provision of content in Vietnamese, or other local languages. Moreover, the poor women are not necessarily motivated enough to take the advantage of the available ICT without assistance from the staffs of agricultural extension services. The households with male heads may in fact be benefited more from the development of ICT because of the backward tradition, according to that women work long day and men have some spare times in which they play, read newspapers and do other things. In the modern days, indeed men have more time for having information, including the facility of ICT. Thus, the effect of ICT development on rural poverty is not gender neutral.

In addition to the public utility, the advancement ICT in Viet Nam has been used with great success by groups and individuals. Business websites have been used for selling agriculture products. For its relatively low costs, web facility may be considered to be available on nondiscriminatory basic. However, the number of business website is currently small in Viet Nam. Data of Viet Nam Internet Center indicate that at the end of August 2004, only 10,362 Vietnamese enterprises registered websites[5] for their operations and that means no more than 8% of enterprises have taken the advantage of Internet in Viet Nam. The mere ten thousand business websites in a country with population of eighty million is too few. While there has been no report on the merits of the websites, we have learned for sure that some work well (see Box 7)

Box 7: Online Pomelo

Nam Roi pomelo's reputation is famous throughout Viet Nam and increasingly sort after by Japanese and French importers. Ms. Luu Nguyen Tra Giang, 22-year old, director of "Hoang Gia" Company graduated from the Bioengineering Department of a Ho Chi Minh City University.

She is using a 6000m2 farm to grow and process Nam Roi pomelo. In May 2002, Ms. Giang registered the website www.5roi.com to promote here pomelo produce. "The website is still very sparse but it attracts the interest of international fruit and vegetable companies. The company has received a lot of orders from the United States, Canada and Europe. In the near future, this website will be registered in US and Canada, and Hoang Gia Company will improve it to provide more information", she said.

Source: Viet Namnews 01/27/2003

If one looks at the households of Viet Nam in sections by their levels of incomes, one would find that only the high income sections have any income effects by the growth of ICT over last three to four decades. However, as a group, the problems such as

[5] *Source*: Ministry of Finance's Electronic News 30 March 2005

family violence, girl school drop-out, and few others rarely happen in the high income sections. On the contrary, the problems of gender inequality are severe in low income sections of population. For the low income families are at the same time, the material effect of ICT has been insignificant. Thus, the overall income effect of ICT has been very weak.

1.2. Gendered impact of ICT development on incomes within the sector

There had been cautiousness on how the growth of ICT affects the demand for women labor. First, on negative impact, there had been concerns that the higher productivity brought about by computers and modern technologies of communications may have a contracting effect on demand for certain skills that are comparative advantage of women. The practice of over three decades does not support any hypothesis on such demand contraction. Secondly, the positive impact, which is the creation of employment by the ICT related businesses, was well expected to benefit both men and women. In fact, the enterprises with large employment in information, post and telecommunication are owned by the state and tend to be relatively nice for women in employment. For the whole economy, women occupy only 37% of all wage employment[6], but according to data of Post & Communication Trade Union (2000), they share about half of the Post and Telecommunications labour force. One of the biggest ICT programs in Viet Nam is the government's 'program for computerization'. Thanks to that program, the number of ICT professionals in line ministries at the central and provincial levels tripled over the period 1995-98, in which proportion of female ICT staff increased from 12.6% to 16% (McDonald, 1999). By all indicators, there is little doubt that the overall effect of ICT development on demand for labor is positive.

Wage in ICT is relatively high (VND2,251 thousand for whole sample) and it is also true for women, who average monthly income of VND1,907 thousand). Data of VHLSS 2002, which is a two-year earlier survey, indicate that for the whole economy, the monthly average wage is VND826.38 thousand and that of female workers is VND747.85 thousand, which are much lower the above corresponding figures[7]. Therefore, an employment in ICT can be a chance to improve economic status for a woman. In that sense, the growth of ICT employment may affect gender equality in

[6] This is calculated based VHLSS 2002 data of sectors other than agriculture, fishery and forestry.
[7] The rate of inflation in Viet Nam in 2002, 2003, and 2004 are 2.9%, 3%, and 9.5% respectively, so the comparative power remains strong.

Viet Nam and that depends on the way the labor market in this sector functions. The MIMAP-Gender network's survey in Ha Noi and Ho Chi Minh City provides a number of interesting facts concerning the gendered impacts of ICT employment.

Job security

In market for ITC labor, the clearest disadvantage of Vietnamese women, as a group, face is job security. The survey data show that female ICT workers do not enjoy the same job security as male counterparts, especially in Ha Noi, where 54% of female employee work on short contracts, while only one third of male counterparts do so (see Table 11). Even though most of IT workers are employed full time, the percentage of women having long contracts is lower than that of men (43 percent vs. 62 percent). On the other hand, up to 47 percent of women work on a short contract while only 30 percent of men work as such. Comparatively, the job is more secure for women in Ho Chi Minh City than those in Ha Noi when we observe that 33 percent of women in Ho Chi Minh City compared with 54 percent in Ha Noi relying on short-term contracts. It should be mentioned, however that in both Ha Noi and Ho Chi Minh City, among the small number of tenured positions, there are more females than males.

Table 11: Type of work basis in the IT enterprises

Unit: percent

Work basis	Male	Female	Total	Ha Noi			HCMC		
				Male	Female	Total	Male	Female	Total
Tenured	8.4	9.8	9.0	7.1	9.6	8.5	9.1	10.3	9.5
Long contract	*62.1*	*43.4*	*54.0*	*60.0*	*36.5*	*46.5*	*63.4*	*56.9*	*61.5*
Short contract	29.5	46.8	37.0	32.9	53.9	45.0	27.5	32.8	29.0

Source: MIMAP-Gender Network survey

Long-term contracts are more likely for male ICT workers and that guarantees job for security of men. While 48 percent of men have contracts with terms longer than a year, but less than 39 percent of women have such type (see Table 12). Majority of male ICT employees in Ha Noi have their contracts longer than a year, less than one third of female ITC employees in Ho Chi Minh City have that kind of contracts. For the group of contracts shorter than one year, the gender distribution in Ha Noi and Ho Chi Minh City are similar.

Table 12: Lengths of contracts for IT workers

Unit: percent

Period of contract	Male	Female	Total	Ha Noi			HCMC		
				Male	Female	Total	Male	Female	Total
below 1 year	8.8	14.0	11.1	9.5	14.4	12.3	8.4	13.0	9.8
Yearly	43.1	47.5	45.1	37.8	44.3	41.5	46.7	54.4	49.0
above 1 year	*48.1*	*38.5*	*43.8*	*52.7*	*41.2*	*49.2*	*44.9*	*32.6*	*41.2*

Source: MIMAP-Gender Network survey

The lack of job security has been causing more stress to female IT workers than male counterparts. In Ha Noi we find that 59 percent of women in Ha Noi compared with 33 percent of women in Ho Chi Minh City felt the threat of getting retrenchment without prior notice (see Table 13). However, male IT workers suffered more physical stress and strain than female counterparts when we observe that one-fourth of male IT workers compared with one-eighth of female counterparts had to work on night shifts.

Table 13: Proportion of ICT workers suffering job related stress

Unit: percent

	Male	Female	Total	Ha Noi			HCMC		
				Male	Female	Total	Male	Female	Total
Get social security benefit due to retrenchment	62.9	49.3	57.0	57.5	47.2	51.6	66.7	54.4	63.2
Work on night shifts	25.2	12.7	19.8	21.4	12.2	16.1	27.5	13.8	23.5
Feel threat of beting retrenched without prior notice	45.8	50.3	47.8	56.5	59.1	58.0	39.4	32.8	37.5

Source: MIMAP-Gender Network survey

Given that law enforcement in Viet Nam has been weak, particularly the low effectiveness of judicial system in protection employees, the lack of job security, especially in Ha Noi, may bring about work pressure or stress for women. They feel fear of being easily pushed out of firms due to retrenchment, when the status of excess supply of labor is reality in Viet Nam. Thus, for this particular issue, the sector of ICT does not seem to improve gender equality in labor market.

Wages and Allowances

As mentioned earlier in this section, ICT is an area of high salary and it is also true in Viet Nam. In addition, salary of women in this sector in average is relatively higher than that for women working in other industries. However there exists a gender wage gap within ICT sector. ICT workers, especially females, faced poor care from the firms or organizations where they work for, especially in Ho Chi Minh City. Like it

found in previous studies (McDonald 1999, UNDP 2003a), the survey reveals that women are more concentrated in low levels of remuneration compared to men.

MIMAP-Gender Network survey indicates that majority (54%) of female ICT employees make each VND 2 million per month or less, while 64% of male counterparts make VND 2 million per month or more (see Table 14). Overall, more than one third of male ICT employees make VND 3 million per month or more, but less than 14 percent of female counterparts do so. The pattern of gender gap in wages is similar for the Ho Chi Minh City sub-sample. However, the Ha Noi sub-sample displays some slight difference. The fraction of very high income male ICT employees in Ha Noi is relatively small, and one of possible reasons for that is the dominance of the State ownership in the ICT enterprises in Ha Noi

Table 14: Distribution of monthly income of IT workers by sex and location

Unit: percent

Remuneration in VND mil.	Male	Female	Total	Ha Noi			HCMC		
				Male	Female	Total	Male	Female	Total
Below 1	6.6	14.4	10.0	12.9	20.9	17.5	2.8	1.7	2.5
1 to 2	30.0	39.3	34.0	52.9	43.5	47.5	16.2	31.0	20.5
2 to 3	30.0	32.4	31.0	23.5	30.4	27.5	33.8	36.2	34.5
3 to 4	20.3	6.4	14.3	8.2	1.7	4.5	27.5	15.5	24.0
Above 4	13.2	7.5	10.7	2.4	3.5	3.0	19.7	15.5	18.5

Source: MIMAP-Gender Network survey

Moreover, the average monthly income of male ICT workers was 1.32 time higher than that of female counterparts (see Table 15). For the whole economy the ratio of salaries of male employees is 1.17, and that means the gender inequality in ICT wage is even worse than that in general economy. For comparative skill, we take the gender ratio for the class of medium grade technicians[8], the ratio is 1.23 is higher than that of general workers, but still lower than that for ICT workers. Further, we look at the salary of the group of high grade technicians[9] and come up with the ratio of 1.26, which is lower than that of ICT. It suggests that ICT wage does not work to improve gender equality.

While the gendered difference in ICT wage is clear and so is gender inequality, it needs not be a fact of discrimination. Part of the disadvantage of female workers is in conjunction to the non-IT major in schooling of many. In general, the average

[8] *Source*: VHLSS 2002
[9] *Source*: VHLSS 2002

monthly income of IT workers with ICT related major was 1.25 times higher than that of IT workers without ICT related major (see Table 15). It is important to note that the gendered wage gap was strongest for those with IT major in their education.

Table 15: Monthly average income of IT employees with college or higher education

Unit: thousand of VND, except Male/Female

Average salary	Male	Female	Total	Male/Female
ICT stream	2,674	1,969	2,448	1.36
Non-ICT stream	2,140	1,867	1,967	1.15
Sample Total	2,512	1,907	2,251	1.32

Source: MIMAP-Gender Network survey

Other than wages, the survey found, however, ICT employees do not receive very good fringe benefits. In fact, up to one third of them do not receive social security and health insurance. For the short contract workers, 45 percent of them do not receive any social security and health insurance. Furthermore, 55 percent of the employees working for private ICT enterprises do not receive any social security and health insurance. Thus, for the whole sector, the cares of workers by employers have not been good enough.

On that background, more than 30 per cent of women reported they are not provided adequate maternity leave in general. The situation is more severe for female workers in Ho Chi Minh City, where the proportions of women benefited from social security, health insurance and maternity leave are 63.8%, 63.8%, and 39.0%, respectively. While it is hard to judge the gender equality on the ground of these benefits, it is clear that the special needs of women are not met to alleviate their difficulty.

Even if the ICT was expected to bring about better gender equality in income, it has not. The average salary of women is clearly lower than that of men in this sector. There are many reasons for that, and one of them is the gender discrimination reflected in pattern of labor division in ICT enterprises.

