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NATIONAL INSTITUTE OF PUBLIC ADMINISTRATION

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# Final Report

Training of Government Officials

ASIAN DEVELOPMENT BANK

TA. 2718 — VIE

March, 1998

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in association with CONCETTI ( Vietnam )

# **APPENDIX F**

## **IS/IT Review and Plan**

# LONG-TERM PLAN OF INFORMATION TECHNOLOGY IN NIPA

This review of IT facility and indicative medium term IT plan for NIPA took place in October 1997. Since the NIPA has, with assistance from Germany, updated some of its IT facilities.

## A. NATIONAL PROGRAM ON INFORMATION TECHNOLOGY

The general goals of the building and development of Information Technology in Vietnam as defined in Resolution No 49/CP, is:

Building the first foundations for the information infrastructure in the society which are able to meet the basis demands for information in the state management and in socio-economy activities, as well as actively building the IT industry into one of the spearheaded industries of the country, contributing to the preparations of our country to occupy a deserved position in the region on the verge of the 21<sup>st</sup> century.

This general target is broken down into concrete objectives as follows:

- a. Develop computer systems and communications facilities as an integrated network, with software, information systems and databases that can serve the needs of state management and key activities of the economy. Some domestic information systems can be linked international information systems.
- b. Develop in a diffused way the use of IT to increase productivity and the quality and effectiveness of production and trading, as well as to promote gradual modernization of the production sectors, important services and national defend and security. Increase and improve the use of IT in the survey and investigation of natural resources and the environment, and in scientific research and other activities.
- c. Popularize "information culture" in society so as to create a favorable environment for becoming an "information society".
- d. Lay the foundation for an IT industry that can produce valuable informatic products and services, giving priority to the development of a "software" industry. Make full use of all opportunities for technology transfer to assist the development of establishment producing modern informatic equipment and components.

## B. THE PRESENT SITUATION OF INFORMATION TECHNOLOGY IN NIPA

The Faculty of Informatics and Didactic Method (hereafter referred to as FIDM) is the unique office that is responsible for Information Technology in NIPA. There are four main tasks of FIDM:

- Teaching IT
- Existing NIPA IT Plan
- Supporting other faculties in IT
- International and local relationships

### 1. Teaching IT

There are different amounts of teaching time for different kinds of students:

- The computing lessons of 15 hours for high-level and mid-level officials. The introductory lessons of IT are conducted; however, the lack of a practice room leads to the fact that the students must see the demonstrations of computer services in other institutes or organizations.
- The computing lessons of about from 90 to 100 hours for long term courses (BA and MA students). FIDM has prepared computer courseware based on some computer books and their own initiatives. There are about 40 hours for BA students to learn Microsoft Office Programs (Microsoft Word, Microsoft Excel, and Microsoft PowerPoint). The Textbook for MA students is the new one. Usually, the MA students had finished their BA program; therefore the textbook for them is the enhanced textbook from the BA textbook.
- The ratio between practice time/theory time is 1/3 for MA students and 3/1 for BA students.

## 2. Existing NIPA IT Plan

The existing NIPA plan of IT from 1998 – 2000 has the following components:

- Building training foundations of IT in NIPA, mainly in Hanoi and Hochiminh City by increasing the IT capacity of NIPA in the terms of knowledge and skills so that the teachers of IT will be capable of teaching the new IT knowledge, and studying applications for administrative management.
- Building databases on Public Administrative Management for teaching and research.
- Building an Information System on Public Administrative Management to provide services for teaching, studying, and management in provincial schools.

NIPA has completed the first step of its IT plan (1996 – 1997). The results can be summarized as follows.

- One small Local Area Network (LAN) that consists of one server and 6 PCs was built in 1997; the Novell NetWare is used as the Network Operating System. The server is in FIDM, and other PCs are in different faculties or departments in NIPA (one PC is in secretarial room of NIPA President).
- Unfortunately the LAN is not in use now, the main reasons can be:
  - The lack of computing skills of users
  - The needed databases are not available
  - Some Applications are not update.
- More than 20 classes of Informatics of State Management were held. The students were administrative officials of provinces and districts.
- According to the IT plan of NIPA, the ISIS program for library was introduced and installed. It can help librarians to control the library services, and help students to do some actions like borrow and return books. However, this program is not in use. It may be the result of: the lack of books in library, the database for books was not created, and not enough computers for library.



