



CAPACITARTE

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ICT systems: components and functions

They are much more than computers. An ICT system involves the use of computers or other types of hardware to meet a specific need. A LAN, local area network, can be an example of an ICT system, but interactive television and the database of a library are types of systems too.

ICT systems have these components:

- **Software, instructions and data**
- **Hardware, computers and other devices**
- **Personnel, people who use, design, control or benefit from the system**

The components perform these basic functions:

1. Input	Data is collected and entered
2. Processing	Data is changed or manipulated
3. Output	The results are shown
4. Communication and Feedback	The results are sent out and new data is collected and entered in the system
5. Memory	Storage of data

Types of systems

They are classified according to their aim.

Information system	Control system	Communication system
(manage data and information)	control different devices) E.G. a house, where this system can control switches to turn on and off lights, sensors to detect smoke and set off the alarms.	send data between different devices) E.G. mobile phone network, digital television.

Types of Devices

At present most of the devices used in ICT systems are multi-purpose: mobile phones can be used as digital cameras, printers are also scanners. Not only is there media integration in the hardware, but also in the services offered by these telecommunication systems.

- **Call centres** are one example of computer telephony integration where companies use databases and telephones for telemarketing.
- **Digital television** uses digital technology to increase the number of channels and their quality of image. It also enables viewers to interact with the content and provide feedback to the programmer via telephone line, cable or satellite.
- **The Internet** is a global network of computers, this enables users to exchange files, send emails and surf the Web to find information, take part in e-commerce, etc.

Living with computers

People who have grown up with PCs and microchips are often called the digital generation.

People do a lot of things on a computer, they tend to use different programs in relation to their work

- **Secretaries** use computers to do the usual office things like write emails to the company's offices all over the world.
- **Publishers** use PCs to produce all sorts of texts in digital format. They publish e-books and interactive e-learning programs and they assist companies to design online material to be displayed on the Web.
- **Bank managers** use financial software to make calculations and then generate graphs or charts. They also use databases to store information to be easily searched.
- **Home users** can use software to retouch photos, they also listen to music portals on the Web and they surf the Web every day and download files.
- Computers have very useful purposes, namely:
- **In cars**, GPS help us never get lost and DVD recorders are perfect for children's entertainment.

- **At schools**, Interactive whiteboards (large touchscreen monitors) are very helpful when delivering classes.
- **Disabled People** can enjoy assistive technology to use computers
- **HMD (Head-mounted display)** allows people to watch films and enjoy virtual reality.
- **Wireless networks** allow us to connect our laptops, PDAs and Wi-Fi cell phone to the network anywhere we go.

However, technology may have some negative effects on the users.

- Our society has developed **technological dependence**. When computers are down, our way of life breaks down, planes stop flying, telephones don't work, banks have to close.
- Computers are also responsible for health problems, **computer addiction, eye fatigue, back problems**, among others.
- Computers produce **electronic waste**, plastic cases and microchips that are not biodegradable and have to be recycled or just thrown away.
- **Cybercrime**, which is crime committed with the help of computers, is creating serious problems
- Citizens may feel a **loss of privacy** because of unauthorized use of personal data or receiving unwanted electronic messages.