1.3. Gendered difference in positions in the ICT enterprises

For a number of reasons, including prejudices against them, it is harder for women to get high paid job in ICT industry. Prejudices include the unfair view on traditional role of women, the myth of their technical/managerial incompetence, and others. In computer industry, clearly fewer women got the jobs than men. Data of Population

Census of 1999 reveals that the representation of women in private and foreign ICT enterprises is even worse than the overall thanks to the relatively better gender equality in the state owned ICT enterprises. Moreover, Table 16 shows that the ratios of women representation are relatively higher in software or data processing than in hardware, and their representation is lowest in "Other" category, which include high paid functions such as management and designing.

Table 16: Number of employees in computers

Unit: person, except (1)/(2)

	Total	Hardware	Software	Data processing	Other[10]
Males (1)	2,684	137	724	166	1,657
Female (2)	1,154	55	326	137	636
(1)/(2)	0.43	0.40	0.45	0.83	0.38

Source: Population Census 1999

More recent data is presented in Table 17, which show the division of labor in ICT enterprises in Ha Noi and Ho Chi Minh City. Given their under-representation in the industry, there are even fewer women in position of management. In other words, they are more likely than men being in low paid position. The situation remains the same after controlling for qualification. That is, when consider only the employees with bachelor degrees (and not higher), we come up with similar statistics. Moreover, the survey reveals that 19 percent felt that ICT women were mostly employed in the low skilled and low wage jobs. This is consistent with the findings in UNDP (2003).

Table 17: Designation of ICT employees

Unit: per cent

Positions	Male	Female
Division (or higher) management	9.7	7.5
Group heads	8.8	4.6
Regular employee	81.5	87.9
Total	100	100

Source: MIMAP-Gender Network survey

Having professional education is an important benefit for employees and the decision on selection of candidate reflect the expectation of employers about the future contribution of the candidates. This issue may reflect the management attitude toward women and therefore gender sensitive. For its attributes, there is a constant demand for learning in ICT sector and it is an important factor for career advancement of the

[10] This category includes works related to databases, repairing computers, etc.

sector employees. The survey data shows that, up to 39 percent of female ICT workers (40 percent in Ha Noi and 37 percent in Ho Chi Minh City) think men got more opportunities than women.

Even though only few women (5%) mention of any discrimination in their organization, some of them (30% of female employees), however think there exist obstacles to promoting women. Nearly a half of female employees say they would have problem if they would work on night shifts. Moreover, women have more family responsibilities and they are not willing to sacrifice family happiness. In fact, only 31 percent would accept a promotion conditional on movement to another place, leaving their family behind. Likewise, about 30 percent disagree with the assumption that ICT-related jobs are better for women compared to other kinds of jobs (see Table 18).

Table 18: Work environment in perception of female IT employees

Unit: percent

Response: Yes	**Ha Noi**	**HCMC**	**Total**
Men get more opportunity of training than women	40.4	36.8	39.2
Exists gender discrimination in the organization	4.4	5.3	4.7
There are delays and barriers in promotion of women	26.3	36.8	29.8
ICT-related jobs are better for women than other kinds of jobs	8.8	3.5	7.0
In this profession, women are mostly employed in the low skilled and low wage jobs	24.8	7.0	18.8
Accept a promotion in condition of movement to a another place leaving one's family behind	30.0	33.3	31.1
Have problem with one's parents/ family members, if working on night shifts	43.9	60.7	49.4

Source: MIMAP-Gender Network survey

There is a strong gender prejudice in Viet Nam regarding particularly technical issues. According to the prejudice, men are more technically competent than women in Vietnamese society and the ICT sector in particular. In practice, women are often hired for sales, marketing and some administrative positions within the ICT industry, even when they bear the same qualifications as men in software, hardware and other ICT areas. A study by the Viet Nam-Canada Information Technology project (VCIT) in 1998 described the situation as "men enjoying stable jobs and handsome salaries while women had to work long hours for low incomes. Most men were university graduates while most of women hold only high school degrees." (McDonald 1998).

ICT has obviously created many economic opportunity for both male and women, but has not been proven improve gender equality in Viet Nam with respect to income. The prior gender inequity plays its role in the ICT labor market and work environment an that perpetuates the gender issue. One of the factors that connect the past disadvantage of women to that in ICT is education, which is the topic of following section.

II. ICT AND EDUCATION ATTAINTMENT OF WOMEN

In this section, we look at dual connections between women education and ICT sector. The first is how women education attainment affects their position in the industry. Secondly, how ICT has facilitated women learning. In either aspect, we try to shed light on gender equa lity.

2.1. Education: cause and consequences of gender inequality

For majority of its employees, to have a position in the ICT sector is a decision to be made well in advance, that is before taking their courses in the field. In other words, in most of the case, having education should precede employment in ICT. Moreover, it is often substantial education and that is in fact, sizable investment in human capital and in that sense, gender is a factor in such decisions of young people's families.

In whole country, as reflected in VHLSS 2002, girls have not been given the same education as boys have (see Table 19). Moreover, Women are concentrated mostly in social disciplines, such as pedagogy and social sciences, and account for about 70 % of all students in these fields. Men are concentrated mostly in technical and technological disciplines, such as engineering and electric technicians, and account for over 70% of all students in these fields (UNDP 2003).

Table 19: Highest degrees by sexes

	Non-degree	Primary	Lower Secondary	Upper Secondary	Higher
Male	21.78	27.32	29.54	12.04	9.32
Female	32.79	25.55	25.82	9.38	6.45

Source: VHLSS 2002

Other evidence of gender bias in career selecting can be found in Population Census 1999, which shows that only 40% of 24 thousand people engaging in natural science research are women. At the same time, women count for 44% of total researchers in social sciences and humanity. Data in MIMAP-Gender survey is consistent with the finding in the report by UNDP (2003) that "the education gap between men and

women in Viet Nam is reducing." In fact, today girls in Ha Noi and Ho Chi Minh City do not suffer from gender discrimination by their parents. Some 81 percent of parents said that they would not make difference in educating a boy and a girl, while only 19 percent said they would. And 95 percent of parents said that they would not differentiate between their son and daughter in terms of technical/computer education, while only 5 percent say they would. There exists, however, a distinct gap in IT/communication degrees between male and female IT workers, especially in Ha Noi.

The survey shows that educational level of both male and female IT workers is very high with 90 percent were graduates and 5 percent were post-graduates in general. Among these, IT/communication degrees constitute 64 percent. However, the percentage of women with such degrees (47 per cent) is much lower than that of men (77 per cent). A similar disparity is easily recognized in Ha Noi and Ho Chi Minh City. Thus, there exists certain disadvantage of women right at the beginning of their carrier in ITC. The ITC degree gender gap, together with the mismatch between their major in choosing and the real jobs could hinder the female participation in this profession and their likelihood in moving up the career ladder.

2.2. Role of ICT for education and learning

The way ICT enable education of girls and women in Viet Nam reflects the international experience in the field of education. For girls and women in Viet Nam, mobility and access to public places, in some cases, not as easy and free of drawback as they are for boys and men. In such a context, the advantage of ICTs is that they can deliver education content to the doorstep. Another advantage of ICTs is in possible low cost to learners. Potentially, with the application of ICTs, government can create more flexible learning environments for the poor learners, including women. From remote communes, women can access to valuable knowledge relevant to their farming or other businesses. In fact, ICTs are widely used by the MARD and international agencies such as World Bank, UNDP and others to bring lessons to Vietnamese people, including rural women.

The enabling role of ICT is mostly in informal education that is more of transmission of popular knowledge instead of instruction basic education. The effect of Internet on education has been very narrow, not only because of limited accessibility in IT infrastructure, but also because of insufficiency and/or shallowness in content it

conveys. For instance, there has been much of debate of the advantage of distance learning, but few of such programs gone further than experiment stages. Educational effect of television, and radio in some extent, has been more powerful than that of Internet. There are many examples of teaching programs targeting women using ICT facility. One of such is the Radio program teaching Business for women of Cham minority in Binh Thuan province (VTV, 12 August, 2005).

Over last two decades, the young and the grown up people in Viet Nam made a colossal progress in learning foreign languages, mostly English, which is very few spoke before the Doi Moi. VTVs and the Voice of Viet Nam, which is the central radio station, have made a major contribution to the development of English learning population of Viet Nam. For majority of women, this form of education is important because private education in English has been too expensive for them. The programs for teaching French and Chinese on VTV have been also very well received in the wide community of learners.

In the system of education of Viet Nam, there are national exams that substantially determine future careers of pupils. In order to boost their chance of success in such exams, the pupils have often to take extra curriculum classes, which are expensive and time consuming. Even the society has denounced the practice of demand for such extra curriculum classes they have been there long enough. The existence of the extra curriculum classes that serve the only purpose of passing the national exams unfairly create disadvantage for the pupils of low income, who have certain duty in income generation or doing home chores. In particular, girls have less chance to take tha t kind of extra curriculum classes, not only because they have heavier chore duties, but also because their parents more willing to sacrifice their daughters' extra education for earnings or housework. The Science-Education Channel of VTV2 provides its regular programs that are helpful for girls or children of low income families and therefore makes it fairer for the competition in the national exams, which are vital for their career.

In Viet Nam, TV has been the most effective branch of ICTs in their functions of enabling education. For a number of reasons such as shortage of IT infrastructure, inadequate teaching personnel or resources, the applications of ICT in regular schools have been relatively simple and therefore not effective enough to have impact on gender equality. Overall, main merit of ICT for education, and therefore on gender

equality has been in conjunction to dissemination of popular knowledge and teaching foreign languages. However, for the large demand of service workers with foreign language in the emerging market of Viet Nam, it helps many young women to have job with decent wage in foreign enterprises.

III. ICT AND SOCIAL AND POLITICAL EMPOWEMENT OF WOMEN

The effect of ICT development on income of women has been weak, except that on the income of those within the industry, which is relatively small. Like wise, the high potential of the facilitating power of ICT on educational attainment of women has been far from fully realized. Other than the way it working through income and education, the applications of ICT have wide social effects on people's attitudes toward gender inequality. The impacts on people's attitudes need not be mostly direct, and are often diverse in nature.

3.1. ICT and networking and advocacy to promote gender equality

The legacy of the feudal society has not gone completely, especially in the attitudes of parents and the in-laws toward girls and women. According to the views, what is most important to girls is to be or to prepare to good wives and mothers, for whom, many social connections do more harm than good. It discourages girls from active participation in social activities. Even though the gap has been much narrowed compared to that under the feudalism, it remains that men and boys are socialize more than girls and women, and obviously, male members utilize more social capital than female members in general. The advantage in networking often is a factor for one's chance of getting a job or being promoted in one's organization.

Other than the backward thinking on how the girls have to behave differently from boys, there are other reasons for family members discouraging girls from being active in society, such as safety as well as limitation of leisure time because girls often have heavy load of chores at home. A survey conducted in Ho Chi Minh City found that urban women spend almost six hours on housework a day and men spend 1.5 a day; in rural areas women spend 7.5 hours and men a mere 30 minutes[11]. It is reasonable expected that, rural women suffer even more inequality in this aspect.

Internet makes it possible for women to socialize without having going out at night. It allows girls and women overcome problem of distance and time. In fact, for the

[11] *Source*: Vietnam News, January 30, 1999

people within the industry, the gap is not very clear. Majority, except for the sub-sample of female workers in Ha Noi, say that male and female employees have the same ability of networking. In no sub-sample the answers "yes" count for majority (see Table 20). This is a good indication of strong networking capability of people with ITCs.

Table 20: Network ability of IT workers: "Are males network better than females?"

Unit: per cent

	Male	Female	Total	Ha Noi			HCM City		
				Male	Female	Total	Male	Female	Total
Yes	32.2	33.5	32.7	35.3	40.0	38.0	30.3	20.7	27.5
No	10.6	10.4	10.5	10.6	13.9	12.5	10.6	3.4	8.5
The same	57.3	56.1	56.8	54.1	46.1	79.5	59.1	75.9	64.0

Source: MIMAP-Gender Network survey

3.2. ICTs as amplifiers of women's voices and perspectives

Even if the legal system of Viet Nam is relatively good regarding to gender equality, women themselves, especially those in rural and isolated areas, need not be fully aware of their rights. TVs, with its wide access, have actually let them know of basic rights, including women rights and the sense of how more liberal they can be toward authority, many of whom had been undemocratic to them. In fact, many women have not been able to take advantage of the greater democracy brought about by the "Doi Moi", and mass media is helpful in that regard.