- FIDM has email service provided by ITNET and VareNet. The ITNET email was provided by the State plan of IT and it was free of charge, however this email service is used inside Vietnam only. The VareNet email can go overseas.
- The WWW site of NIPA can be seen in the VareNet with the address: <http://203.160.0.110/>

### 3. Supporting Other Faculties in IT

The main services of FIDM in this area are:

- Supporting other teachers, officials of NIPA in using computer and its applications such as Microsoft Word, Microsoft PowerPoint. Several short training courses were held in NIPA. Now most teachers know how to use PowerPoint program to create their presentations of lecture contents for using with projector.
- Training local schools' officials in using IT facilities and some computer applications on annual conferences.

### 4. International and Local Relationships

#### *International Relationships:*

FIDM keeps international relationships with several organizations such as International Association of Schools and Institutions for Administration (IASIA), Eastern Regional Organization for Public Administration (EROPA), Canada, Germany (DSE organization). There are expectations that these organizations can support them in performing IT plan and enhancing didactic methods. DSE has recently installed one networked computer system of one server and 10 PC stations. FIDM plans to use this computer system for computing tutorials.

#### *Local Relationships:*

FIDM is responsible for developing and directing the training programs of IT in about 61 provincial Schools of Administration. The computing infrastructure of almost all these schools are in poor status, some schools have 1 or two PCs (only School in Hochiminh city has 5 PCs), many schools have no computer.

The current situation of information technology in NIPA can be summarized as follows:

- *The computer system of NIPA is based on Microcomputers; they are on a stand-alone basis or in a emerging Local Area Network.*
- *Lack of Databases in the computer system.*
- *Lack of appropriate applications in the computer system.*
- *Lack of users' skills, and many users have no computer literacy.*
- *NIPA needs more Computer Experts.*

### C. PURPOSES OF THE MEDIUM-TERM PLAN

Understanding the current IT situation of NIPA, the long-term plan of IT sets up a number of aims to increase NIPA capacity in IT. The following items should be considered as purposes of the long-term plan of IT:

- *Increase the capacity of Management Information System of NIPA so that it will have a reliable information system.*
- *Increase teaching capacity*
- *Increase capacity of exchanging information of NIPA inside itself and with other institutions of both overseas and inside Vietnam.*
- *Provide tools for distance learning and consultancy of NIPA.*

#### **D. REQUIREMENTS FOR THE LONG-TERM PLAN**

The current information system of NIPA itself and Vietnam in general is still backward and closed in terms of information. IT development is mainly based on the use of technology of other countries in both hardware and software. Moreover, the Information Technology is being developed very fast. The process of development should fulfill some conditions:

- *The process of computerization should contain several steps, and the users must be trained to gain necessary computer skills and knowledge in each step.*
- *The computer system should have the capacity of expanding itself so that the new technology can be used.*
- *The computer system should be "open" so that it can be linked up with a national computer network and later on mingled with international networks.*

#### **E. THE MEDIUM - TERM PLAN**

The NIPA long-term IT Plan should consist of the following components:

1. *Building the foundations for the information infrastructure*
2. *Developing special rooms*
3. *Building a computer center*
4. *Computerizing some offices*
5. *Building several expert systems*
6. *Training and training materials of IT*
7. *Proposed process of computerization.*

##### **1. Building the foundations for the Information Infrastructure**

The computer system of NIPA is based on stand-alone PCs and the small emerging Local Area Network. Stand-alone PCs provide limited functions as Word processing, PowerPoint presentations in NIPA. Moreover there is no real network service in NIPA in terms of local, national-wide, and world-wide networks. Lack of a reliable computer system based on adequate and appropriate information infrastructure can be the main reason. Therefore the primary goal is build the foundation for the information infrastructure. It is the computer system as a computer network based on adequate hardware, software and the appropriate databases.

##### **a) Developing computer system and communication facilities**

There are 15 faculties, divisions, functional departments and board of Director in NIPA. Each of these offices should have one small computer network, and all small computer networks must be integrated together to be one NIPA computer system. Later on the NIPA computer system can be connected with national network, and international network via Internet. Building the NIPA computer system can be performed in 4 steps:

1. *Building a small network for each office*
2. *Building the NIPA network*



3. Connecting the NIPA network to networks of provincial schools of administration
4. Connecting to the outside world: national and international institutions.

