

1.7 Evaluates the impact of ICT in the society

4 periods

Learning Outcomes

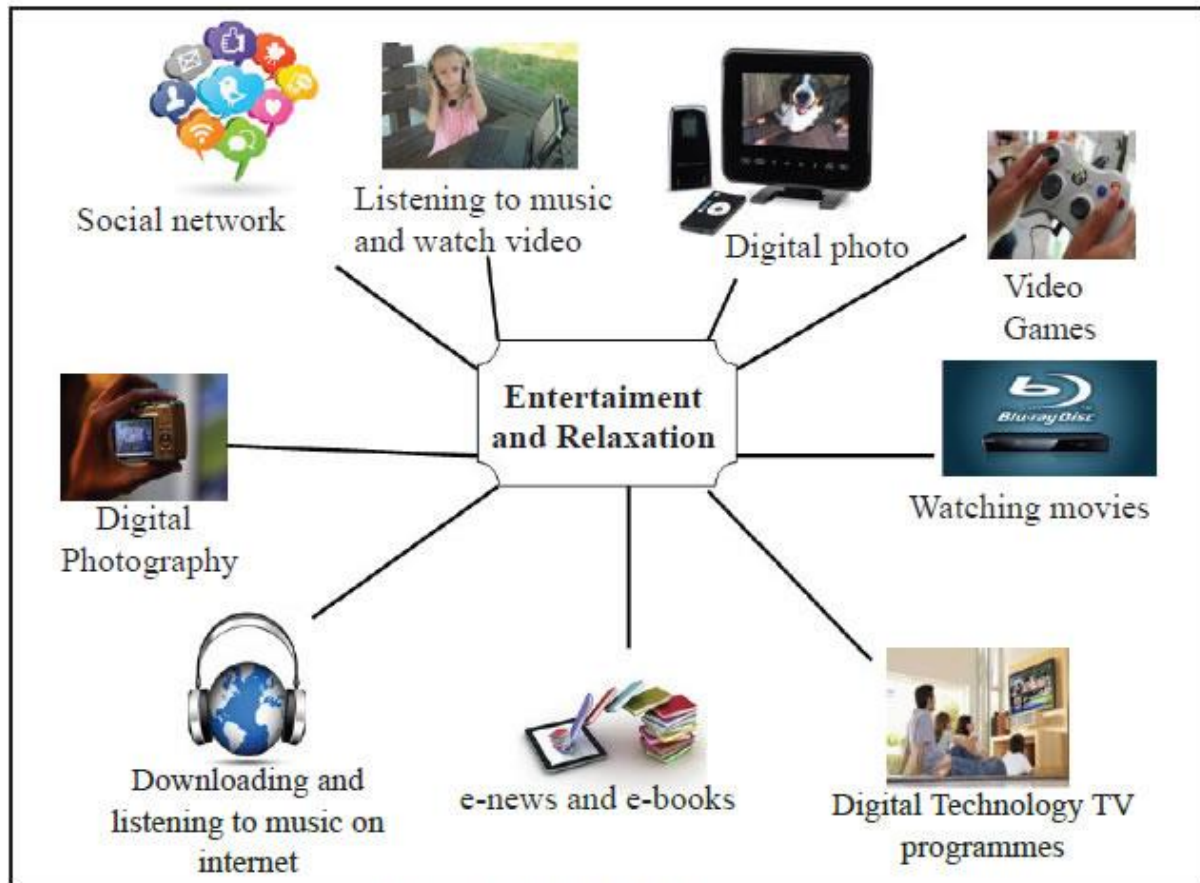
- Explains the benefits of ICT in terms of social and economic aspects
- Explains briefly the issues caused by advancement of ICT in terms of social, economic, environmental, ethical and legal aspects
- Investigates the legal situation connected with the usage of ICT.
- Explains the environmental issues associated with ICT
- Explains safe disposal methods of e-waste
- Explains briefly the ethical, Legal and social issues in the usage of ICT
- Briefly explains the role of ICT in achieving Sustainable Development Goals (SDGs)
- Investigates the approaches to eliminate digital divide

Social and economic benefits of ICT

There is a widespread belief that information and communication technologies (ICTs) can play a significant role in the socio-economic development of a developing country. ICT has the potential to affect many aspects of economic and societal activities such as Gross domestic product (GDP) growth, employment, productivity, poverty alleviation, quality of life, education, and healthcare.