The high level organizations of public administration are good protectors of women, and generally better than private sectors. Mass media is often the enemies of wrong doers against feminists and women. Given that poor women are the most frequent victims of wrong doers of all kinds, from sexual and violent abuses to political and economical unfair treatment, the availability of ICTs with relatively low cost for reporting to high office is a shortcut to authority and therefore a power enhancer for women. For instance, in Viet Nam, land belongs to the State, and local authorities give lands to farmers for cultivation and collect rents for the State. As the usage and productivity of land vary and so do the rents. In practice, local officers have lots of arbitrariness over land distribution and rates of rents. Mass media have reported many cases unfair tax duties in conjunctions to the arbitrariness and the people with low education and little connections are often the victims in such unfair cases, which

present the tip of the iceberg. The TVs, Internet news have been crucial for uncovering many of such cases.

A big part of discrimination against women takes place in their houses, but even though, ICTs can still have impacts. There are websites that provide interactive resources about domestic violence and let the media to make use of the information to share with the public for facilitating people to intervene to prevent domestic violence. Not only the ICTs let the women know what is wrong and what is right, but also they provide channels for getting help. Moreover, ICTs improve access to justice and public administration, and improve capacity to deliver basic services, including those protecting women. Thus, ICTs have made up certain political power for those rural poor women.

3.3. Other effects of ICT on powering women

One of the other major impacts of ICT on gender equality is that on the family planning. Even though it is an indirect impact, but it is significant, at least in urban areas. ICTs have certainly been part of the success of the campaign for population control, which in turn made progress in gender equality. The impact of the population control on gender gap works in two channels. First, on current generation of mothers, for whom fewer children means to have less burdens and more leisure time and that allow the women to enjoy their lives as well as study. Secondly, on the future generation that is most of families would have one or two children at the result of the campaign. When the families have fewer children, the parents are less likely to discriminate against their daughters as all the children are better taken care of. Moreover, smaller size of family means the income per member to increase, and therefore there will be less reason for parents to keep their daughters out of schools as it is in families of big size. This effect has been relatively clearly observed in urban areas, but much less so in rural areas.

As discussed above, disadvantage of women does not come from anywhere in the legal system of Viet Nam. In stead, it is mostly in the attitudes of people, more likely of men. The men attitudes toward women have changed for a number of reasons, including the social development created by the Open Door policy. Through TVs and Internet, men get access to information from other countries. Whether one likes it or not, the good things will be learned gradually. Our survey data indicate that there have been changes (see Table 21).

Table 21: Male household heads' perception on gendered changes

Unit: per cent

	Ha Noi	HCM City	Urban	Suburb	Total
Things changed in the present generation	87.5	76.4	77.3	90.4	81.8
Attitudes changed	81.7	70.6	72.9	82.2	76.1

Source: MIMAP-Gender Network survey

PART VI: CONCLUSIONS AND POLICY RECOMMENDATIONS

I. CONLUDING REMARKS

Gender inequality existed for many centuries and needed not have a trend. In Viet Nam, the gradual admission of the Confucianism brought about a long lasting influence to role of women in society and in family. In fact, when the feudal state adopted the Confucian teaching as orthodox ideology, a set of discriminatory norms against women became institutionalized.

French colonialism may have brought in the ideas of liberty and equality that might have had favorable impact on life of a fraction of elite women and girls, but the liberty and equity become realized only after the colonialism had gone. The status of women in society and in families was improved as the socialism took power in this country. Even if the advent of market economy benefits Vietnamese women in absolute terms, it does not do so comparatively in the sense that the market competition has not been favorable for gender equality.

Policy makers of a large organization are typically pro gender equality. Not all households, however, have such gender friendly leadership, especially those with male household heads, who have limited education and is possibly egoistic. The evidence of possible contradiction between the state and household purposes is the article in the Land Law regarding to requirement of land titling for spouses. For certain issues relevant to gender equity, a shift of power from household units may not be positive.

Even thought the record on human development, which includes gender equality of Viet Nam is not worse than that of the countries with comparative level of economic development, there are problems related to women and girls that require to be addressed in government programs concerning social development. Many of the problems stem from economic hardship in their families, and therefore poverty alleviation can be an effective way to improve gender equality. Other effective measures include provision of free education for girls, protecting property ownership for female member in the households, for instance by requirement on names of both spouses presented in land use certificate, if it is legitimate. Viet Nam has been trying

to have women help themselves in the way having more women elected in public offices, but the progress in that direction has not been very high.

The growth of ICT works on gender gap mainly through income, education and political empowerment of female member of society. For vast rural area, by any channel, the impacts of ICT have been weak. The impact on the economic status of female member has been significant only for those in the sector. However, as the salary ratio between male to female employees is greater than that in the economy in general, it hardly implies the growth of ICT has improve gender equity in terms of income. On basic education, the effect of Internet has not been very substantively. More substantially, TVs and radio are effective in transmitting popular knowledge and teaching foreign languages, which is very helpful for many urban girls to have high paid jobs in enterprises with foreign partnership and that makes certain difference in gender gap.

The social and political impacts of ICT on gender gap have been powerful. In fact, social opinion has changed so much in direction in favor female members. It is easier now to elect women to public offices, and to accept women in managerial positions than ever before. When minds are open to much more diverse ideas and facts, many old norms, if they are not conformable to reality, will not be followed. Discrimination against female member of society and families is one of such old norms.

Even though the impacts of ICT on gender gap in Viet Nam are currently modest, there are reasons for optimism. First, the ICT sector of Viet Nam has been in its initial stage of development, and the scale of operation and the employment remain small. Secondly, the Government is not only supportive, but also making big investment, which seems to have crowding in effect in this sector. In fact, the sector rates of growth in recent years are very high. Finally, by its nature, the way ICT development affects the gender gap is accumulative, perhaps with lags, and therefore, one rationally expects more significant impact in the future.

Even though the focus of this study is narrow for the major findings concern mostly two biggest cities and one sector, the implications need not be meaningful only in those areas. As the ICTs will be more substantially used in other sectors and in other cities and provinces, where more industrialization take place sooner or later, while the people's incomes approach those in Ha Noi and Ho Chi Minh City, and all that make

the gendered impacts of ICT in the provinces to resemble those observed in this study. While it is surely that the gendered effect of ICT is positive, for more reliable policy recommendations, broader set of survey data is desirable.

II. RECOMMENDATIONS

In order to further support for ICT development, achieve the main objectives of ICT strategies and plans of the Party and Government and mobilize resources for implementing the ICT strategies and plans. It is necessary to reform regulatory system for safeguard a freer and more competitive environment. A national consultative process involving all stakeholders (i.e., users, service providers and private sector) should be undertaken to identify bottlenecks to streamlining the rulemaking process in the Ministry of Post and Telecommunications. Licensing procedures should be simplified for foreign and private investors; the number of service providers should be increased; restrictions on content through ICP licenses and the national firewall should be replaced by general guidelines that for self-regulation; licensing for Internet cafes should be liberalized and legal status clarified; and official support should be considered for franchising schemes.

The study recommends that while the household attitude toward gender equity is being changed slowly in right direction, there are measures that can be done in schools or other public places to remedy the disadvantage of girls and the young women in terms of their readiness to ICT. Public school should provide more and improved programs in IT. It require a substantially more investment in computers, Internet lines, equipments and, more importantly, the greater and better instruction staffs in schools. Girls should be encouraged and assisted in career orientation. Moreover, parents should be held responsibility for any bias against their daughters in their provision of education to children.

The legal system of Viet Nam should be made more effective in its enforceability. It should be affecting the position of female job seekers in their negotiations with employers, who often have substantial market power, especially in the area with high technological contents, such as the ICTs. In fact, many of the reasonable benefits of many female employees in the sector of ICT have not been effectively protected by current laws dealing with labor market. Neither have the special benefits of women in the industry. A more operative labor law may deal with that and enterprises can be

held responsibility is gender bias is found in their hiring practices. The government of Viet Nam has had slight tax incentives to the enterprises that employ large number of females, and the broader measures in that direction, however, should be taken. It is encouraging that the Land Law of Viet Nam requires that the names of both household head-spouses present in their Land Use Certificates. The application of that gender friendly piece of Law has been, at most fractional, and therefore the full enforcement has become urgent.

Provision Internet infrastructure to the vast rural areas, even if can be expensive, is necessary and urgent purchase for the Government of Viet Nam. Lack of information is an important part of the poverty, which exists mostly in rural areas, and Internet is the most effective way to assist the rural poor. The full benefit of the Internet, however, can not be realized without instruction staffs available to work with the rural people with limited education.

Gender gap persists because there are elements in a vicious circle, which includes household behavior with respect to the investment in education, inheritance, labor division, etc., and social behavior such as election for public office. To break the vicious circle, the gender neutral measures are likely to be ineffective, or slow. In order to speed up the progress in gender equality, some biased measures in favor of female members of the society are needed. The politic system should adopt special measures for giving women more of the tools brought about by the development of ICT and having more women elected in offices with power.

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APPENDICES

APPENDIX 1: SURVEY QUESTIONNAIRE FOR IT WORKERS

Date: Questionnaire No:

A. General information about the informant

1. General Information

Name	Age or Date of birth	Sex 1. Male 2. Female	Name of the Organization
[q11]	[q12]	[q13]	[q14a]/[q14b]/ [q14c]

2. Educational Qualifications (completed):

	Stream: 1.IT/ Communication 2. Other science 3. Arts 4. Economics/ commerce 5. Any other	Name of the Institute
Below XII ✍ [q211]		[q213]
XII completed ✍ [q221]		[q223]
Graduate ✍ [q231]	[q232]	[q233]
Post- graduate ✍ [q241]	[q242]	[q243]
Other professional course (specify) ✍ [q251]/[q251t]	[q252]	[q253]

B. Nature of employment

3. Job description

Name of the Organization	Date of Joining the current firm	Type of ICT work the organization specializes in: 1. Software design 2. Word processing 3. Storing and processing data/ information 4. Call answering 5. Communication 6. Components production, computer assembly and maintenance 7. Other.	Designation in the organization: 1. Director 2. Manager (vice) of division 3. Head (vice) of group 4. Official Job description	How many hours do you work on an average day?	Type of employment 1. Full time 2. Part time 3. Intern 4.Consultant	How many hours do you spend working on the computers on an average day?	Are you on permanent basis? 1. Tenured 2. Long contract 3. Short contract	If yes, please mention the period of contract	Average salary/ remuneration per month
[q31]	[q32]	[q33]	[q34a]/[q34b]	[q35]	[q36]	[q37]	[q38]	[q39]	[q310]

4. Are you eligible for the following?

	Response 1. Yes 2. No 3. Can't say	Amount/ no. of days or percentage (wherever applicable)
4.1 Social security	[q411]	Amount: [q412]
4.2 Health insurance	[q421]	Amount: [q422]
4.3 Educational Allowance	[q431]	Amount: [q432]
4.4 Housing Allowance	[q441]	Amount: [q442]
4.5 Car/ transport	[q451]	Amount: [q452]
4.6 Telephone	[q461]	Amount: [q462]
4.7 Leave travel allowance	[q471]	Amount: [q472]
4.8 Policy of stock options	[q481]	No. of stock or % [q482]
4.9 Leaves		
4.9.1 Holidays per week	[q4911]	No. of days: [q4912]
4.9.2 Annual leave	[q4921]	No. of days: [q4922]
4.9.3 Sick leave	[q4931]	No. of days: [q4932]
4.9.4 Maternity leave	[q4941]	No. of days: [q4942

C. Information on career prospects, networking and stress related problems

5. Information on career prospects and goals

How long are you in this profession?	How many times have you changed jobs in this profession?	Do you wish to continue in this profession? 1. Yes; 2. No; 3. Can't say.	What is the best position one can reach in this profession?	Expected salary at the best position	No. of times you		Are you satisfied with the job? 1. Yes 2. No	Will you search for a better career? 1. Yes 2. No
					had your salary hike after joining the current job	have been promoted		
[q51]	[q52]	[q53]	[q54]	[q55]	[q56]	[q57]	[q58]	[q59]

