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DSC-03

S.Y. BSC-BZ

Foundation course
Project



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Information Communication Technology

Abstract

Modern information and communication technology have created a "Global village."

In which place can communication with other always be world. ICT is often studied in the context of how modern communication technologies affect society. Information and the communication Technology (ICT) has become a key factor in the future development of services industry including banking, transport, logistics, and retailing influencing every aspect of human life. They are playing roles in work places, business education, and even as entertainment. The world is changing fast. Information and communication technologies of information communication technologies within today's ever-changing society profoundly impacts the way we lead our lives. The effects of these pervasive pervasive technologies present both a challenge and an opportunity for researchers, educators, and students worldwide. The development and convergence of computer and communication technologies is jointly termed as information and communication technologies (ICT) has affected almost all aspects of human life.





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INTRODUCTION :-

Information technology "evolved in the 1970s.

Its basic concept however, can be traced to the world war II alliance of the military and industry's in the development of electronics, computers and information theory.

After the 1940s, the military remained the major source of research and development funding for the expansion of automation to replace manpower with machine power.

Information and communication technologies for development refers to the application of information and communication technologies (ICT) towards social, economic, and political development, with a particular emphasis on helping poor and marginalized people and communities. ICT for development is grounded in the notions of "development growth, progress and globalization and is often interpreted as the use of technology to deliver a greater good.

Information and communication refers to technologies that provide access to information through Telecommunication.

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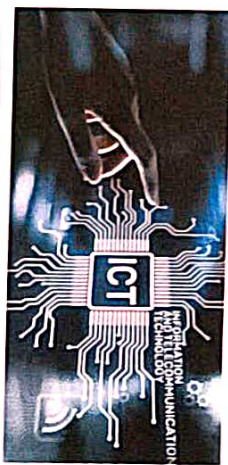
WHAT IS ICT?

The term ICT is also used to refer to the convergence of audiovisual and telephone networks with computer networks through a single link system.

There are large economic incentives to merge the telephone network with the computer network system using a single unified system of cabling, signal distribution and management. communication devices encompassing, radio, television, cell phones, computer and network hardware, satellite system and so on, as well as the various games and appliances with them such as video conferencing and so on, as well as information communication technology is a common term referring to the technologies used for collecting, storing, editing and communicating information.

ICT means the use of computer based technology and the Internet to make information and communication services available in a wide range of users.

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Definition :-

According to the Encyclopaedia of computer science, "Information communication Technology (ICT) is an imprecise term frequently fundamental to broad areas of technology and associated with the use of computers and communications".

According to UNESCO "ICT is a scientific, technological and engineering discipline and management techniques used in handling information and social, economical and cultural matters".

Advantages of ICT :-

- **Globalization** :- Video conferencing saves money of flights and accommodation.
ICT has not only brought the countries and people closer together, but it has allowed the world economy to be become a single interdependent system for contact either a business to make them exceptionally cost effective.
- **Cost effectiveness** :- The jets have to send an email and without doubt cheaper than phone calls. ICT has also helped to automate business



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Practices, to make them exceptionally not effective.

- **More Time :-** you may have your goods delivered right to your doorstep with having to move a single muscle by clicking the items to be purchased via internet and making payment electronically.

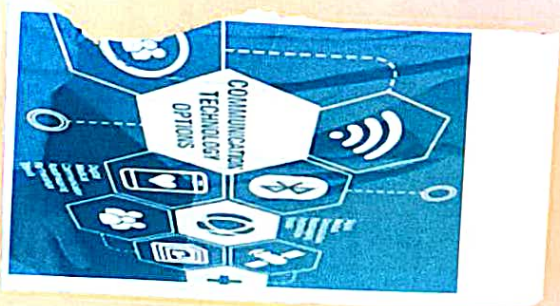
- **Creation of new jobs :-** The byproduct of ICT has been the creation of new software and interneting job - computer programmers, systems hardware and software developers and web designers are some of the many new employment opportunities created with help of IT.

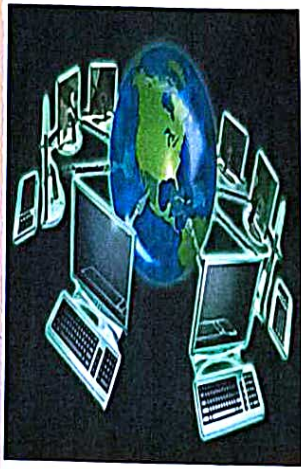
- **Education :-** Computer's along with their programmes and the internet have created education opportunities not available to previous generation. It degree can be completed online from person's home. It is possible to hold a job and still do degree.