Benefits provided by ICT such as social benefits and economic benefits would tend people to embrace the information communication technology.

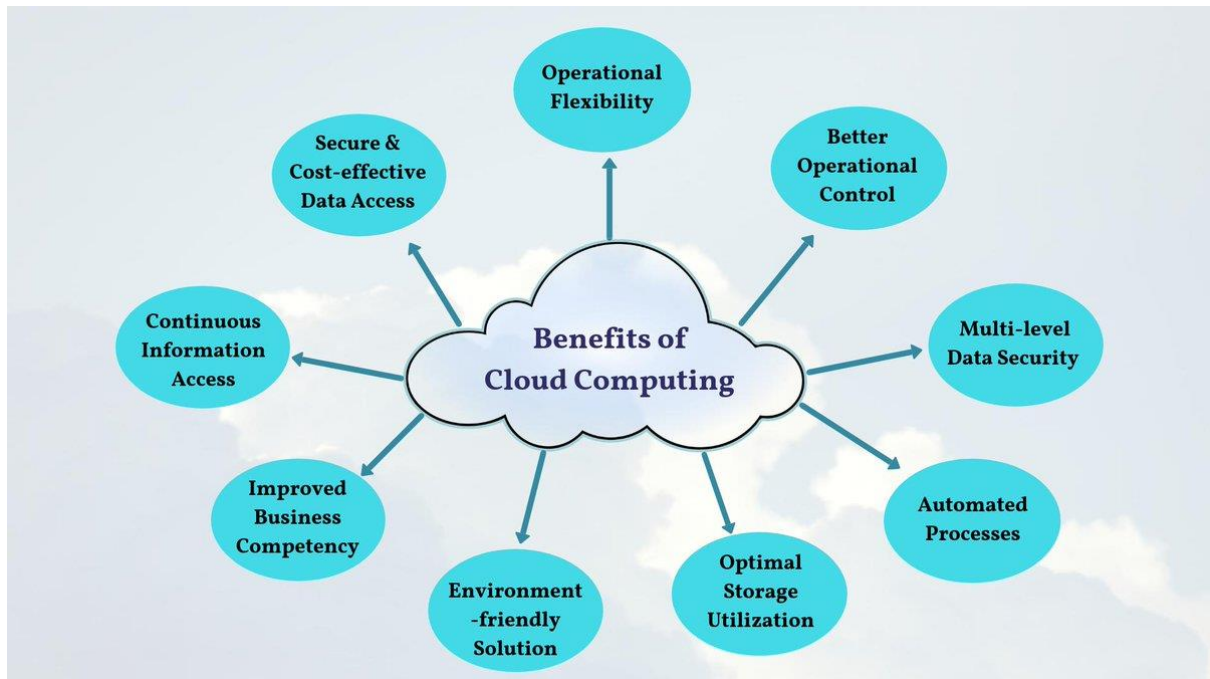
ICT impact in entertainment and leisure industry has improved the way in which we can entertain ourselves by enhancing and providing people with different ways of entertaining ourselves such as online games and chat with friends etc.



A growing ICT sector can contribute to aggregate increases in productivity, GDP and trade. As people continue to embrace ICT with an aim of making their life better, it may also affect how productive they are. Increase in the size and productivity of the ICT sector, it associate growth in labor productivity, manufacturing productivity and ultimately the economy.



ICT has bridged access to information from anywhere anytime which improves information dissemination around the world. Cloud computing activates better application, services, security, reliability and availability of information.



Social, economic, environmental, ethical, legal and privacy issues caused by ICT

ICT adoption in industries causes thousands of job losses. This is because computers reduce the number of people needed to perform a particular task.

Negative impacts of entertaining using ICT are time wastage, health issues. Continuous use of ICT for entertainment such as playing games brings health issues. For instance, constant use of thumbs, wrists and eyes can lead to problems such as eyes strain, RSI, Back and Neck Ache and other physical problems.

Eye-Strain

One health issue that can occur after using computers for a long time is eye-strain (tiredness of the eyes).

This is caused by looking at a monitor which is a constant distance away. The muscles that focus your eyes do not move, and so get tired and painful. Eye-strain can also cause headaches.

