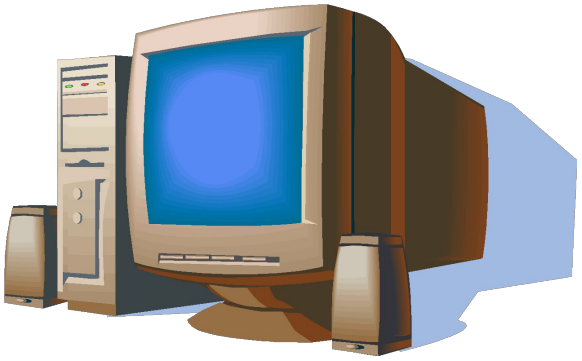
ICT
Concepts & Characteristics



What is Computer ?

- Computer is an electronic device.
- Can store large amounts of data.
- Can performing operations on data.
- Performing given function on the data & displays the result as output.
- Process data whenever needed.
- Known from ‘to compute’

What is Process?

- Computer works on data as per programme is called process.
- Processing means operations like…..
  - Calculations,
  - Logical decision making,
  - Outputting data,
  - Communicating with others computer etc.

Characteristics

- Speed
- Arithmetical and Logical Operations
- Accuracy
- Reliability
- Storage
- Retrieving Data and Programme
- Automation
- Versatility (Flexible)
- Consistency
- Communications

Applications of Computer

- Science research
- Education
- Business applications
- Banking
- Office Automation
- Desktop publishing
- Management aids
- Engineering designing
- Road traffic control
- Railway
- Medicine
- Information services

What is Internet

- Inter connection of many computers via network.
- Global connected through network (through LAN or WAN)
- To provide the various application services i.e. E-Mail, Usenet (News), WWW, Telnet, FTP, etc

Uses of Internet

- Searching
- E-mail service
- Commercial Services
- Electronic books & Publication
- Video Conferencing
- Sharing data and results quickly
- Retrieving files & Program of all types
- Find information databases and tutorials
- News paper columns
- Banking
- Downloading / Uploading any information
- News, sports, stocks, music etc.
- Use of internet in various fields like education, Business, governance, etc.
- And many more ……..

Internet as a ICT tools

What is ICT?

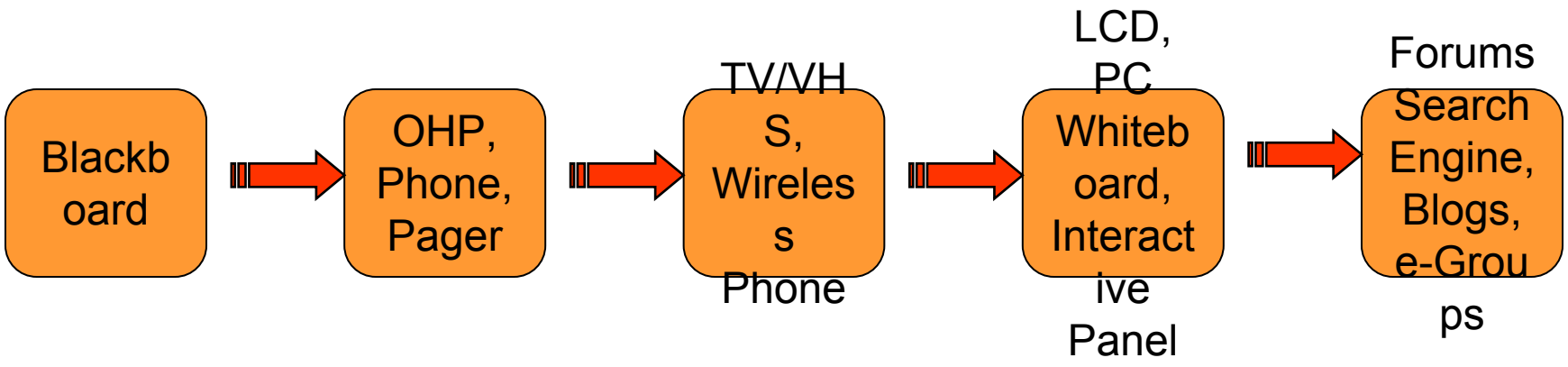
- During last decade of twentieth century there was extraordinary development in information and communication technology (ICT) which led to a transmutation of processes and practices in almost all aspects of human activities.
- Information and communication technologies (ICTs) are the technologies used in the conveying, manipulation and storage of data by electronic means.

Information and Communication Technologies

- Information is data that has been sorted and arranged.
- It consists of organized facts and opinions people receive during daily life.
- Changing data into information is called data processing or information processing.
- It involves gathering, organizing, and reporting data so it is useful to people.
- It is often done using information technology.

ICT Tools

- **Radio, television, video, DVD, telephone (fixed line & mobile), satellite systems, computer and network hardware and software; (equipment and services associated with these technologies, such as videoconferencing and electronic mail.) , blogs**



Information and Communication Technologies

- People often use the terms information and communication together.
- These terms are related, but each means something different.
- Two words we need to know to understand communication technology are data and information.
- Data includes individual facts, statistics (numerical data), and ideas.
- These facts and ideas are not sorted or arranged in any manner.

What is Communication?

- Communication is simply the act of transferring information from one place to another.
- Exchanging Information from computer to another computer
- The classic communication system is made up of an information source, an encoder, a transmitter, a receiver, a decoder, storage, retrieval, and an information destination.

