

1.5.2 Moral And Ethical Issues

Revision sheet

1 Computers In The Workforce 1.6 Hospitals

1.1 Changes In Employee Roles

The roles of employees in the workforce are changing. There are now more jobs for maintaining computers; however, lower skilled jobs are now requiring a basic understanding of computers.

1.2 Automated Production And Manufacturing

Robots are now able to be used in automated production and manufacturing, this means jobs which would have been unsafe for humans to do can now be done by robots; however, this move to robotic manufacturing is taking work away from low skilled workers, meaning only high skilled workers (more likely to come from wealthier backgrounds) can get job.

1.3 Home Working

More companies are moving to a remote working approach, companies are saving money by not needing buildings to work from, staff can be more comfortable and no time is wasted on commuting. However, employees mental and physical health is suffering, partly due to not seeing colleagues. Employees are also distracted easier.

1.4 Video Conferencing

Virtual conferencing software is another option to in-person conferences, meetings or events. This means that people don't have to fly to other countries to attend and it is easier to translate the material delivered into different languages.

1.5 Use Of Internet And Email

The internet is being used more and more to work faster and smarter, with companies producing tools which allow real-time collaboration on documents (eg, Google Docs). This means information is more readily accessible and it is easier to share information between different people.

Hospitals are usually at the forefront of technology and developments within. If hospitals use shared servers for file storage, then multiple hospitals are able to share documents easily.

2 Automated Decision Making

2.1 Job Applications

Some companies are choosing to use an automated personality test to screen candidates before interviewing them. The use of the automated decision making is easier for the company as well as removes the subconscious bias of a person looking at names on a list and choosing who to invite for an interview. However, this is negative because a potential interviewee cannot expand on the statements in the same way they would in an interview.

2.2 Finance Applications

Banks and money lenders are using automated decision making to remove the human element of deciding if someone is able to get a loan or not. This is good because it is easier for the bank; there is less delay between submitting the application and getting a result than if a real person was reviewing the application; and there is no subconscious bias. However, the systems cannot handle any scenarios which it was not programmed to handle that a real person could think about and take into considerations.

2.3 Emergency Response Systems

These systems work out which emergency service is needed. This is a good thing as it means that the right people to react to the situation react faster however it might not be accurate; and automated decision making doesn't have the same decision making capabilities that humans have.

3 Artificial Intelligence

3.1 Siri/ Alexa

These are voice assistants that use AI to recognise what the user is saying. When they are trained and used to do helpful things, they can be helpful; as well as providing accessibility options for disabled people. However, they are always listening. This results in companies building up massive data sets about the users.

3.2 Transactional AI

These are AI systems which aim products at specific users. This can be useful if the product is cheaper than when you first looked at it, however they can also be a hindrance if you keep getting reminded about a product which you bought as a one off purchase.

3.3 Medical Diagnosis

These are AI systems which use inputs from users to diagnose medical conditions. If they are good and accurate, they can save the time of doctors as well as being available 24/7. However, this could potentially have life threatening consequences if the system went wrong and wrongly diagnosed a condition or didn't diagnose something serious.

3.4 Electronic Trading

In situations like the stock market, this can have quite a negative consequence - especially if the algorithm is badly written then the purchasing and selling times of the stock might go wrong.

3.5 Gaming

AI characters are being used in video games to make the games more complicated. This can be a good thing for advanced players as it can make it harder for them to win however, some of these AIs are getting very good and are taking over the top human competitors.

4 Environmental Effects

4.1 Electricity Usage

New technology is contributing to both using a lot of electricity and to the discovery of new ways in which electricity can be generated. Electrical use for digital devices is at its highest point it has ever

been before, this is a figure which will continue to rise.

4.2 Waste Disposal

Electrical devices use a number of components in them which are toxic, unless these are disposed of carefully, they can leak into the environment. Furthermore, the continual cycle of devices breaking and them being thrown out is contributing to landfill.

4.3 Lifetime Of Products

Digital products are having shorter and shorter lives. Some people feel the need to update their device to the most up-to-date device whenever a new product is released, however their current device would suffice for another substantial period of time.

4.4 Ability To Model Potential Disasters

The ability of modelling software to model potential disasters is increasing, on systems with a massive amount of computational power. However, these systems are being used to save lives.

4.5 Ability To Develop Products That Are More Environmentally Friendly

Companies are now considering the environment and are making products which are more environmentally friendly, which is better for the environment.

