

Environmental impacts of digital technology on wider society

Techno trash/E-waste

- Waste takes longer to disassemble and break up and could involve using additional technologies
- Batteries/fuel etc. leak impacting water and ground use

Global assembly lines

Developing technologies in 1 country and then transporting it to another
E.G Car manufacturing in Germany and battery manufacturing in Japan

Increased mining for rare earth elements

Damage to local ecosystems
Increased emissions in extraction
Inefficient extraction methods

Energy consumption

- Increased energy produced when they are being used/made possibly because of complex designs/materials
- Increased energy consumption for a range of different technologies needed different power requirements

Legislation and its impact on security, privacy, data protection and freedom of information

Computer misuse act

Designed to protect computer users against wilful attacks and theft of information. The Act makes it an offence to access any computer to which you do not have an authorised right to use. The offences include-

- 1- Unauthorised access to computer material
- 2- Unauthorised modification of computer material
- 3- Unauthorised access with intent to cause or facilitate further offences

Common offences charged under the act include hacking, harvesting data and unauthorised encryption of data which usually occurs during extortion campaigns such as ransomware.

Data protection act

Controls how your personal information is used by organisations, businesses or the government. This includes-

- Collecting of personal information
- Processing (using) of personal information
- Protecting the rights of the subject
- Holding organisation to account if they breach the rules

Key information:

Legislation and its impact on security, privacy, data protection and freedom of information

Copyright act

It gives the creators of literary, dramatic, musical and artistic works the right to control the ways in which their material may be used.

The rights cover: Broadcast and public performance, copying, adapting, issuing, renting and lending copies to the public. In many cases, the creator will also have the right to be identified as the author and to object to distortions of his work.

Freedom of information act

Provides public access to information held by public authorities.

It does this in two ways:

- public authorities are obliged to publish certain information about their activities; and
- members of the public are entitled to request information from public authorities

Professional standards

Why should we conform to professional standards?

Everyone is treated the same

Everyone knows how to act/behave

Everyone knows where to get support or report issues

Everyone knows how something has been made/generated /reviewed/tested etc.

Everyone knows the consequences/sanctions

Formal standards-

An acceptable use policy or internet access policy. Any policy that is formally written and signed up to is considered a formal code.

Informal standards-

Expectations, customs, habits, personal integrity.

Ethical impacts of digital technology

Digital divide

Those that have access to the latest technology and the internet and those do not.
Causes of it include-

Money - people need money to access the internet and buy the latest devices, such as computers, smartphones and tablets.

Location - access to network coverage and high-speed broadband can vary greatly depending on where you live. Most large towns and cities have good network coverage and access, but rural areas can have limited or no coverage. Without these connections, the internet can be slow or non-existent.

IT literacy - knowing how to use technology empowers people to make the most of it. People who don't know how to use computers and the internet do not have the opportunities that IT-literate people do.

Internet access - the internet provides many opportunities for people who want to access online shopping, banking and job adverts. Students with internet access at home can research or revise with online help. Many universities and schools offer courses online. Social networking helps people make connections and stay in touch.

Key information:

Ethical impacts of digital technology

Hacking

The term 'hacking' can have a positive or negative meaning. It refers to any activity which makes unusual use of, or attempts to break, a computer system. Hacking can be used for negative purposes such as looking for weaknesses in systems to access and steal private data, but it can also be used for positive purposes such as:

- creatively exploring new ways of using a program or computer
- working around bugs in code
- exposing security risks in **software** and websites, and warning the general public
- testing the security of a system
- a 'hack day' - where people get together to explore new technologies
- Hackers who attempt to do good through hacking are called 'white hats' but those that carry out criminal activity are called 'black hats'.