This problem can be solved:

- Look away from the monitor at regular intervals – re-focus on distant or close objects to exercise the muscles in the eye.
- Take regular breaks.
- Use an anti-glare filter in front of the monitor to cut down on screen reflections that can also tire the eyes.



Back and Neck Ache

Many people suffer from back and neck pain after working at a computer for a long time. This is usually due to them having a bad sitting posture.

This problem can be solved:

- Use an adjustable, ergonomic chair, and take the time to set it up properly.
- The computer keyboard and monitor should be at the correct height for the seated person (keyboard lower than the elbow, top of monitor at eye level).
- Take regular breaks: get up, walk around, and stretch your muscles



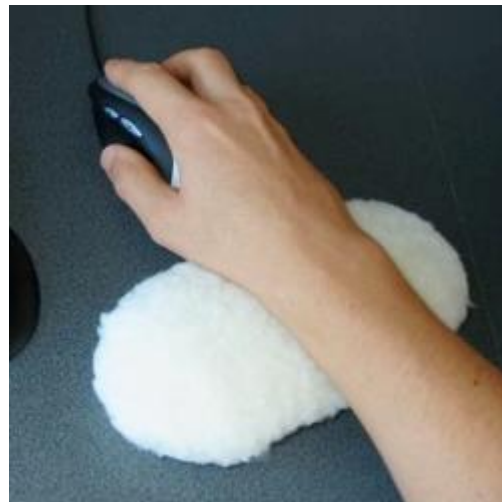
Repetitive Strain Injury (RSI) in Wrists and Hands

Any repetitive movement (same movement over and over again) can result in a health problem called repetitive strain injury (RSI).

In particular, typing and using a mouse for long periods are common causes of RSI in the wrist (it is often called carpal-tunnel syndrome).

This problem can be solved:

- Use a wrist-rest to support the wrists while typing and when using the mouse.
- Take regular breaks from typing or using the mouse.

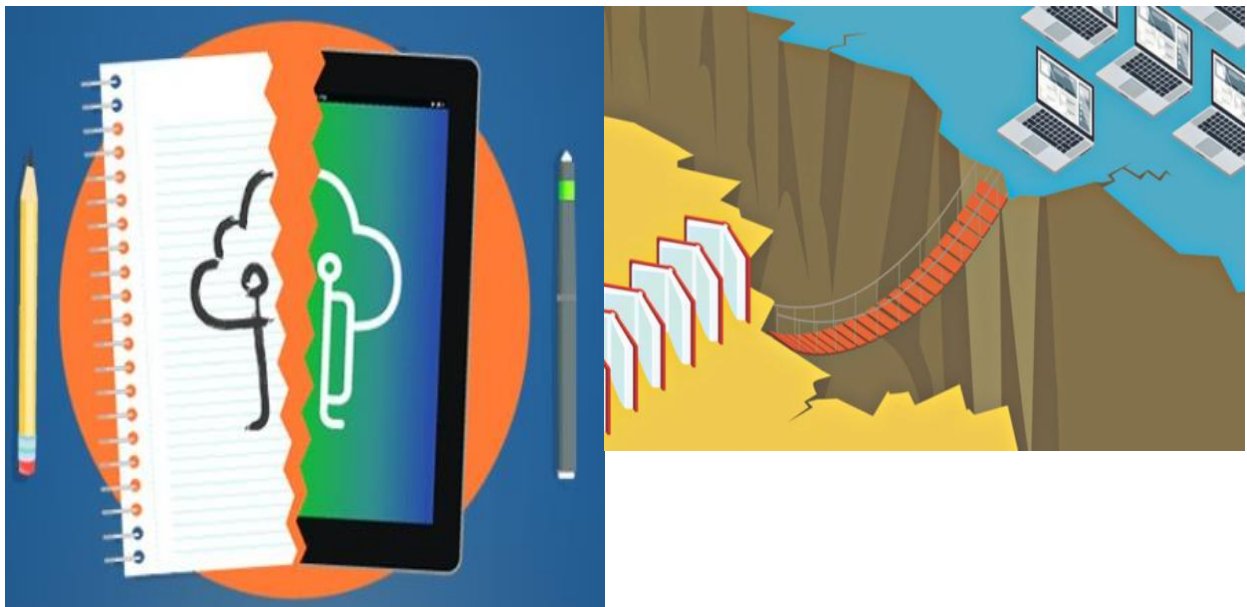


Users may adopt a more inactive lifestyle. This can lead to health problems such as obesity, heart disease, and diabetes. Many countries have workplace regulations to prevent problems such as repetitive strain injury or eyestrain, but lack of physical exercise is rarely addressed as a specific health hazard.