6. Information on work/ job related stress and strain

	Response 1. Yes 2. No	Period
6.1 When you want to quit the organization, what is the period of advance notice required?	[q611]	[q612]
6.2 Is there any early warning system before retrenchme nt in your organization?	[q621]	[q622]
6.3 Do you get any social security benefit due to retrenchment? If yes, what?	[q631]	Amount: [q632]
6.4 Have you seen anybody in the past who has been retrenched without prior notice?	[q641]	
6.5 Do you work on night shifts?	[q651]	[q652]
6.6 Do you get transport facility?	[q661]	
6.7 Do you feel the threat of getting retrenched without prior notice?	[q671]	

D. Skill acquisition

7. Information on skill acquisition and training

Type of Institute	Type of course 1. Computer related course 2. Call centre related course 3. Transcription related course 4. Management related course 5. Any other	Length of the course (in month)	Who pays the course fee? 1. Organization 2. Yourself 3. State subsidy
Private training Inst.	[q711]	[q712]	[q713]
Govt. training Inst.	[q721]	[q722]	[q723]
College	[q731]	[q732]	[q733]
University	[q741]	[q742]	[q743]
Any other	[q751]	[q752]	[q753]

8. Keeping up with the new technology

How do you keep up with the new technology? 1. Organization provides training; 2. Help from colleagues and friends; 3. Already enrolled in some technical course; 4. Online training via Internet; 5. Other; 6. I do not.	Do you think attaining skills can help in reaching a better positio n in this profession? 1. Yes 2. No	Do you think your organisation provide you the necessary facilities to attain skills? 1. Yes 2. No	Do you think in your profession acquiring skills is a one time affair? 1. Yes 2. No	Have you found anybody in this profession who could not make a better career move due to redundant skill set? 1. Yes 2. No	Do you think acquiring managerial skills alongside technical skills puts you on a better position? 1. Yes 2. No	Do you access Internet for updating your skill set? 1. Yes 2. No
[q81]	[q82]	[q83]	[q84]	[q85]	[q86]	[q87]

9. Do you think in this profession, males network better than females? [q9]

1. ✍ Yes;
2. ✍ No;
3. ✍ The same.

E. Questions about the informant's family

10. Information about your brothers and sisters.

	Age	Sex 1. Male 2. Female	Level of education 1. Less than Primary 2. Primary 3. Lower secondary 4. Upper secondary 5. T ech./professional 6. Graduate 7. Post- graduate 8. Other (specify)	Stream of education 1. Science 2. Arts 3. Economics/ Commerce 4. Any other	Do they have any exposure to ICT? 1. Yes 2. No
(i)	[q1011]	[q1012]	[q1013]/[q1013t]	[q1014]	[q1015]
(ii)	[q1021]	[q1022]	[q1023]/[q1023t]	[q1024]	[q1025]
(iii)	[q1031]	[q1032]	[q1033]/[q1033t]	[q1034]	[q1035]
(iv)	[q1041]	[q1042]	[q1043]/[q1043t]	[q1044]	[q1045]
(v)	[q1051]	[q1052]	[q1053]/[q1053t]	[q1054]	[q1055]

12. Job status and educational qualification of parents

	Job status 1. Housewife 2. Govt. service; 3. State/corporate sector 4. Private/ corporate sector 5. Self-employed 6. Any other	Educational qualification 1. Less than Primary 2. Primary 3. Lower secondary 4. Upper secondary 5. T ech./professional 6. Graduate 7. Post- graduate 8. Other (specify)	Monthly earnings (thousand of dong)
Father	[q1211]	[q1212]/[q1212t]	[q1213]
Mother	[q1221]	[q1222]/[q1222t]	[q1223]

F. To be asked to only women

13. Questions on work environment

	Response 1. Yes 2. No	Of what kind?
13.1 Do you face discrimination of any sort in your organization for being a woman?	[q1311]	[q1312]
13.2 Are there any special policies for women in your organization?	[q1321]	[q1322]
13.3 Do you feel that being a woman leads to delays and barriers in promotion?	[q1331]	[q1332]
13.4 Are ICT -related jobs better for women compared to other kinds of jobs? If so, why? If not, why? If yes, why?	1. ✍ Yes; 2. ✍ No; 3. ✍ The same. [q1341]	Why? [q1342]
13.5 Do you think men get more opportunities compared to women in terms of training imparted by your organization?	[q1351]	[q1352]
13.6 Do you think the attitude of the family members is conducive enough for you to prosper?	[q1361]	[q1362]
13.7 Will you take a promotion if you are asked to move to a different place leaving back your family?	[q1371]	[q1372]
13.8 If you are working on night shifts, do you face any sort of trouble/ obstacle from your parents/ family members/ neighbors?	[q1381]	[q1382]
13.9 Do you feel that women are mostly employed in the low skilled and low wage jobs in your profession?	[q1391]	[q1392]

APPENDIX 2: SURVEY QUESTIONNAIRE FOR HOUSEHOLDS ON GENDER AND ICT

Date: Questionnaire No:

1. General information about the household

(To be asked to head of the household or a senior member)

1. Household Identity No.

1.1 Location / Address: [a11]

1.2. Telephone number: [a12]

2. Infrastructure and neighborhood assessment

2.1. Drinking water

2.1.1. Source: [a211]

1. ✍ Supply water: Tap inside the house
2. ✍ Supply water: Roadside tap
3. ✍ Roadside tube well
4. ✍ Others (specify) [a211t]

2.1.2. Adequacy: [a212]

1. ✍ Satisfactory
2. ✍ Partly satisfactory
3. ✍ Not satisfactory

2.2. Electricity

2.2.1. Adequacy: [a22]

1. ✍ Enough
2. ✍ Partly satisfactory
3. ✍ Not satisfactory

2.3. House

2.3.1. Type of the structure: [a23]

1. ✍ Pucca (concrete structure)
2. ✍ Kuccha (non-concrete structure)
3. ✍ jhuggi-jhopri (slum/squatter settlement)
4. ✍ Apartment
5. ✍ Others (specify) [a23t]

4. Household profile (for household members only)

Sl. No.	Name	Relation to Head of Household 1. Head 2. Wife/husband 3. Child 4. Others.	Sex 1. Male 2. Female	Age	Educational level 1. Less than Primary 2. Primary 3. Lower secondary 4. Upper secondary 5. Tech./professional 6. Graduate 7. Post graduate 8. Other (specify)	Exposure t o computer education 1 No exposure 2 Basic knowledge (w/o formal training) 3 Basic knowledge (with formal training) 4 Advanced knowledge	Earning Status 1. Earning regular 2. Earning irregular (for sometime during the year) 3. Not earning
1.	[a411]	[a412]	[a413]	[a414]	[a415]/[a415t]	[a416]	[a417]
2.	[a421]	[a422]	[a423]	[a424]	[a425]/[a425t]	[a426]	[a427]
3.	[a431]	[a432]	[a433]	[a434]	[a435]/[a435t]	[a436]	[a437]
4.	[a441]	[a442]	[a443]	[a444]	[a445]/[a445t]	[a446]	[a447]
5.	[a451]	[a452]	[a453]	[a454]	[a455]/[a455t]	[a456]	[a457]
6.	[a461]	[a462]	[a463]	[a464]	[a465]/[a465t]	[a466]	[a467]
7.	[a471]	[a472]	[a473]	[a474]	[a475]/[a475t]	[a476]	[a477]
8.	[a481]	[a482]	[a483]	[a484]	[a485]/[a485t]	[a486]	[a487]
9.	[a491]	[a492]	[a493]	[a494]	[a495]/[a495t]	[a496]	[a497]
10.	[a4101]	[a4102]	[a4103]	[a4104]	[a4105]/[a4105t]	[a4106]	[a4107]
11.	[a4111]	[a4112]	[a4113]	[a4114]	[a4115]/[a4115t]	[a4116]	[a4117]
12.	[a4121]	[a4122]	[a4123]	[a4124]	[a4125]/[a4125t]	[a4126]	[a4127]

5. Economic Activities and household earnings

Sl. No.	Name	Sector of Work 1. ICT related job 2. Agriculture & allied 3. Non-farm own account enterprise 4. Service-Government 5. Service- Pvt. sector 6. Others (specify)	Labor Status 1. Self employed 2. Salaried worker 3. Wage worker 4. Casual labor 5. Unpaid family labor 6. Unemployed 7. House wife 8. Student 9. Retired 10. Others (specify)	Monthly earnings from salary and wages (thousand of dong)
1.	[a511]	[a512]/[a512t]	[a513]/[a513t]	[a514]
2	[a521]	[a522]/[a522t]	[a523]/[a523t]	[a524]
3	[a531]	[a532]/[a532t]	[a533]/[a533t]	[a534]
4	[a541]	[a542]/[a542t]	[a543]/[a543t]	[a544]
5	[a551]	[a552]/[a552t]	[a553]/[a553t]	[a554]
6.	[a561]	[a562]/[a562t]	[a563]/[a563t]	[a564]
7.	[a571]	[a572]/[a572t]	[a573]/[a573t]	[a574]
8.	[a581]	[a582]/[a582t]	[a583]/[a583t]	[a584]
	Total			[a594]

6. Final Assessment of Economic Status of the household: [a6]

a. ✍ Rich
b. ✍ Higher middle class
c. ✍ Middle class
d. ✍ Lower middle class
e. ✍ Poor

7. ICT related asset ownership and consumption of ICT

Items	Ownership 1. Yes 2. No	Quality 1. Very good 2. Good 3. Bad	Consumption	
			Who uses them (1: son, 2: daughter, 3: both)	How intensively 1. Hours per day 2. Hours per week
Telephone	[a711]	[a712]	[a713]	[a714]
Mobile phone	[a721]	[a722]	[a723]	[a724]
Computer	[a731]	[a732]	[a733]	[a734]
Internet connection	[a741]	[a742]	[a743]	[a744]
TV	[a751]	[a752]	[a753]	[a754]
Cable/satellite TV connection	[a761]	[a762]	[a763]	[a764]
Radio	[a771]	[a772]	[a773]	[a774]
Any other (specify) [a781]	[a781]	[a782]	[a783]	[a784]

II. List of questions for parents

1. When you were young, boys and girls used to be treated differently. Do you agree? [b1]

✍ Yes ✍ No

2. Do you think that things have changed in the present generation? [b2]

✍ Yes ✍ No

Could you explain how? [b2t]

3. Do you think your attitudes regarding this are different from the earlier generations? [b3]

? ✍ Yes
? ✍ No
? ✍ Different in some respect, not different in others

Please explain: [b3t]

4. Would you make any diffe rence in educating a boy and a girl? [b4]

✍ Yes ✍ No

5. Would you differentiate between your son and daughter in terms of technical education or education in computers? [b5]

✍ Yes ✍ No.
Explain: [b5t]

6. Do you think ICT related jobs have opportunities for the girls? [b6]

✍ Yes ✍ No
Explain: [b6t]

III. Questions for boys and girls

(If children are different in terms of sex, then please interview one boy and one girl. If children are the same in terms of sex, the n please interview any one boy or any one girl. III.a. if boy and III.b. if girl

III.a. Boy (Please choose any one boy)

Identification: (Please take it from Sl. No. in Question 4. Household profile) [ca0]

1. Do you use computers? [ca1]

✍ Yes ✍ No

2. If yes: From where have you learnt? [ca2]
a. ✍ self learnt
b. ✍ learnt in school
c. ✍ learnt informally
d. ✍ learnt from an institute
e. ✍ any other (specify) [ca2t]

3. Are you aware of Internet? [ca3]

✍ Yes ✍ No

4. If yes, do you use the Internet? [ca4]

✍ Yes ✍ No

If yes, where?

a. ✍ Internet kiosks [ca4a] (price per hour: [ca4ap])
b. ✍ school/college [ca4b]
c. ✍ friends' places [ca4c]
d. ✍ at home [ca4d]
e. ✍ any other (specify) [ca4e]/[ca4et]

5. For what purpose you use Internet?

a. ✍ entertainment [ca5a]
b. ✍ educational and learning purposes [ca5b]
c. ✍ mailing and communication/chatting [ca5c]
d. ✍ job information [ca5d]
e. ✍ shopping [ca5e]
f. ✍ for official and purposes [ca5f]
g. ✍ any other [ca5g]/[ca5gt]

