

# ICT

## A BRIEF INTRODUCTION

### TOPICS:

- What is ICT?
- Where does ICT literacy begin
- What skills makes one an ICT literate
- Why is ICT so important
- What are the fundamental elements of ICT
- How do you create information
- How do you store information
- How do you transmit or send information
- How do you retrieve and manipulate information
- How to you interpret information
- How does one acquire ICT skills

## WHAT IS ICT?

ICT is short for **Information & Communications Technology**.

ICT covers all forms of Computer and Communications equipment as well as the software used to create, store, transmit, receive, interpret, and manipulate *information* in its various formats.

Information comes in various formats and it is all around us:

- Voice Conversation
- Text
- pictures
- Data
- Motion Pictures or Video
- Multimedia Presentations
- Radio and Wireless Broadcast
- Television Broadcast

ICT deals with all the systems involved in creating, storing, sending or transmitting, receiving and manipulating these kinds of information.

The systems behind ICT include both hardware devices and the software that allow the hardware devices to carry out or to be used for their intended functions.

**Hardware** is the physical parts of the system that one can see and touch. For example the Computer's CPU is a hardware aspect of the Computer system. The Computer's Display or Monitor is another hardware component of the Computer system. For the Computer to perform its function there are programs or software aspects that work together with the hardware components to make the Computer usable.

A Computer needs software to help create and manipulate information such as text, data, picture or video. To manipulate information such as print a document, the Computer needs to have a printer software running that can communicate with the printer (hardware). The printer software, also known as printer driver, tells the printer what to print, how to print and when to print it. Without this software you will not be able to print hard copies of your document on paper.

## **WHERE DOES ICT LITERACY BEGIN?**

ICT know-how begins with Computer Literacy.

Nowadays Computers can be found in a lot of places apart from individual homes. Computers are being used at workplaces, in schools, libraries and businesses to accomplish a variety of tasks at a fraction of the time that it took to accomplish those same tasks long before the introduction of Computers.

Computers help us accomplish more in less time and more efficiently. Computers have made us more productive than ever before.

Being a Computer literate has become very important in the world these days. Computer Literacy enables people to acquire the basic skills and knowledge to be part of the workforce in any ICT equipped environment.

Computer Literacy has created and continues to create many job opportunities for people.

Skills in ICT provides opportunities for people to work with one another as well as independently to undertake and accomplish different tasks.

Thanks to developments in ICT you can now compose and send messages to friends and family as well as to colleagues at work with the help of electronic mail applications and ICT networks such as the Internet.

Text messaging to friends and families using various mobile devices has become the order of the day.

Video Conferencing for important meetings across the globe is now possible.

In summary the knowledge and use of Computers is at the core of ICT literacy and skill building.

## **WHAT SKILLS MAKES ONE AN ICT LITERATE?**

Information and Communications Technology (ICT) covers a wide range of systems and technologies and an individual does not need to know all these systems and technologies in order to be considered as an literate.

To be considered an ICT literate one needs to acquire various ICT skills that include but not limited to the following:

- Must understand and be able to use a Computer to perform various tasks such as opening applications, creating and modifying documents, spreadsheets or presentations. Some basic typing skills will be necessary.
- Have the ability to identify various ICT technologies and their uses.
- Understand ICT technologies and concepts and be able to decide which ICT technology will be suitable for a particular task.
- Ability to differentiate between various forms of information and understand how to use or manipulate them.

### **WHY is ICT important?**

Information and Communication Technology (ICT) is all around us. We encounter some elements of ICT in our day-to-day lives. In offices, schools, libraries, industries and homes ICT is increasingly being used. It has become progressively more important to acquire skills in ICT for several reasons.

Acquiring skills, knowledge and understanding in the use of ICT systems prepares people to use such technologies to accomplish various tasks in their everyday lives as well as in their working lives.

ICT technologies such as the Internet enables people to access and share information. Distant learning and online education has become the order of the day thanks to advancements in ICT.

The knowledge of ICT provides opportunities for people to work both collaboratively and independently in completing different tasks.