Synchronous Communication

- Online Chat
  - Text based
  - Audio based
  - Video based

- Mobile Technology
  - Conferencing
  - Phone

- Satellite
  - Television channel
  - Video Conferencing

Asynchronous Communication

- Discussion Forums
- Blogs
- e-Groups
- Wikepedia (Knowledge base)
- Google (search engine)
- Mobile SMS, MMS & Podcasting

Scope of Internet as a ICT

- Education
- Research
- Communication
- Leisure and Entertainment
- Exploring the world
- Finance
- Shopping

- And many more ....

Scope of Internet as a ICT in Education

- ICT as a tool to innovate teaching-learning practice via Internet (i.e. digital content, multimedia, teaching-learning methods, learning environment)
- ICT as an administrative tool (i.e. education management information systems (EMIS)
- ICT as an expanding learning opportunity (i.e. distance learning, e-Learning)
- ICT as a facilitator of higher-order thinking skills (i.e. learner-centered, self-directed learning, tailored learning)

Traditional v/s Internet based ICT education Approach

	Traditional Classroom	ICT In Education
Classroom	· Physical – limited size · Synchronous	· Unlimited · Anytime, anywhere
Content	· PowerPoint / transparency / etc · Textbooks / library · Video	· Multimedia / simulation · Digital library · On demand · Syn & Asyn. Communication
Personalisation	· One learning path	· Learning path and pace determined by learner

Psychology of using Teaching Aids which include ICTs

- **Hear is an effective saying**
  - **I hear, I forget : Verbal description only are not enough for learners to remember and understand. Visualization of objects especially in science and technology is important**
  - **I see, I remember: Knowledge that is gained through the site is more colorful, accurate and permanent. It is said that 80% of our knowledge is gained through our eyes.**

ICT can help learning

- **Develop understanding**
  - **Speed and automatic functions of ICT can enable teachers to demonstrate, explore or explain aspects of their teaching, and students learning, more effectively e.g. use of a spread sheet to perform calculations in order that patterns can be concentrated on rather than the calculating.**

ICT can help learning

- **Extend access to sources**
  - the capacity and range of ICT can enable teachers and students to gain access to historical, recent or immediate information, through, for example, accessing information on CD-ROM or the Internet
- **Enhance enquiry skills**
  - search for and compare information from different sources

ICT can help learning

- **Enhance the communication of ideas**
  - **communicate with other people, locally and over distances, easily and effectively**
  - **present information in ways which are accessible in different forms for different audiences.**

Does ICT increase access to learning opportunity?

- Education opportunities in dispersed locations where conventional schools are not viable;
- A choice to students and parents of what they want to learn i.e. Choice based credit system (CBCS);
- A safety net for school drop-outs so they do not lapse into illiteracy;
- Alternative venue to schools.
- Second chance education.
- Standardised curriculum materials
- Lifelong learning concept
- Limiting fraud in assessment process

Internet based ICT in Agriculture using web applications

- There are many web sites available for getting information regarding agricultural products.
- One of them is “Soil Health Card” a 12th National e-governance award winner. It reflects soil testing report (Current composition of soil) and provides information about which crops farmers should cultivate and which manure should be applied in what proportion.

  Agmarknet (Digital Mandi for Indian Kisan –by IIT, Kanpur)

  www.kissankerala.net and Many more …

Green ICT

Green ICT refers to an approach in reducing the energy and other resources consumed and the emissions and other waste produced across the ICT lifecycle – from manufacture, procurement and use of ICT in an organisation to its re-use and aims to improve environmental sustainability of organisations. Specifically, Green ICT as applied to the use of ICT resources aims to:

- Reduce energy consumption and CO2 emissions during ICT use
- -Reduce environmental impact of disposal of ICT waste products

In addition to the above, Green ICT also explores how ICT applications can be used to help other sectors conserve and optimise energy usage.

Steps towards Green ICT

- Reducing Power Consumption of ICT equipments.
- Going Paperless
- Buying Energy-efficient ICT equipments
- Disposal, Re-use and Recycling ICT Equipments
- Server Optimisation and Virtualisation
- Indirect ICT Savings
  - Tele Conferencing
  - Web Conferencing
  - Video Conferencing

Our Commitment

Accelerating Our Daily life activities by Convergence of Technologies & Sharing of Experiences and Resources.

Green ICT can reduce costs and the negative impact on the environment, making being green good for all businesses

Useful Keys Internet

- **Network:** Connecting computers with each other For exchanging information
- **Client :** It is a programme or computer for getting special information from another compute.
- **Server:** It is a programme or computer, which gives information to the client computer.
- **Protocol:** It's a rules for connecting to the internet. (TCP/IP)
- **Portal:** It is a website. Known as a gateway of internet.

  (Search engine)

Router: It is a device, which decides where data will be send (Network point)

www : World Wide Web

Browser: It is a programme which helps us to use internet

Website: Group of different web pages.

URL : Universal Resource Locator

Types of Website (Domain)

.com :	Commercial organization
.net :	Large Networks
.gov :	Government organization
.org :	non-profit making organization
.edu :	educational organization
.mil :	military organization
.in :	India
.au :	Australia
.us :	United States
.uk :	United Kingdom

Units of Computer Memory Measurements

1 Bit = Binary Digit

8 Bits = 1 Byte

1024 Bytes = 1 KB (Kilo Byte)

1024 KB = 1 MB (Mega Byte)

1024 MB = 1 GB(Giga Byte)

1024 GB = 1 TB(Terra Byte)

1024 TB = 1 PB(Peta Byte)

1024 PB = 1 EB(Exa Byte)

1024 EB = 1 ZB(Zetta Byte)

1024 ZB = 1 YB (Yotta Byte)

1024 YB = 1 (Bronto Byte)

1024 Brontobyte = 1 (Geop Byte)

Geop Byte is The Highest Memory

Thank You