6. How many minutes/hours do you spend surfing the net, on an average per day? [ca6]

7. How many minutes/hours do you spend in front of computer per day on an average? [ca7]

8. Would you like to have a job in the ICT sector? Why so? [ca8]

✍ Yes ✍ No

Expla in: [ca8t]

9. Are girls and boys equally suited for computer jobs? Why so? [ca9]

✍ Yes ✍ No

Explain: [ca9t]

10. Is there any gender discrimination in your family? [ca10]

✍ Yes ✍ No

If yes, of what kind? [ca10t]

11. Do you think computer jobs are equally accessible to men and women? [ca11]

✍ Yes ✍ No

12. If you want to pursue a ICT training or ICT related job, you will face opposition from your parents? [ca12]

✍ Yes ✍ No

If yes, why? [ca12t]

III.b. Girl (Please choose any one girl)

Identification: (Please take it from Sl. No. in Question 4. Household profile) [cb0]

1. Do you use computers? [cb1]

✍ Yes ✍ No

2. If yes: From where have you learnt? [cb2]
a. ✍ self learnt
b. ✍ learnt in school
c. ✍ learnt informally
d. ✍ learnt from an institute
e. ✍ any other (specify) [cb2t]

3. Are you aware of Internet? [cb3]

✍ Yes ✍ No

4. If yes, do you use the Internet? [cb4]

✍ Yes ✍ No

If yes, where?
a. ✍ Internet kiosks [cb4a] (price per hour: [cb4ap])
b. ✍ school/college [cb4b]
c. ✍ friends' places [cb4c]
d. ✍ at home [cb4d]
e. ✍ any other (specify) [cb4e]/[cb4et]

5. For what purpose you use Internet?
a. ✍ entertainment [cb5a]
b. ✍ educational and learning purposes [cb5b]
c. ✍ mailing and communication/chatting [cb5c]
d. ✍ job information [cb5d]
e. ✍ shopping [cb5e]
f. ✍ for official and purposes [cb5f]
g. ✍ any other [cb5g]/[cb5gt]

6. How many minutes/hours do you spend surfing the net, on an average per day? [cb6]

7. How many minutes/hours do you spend in front of computer per day on an average? [cb7]

8. Would you like to have a job in the ICT sector? Why so? [cb8]

✍ Yes ✍ No

Explain: [cb8t]

9. Are girls and boys equally suited for computer jobs? Why so? [cb9]

✍ Yes ✍ No

Explain: [cb9t]

10. Is there any gender discrimination in your family? [cb10]

✍ Yes ✍ No

If yes, of what kind? [cb10t]

11. Do you think computer jobs are equally accessible to men and women? [cb11]

✍ Yes ✍ No

12. If you want to pursue a ICT training or ICT related job, you will face opposition from your parents? [cb12]

✍ Yes ✍ No

If yes, why? [cb12t]

APPENDIX 3: RESULTS FOR IT WORKERS SURVEY

Sample size **400**

A. General information about the informant

2. General Information

Age				Sex 1. Male 2. Female		Ownership of the organization 1. State-owned enterprises 2. Limited and private companies 3. Joint stock companies 4. Foreign direct invested enterprises 5. ICT training centers/ universities and mass media organizations	
Range of age	Male	Female	Total				
= 20	0.4%	1.7%	1.0%	1.	56.7%	1.	22.8%
20-30	76.3%	85.6%	82.0%	2.	43.3%	2.	32.3%
30-40	18.5%	10.4%	15.0%			3.	19.8%
>40	1.8%	2.3%	2.0%			4.	5.8%
						5.	19.5%

2. Educational Qualifications (completed)

Educational level		Educational stream	
1. Below XII	0.3%	1. IT/ Communication	61.5%
2. XII completed	3.5%	2. Other science	7.0%
3. Graduate	90.0%	3. Arts	2.3%
4. Post- graduate	5.0%	4. Economics/ commerce	19.5%
5. Other professional course (specify)	1.2%	5. Any other	6.0%

B. Nature of employment

4. Job description

Type of ICT work the organization specializes in: 1. Software design 2. Word processing 3. Storing and processing data/ information 4. Call answering 5. Communication 6. Components production, computer assembly and maintenance 7. Other ICT related services	Designation in the organization: 1. Director 2. Manager (vice) of division 3. Head (vice) of group 4. Official Job description	How many hours do you work on an average day?	Type of employment 1. Full time 2. Part time 3. Intern 4.Consultant	How many hours do you spend working on the computers on an average day?	Are you on permanent basis? 1. Tenured 2. Long contract 3. Short contract	If yes, please mention the period of contract	Average salary/ remuneration per month VND000
1. 58.0% 2. 2.5% 3. 0.0% 4. 0.0% 5. 14.7% 6. 9.5% 7. 15.3%	1. 1.0% 2. 7.6% 3. 7.0% 4. 84.3%	8 hours/day	1. 97.2% 2. 1.8% 3. 0.2% 4. 0.8%	7 hours/day	1. 9% 2. 54% 3. 37%	2 years	2251

4. Are you eligible for the following?

	Response 1. Yes 2. No 3. Can't say			Amount/ no. of days or percentage (wherever applicable)
	1	2	3	
4.1 Social security	71.5%	18.5%	10.0%	Amount: VND 11000/month
4.2 Health insurance	70.5%	20.8%	8.7%	Amount: VND 3000/month
4.3 Educational Allowance	20.3%	71.7%	8.0%	Amount
4.4 Housing Allowance	0.0%	95.3%	4.7%	Amount
4.5 Car/ transport	5.5%	91.8%	2.7%	Amount
4.6 Telephone	11.3%	85.0%	3.7%	Amount
4.7 Leave travel allowance	31.0%	59.2%	9.8%	Amount
4.8 Policy of stock options	1.6%	76.0%	22.4%	No. of stock or %
4.9 Leaves				
4.9.1 Holidays per week	98.3%	1.5%	0.2%	No. of days: 2
4.9.2 Annual leave	91.0%	4.5%	4.5%	No. of days: 12
4.9.3 Sick leave	74.7%	17.4%	7.9%	No. of days: 6
4.9.4 Maternity leave (female only)	64.7%	20.6%	14.7%	No. of days: 120

C. Information on career prospects, networking and stress related problems

5. Information on career prospects and goals

Do you wish to continue in this profession? 1. Yes 2. No 3. Can't say	What is the best position one can reach in this profession? 1. Director 2. Manager (vice) of division 3. Head (vice) of group 4. Official 5. Other	Are you satisfied with the job? 1. Yes 2. No	Will you search for a better career? 1. Yes 2. No
1. 90% 2. 1% 3. 9%	1. 23% 2. 35% 3. 21% 4. 14% 5. 7%	1. 91% 2. 9%	1. 44% 2. 56%

6. Information on work/ job related stress and strain

	Response	
	1. Yes	2. No
6.1. When you want to quit the organization, what is the period of advance notice required?	99.5%	0.5%
6.2. Is there any early warning system before retrenchment in your organization?	71.0%	29.0%
6.3. Do you get any social security benefit due to retrenchment? If yes, what?	57.0%	43.0%
6.4. Have you seen anybody in the past who has been retrenched without prior notice?	6.4%	93.6%
6.5. Do you work on night shifts?	19.8%	80.2%
6.6. Do you get transport facility?	1.3%	98.7%
6.7. Do you feel the threat of getting retrenched without prior notice?	47.8%	52.2%

D. Skill acquisition

7. Information on skill acquisition and training

Type of Institute	Type of course 1. Computer related course 2. Call centre related course 3. Transcription related course 4. Management related course 5. Any other					Who pays the course fee? 1. Organization 2. Yourself 3. State subsidy		
	1	2	3	4	5	1	2	3
Private training Inst.	53%	9%	10%	11%	17%	47%	53%	0%
Govt. training Inst.	58%	9%	3%	18%	12%	58%	33%	9%
College	60%	0%	0%	30%	10%	0%	100%	0%
University	60%	11%	0%	6%	23%	8%	89%	3%
Any other	26%	2%	4%	11%	58%	54%	39%	7%

8. Keeping up with the new technology

How do you keep up with the new technology? 1. Organization provides training 2. Help from colleagues and friends 3. Already enrolled in some technical course 4. Online training via Internet 5. Other 6. I do not	Do you think attaining skills can help in reaching a better position in this profession? 1. Yes 2. No	Do you think your organization provide you the necessary facilities to attain skills? 1. Yes 2. No	Do you think in your profession acquiring skills is a one time affair? 1. Yes 2. No	Have you found anybody in this profession who could not make a better career move due to redundant skill set? 1. Yes 2. No	Do you think acquiring managerial skills alongside technical skills puts you on a better position? 1. Yes 2. No	Do you access Internet for updating your skill set? 1. Yes 2. No
1. 37.8% 2. 31.8% 3. 9.5% 4. 5.5% 5. 13.7% 6. 1.7%	1. 97.3% 2. 2.7%	1. 90% 2. 10%	1. 65.1% 2. 34.9%	1. 56% 2. 44%	1. 98.8% 2. 1.2%	1. 99% 2. 1%

9. Do you think in this profession, males network better than females?

1. Yes	32.7%
2. No	10.5%
3. The same	56.8%

E. Questions about the informant's family

10. Information about your brothers and sisters

Sex 1. Male 2. Female		Level of education 1. Less than Primary 2. Primary 3. Lower secondary 4. Upper secondary 5. T ech./professional 6. Graduate 7. Post- graduate 8. Other (specify) (Age = 6)		Stream of education 1. Science 2. Arts 3. Economics/ Commerce 4. Any other (Age = 18)		Do they have any exposure to ICT? 1. Yes 2. No	
1.	48.3%	1.	0.3%	1.	31.9%	1.	43%
2.	51.7%	2.	0.9%	2.	1.0%	2.	57%
		3.	5.2%	3.	33.7%		
		4.	17.5%	4.	33.3%		
		5.	6.7%				
		6.	61.0%				
		7.	8.1%				
		8.	0.3%				

12. Job status and educational qualification of parents

	Job status 1. Housewife 2. Govt. service 3. State/corporate sector 4. Private/ corporate sector 5. Self- employed 6. Any other						Educational qualification 1. Less than Primary 2. Primary 3. Lower secondary 4. Upper secondary 5. T ech./professional 6. Graduate 7. Post- graduate 8. Other (specify)							
	1.	2.	3.	4.	5.	6.	1.	2.	3.	4.	5.	6.	7.	8.
Father	1 %	46%	5 %	8 %	15%	25%	1 %	1 %	8 %	24%	10%	47%	5 %	3 %
Mother	33%	33%	4 %	3 %	8 %	19%	2 %	3 %	13%	29%	14%	34%	2 %	3 %

F. To be asked to only women

13. Questions on work environment

	Response 1. Yes 2. No 3. The same	
13.1 Do you face discrimination of any sort in your organization for being a woman?	1. 2.	4.7% 95.3%
13.2 Are there any special policies for women in your organization?	1. 2.	42.4% 57.6%
13.3 Do you feel that being a woman leads to delays and barriers in promotion?	1. 2.	29.8% 70.2%
13.4 Are ICT -related jobs better f or women compared to other kinds of jobs? If so, why? If not, why? If yes, why?	1. 2. 3.	7% 30.4% 62.6%
13.5 Do you think men get more opportunities compared to women in terms of training imparted by your organization?	1. 2.	39.2% 60.8%
13.6 Do you think the attitude of the family members is conducive enough for you to prosper?	1. 2.	92.4% 7.6%
13.7 Will you take a promotion if you are asked to move to a different place leaving back your family?	1. 2.	31.1% 68.9%
13.8 If you are working on night shifts, do you face any sort of trouble/ obstacle from your parents/ family members/ neighbors?	1. 2.	49.4% 50.6%
13.9 Do you feel that women are mostly employed in the low skilled and low wage jobs in your profession?	1. 2.	18.8% 81.2%

APPENDIX 4: RESULTS FOR HOUSEHOLD SURVEY ON GENDER AND ICT

Sample size | 300 |

2. Infrastructure and neighborhood assessment

2.4. Drinking water

2.4.1.	Source:	1. Supply water: Tap inside the house	77.0%
		2. Supply water: Roadside tap	0.3%
		3. Roadside tube well	9.7%
		4. Others (specify)	13.0%
2.4.2.	Adequacy:	1. Satisfactory	91.3%
		2. Partly satisfactory	5.0%
		3. Not satisfactory	3.7%