As well as Most people need some form of social interaction in their daily lives and if they do not get the chance to meet and talk with other people and they may feel isolated and unhappy.



Probably the largest effect that ICT use has on society is allowing members of society to have greatly increased access to information. This can have numerous negative effects, such as: causing a **digital divide** between those who can access information and those who cannot, reducing levels of education and understanding due to the vast amount of incorrect and misleading information that is available causing moral and ethical problems due to the nature of some of the material available. **Access to appropriate technological resources similar and improvements in ICT education will helpful to overcome digital divide.**



Electronic waste or e-waste is becoming a severe problem around the world. The major problem with e-waste is that the toxic chemicals such as lead, arsenic and cadmium can leach into the soil over time and contaminate the drinking water.



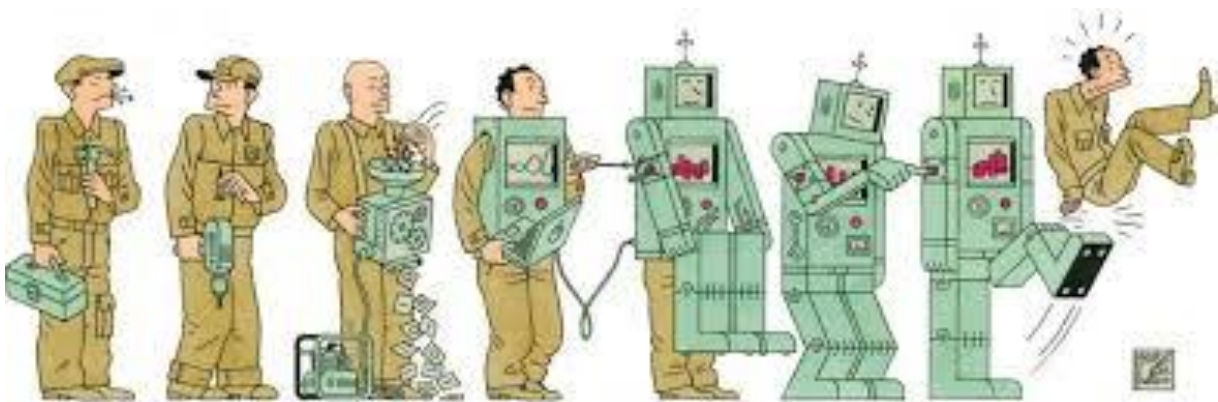
Green computing, the study and practice of efficient and eco-friendly computing resources, is now under the attention of not only environmental organizations, but also businesses from other industries. As a result, most countries in the developed world have introduced regulations to prevent e-waste being dumped into landfill. The majority of components in electronic goods now have to be recycled.



Intellectual property rights, patents on academic material, music and software difficult to be protected as how fast they are distributed over networks. Net etiquette/internet ethics are not kept by all of the Internet users.



Another largest negative effects of ICT can be the loss of a person's job. This has both economic consequences, loss of income, and social consequences, loss of status and self-confidence. Job losses may occur for several reasons, including: Manual operations being replaced by automation. e.g. robots replacing people on an assembly line. Job export. e.g. Data processing work being sent to other countries where operating costs are lower. Multiple workers being replaced by a smaller number who are able to do the same amount of work. e.g. A worker on a supermarket checkout can serve more customers per hour if a bar-code scanner linked to a computerized till is used to detect goods instead of the worker having to enter the item and price manually