Companies are able to reduce cost of operations and improve efficiency by using the right ICT systems to conduct their businesses.

With the appropriate ICT systems, information and data can be stored and retrieved more efficiently and reliably.

The application of ICT to accomplish tasks is not limited to any particular business or industry. Whether you are a teacher, student, doctor, nurse, accountant, architect or engineer there is a great chance that you are currently using Computers or will be doing so in the near future to perform various duties in your field.

### **What are the fundamental elements of ICT**

The basic components of an ICT system include devices such as Computers and Communications equipment and networks used to create, store, retrieve, send and receive information.

A Computer can be used to create, store or change information.

Communication devices such as modems, routers, switches and hubs that are connected to Computer systems help to transmit and receive information to and from other Computers and ICT systems.

Communication devices simply allow Computers and various ICT systems to be connected to one another. They facilitate the transmission and receiving of information and data over the transmission media that link them to each other.

Examples of Transmission Media are:

- Cables (Copper or Fiber)
- Telephone Lines
- Cellular or Mobile Links (through open space, wireless)
- Satellite Links (through open space)

Communication devices and the infrastructure or transmission media that link them together constitute Communication Networks.

### **What are Communications Networks?**

In order to send and receive information you need some kind of infrastructure or network in place to transport the information back and forth. This is the communications network.

A Communications Network is made up of connected Communications devices and the transmission media that link them together.

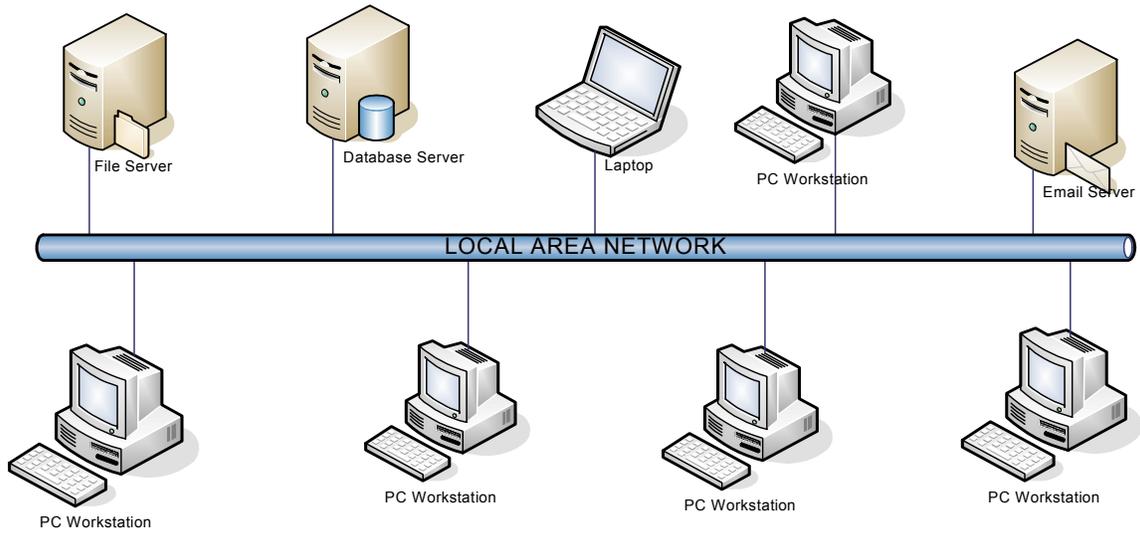
There are various forms of communications networks:

- Local Area Networks
- Wide Area Networks
- The Internet
- Satellite Links
- Telephone Networks

The Internet has become a major communications and information distribution network.