2.5. Electricity

2.5.1.	Adequacy:	1. Enough	98.0%
		2. Partly satisfactory	2.0%
		3. Not satisfactory	

2.6. House

2.6.1.	Type of the structure:	1. Pucca (concrete structure)	80.0%
		2. Kuccha (non-concrete structure)	6.7%
		3. jhuggi-jhopri (slum/squatter settlement)	0%
		4. Apartment	13.3%
		5. Others (specify)	0%

4. Household profile (for household members only)

Total number of household member: 1318

Relation to Head of Household		Sex		Educational level		Exposure to computer education		Earning Status	
1. Head	23%	1. Male	49%	1. Less than Primary	12%	1. No exposure	42%	1. Earning regular	48%
2. Wife/husband	21%	2. Female	51%	2. Primary	4%	2. Basic knowledge (w/o formal training)	44%	2. Earning irregular (for sometime during the year)	5%
3. Child	53%			3. Lower secondary	23%	3. Basic knowledge (with formal training)	14%	3. Not earning	47%
4. Others	4%			4. Upper secondary	32%	4. Advanced knowledge	1%		
				5. Tech./professional	7%				
				6. Graduate	20%				
				7. Post graduate	1%				
				8. Other (specify)	0%				

5. Economic Activities and household earnings

Total number of household members in economic activities: 950

Sector of Work		Labor Status		Average monthly income per household (thousand of dong)
1. ICT related job	3.8%	1. Self employed	25.9%	3582
2. Agriculture & allied	3.5%	2. Salaried worker	4.6%	
3. Non-farm own account enterprise	19.1%	3. Wage worker	34.1%	
4. Service -Government	10.5%	4. Casual labor	2.3%	
5. Service - Private sector	31.6%	5. Unpaid family labor	1.3%	
6. Others (specify)	31.6%	6. Unemployed	0.1%	
		7. House wife	3.4%	
		8. Student	11.9%	
		9. Retired	2.5%	
		10. Others (specify)	13.9%	

6. Final Assessment of Economic Status of the household:

f. Rich	1.7%
g. Higher middle class	22.0%
h. Middle class	73.3%
i. Lower middle class	2.3%
j. Poor	0.7%

7. ICT related asset ownership and consumption of ICT

Items	Ownership		Quality			Consumption				
						Who uses them			How intensively	
	Yes	No	Very good	Good	Bad	Son	Daughter	Both	Hours per day	Hours per week
Telephone	90%	10%	23%	76%	1%	11%	7%	82%	33%	67%
Mobile phone	59%	41%	25%	74%	1%	57%	16%	27%	16%	84%
Computer	64%	36%	22%	76%	2%	20%	10%	70%	85%	15%
Internet connection	22%	78%	25%	74%	1%	34%	12%	54%	54%	46%
TV	100%	0%	21%	76%	3%	9%	6%	85%	98%	2%
Cable/satellite TV connection	22%	78%	27%	73%	0%	3%	2%	95%	92%	8%
Radio	58%	42%	15%	80%	5%	19%	13%	68%	57%	43%
Any other (specify)	16%	84%	11%	81%	8%	19%	15%	66%	58%	42%

II. List of questions for parents

1. When you were young, boys and girls used to be treated differently. Do you agree?

Yes	33%	No	67%

2. Do you think that things have changed in the present generation?

Yes	84%	No	16%

3. Do you think your attitudes regarding this are different from the earlier generations?

Yes	76.5%
No	13.1%
Different in some respect, not different in others	10.4%

4. Would you make any difference in educating a boy and a girl?

Yes	19%	No	81%

5. Would you differentiate between your son and daughter in terms of technical education or education in computers?

Yes	5.4%	No	94.6%

6. Do you think ICT related jobs have opportunities for the girls?

Yes	95.3%	No	4.7%

III. Questions for boys and girls

(If children are different in terms of sex, then please interview one boy and one girl. If children are the same in terms of sex, then please interview any one boy or any one girl. III.a. if boy and III.b. if girl

III.a. Boy (Please choose any one boy)

Identification: (Please take it from Sl. No. in Question 4. Household profile)

1. Do you use computers?

Yes	98.3%	No	1.7%

2. If yes: From where have you learnt?

a. self learnt	4.0%
b. learnt in school	80.0%
c. learnt informally	2.7%
d. learnt from an institute	12.0%
e. any other (specify)	1.3%

3. Are you aware of Internet?

Yes	79%	No	21%

4. If yes, do you use the Internet?

Yes	86.2%	No	13.8%

If yes, where?

a. Internet kiosks	38.0%
b. school/college	8.0%
c. friends' places	6.3%
d. at home	14.7%
e. any other (specify)	1.3%

5. For what purpose you use Internet?

a. entertainment	41.7%
b. educational and learning purposes	32.7%
c. mailing and communication/chatting	30.0%
d. job information	9.7%
e shopping	1.3%
f. for official and purposes	2.0%
g. any other	0.3%

6. How many minutes/hours do you spend surfing the net, on an average per day?

7. How many minutes/hours do you spend in front of computer per day on an average?

8. Would you like to have a job in the ICT sector? Why so?

Yes	69.9%	No	30.1%

9. Are girls and boys equally suited for computer jobs? Why so?

Yes	93.4%	No	6.6%

10. Is there any gender discrimination in your family?

Yes	2.2%	No	97.8%

11. Do you think computer jobs are equally accessible to men and women?

Yes	97.3%	No	2.7%

12. If you want to pursue a ICT training or ICT related job, you will face opposition from your parents?

Yes	1.8%	No	98.2%

III.b. Girl (Please choose any one girl)

Identification: (Please take it from Sl. No. in Question 4. Household profile)

1. Do you use computers?

Yes	96.2%	No	3.8%

2. If yes: From where have you learnt?

a. self learnt	3.4%
b. learnt in school	84.3%
c. learnt informally	1.5%
d. learnt from an institute	10.3%
e. any other (specify)	0.5%

3. Are you aware of Internet?

Yes	73.3%	No	26.7%

4. If yes, do you use the Internet?

Yes	90.3%	No	9.7%

If yes, where?

a. Internet kiosks	32.0%
b. school/college	11.7%
c. friends' places	4.7%
d. at home	9.3%
e. any other (specify)	1.3%

5. For what purpose you use Internet?

a. entertainment	30.3%
b. educational and learning purposes	32.3%
c. mailing and communication/chatting	28.0%
d. job information	8.0%
e shopping	0.3%
f. for official and purposes	1.3%
g. any other	0%

6. How many minutes/hours do you spend surfing the net, on an average per day?

7. How many minutes/hours do you spend in front of computer per day on an average?

8. Would you like to have a job in the ICT sector? Why so?

Yes	66.7%	No	33.3%

9. Are girls and boys equally suited for computer jobs? Why so?

Yes	93.8%	No	6.2%

10. Is there any gender discrimination in your family?

Yes	1.4%	No	98.6%

11. Do you think computer jobs are equally accessible to men and women?

Yes	92.9%	No	7.1%

12. If you want to pursue a ICT training or ICT related job, you will face opposition from your parents?

Yes	2.4%	No	97.6%

Table 22: Educational Level of IT Workers by Sex and Location (%)

Unit: percent

Level	Male	Female	Total	Ha Noi			HCMC		
				Male	Female	Total	Male	Female	Total
Below XII	0.4	0	0.3	1.2	0	0.5	0	0	0
XII completed	3.5	3.5	3.5	2.3	4.4	3.5	4.2	1.7	3.5
Graduate	*89.4*	*90.7*	*90.0*	*91.8*	*91.3*	*91.5*	*88.0*	*89.7*	*88.5*
Post-graduate	5.7	4.1	5.0	3.5	1.7	2.5	7.0	8.6	7.5
Other	0.9	1.7	1.2	1.2	2.6	2	0.7	0	0.5
Total	100	100	100	100	100	100	100	100	100

Table 23: Educational Stream of IT Workers with Graduates and Higher by Sex and Location

Unit: percent

Stream	Male	Female	Total	Ha Noi			HCMC		
				Male	Female	Total	Male	Female	Total
IT/Communication	*76.6*	*47.3*	*63.9*	*65.8*	*30.1*	*50.5*	*83.1*	*63.2*	*77.2*
Other science	8.3	6.0	7.3	12.2	5.4	8.3	5.9	7.0	6.2
Arts	1.8	3.0	2.3	1.2	4.6	3.1	2.2	0	1.5
Economics/Commerce	9.6	34.1	20.3	15.9	40.9	30.2	5.9	21.0	10.4
Other	3.7	9.6	6.2	4.9	10.0	7.8	2.9	8.8	4.7
Total	100	100	100	100	100	100	100	100	100

Table 24: Type of Employment of IT Workers by Sex and Location

Unit: percent

Employment	Male	Female	Total	Ha Noi			HCMC		
				Male	Female	Total	Male	Female	Total
Full time	*96.9*	*97.7*	*97.2*	*98.8*	*96.5*	*97.5*	*95.8*	*100*	*97.0*
Part time	2.6	0.6	1.8	0	0.9	0.5	4.2	0	3.0
Intern	0.4	0	0.2	1.2	0	0.5	0	0	0
Consultant	0	1.7	0.8	0	2.6	1.5	0	0	0
Total	100	100	100	100	100	100	100	100	100

Table 25: Type of Work Basis in the Organization of IT Workers by Sex and Location

Unit: percent

Work basis	Male	Female	Total	Ha Noi			HCMC		
				Male	Female	Total	Male	Female	Total
Tenured	8.4	9.8	9.0	7.1	9.6	8.5	9.1	10.3	9.5
Long contract	*62.1*	*43.4*	*54.0*	*60.0*	*36.5*	*46.5*	*63.4*	*56.9*	*61.5*
Short contract	29.5	46.8	37.0	32.9	53.9	45.0	27.5	32.8	29.0
Total	100	100	100	100	100	100	100	100	100

Table 26: Period of Contract of Contract-based IT Workers by Sex and Location

Unit: percent

Period of contract	Male	Female	Total	Ha Noi			HCMC		
				Male	Female	Total	Male	Female	Total
< 1 year	8.8	14.0	11.1	9.5	14.4	12.3	8.4	13.0	9.8
1 year	43.1	47.5	45.1	37.8	44.3	41.5	46.7	54.4	49.0
> 1 year	*48.1*	*38.5*	*43.8*	*52.7*	*41.2*	*49.2*	*44.9*	*32.6*	*41.2*
Total	100	100	100	100	100	100	100	100	100

Table 27: Proportion of IT Workers Suffering Job Related Stress by Sex and Location

Unit: percent

	Male	Female	Total	Ha Noi			HCMC		
				Male	Female	Total	Male	Female	Total
Prior notice before quitting	100	98.8	99.5	100	98.3	99.0	100	100	100
Warning system before retrenchment	70.1	72.2	71.0	83.3	76.8	79.6	61.7	63.2	62.1
Get social security benefit due to retrenchment	62.9	49.3	57.0	57.5	47.2	51.6	66.7	54.4	63.2
Seen person in the past who has been retrenched without prior notice	7.7	4.7	6.4	8.4	3.6	5.6	7.3	7.0	7.2
Work on night shifts	25.2	12.7	19.8	21.4	12.2	16.1	27.5	13.8	23.5
Get transport facility	1.8	0.6	1.3	1.2	0	0.5	2.1	1.7	2.0
Feel the threat of getting retrenched without prior notice	45.8	50.3	47.8	56.5	59.1	58.0	39.4	32.8	37.5

Table 28: Distribution of Monthly Income Level of IT Workers by Sex and Location

Unit: percent

Salary/ remuneration	Male	Female	Total	Ha Noi			HCMC		
				Male	Female	Total	Male	Female	Total
< VND 1 mill.	6.6	14.4	10.0	12.9	20.9	17.5	2.8	1.7	2.5
VND 1-2 mill.	30.0	39.3	34.0	52.9	43.5	47.5	16.2	31.0	20.5
VND 2-3 mill.	30.0	32.4	31.0	23.5	30.4	27.5	33.8	36.2	34.5
VND 3-4 mill.	20.3	6.4	14.3	8.2	1.7	4.5	27.5	15.5	24.0
= VND 4 mill.	13.2	7.5	10.7	2.4	3.5	3.0	19.7	15.5	18.5
Total	100	100	100	100	100	100	100	100	100