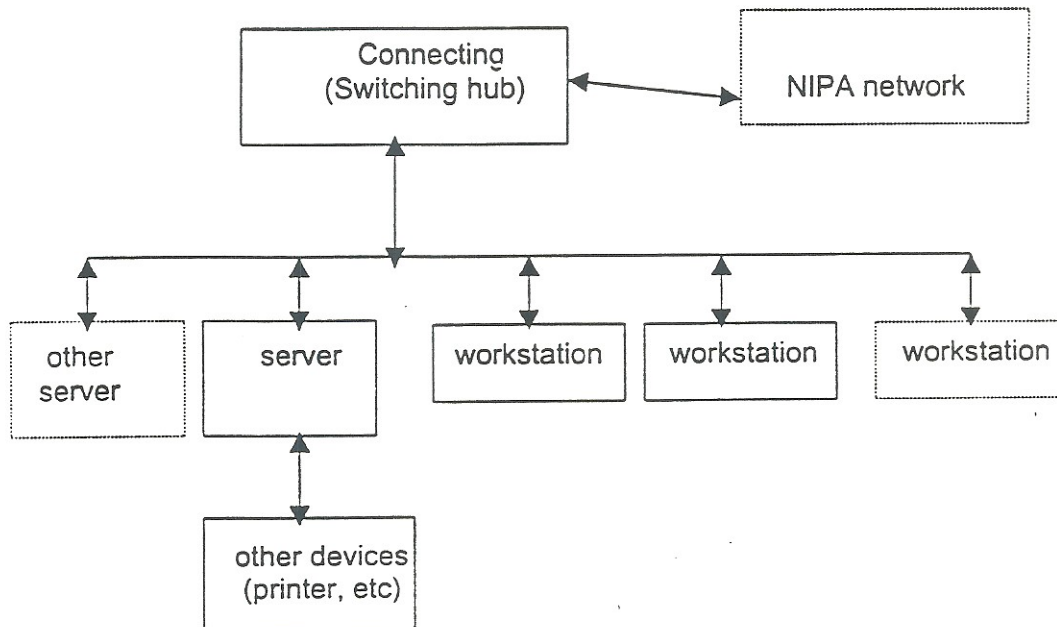
**Step 1: Building a small network for each office**

As each NIPA office has its own function, the computer system should support each office in performing its operations. The process of computerization of each office can be seen in two parallel steps: one is building the computer system and the other is training users. Each small computer system consists of appropriate hardware, software and databases.

Each small network consists of from 3 to 5 or more workstations, one small appropriate server, and one printer. It is possible that the other devices like scanner, back-up device, etc can be used, depending on the services and functions of each office. The structure of each small computer network can be seen in the figure 1.

The software applications that need to be installed in each office can be divided into three groups:

- The applications that are necessary to operate the computing system and minimum functions of the operating system. These can be operating system such as windows 95, windows NT and office applications like word processor, accounting, and presentations.
- The applications specific to each office functions. These can be computer aided design program (AutoCAD) and database management or applications that need to be created from scratch like programs for library, teaching department, etc.
- The applications that perform the network functions such as Electronic Mail, File Transfer or WWW browser.

