3. Defining Information Technology

3.1. Definition of IT

Information Technology (IT) affects most, if not all, aspects of business and personal communications. It is a broad field which touches virtually all human activity and it concerns the techniques and tools for handling information. Information, acquired by the senses, processed by the mind, and retained in memory, can be represented, conveyed, and presented to other humans. Information can also be processed to create new information or imbedded in processes and materials to create goods and services for human use. These natural processes may also be accomplished, enhanced or assisted using artifices such as transducers (acquisition and presentation), computers (retention and processing) and various media technologies (conveyance). Accordingly, information technology may be defined as follows:

> Information Technology (IT) comprises the techniques, tools and procedures for acquiring, creating (composing), extracting, storing (filing), retrieving, conveying or presenting information ultimately for human assimilation, understanding and utilization.

While Information Technology would cover all information media, whether tactile, aural, or visual, most current interest emphasizes the visual because of relevant progress in electronic microcomputer technology. Historically, visual media have been dominated by paper for both processing and conveyance as well as for input - output and storage. Paper is still the dominant input - output and storage medium for origination, presentation and retention despite some progressive displacement by the increasingly ubiquitous cathode ray tube (CRT) monitor or television display. However, the use of paper for processing and conveyance is diminishing rapidly in favour of electronic media.

Increasingly, Information Technology is becoming more electronic as advances in computing and telecommunications technologies continue to be made at an unprecedented rate. Microelectronics, the high growth area on the materials side of Information Technology, continues to integrate more and more complex electronic circuitry into tiny semiconductor packages, both lowering cost and increasing affordability of products and services. Moreover, Artificial Intelligence (AI), an emerging area of Information Technology, is leading the way toward computational machines which will perceive, learn, understand, plan, decide and act within limited contexts of specific environments, situations and scenarios to achieve limited objectives. As time progresses, these limits will widen and allow greater potential, versatility and autonomy for machine assistance and automation.

In view of the above it is not surprising that Information Technology (IT), of which communications is a major part, is a recognized instrument of social and economic change shaping directions and levels of business and employment well into the future.