Table 29: Average Monthly Income of IT Workers with Graduates and higher by Educational Stream

Unit: thousand of dong

Salary/ remuneration	Male	Female	Total	Ha Noi			HCMC		
				Male	Female	Total	Male	Female	Total
ICT stream	2674	1969	2448	1843	1671	1766	3071	2325	2891
Non-ICT stream	2140	1867	1967	1655	1488	1537	2730	3076	2895
Total (*)	2512	1907	2251	1744	1573	1645.78	2972	2569	2855

Note: (*) Average monthly income of all IT workers in the sample

Figure 11: Average Monthly Income of IT Workers by Sex and Location

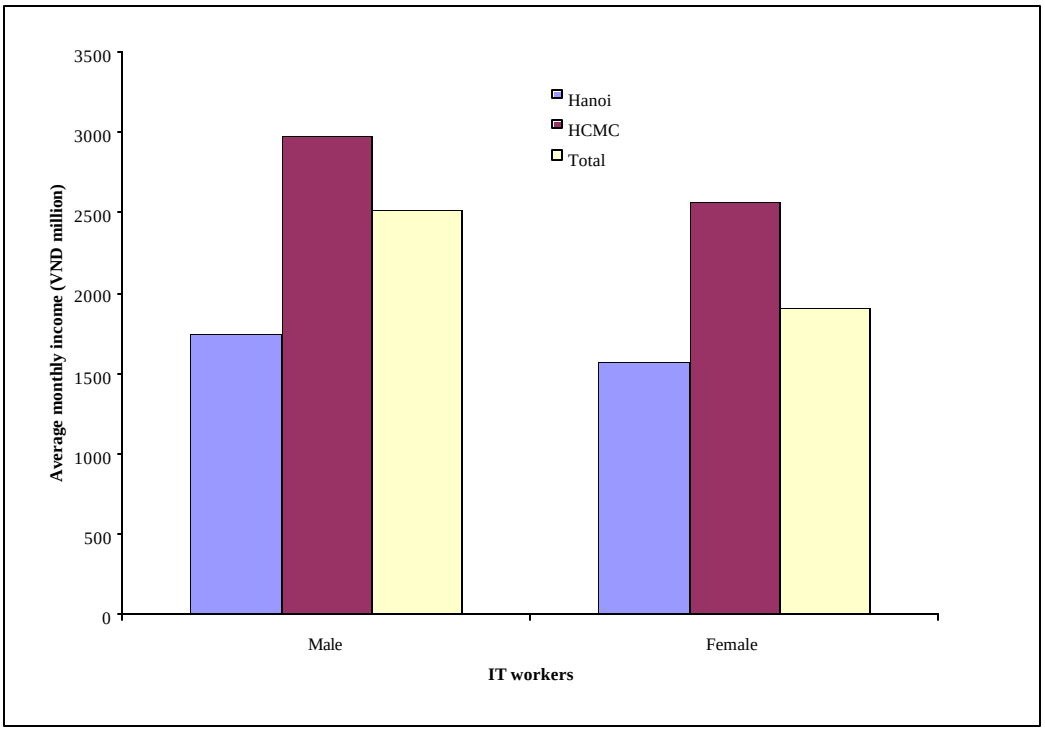

Table 30: Proportion of IT Workers with Allowances and Leaves by Sex and Location

Unit: percent

	Male	Female	Total	Ha Noi			HCMC		
				Male	Female	Total	Male	Female	Total
Social security	*74.0*	*68.2*	*71.5*	*69.4*	*70.4*	*70.0*	*76.8*	*63.8*	*73.0*
Health insurance	*70.9*	*69.9*	*70.5*	*69.4*	*73.0*	*71.5*	*71.8*	*63.8*	*69.5*
Educational allowance	20.3	20.2	20.3	20.0	25.2	23.0	20.4	10.3	17.5
Housing allowance	0	0	0	0	0	0	0	0	0
Car/ transport	7.9	2.3	5.5	7.1	0.9	3.5	8.5	5.2	7.5
Telephone	11.5	11.0	11.3	16.5	16.5	16.5	8.5	0	6.0
Leave travel allowance	31.7	30.1	31.0	48.2	36.5	41.5	21.8	17.2	20.5
Policy of stock options	2.3	0.6	1.6	1.2	0.9	1.1	3.0	0	2.1
Leaves:									
- Holidays per week	98.2	98.3	98.3	98.8	97.4	98.0	97.9	100	98.5
- Annual leave	91.6	90.2	91.0	89.4	88.7	89.0	93.0	93.1	93.0
- Sick leave	73.0	77.0	74.7	87.8	81.1	83.9	63.9	68.5	65.2
- *Maternity leave*	-	*64.7*	-	-	*75.8*	-	-	*39.0*	-

Table 31: Educational Level of IT Workers' Brothers and Sisters by Sex of IT Workers and by Location

Unit: percent

Educational Level	Male	Female	Total	Ha Noi			HCM		
				Male	Female	Total	Male	Female	Total
Less than Primary	0.3	0.4	0.4				0.4	1.2	0.6
Primary	0.6	1.2	0.9	0.0	1.3	0.8	0.9	1.2	1.0
Lower secondary	6.7	3.7	5.4	6.9	3.8	5.0	6.6	3.5	5.8
Upper secondary	19.8	14.3	17.5	10.9	12.0	11.5	23.8	18.8	22.4
Technical/ p rofessional	7.0	6.2	6.6	5.0	6.9	6.2	7.9	4.7	7.1
Graduate	57.3	65.6	60.8	65.4	70.4	68.5	53.7	56.5	54.5
Post-graduate	7.9	8.2	8.0	10.9	5.0	7.3	6.6	14.1	8.7
Other (specify)	0.3	0.4	0.4	1.0	0.6	0.8			
Total	100	100	100	100	100	100	100	100	100

Table 32: Exposition to ICT of IT Workers' Brothers and Sisters by Sex of IT Workers and by Location

Unit: percent

	Male	Female	Total	Ha Noi			HCMC		
				Male	Female	Total	Male	Female	Total
Yes	41.8	44.5	43.0	51.0	47.4	48.8	37.6	38.7	37.9
No	58.2	55.5	57.0	49.0	52.6	51.2	62.4	61.3	62.1
Total	100	100	100	100	100	100	100	100	100

Table 33: Educational Level of IT Workers' Fathers and Mothers by Sex of IT Workers

Unit: percent

Educational Level	Fathers			Mothers		
	Male	Female	Total	Male	Female	Total
Less than primary	1.0	0	0.6	1.9	1.2	1.6
Primary	2.0	0	1.1	5.2	1.2	3.5
Lower secondary	11.4	3.8	8.1	15.7	9.9	13.2
Upper secondary	24.3	24.4	24.3	30.5	26.5	28.8
Technical/ p rofessional	6.9	13.5	9.8	9.5	20.4	14.2
Graduate	46.5	48.7	47.5	33.8	34.6	34.1
Post-graduate	4.9	5.8	5.3	1.4	2.5	1.9
Other	3.0	3.8	3.3	1.9	3.7	2.7
Total	100	100	100	100	100	100

Table 34: Job Status of IT workers' Fathers and Mothers by Sex of IT Workers

Unit: percent

Job Status	Fathers			Mothers		
	Male	Female	Total	Male	Female	Total
Housewife	1.0	1.3	1.1	36.3	28.1	32.7
Government service	43.1	49.4	45.8	28.8	39.0	33.2
State/corporate sector	4.0	6.4	5.0	3.3	4.3	3.7
Private/ corporate sector	8.4	6.4	7.5	3.8	3.1	3.5
Self-employed	15.8	14.1	15.1	9.0	6.1	7.7
Any other	27.7	22.4	25.4	18.9	19.5	19.2
Total	100	100	100	100	100	100

Table 35: Job Status of IT Workers' Fathers and Mothers with Graduates and Higher by Sex of IT Workers

Unit: percent

Level	Fathers			Mothers		
	Male	Female	Total	Male	Female	Total
Housewife	1.0	1.2	1.1	16.2	11.7	14.2
Government service	62.5	69.4	65.6	58.1	65.0	61.2
State/corporate sector	5.8	9.4	7.4	4.1	3.3	3.7
Private/ corporate sector	11.5	3.5	7.9	4.1	3.3	3.7
Self-employed	2.9	7.1	4.8	1.4	1.7	1.5
Any other	16.4	9.4	13.2	16.2	15.0	15.7
Total	100	100	100	100	100	100

Table 36: Answers on "Work Environment" from Female IT Workers by Location

Unit: percent

Response: Yes	**Ha Noi**	**HCMC**	**Total**
Men get more opportunities compared to women in terms of training imparted by your organization?	40.4	36.8	39.2
Discrimination in the organization for being a woman?	4.4	5.3	4.7
Being a woman leads to delays and barriers in promotion	26.3	36.8	29.8
ICT-related jobs are better for women compared to other kinds of jobs?	8.8	3.5	7.0
Women are mostly employed in the low skilled and low wage jobs in your profession?	24.8	7.0	18.8
Take a promotion if you are asked to move to a different place leaving back your family?	30.0	33.3	31.1
If you are working on night shifts, do you face any sort of trouble/ obstacle from your parents/ family members/ neighbors?	43.9	60.7	49.4

Table 37: Households with ICT-related Assets by Location (%)

Unit: percent

Ownership	**Total**	**Ha Noi**	**HCMC**	**Urban**	**Suburb**
Telephone	89.7	91.3	88.0	90.2	88.4
Mobile phone	59.0	53.3	64.7	62.9	50.5
Computer	63.7	52.0	75.3	72.2	45.3
Internet connection	21.7	18.7	24.7	28.3	7.4
TV	100	100	100	100	100
Cable/satellite TV connection	22.0	32.7	11.3	32.2	0
Radio	58.0	54.0	62.0	60.0	53.7

Table 38: Households with ICT-related Assets by Sex of Household Heads and Location

Unit: percent

Ownership	Total		Ha Noi		HCMC		Urban		Suburb	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Telephone	89.3	90.7	91.3	91.3	87.3	90.0	90.8	89.1	86.3	95.5
Mobile phone	57.5	62.8	51.9	56.5	62.7	70.0	61.7	65.6	49.3	54.6
Computer	61.7	68.6	46.2	65.2	76.4	72.5	71.6	73.4	42.5	54.6
Internet connection	21.0	23.3	18.3	19.6	23.6	27.5	27.7	29.7	8.2	4.6
TV	100	100	100	100	100	100	100	100	100	100
Cable/satellite TV connection	22.4	20.9	33.7	30.4	11.8	10.0	34.0	28.1	0	0
Radio	56.5	61.3	51.9	58.7	60.9	65.0	56.7	67.2	56.2	45.4

Table 39: Households with ICT-related Assets by Quintiles and Sex of Household Heads

Unit: percent

Ownership	Quintiles					Quintile 1		Quintile 2		Quintile 3		Quintile 4		Quintile 5	
	1	2	3	4	5	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Telephone	80.3	84.5	90.3	95.2	98.2	79.2	84.6	82.2	92.3	90.9	88.9	97.5	91.3	100	94.7
Mobile phone	27.9	48.3	69.4	66.7	83.9	27.1	30.8	44.4	61.5	72.3	61.1	60.0	78.3	91.9	68.4
Computer	36.1	48.3	67.7	74.6	92.9	33.3	46.2	42.2	69.2	65.9	72.2	82.5	60.9	94.6	89.5
Internet connection	8.2	6.9	24.2	22.2	48.2	10.4	0	6.7	7.7	20.5	33.3	20.0	26.1	54.1	36.8
TV	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Cable/satellite TV connection	19.7	12.1	21.0	28.6	28.6	18.8	23.1	13.3	7.7	25.0	11.1	20.0	43.5	37.8	10.5
Radio	41.0	53.5	61.3	66.7	67.9	39.6	46.2	53.3	53.9	63.6	55.6	67.5	65.2	62.2	79.0