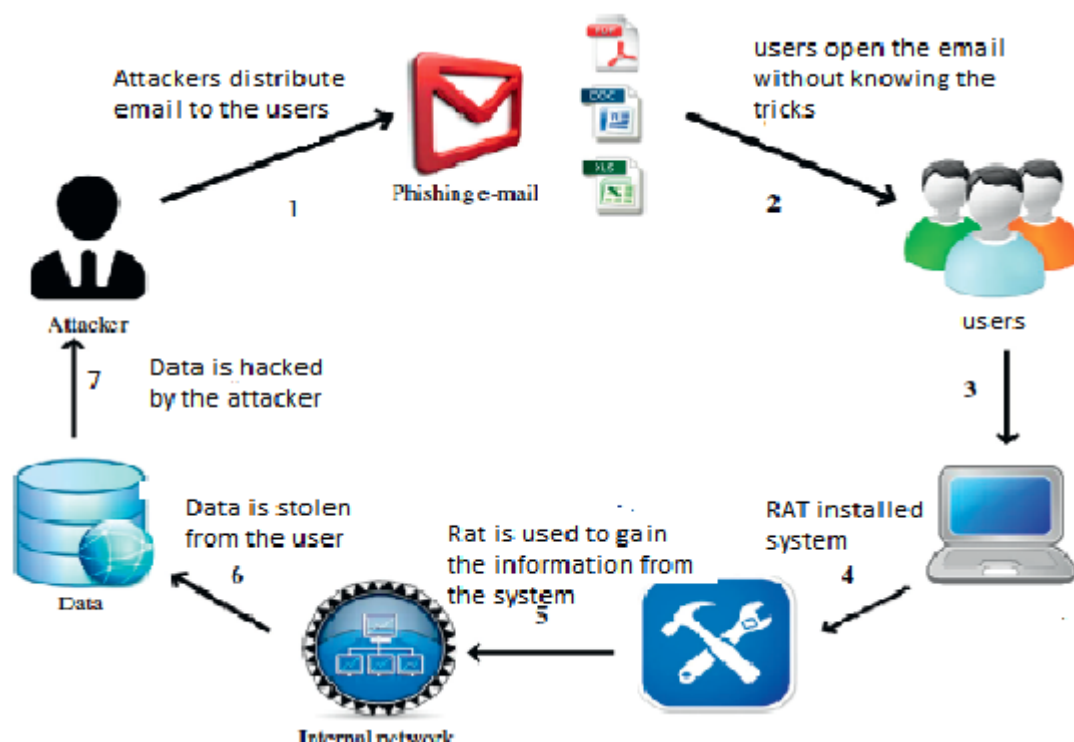


Confidentiality of data or information

Confidentiality of information can be kept with the use of password protection, encryption techniques and digital signatures.

Stealing / Phishing

Phishing is the attempt to acquire sensitive information such as usernames, passwords, and credit card details for malicious reasons, by masquerading as a trustworthy entity in an electronic communication. To protect data or information against stealing or phishing it is necessary to setup firewall, use of password, apply updates and not opening suspicious emails and clicking on links of untrusted senders.



Piracy

Software piracy is the act of stealing software that is legally protected. This stealing includes copying, distributing, modifying or selling the software.

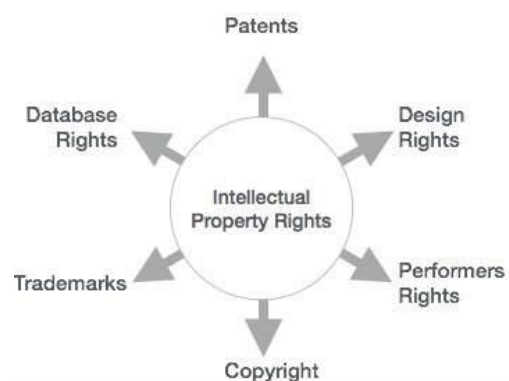


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Copyright / Intellectual Property laws

Intellectual property is the area of law that deals with protecting the rights of those who create original works. It covers everything from original plays and novels to inventions.



Plagiarism

Plagiarism is the stealing of someone else's thoughts, ideas, expressions or work and the representation of them as one's own original work.



Licensed / unlicensed software

A software license is a legal instrument governing the use or redistribution of software. Two common categories for software under copyright law are **proprietary software and free and open source software (FOSS)**. FOSS software licenses both rights to the customer and therefore bundles the modifiable source code with the software (open-source), while proprietary software typically does not license these rights and therefore keeps the source code hidden (closed source). License grants the licensee specific rights to use, edit or redistribution of software.

Unlicensed software outside the copyright protection is either public software or software which is non-distributed, non-licensed and handled as internal resource of an organization.



References

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<https://www.sciencedirect.com/science/article/abs/pii/S037872061730410X>

<https://ajahana.wordpress.com/2012/06/27/the-positive-and-negative-impacts-of-ict-5/>

<https://www.igcseict.info/theory/6/health/index.html>

<https://www.pandasecurity.com/mediacenter/panda-security/software-piracy/>