5 Internet Censorship

5.1 Government Censorship

Whilst this can prevent radicalisation, governments can completely censor opposing political parties so they remain in power. This also prevents people from forming opinions or understanding the extent of what their government are doing.

5.2 Web Filtering

Most modern devices have some form of web filtering which can be used to prevent young people from accessing inappropriate content and make the internet safer.

5.3 Freedom Of Speech

The internet is providing a platform for anyone and everyone to have freedom of speech. Smaller groups are able to form their own website in which they are able to speak freely and share opinions. However the restriction of freedom of speech can be suppressed under the guise of genuine security concerns; only approved information can be seen by the public, influencing the thoughts and opinions of the public by the government.

6 Monitoring Behaviour

6.1 Drones

The use of drones is increasing in situations where it would be impractical for a human to reach - for example to search for someone in a remote location. However, drones with cameras can be bought by anyone for any purpose, including spying on someone.

6.2 CCTV

CCTV can be used to catch criminals or trace their movements. However, its use can lead to Big Brother style situations where you know you are continually being watched.

6.3 Number Plate Recognition

Number plate recognition camera systems can be used to track the general movement of people to help suggest that a new road might be needed. However, they can be misused to stalk people.

6.4 Tracking Devices

GPS tracking devices are becoming more common, with most fitness devices having it built in. These are good for monitoring fitness and for parents to check on where their children are as well as for safety. However people's location is now being broadcast to the internet, which cyber stalkers could potentially use to track people down and for kidnappers to find people.

6.5 Government Databases

The government person database can be used to prevent terrorism as it looks for abnormal behaviour. However, the government storing this data about individuals does raise questions.

6.6 Employee Monitoring

In companies, it is typical behaviour for the computer use of employees to be monitored, so that in the event of a cyber attack it might be possible to see what has caused said attack so that protection measures can be put in place so that it doesn't happen again. However, some companies push this over the boundary of normal, and use employee tracking software to make employees work harder.

7 Analysis Of Personal Information

7.1 Targeted Advertising

Through the use of targeted advertising, users might be able to get a better deal. However, if ads are placed at the right time, companies might be able to influence consumers to make purchases when they weren't intending on doing so; ads become much more annoying; scammers use targeted advertising and the more it is normalised, the more people are likely to fall for a scam.

7.2 Friend Recommendations

This can be a good thing as it would enable old friends to reconnect virtually however it is often wrong or annoying.

7.3 Location Services And Tracking

Services like Google Maps can tell you where you have been on a timeline, which can make for interesting reading. However, this information can also be used by stalkers to find you.

7.4 Who Has Data About You?

Data can be used for illegal purposes or it could be sold to other companies without the owner of the data's consent. This is bad.

8 Social

8.1 Social Isolation

During social isolation, technology can be used for family and friends to keep in touch. However, virtual socialising is not the same as socialising in the same room.

8.2 Small World

In the small interconnected world we live in, everyone is connected all of the time. This presents the expectation that you should be talking to everyone all of the time.

8.3 Cyber Bullying

When cyber-bullying occurs, it is easy to run away from it as you can make a new account or block the person who is bullying you. However, this makes bullying a faceless act where bullies can hide behind alternate accounts and hidden phone numbers, resulting in anonymised bullying.

8.4 Equality

In some social circles, people may look down on other people who cannot afford the latest device. The internet is also becoming inaccessible to the older generations and technology illiterate.

8.5 Communications

Virtual communications can allow those who find face to face conversations difficult to have conversations with someone over instant messengers as well as people who feel lonely in real life can find friends within online communities. However, some friendship groups may communicate a lot over instant messengers which leads to those who are unavailable all the time feeling left out and using instant messengers is not a complete substitute for physical human contact.

8.6 Disability

People who are disabled may be able to use technology to get to events through video conferencing software. However, social media can be detrimental to mental health where people get a 'one-sided' relationship with social media.

9 Moral

9.1 Monitoring Behaviour

Technology is used to track people through their computers, including what websites they visit. Tracking should be made optional, and where it isn't optional, people can use a VPN to avoid tracking.

9.2 Grooming

Technology is used for predators to find their victims, especially as a lot of young people don't use appropriate safety precautions or practice good internet safety. To help reduce the chances of this happening, people should be educated on safe internet use.

9.3 Terrorism

Terrorists and extremists are able to use the internet to find those who have similar beliefs to them and coax them into terrorist ways. To reduce this happening, people should be educated on the signs that this is happening to themselves or to someone else.