Table 40: Who Uses ICT-related Assets in Households by Location

Unit: percent

	Male	Female	Both	Ha Noi			HCMC		
				Male	Female	Both	Male	Female	Both
Telephone	11.1	6.7	82.2	6.6	8.0	85.4	15.9	5.3	78.8
Mobile phone	57.1	15.8	27.1	51.2	18.8	30.0	61.9	13.4	24.7
Computer	20.4	9.4	70.2	19.2	6.4	74.4	21.2	11.5	67.3
Internet connection	33.8	12.3	53.9	21.4	14.3	64.3	43.2	10.8	46.0
TV	8.7	6.3	85.0	4.7	5.3	90.0	12.7	7.3	80.0
Cable/satellite TV connection	3.0	1.5	95.5	0	0	100	11.8	5.9	82.3
Radio	19.0	13.2	67.8	18.5	9.9	71.6	19.4	16.1	64.5

Table 41: Who Uses ICT-related Assets in Households by Area

Unit: percent

	Urban			Suburb		
	Male	Female	Both	Male	Female	Both
Telephone	9.2	3.8	87.0	15.5	13.1	71.4
Mobile phone	58.1	14.0	27.9	54.2	20.8	25.0
Computer	17.6	8.8	73.6	30.2	11.6	58.1
Internet connection	31.0	12.1	56.9	57.1	14.3	28.6
TV	7.8	4.9	87.3	10.5	9.5	80.0
Cable/satellite TV connection	3.0	1.5	95.5	0	0	0
Radio	17.9	13.0	69.1	21.6	13.7	64.7

Table 42: Perceptions of Parents by Sex of Household Heads and Location

Unit: percent

Response: Yes	Male	Female	Total	Ha Noi			HCMC		
				Male	Female	Total	Male	Female	Total
Make any difference in educating a boy and a girl?	19.6	17.4	19.0	11.5	15.2	12.7	27.3	20.0	25.3
Differentiate between son and daughter in technical/ computer education?	5.6	4.7	5.4	6.7	4.4	6.0	4.6	5.0	4.7
ICT-related jobs have opportunities for girls?	94.8	96.5	95.3	93.3	100	95.3	96.3	92.5	95.3

Table 43: Perceptions of Parents by Sex of Household Heads and Area

Unit: percent

Response: Yes	Urban			Suburb		
	Male	Female	Total	Male	Female	Total
Make any difference in educating a boy and a girl?	17.7	12.5	16.1	23.3	31.8	25.3
Differentiate between son and daughter in technical/computer education?	4.3	4.7	4.4	8.2	4.6	7.4
ICT-related jobs have opportunities for girls?	97.9	98.4	98.0	89.0	90.5	89.4

Table 44: Answers of Boys and/or Girls in Households

Unit: percent

Response: Yes	Have only boys	Have only girls	Have both boys and girls	
			Boys	Girls
Use computers	98.9	98.6	97.9	95.0
Aware of Internet	79.6	67.6	78.7	76.3
Use the Internet	84.3	87.5	87.4	91.5
Like to have a job in the ICT sector	74.7	71.4	66.9	64.3
Girls and boys equally suited for computer jobs	96.6	98.6	91.4	91.4
Gender discrimination in the family	2.3	2.8	2.1	0.7
Computer jobs equally accessible to men and women	98.8	93.0	96.4	92.9
Face opposition from parents in pursuing a ICT training or ICT-related job	1.2	1.5	2.1	2.9

Table 45: Answers from Boys in Households with Boys only by Sex of Household Heads and Location

Unit: percent

Response: Yes	Head of HHs		City		Area		Total
	Male	Female	Ha Noi	HCM	Urban	Suburb	
Use computers	98.5	100	98.0	100	98.2	100	98.9
Aware of Internet	80.3	77.3	74.0	86.8	78.2	81.8	79.6
Use the Internet	83.0	88.2	81.1	87.9	88.4	77.8	84.3
Like to have a job in the ICT sector	71.2	85.7	82.0	64.9	65.5	90.6	74.7
Girls and boys equally suited for computer jobs	97.0	95.5	96.0	97.4	98.2	93.9	96.6
Gender discrimination in the family	3.1	0	4.0	0	0	6.3	2.3
Computer jobs equally accessible to men and women	100	95.2	100	97.3	100	96.8	98.8
Face opposition from parents in pursuing a ICT training or ICT-related job	1.6	0	0	2.7	1.9	0	1.2

Table 46: Answers from Girls in Households with Girls only by Sex of Household Heads and Location

Unit: percent

Response: Yes	Head of HHs		City		Area		Total
	Male	Female	Ha Noi	HCM	Urban	Suburb	
Use computers	98.1	100	98.0	100	98.1	100	98.6
Aware of Internet	62.3	83.3	56.0	95.2	75.0	47.4	67.6
Use the Internet	87.9	86.7	85.7	90.0	89.7	77.8	87.5
Like to have a job in the ICT sector	69.2	77.8	75.5	61.9	67.3	83.3	71.4
Girls and boys equally suited for computer jobs	98.1	100	98.0	100	98.1	100	98.6
Gender discrimination in the family	3.8	0	4.0	0	1.9	5.3	2.8
Computer jobs equally accessible to men and women	92.5	94.4	90.0	100	98.1	79.0	93.0
Face opposition from parents in pursuing a ICT training or ICT-related job	2.0	0	2.2	0	1.9	0	1.5

Table 47: Answers from Boys and Girls in Households Have both Boys and Girls by Sex of Children and Location

Unit: percent

Response: Yes	Total		Ha Noi		HCMC		Urban		Suburb	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Use computers	97.9	95.0	100	94.0	96.7	95.6	98.0	92.9	97.7	100
Aware of Internet	78.7	76.3	72.0	59.2	82.4	85.6	76.5	76.0	83.7	76.7
Use the Internet	87.4	91.5	80.6	93.1	90.7	90.9	92.0	94.5	77.8	84.9
Like to have a job in the ICT sector	66.9	64.3	80.0	75.5	59.6	58.2	67.7	61.2	65.1	71.4
Girls and boys equally suited for computer jobs	91.4	91.4	98.0	95.9	87.9	88.9	95.9	93.8	91.0	85.7
Gender discrimination in the family	2.1	0.7	2.0	0	2.2	1.1	2.0	1.0	2.3	0
Computer jobs equally accessible to men and women	96.4	92.9	98.0	94.0	95.6	92.3	100	95.9	88.4	86.1
Face opposition from parents in pursuing a ICT training or ICT-related job	2.1	2.9	2.0	2.0	2.2	3.3	3.1	4.1	0	0

Table 48: Answers from Boys and Girls in Households with both Boys and Girls by Sex of Children and Sex of Household Heads

Unit: percent

Response: Yes	Total		Male-headed households		Female-headed households	
	Boys	Girls	Boys	Girls	Boys	Girls
Use computers	97.9	95.0	96.8	94.7	100	95.7
Aware of Internet	78.7	76.3	79.0	72.3	78.3	84.4
Use the Internet	87.4	91.5	89.3	92.7	83.3	89.5
Like to have a job in the ICT sector	66.9	64.3	70.2	63.8	60.0	65.2
Girls and boys equally suited for computer jobs	91.4	91.4	92.6	91.5	89.1	91.1
Gender discrimination in the family	2.1	0.7	3.2	1.1	0	0
Computer jobs equally accessible to men and women	96.4	92.9	95.8	91.6	97.8	95.7
Face opposition from parents in pursuing a ICT training or ICT-related job	2.1	2.9	2.1	3.2	2.2	2.2

Table 49: Where Children Learnt to Use Computers by Sex of Children and Location

Unit: percent

Where	Total		Ha Noi		HCMC		Urban		Suburb	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Self learnt	4.0	3.4	5.1	4.2	3.2	2.8	2.7	3.5	6.7	3.3
Learnt in school	80.0	84.3	88.9	93.8	73.0	75.9	80.0	85.3	80.0	82.0
Learnt informally	2.7	1.5	1.0	0	4.0	2.8	3.3	1.4	1.3	1.6
Learnt from an institute	12.0	10.3	3.0	1.0	19.0	18.5	12.0	9.1	12.0	13.1
Other	1.3	0.5	2.0	1.0	0.8	0	2.0	0.7	0	0
Total	100	100	100	100	100	100	100	100	100	100

Table 50: Where Children Use the Internet by Sex of Children and Location

Unit: percent

Where	Total		Ha Noi		HCMC		Urban		Suburb	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Internet kiosks	38.0	32.0	28.7	23.3	47.3	40.7	35.1	31.2	44.2	33.7
School/college	8.0	11.7	4.0	8.0	12.0	15.3	9.8	13.7	4.2	7.4
Friends' places	6.3	4.7	4.0	2.0	8.7	7.3	7.3	6.3	4.2	1.1
At home	14.7	9.3	8.7	8.7	20.7	10.0	18.1	13.2	7.4	1.1
Other	1.3	1.3	2.0	1.3	0.7	1.3	2.0	2.0	0	0

Table 51: What Purpose Children Use the Internet for by Sex of Children and Location?

Unit: percent

Purpose	Total		Ha Noi		HCMC		Urban		Suburb	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Entertainment	41.7	30.3	30.0	22.7	53.3	38.0	42.4	31.2	40.0	28.4
Educational and learning purposes	32.7	32.3	22.0	22.7	43.3	42.0	32.2	35.6	33.7	25.3
Mailing and communication/chatting	30.0	28.0	19.3	20.0	40.7	36.0	32.7	31.7	24.2	20.0
Job information	9.7	8.0	4.0	3.3	15.3	12.7	8.8	8.8	11.6	6.3
Shopping	1.3	0.3	0.7	0	2.0	0.7	1.0	0.5	2.1	0
For official and purposes	2.0	1.3	0	0	4.0	2.7	2.4	2.0	1.1	0
Other	0.3	0	0	0	0.7	0	0.5	0	0	0

APPENDIX 5: PROVINCIAL AVERAGE EXPENDITURES AND THE FEMALE PERCENTAGE OF ENTERPRISE DIRECTORS

Province/City		Expenditure 1999[12] thous./month	Share of female[13] enterprises directors
Ha Noi	1	387	18.12
Hai phong	2	311	9.74
Vinhphuc	3	192	12.77
Hatay	4	221	10.85
Bacninh	5	218	5.81
Haiduong	6	223	8.85
Hungyen	7	201	5.63
Hanam	8	206	3.85
Namdinh	9	207	6.06
Thaibinh	10	222	7.3
Ninhbinh	11	205	16.67
Hagiang	12	175	6.67
Caobang	13	190	6.25
Laocai	14	164	4
Backan	15	160	0
Langson	16	220	0
Tuyenquang	17	180	3.33
Yenbai	18	185	10
Thainguyen	19	231	7.84
Phutho	20	199	8.57
Bacgiang	21	227	0
Quangninh	22	316	5.49
Laichau	23	143	0
Sonla	24	171	4
Hoabinh	25	182	4.35
Thanhhoa	26	178	4.76
Nghean	27	190	11.02
Hatinh	28	175	5.88
Quangbinh	29	160	2.63
Quangtri	30	174	7.14
Thua ThienHue	31	193	8.79
Danang	32	309	10.32
Quangnam	33	153	3.57
Quangngai	34	183	1.85
Binhdinh	35	217	5.71
Phuyen	36	180	2.22
Khanhhoa	37	272	14.16
Kontum	38	183	13.33

[12] *Source:* Poverty survey 1999
[13] *Source:* Industrial complete survey of 30 June 1998

Province/City		Expenditure 1999[12] thous./month	Share of female[13] enterprises directors
Gialai	39	198	18.6
Daklak	40	317	2.22
Lamdong	41	295	15.66
HCMC	42	646	23.45
Ninhthuan	43	194	15.79
Binhphuoc	44	271	24.32
Tayninh	45	274	29.12
Binhduong	46	316	20.42
Dongnai	47	356	16.61
Binhthuan	48	248	16.67
Baria Vungtau	49	393	14.95
Longan	50	258	24.05
Dongthap	51	260	24.5
Angiang	52	258	27.36
Tiengiang	53	265	30.38
Vinhlong	54	253	23.57
Bentre	55	208	22.22
Kiengiang	56	363	29.53
Cantho	57	298	24.24
Travinh	58	261	25.14
Soctrang	59	238	30.54
Baclieu	60	238	21.19
Camau	61	278	13.79