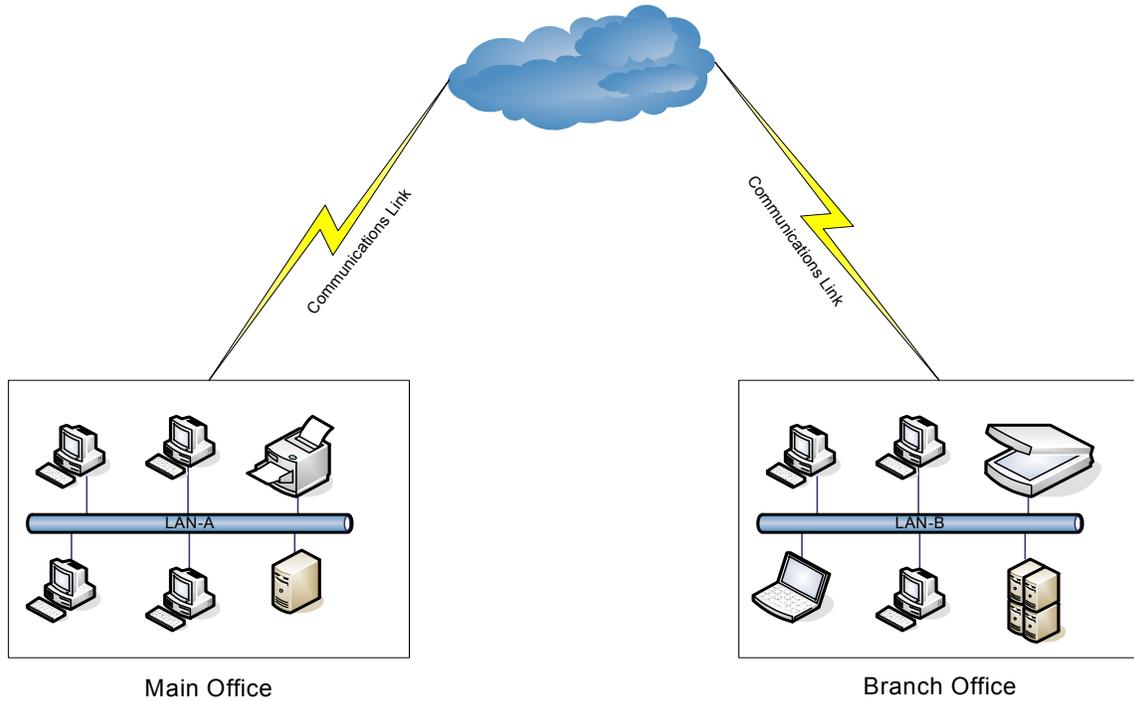
Below are some illustrations of the above forms of Communication Networks:

## LOCAL AREA NETWORK



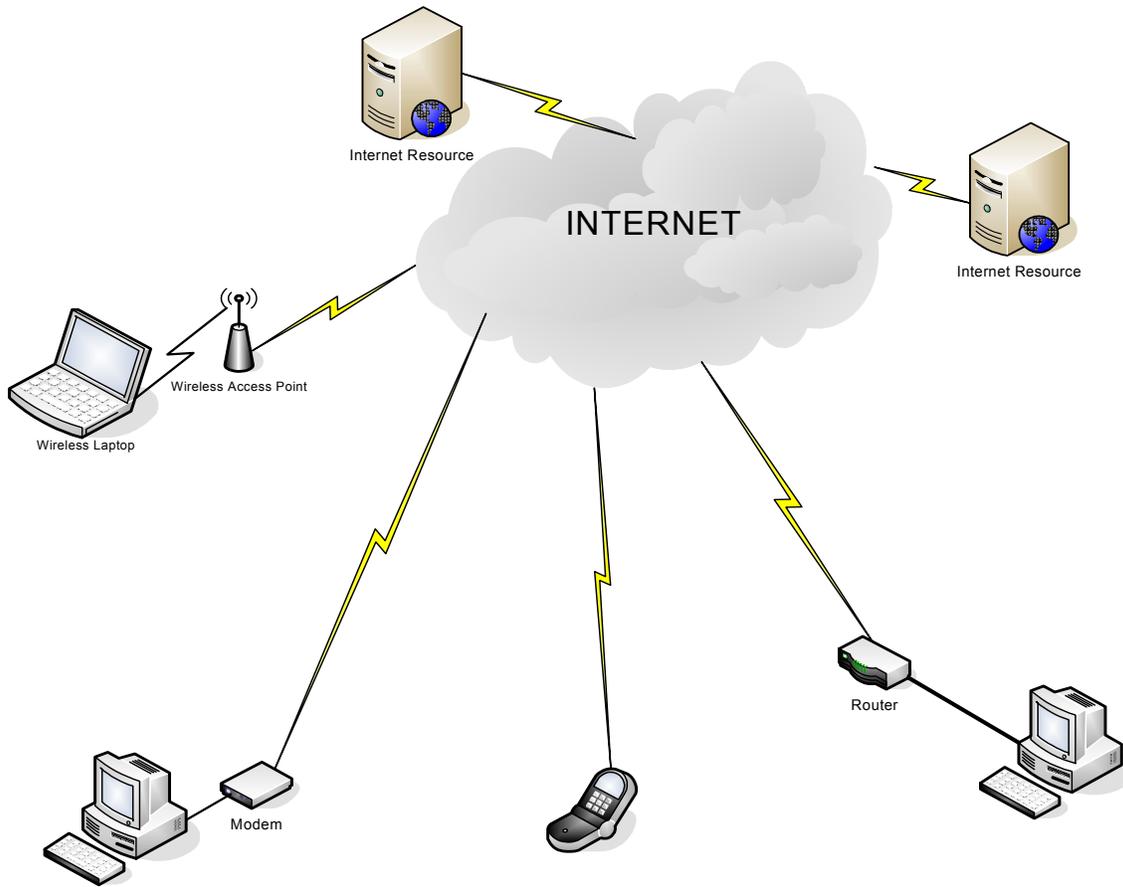
In the Local Area Network (LAN) above any PC Workstation is able to retrieve or store files on the file server. The workstations can also send electronic mail (email) to one another through the Email Server. Important data can be stored in records on the Database Server.

## WIDE AREA NETWORK



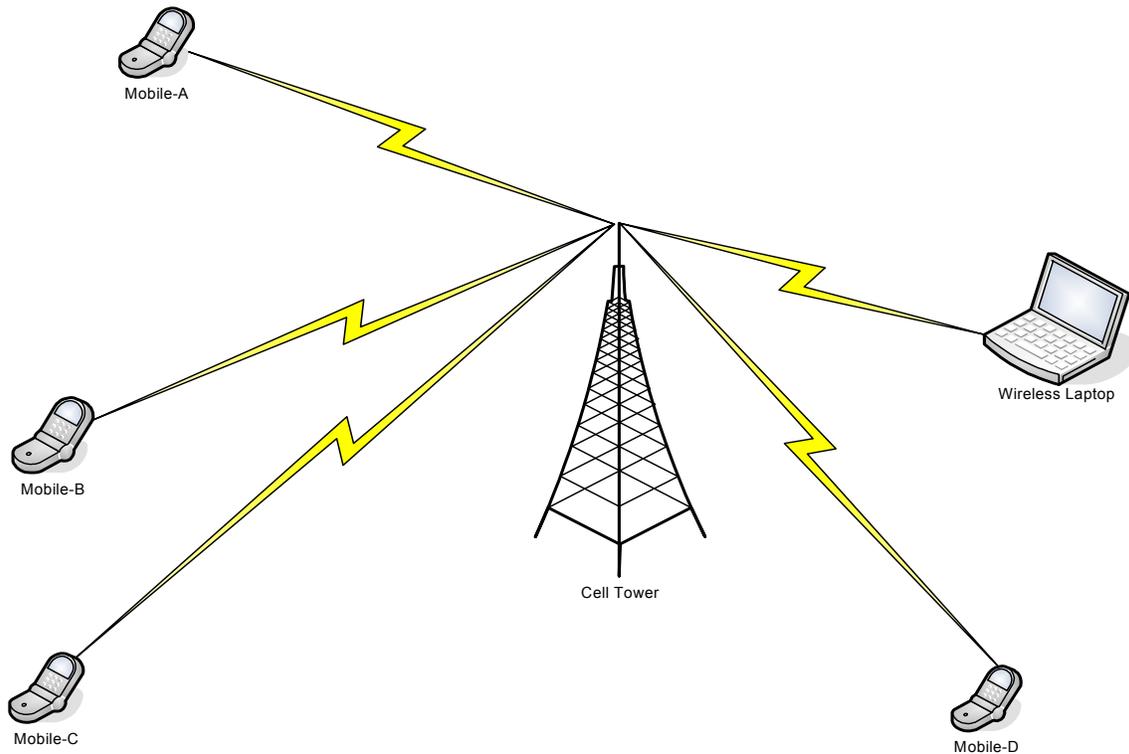
The Wide Area Network is an expansion of the Local Area Network. In addition to information exchanges between Computers inside the same building, data transfers and email can now be transmitted over long distance across town, between two cities or even two continents.