Disadvantages of ICT :-

- **Blackmail :-** Using the internet to threaten to cause damage with the intent to extort from any person any money or other things of value.

- **Unemployment :-** Using the computer instead of human characters employers save huge amount of





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many but employees are losing their jobs as not needed anymore.

- **Privacy** :- Information technology may have made communication fast and more convenient, it has also brought along privacy problem. From cell phone signal interception to email hacking about their own private information becoming public knowledge.

- **Computer viruses** :- worms, Trojans, malware span any cell can chaos and disrupt our daily lives.

- **Social media** :- they became addicted to the phones, iPod, gaming consoles forgetting about outside activities and communication in the society.

Disadvantages of ICT -

- **Blackmail**

Components of ICT -

- 1) **Computer Technology**

A complete history of computing would include a multitude of diverse devices such as the ancient abacus which is a ...

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and Charles Babbage's "analytical engine" (1834).

It could also include discussion of mechanical, analog and digital computing architectures.

As late as the 1960s, mechanical devices, such as the mechanical calculator, still found widespread application in science and engineering.

During the early days of electronic computing devices, there was much discussion about the relative merits of analog vs. digital computers.

In fact, as late as the 1960s, analog computers were routinely used to solve systems of finite difference equations arising in oil reservoir modeling.

Use of computers :-

Education

Health and medicine

Science

Business

Entertainment

Government

Defense

Transport

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Characteristics of computer :-

Speed operations

Accuracy

Reliability

Storage

Automation

versatility

No feeling

2. Network Technology -

Networking technology allows for the exchange of data between large and small information systems used primarily by business and educational institutions.

Networking, end-users are able to transmit files, messages and other data through e-mail or various other channels. Having information is the strong interconnection based on the needs of an organization.

visitors connections to display various data, communication and resource in different part of the world.

ARPANET - the first network.

Advanced Research Projects Agency Network.

The granddaddy of internet was a network established by the US Department of Defense.

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- Science
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- Defense
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The work for establishing the network started in the early 1960s and DOD sponsored major research work, languages and programming for network communication.

→ Computer

→ Network interface

→ Media

→ Switches

→ Routers

Network Types:- based on geographically area covered, these types of networks

→ **Local Area Network (LAN)** - LAN are the most frequently discussed networks.

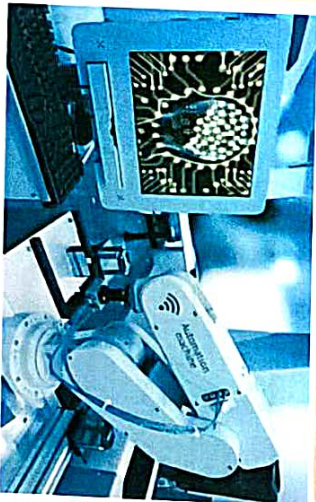
LANs connect group of computers and low-voltage devices together over short distances to share information and resources.

→ **Metropolitan area network (MAN)** - It provides interconnection of network in a city into single network.

MANs span entire geographic area typically a town or city, but sometimes a campus.

→ **Wide area network (WAN)** - It covers large geographical area having state or countries.

The internet is the most basic example of WAN, connecting all computers.



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Types of network in use Today :

- Personal area network
- wireless local area network
- campus area network
- Enterprise private network

3) Communication Technology :-

Information and communication technology has become a revolutionary cornerstone in the education world today we also use information communication technology in our every day work.

Information communication technology in India was promoted under the national secondary education campaign which was started in December 2004.

The world communication has its origin in the English language world communication, which is made up of Latin-language communication.

Communication in Ancient Times :- The first means of communication was, the human voice but about 3,200BC writing was invented in Mesopotamia.

Communication 1500-1800 :- The next major improvement in communication was the invention of printing.

The first newspapers were printed in the 17th century.

The first newspaper in England was printed in 1641.

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Communication in the 20th century: - Communication continued in 1837. Alexander Graham Bell the 1910 new radio stations included Radio 5 live 1990 and classic FM 1991.

