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Objective: Discuss the social and ethical issues associated with a networked world

There are many social and ethical issues that may relate to the use of technology. [1].

Reliability and integrity

Reliability refers to the operation of hardware, the design of software, the accuracy of data or the correspondence of data with the real world. Data may be unreliable if it has been entered incorrectly or if it becomes outdated. The reliability of machines, software and data determines our confidence in their value. *Integrity* refers to safeguarding the accuracy and completeness of stored data. Data lacks integrity when it has been changed accidentally or tampered with. Examples of data losing integrity are where information is duplicated in a relational database and only one copy is updated or where data entries have been maliciously altered.

Security

Security refers to the protection of hardware, software, machines and networks from unauthorized access. Security measures include restricted access to machines and networks for certain employees or to prevent access by hackers. The degree of security of information systems largely determines society's confidence in the information contained in the systems.

Privacy and anonymity

Privacy is the ability of individuals and groups to determine for themselves when, how and to what extent information about themselves is shared with others. At its extreme, privacy becomes anonymity when, for instance, a person uses it to conceal his or her true identity in order to cyber-bully someone else. Conversely, excessive privacy could also conceal the perpetrators of criminal, terrorist or computer hacking acts from law enforcement agencies.

Intellectual property

Intellectual property includes ideas, discoveries, writings, works of art, software, collections and presentations of data. Copyright, trademarks and patents exist to protect intellectual property. However, the easy and accurate duplication methods made available through IT can undermine such protection.

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Authenticity

Authenticity means establishing a user's identity beyond reasonable doubt. Authenticating the user is crucial in many scenarios, particularly in business and legal matters. A simple example of authentication is a user login to a network. A more advanced example would be the use of encrypted digital signatures in a business transaction or the use of watermarking on digital photographs.

The digital divide and equality of access

The growth of the use of IT systems has led to disparities in the use of, and access to, information technologies. Disparities exist not only internationally between countries, but also within countries between different socio-economic groups as well as within what may appear to be relatively homogenous groups. This may lead to groups or individuals without access to IT being disadvantaged. For example, while telelearning may bring previously unavailable opportunities to everyone's doorstep, factors such as the cost and availability of hardware, software or access to the internet may create a "digital divide".

Surveillance

Surveillance is the use of IT to monitor the actions of people. For example, monitoring may be used to track, record and assess employees' performance. It can be used to support claims for promotion or to ensure that employees follow the organization's internet policy appropriately.

Globalization and cultural diversity

Globalization means the diminishing importance of geographical, political, economic and cultural boundaries. IT has played a major role in reducing these boundaries. For example, any dramatic event anywhere in the world can be broadcast almost instantly by television or on the internet. However, the new "global village" may lead to the extinction of minority languages.

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Policies

Policies are enforceable measures intended to promote appropriate and discourage inappropriate use relating to information technologies. They can be developed by governments, businesses, private groups or individuals. They normally consist of rules governing access to, or use of, information, hardware, software and networks. For example, a school policy on the use of IT would consist of each user signing an acceptable use policy. It would also address unlawful access to the network through, for example, identity theft or using hacking software, and how these transgressions would be treated. Many websites also require users to agree to specific policies before allowing access to their services. Policies also affect the exchange of information, for example, by making it subject to copyright laws and raising people's awareness of plagiarism. In general, policies can promote or restrict access, guide behaviour, require the fulfillment of certain conditions prior to or during use, or need to be developed to address unforeseen issues such as cyber-bullying.

Standards and protocols

Standards and protocols are technical rules and conventions that enable compatibility and therefore facilitate communication or interoperability between different IT systems and their components. They might govern the design and use of hardware, software and information. For example, the communication protocols used on the internet, the ASCII representations for characters, or the design of the printer port on a personal computer are all governed by standards.

People and machines

The use of IT systems brings significant advantages, for instance in ease of use, being available 24/7, or through its use rather than exposing humans to a potentially hazardous environment. However, this can raise concerns about the rate at which technology is being introduced and issues that may arise from insufficient testing in critical situations such as air traffic control. The ultimate fear of many people is that future systems will be programmed to make decisions that would be better taken by humans, such as the decision to deploy nuclear weapons.
There are also social impacts such as internet addiction, where people feel that they can never get away from IT and are trapped on a "digital treadmill".

Digital citizenship

Digital citizenship can be defined as appropriate behaviour that represents the responsible, ethical and legal approach that individuals take in any situation with respect to the use of IT. Digital citizenship permeates, in one way or another, all of the preceding social and ethical considerations. Other specific social and ethical considerations. Other social and ethical considerations may emerge during different scenarios discussed in class. These may be related to changes in attitudes towards the use of IT systems, or new developments in IT such as social networking or e-assessment.