# THE INTERNET



The Internet is the Network of Networks that has extended our global reach to resources all over the world.

## A SIMPLE CELLULAR NETWORK



### **How do you create information?**

There are various ways to create information in its various forms.

Depending on the kind of information being created one of the following methods can be used:

- A Word Processor such as Microsoft Word, Wordpad or OpenOffice Writer can be used to create documents.
- A program like Excel on the Computer helps to create spreadsheets.
- There are applications for creating presentation documents
- Various applications allow you to enter records in a database
- Video recording device connected to a Computer (e.g. WebCam)
- Camera or Camcorder can be used to capture scenes or record video
- Microphone to create voice information
- Video editing applications to manipulate motion pictures or video

## **How do you store information?**

In ICT storing information means keeping the information on a reliable storage media so that it can be retrieved and re-used when needed.

Once created, information or data can be stored on any of the following media:

- The Computer hard disk
- A USB or Pen drive
- A writeable Compact Disk or CDROM
- A magnetic tape

## **How do you retrieve and manipulate information?**

Depending on what ICT technology was used to create and store information, it can be retrieved and manipulated when necessary.

You will always need a similar or compatible application to retrieve and manipulate documents and data created using a particular application.

For example you will use a word processor to retrieve and view documents created with the same application. Same concept applies to a spreadsheets and presentation documents.

Using a windows application such as MSWord or Excel you can open an existing document or file, view its contents, add more contents or change current contents. You can then save your changes to update the file.

## **How do we transmit information from one place to another?**

Information can be transmitted from one place to another with the help of a Communications infrastructure such as a Local Area Network or the internet. Many companies have their own internal Networks ( LAN or WAN) equipped to facilitate information transfer.

You can send information via electronic mail or by using various file transmission applications such as FTP. Files can be copied from one computer to another over a Local Area Network, Wide Area Network or the Internet.

Using the appropriate equipment and transmission media, information can be sent and received between two end points. For example with the help of a modem or router connecting your Computer to the Internet you can send electronic mail and text messages to people around the globe.

Documents and files can also be sent as attachments to electronic messages (emails).

### **What does interpreting information mean?**

Making sense out of information to be able to use it in accomplishing a particular task  
An ICT literate with the skills to create and manipulate an Excel spreadsheet also possesses the knowledge to make sense of the spreadsheet that he or she creates as well as those that he or she receives or retrieves from other sources

### **How does one acquire ICT skills?**

A Computer literate is someone who has developed the skills to be able to use a Computer to accomplish meaningful tasks as part of their normal duties in the workplace or in private.

Most schools now have ICT and Computer studies as part of their curriculum

Besides acquiring ICT knowledge and skills through formal education an individual can take steps to develop skills on their own through one of the following means:

- Register for Computer training classes
- Register for an online or internet training course
- Use free Tutorials and Manuals on the Internet
- Learn to type with the help of typing software (.e.g Mavis Beacon Teaches Typing)
- Learn to identify various programs on the Computer and what they can be used for
- Learn to use the Computer to find information