Television was invented in 1925 by John Logie Baird and the BBC began regular, high definition broadcasting in 1936. Martin Cooper invented the first handheld mobile phone in 1973. The first mobile phone

cell in Britain was made in 1985. In Britain smart phone were introduced in 1996.

Communication in the 21st century: 21st century the internet became an important form of communication.

Today email has become one of the most popular methods of communication.

Communication process - In order to better understand the communication process;

➤ **Source (sender)** - Sender of the communication generates the message and convey it to the receiver.

➤ **Message** - The message or content is the information the sender wants to relay to the receiver.

All these elements together - sender, receiver and message and you have the communication process at its most basic.

➤ **Media** - The medium is decided by sender.

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➤ **Receiver** — he is the person who is last in the chain and for whom the message was sent by the sender.

4. **Telecommunication** —

The history of telecommunication began with use of smoke signals and drums in Africa, the Americas and part of Asia. In 1830 that electrical telecommunication system started to appear. Telecommunication is the transmission of signs, signals, message, words, writings, images and sounds or information of any nature by wire, radio, optical or other electromagnetic systems.

The word telecommunication comes from the Greek prefix Tele, which means distant, combined with the Latin word Communication which means to share.

Telecommunication technologies include the telegraphy, telephone, radio television, video telephony, satellite, closed computer networks and public internet. Early telecommunication transmission used

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analog signals which were transferred over copper wires. Today telephone and cable companies still use these same lines though most transmission are now digital. Telecommunication wiring is done with cables that are optimized for digital communication such as fiber optic cables and digital phone lines. Telecommunication is a universal term that is used for a vast range of information - transmitting technologies such as mobile phones, landlines, VoIP and broadcast network.

Types of telecommunication :-

- a) **E-mail** - Electronic mail is a method of exchanging message between people using electronic devices. Invented by ray Tomlinson email first entered limited used. in the 1960 and by the mid - 1970 had taken the form now recognized as email.

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b) **Fax** - The first fax machine was invented by Scottish mechanic and inventor Alexander Bain. A fax machine is a device that is used to send documents electronically over a telephone network. Today's fax machine is less frequently a stand-alone machine and more often part of a multifunction unit that also has printing, scanning, and copying features.

c) **Telephony** - Alexander Graham Bell was awarded the first U.S. patent for the invention of the telephone in 1876. A telephone also called Phone is a communication tool using a telephone two people who are in different places can talk to each other.

d) **Television broadcasting** - The world's first electronic television was developed by a 21 year old inventor named Philo Taylor Farnsworth.

e) **videoconferencing** - The first concepts of video conferencing were developed in the 1870s, as part of an extension of audio devices.

Today video conferencing is used by many industries, including educators, marketers.

f) **cell phone / Mobile phone** - A mobile phone is frequently called a cellular phone or cell phone.

Most mobile phone provide voice communication, short message service (SMS), multimedia message service (MMS), and newer phones may also provide internet.

g) **Radio**

h) **Telegraph**

5. **Radio communication** -

Radio waves were first identified and German physicist Heinrich Hertz in 1886.

The early is the history of technology that produces and uses radio instruments that use radio waves.

6. **Microwave communication** -

Microwave technology was developed during world war II (1939-45) in connection with secret military radar research.

Today, microwaves are used primarily in microwave oven and communications.

Advantage of microwaves :-

- Large Bandwidth - Microwaves are used for point to point communication.
- Small size Antenna - The antenna size can be smaller as the size of antenna is inversely proportional.
- low power consumption - As microwaves have high frequency this requires very less power.
- Effect of fading - while at low frequency signal the layers around the earth causes fading of the signal.

7. Satellite communication -

A communication satellite is an artificial satellite that relays and amplifies radio telecommunication signals via a transponder communication channel, between a source

Uses of Satellite communication;

- ▶ Traditional Telecommunication
- ▶ Cellular
- ▶ Television signals
- ▶ Marine communication

8. Fiber optical communication -

Fiber-optical communication is a system in which information is sent from one people to another

Advantage of fiber optic communication;

- ▷ Bandwidth
- ▷ Low power loss
- ▷ size
- ▷ flexibility
- ▷ cost
- ▷ security

Conclusion :-

Information and communication Technology (ICT) tools and techniques utilization has been spread widely in every corner of human being and all kinds of organizations.

ICT has improved well the library services than traditional one and now become the demand of the users as well as organizations to fulfill the necessary requirements on time.

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