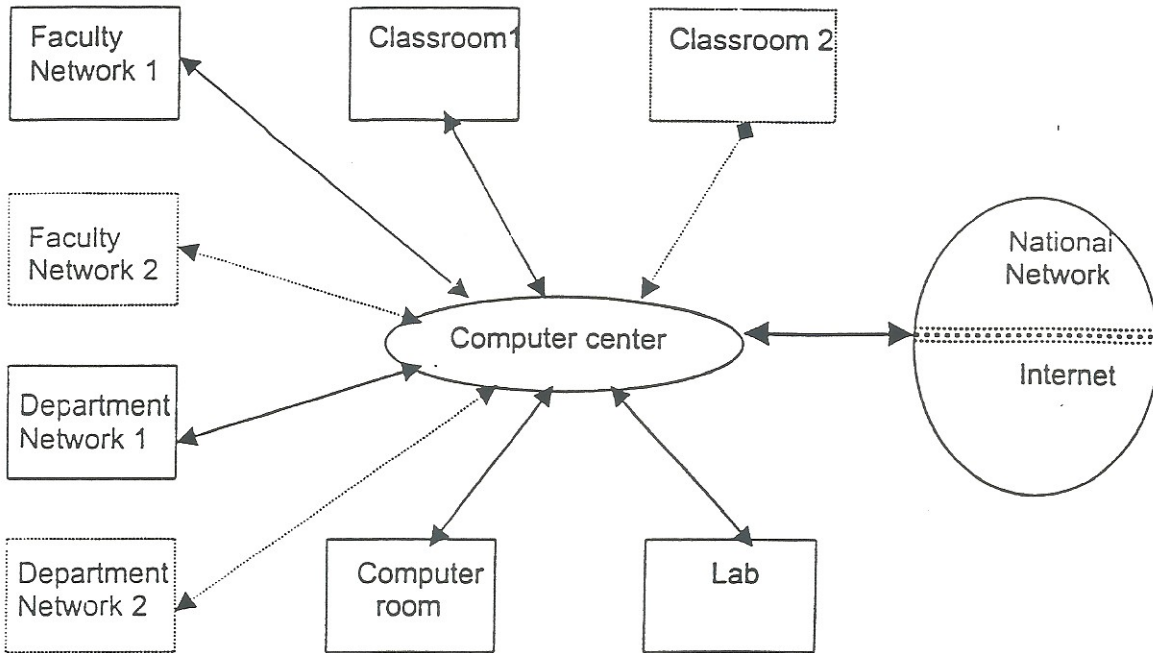


**Figure 1: Profile of a small network for each office**

**Step 2: Building the NIPA network**

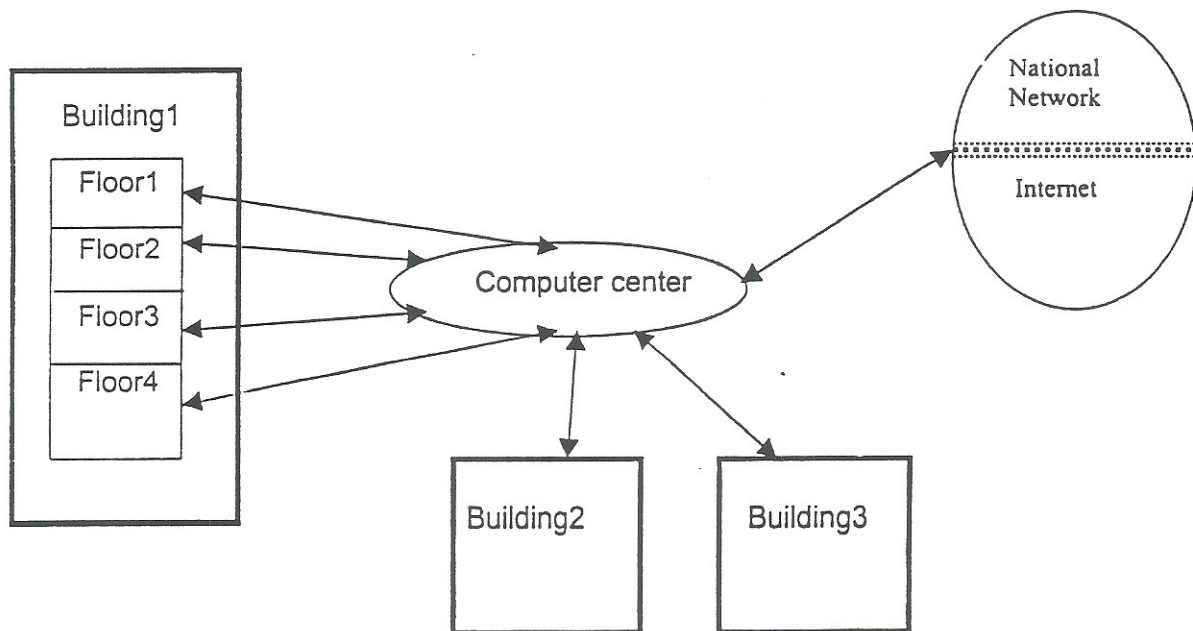
The next step is build a whole network NIPA for integrating all the small. The aim of the NIPA network is providing consistnt information system inside NIPA, and between NIPA and outside world.

The NIPA network structure can be seen in the figure 2.



**Figure 2: The Proposed NIPA Network from Office View**

The NIPA offices (departments, faculties, etc ) are located in different floors of different building. Almost all offices are located in the one building and the other are in two other buildings. These buildings are only 100 meters from each other. Figure 3 shows the NIPA network from a buildings perspective.



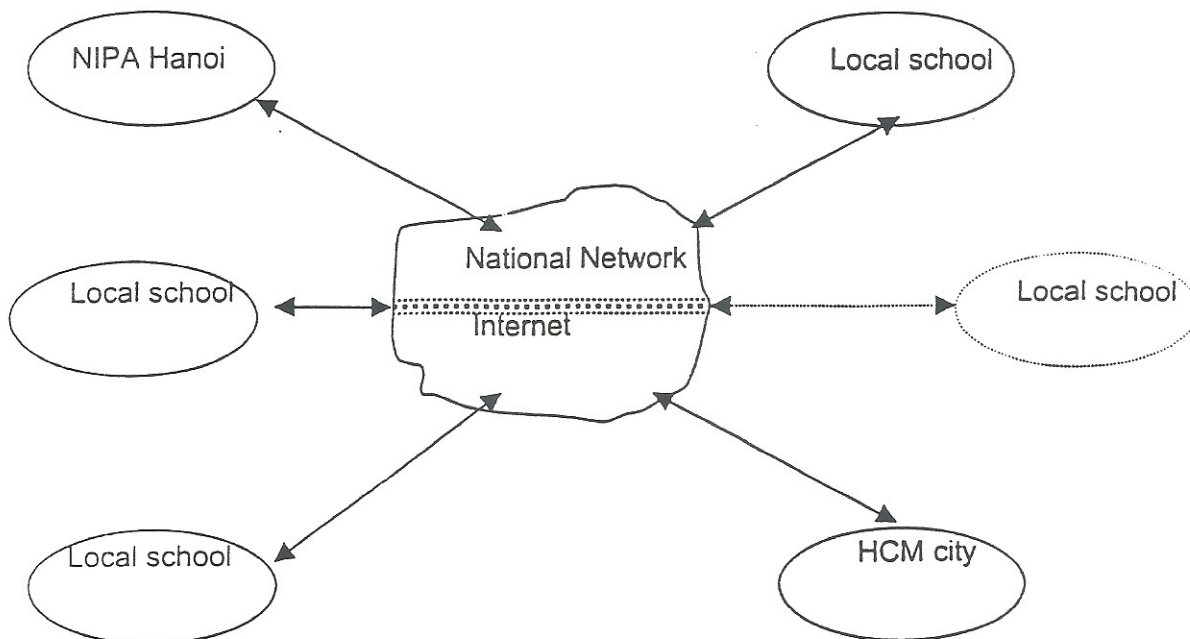
**Figure 3: The NIPA Network from Building View**



The main computer network puts all small networks together and provides the network services of both inside NIPA and outside NIPA. In the short-term all small networks must be integrated with NIPA network and provide not only stand-alone PC services but the network services like electronic mail, ftp, printer share, database access, etc.

**Step 3: Connecting the NIPA network to networks of provincial schools of administration**

There are 61 Provincial schools in Vietnam and assuring that each is provided with a small network these schools can be connected to NIPA, and with each other. The exact size of each local school network depends on the requirements of this school. Figure 4. shows the picture of this structure.



**Figure 4: The Proposed Vietnam Network of Public Administration**

In the long-term the NIPA network will mingle with national network and international network and provide more additional services like email, ftp, World Wide Web services, etc. However, in the immediate term, one computing center must be built, and it will be responsible for the all computer services in the NIPA.

**b) Develop databases and applications that can serve the needs of NIPA**

The computer system can meet the demands of NIPA in terms of management system, information flow, and exchanging information only if appropriate databases and applications are created. Databases are the resources that the applications can work on. The following databases and applications should be considered as necessary network components:

- *Building database and application to manage the NIPA staff.*
- *Building database and application to manage NIPA students.*

### 3. Building a Computer center

At present, the teachers of IT faculty is responsible for teaching of IT, maintaining computers, and providing computer services for NIPA. Also, at present, the demand for network services are low. However, as networks are built, the current IT staff will not be enough to manage and maintain systems. A computer center will be needed:

- All computer servers like Database server, Communication server, Web server, etc, will be located in the computer center.
- This center will be responsible for:
  - Maintaining computer network in NIPA among all faculties, departments, library, etc, and between Hanoi NIPA with outside world.
  - Providing network services like email, ftp, www, etc for all NIPA staff.

### 4. Computerizing some offices

It is clear that to increase the management information system and information flow in NIPA, some of offices will need more features of computerization. These offices can be:

- a) *General office*
- b) *Library*
- c) *The Department of Organization and Personnel*
- d) *The Department of Teaching Management.*

#### **General Office:**

When NIPA is computerized, this office will perform some or all of 5 functions:

- Processing documents
- Using email for exchanging information with outside world
- Using fax and telephone through computers
- Using spreadsheets
- Using Information system and databases. Some of databases created in section (1,b) will be used for this office: *database to manage the NIPA staff, database to manage NIPA students, database to manage NIPA documents, database to manage NIPA general information.*

#### **Library:**

The library should be computerized; study and research can not be conducted without information from library.

The following steps can be considered to computerize NIPA library:

- Computerize the library: Create computer local area network for library, standardize the way to input, borrow books. To decrease cost of computerization, the diskless computers can be used. The *database and application to serve library* created from section (1,b) is used in library. Several computers in library should be multimedia, so that CD-ROM of articles can be read.
- Connect NIPA library to Internet, so that user can get information from WWW source.
- When it is possible, link NIPA library with other libraries of outside world.

#### **Department of Organization and Personnel:**

- *Building database and application to serve the NIPA library*
- *Building database and application to manage NIPA documents*
- *Building database and application to manage NIPA general information*

## **2. Developing special rooms**

The lack of computer room in NIPA prevents IT teachers from conducting hands on IT tutorials and demonstrating computer network services to trainees. To increase the teaching capacity of IT in NIPA, computer rooms, a Multimedia Laboratory and a center of WWW information should be considered as tools for teaching of both direct and distance learning and delivering NIPA information as consultancy.

- Computer room for conducting tutorials of Information Technology*
- Multimedia Laboratory*
- The center that creates Information System on the Web*

### **Computer room:**

- It can consist of 20 multimedia PCs, one server, two printers, and one scanner. These machines should be connected together as one Local Area Network and later on it can provide services of computer network, Internet, and Word Wide Web.
- The computer can be used for conducting tutorials of Information Technology, demonstrating services of computer and computer network, as well as Internet.

### **Multimedia Laboratory:**

- It can have 5 multimedia computers, one server, one printer, video-cassette recorder, digital camera, cassette recorder, color TV, licensed multimedia software, etc. These machines should be connected together as one Local Area Network and later on it can provide services of computer network, Internet, and Word Wide Web.
- This room can be used for producing CD-ROM titles of training materials, courseware of Public Administration or NIPA information. This room can also be used multimedia development.

### **Center of WWW information:**

This center can be created when NIPA and its associated network of Provincial Schools, other Ministerial Schools and provincial offices of administration have capacity of exchanging information via WWW. The primary goals of this center would be:

- Manage the Web site of NIPA; provide NIPA information through WWW.
- Provide a number of NIPA training materials for distance learning. The WWW can explore multimedia.



This department in association with General Office will manage Management Information System of NIPA. The databases created from section (1,b): *database to manage the NIPA staff, database to manage NIPA students, database to manage NIPA general information* can be used.

#### **Department of Teaching Management:**

This department is responsible for functions like managing teaching time, training materials, etc in NIPA. The databases created from section (1,b): *database to manage the NIPA staff, database to manage NIPA students, database to manage NIPA general information* can be used.

#### **5. Building several Expert Systems**

Expert system is a kind of knowledge base; it can be seen as an interactive system of "Questions and Answers". The expert system can help user to gain and test knowledge of a required field like state management. The number of Expert Systems that can be built depends on the requirements of NIPA.

#### **6. Training and Training Materials of IT.**

The process of computerization in NIPA requires more knowledge of Information Technology from both IT teachers and NIPA staff. They need to be retrained in the area of Information Technology.

##### **a) Training Trainers and training materials of IT**

The process of computerization in NIPA in particular and in Vietnam in general is based on foreign technology. Moreover, only few books of Information technology field can be seen in Vietnam and in NIPA. Therefore the teachers of IT need regularly short courses of IT to update their knowledge. They can take courses in several Information Technology centers located in Vietnam, however it is better if they can take courses of IT in *industrialized countries*. In addition, they can exchange information with other institutions of both overseas and inside Vietnam.

Based on IT knowledge gained from the short courses and IT books, the IT teachers can update their textbooks and training materials, as well as disseminate IT information to local schools.

##### **b) Training users: NIPA staff.**

At present, the NIPA officials do not have enough computing skills, many of them have no computer literacy. It is necessary to hold regular short courses of IT for NIPA officials in one or two weeks. These courses can be kinds of "How to survive in Microsoft Windows", "How to survive in Microsoft Office", "How to survive in Internet", etc.

The process of computerization in NIPA cannot be successful if the users do not gain enough necessary computer skills./.