# **Task 2 - Development and widespread use of digital audio and video technology**

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**9/B. D2 Evaluate the impact that the implementation of a specific development in computing technology has had on wider society.**

**9/B.M2 Analyse the benefits and disadvantages of the social impact of computing technology developments**

**9/B. P3 Assess the potential ethical and environmental impacts of developments in technology.**

**9/B. P4 Explain how lack of understanding or access to IT can disadvantage certain groups of people**

The usage of technology is rising day by day, we can see a lot of change in the world of work when it comes to technology and communication. A substantial change which we evolved is the use of digital video and audio technology. We can access this is many ways whether by call, face time, online meeting, and others. The only downside to this is, internet connection via Wi-Fi or mobile data is required and credit may also be necessary. However, there are many great contracts deals online which contain of minutes, text, and personal data.

## **Areas where these technologies are used:**

### **Mobile phones:**

**(D2. / M2.)** Due to the devolvement of technology, mobile phones are quite common nowadays. These days, pupils tend to carry smartphones around with them as they are portable and allow you to make phone calls around the world in just seconds. In the past, it was only possible to make phone calls stationary in the range of a telephone. Since smartphones have been manufactured, humans can freely make calls from anywhere and do not need to be in a range nor stationary.

As time has passed, mobile phones have also become smarter. A notable example of this is shown through power and battery capacity. Mobiles phones are always becoming smarter and increasing their battery capacity. This allows users to spend more time on their mobile phones. This is beneficial for users who are travelling as they can use their mobiles over the time of their journey.

Figures show that in 2023, there is approximately 6.8billion users who use mobile phones and adults spend an average of 3 hours per day on their mobile phones. Stats also show that 51% of digital buyers use their mobile phones a few times a week.

Most users tend to buy the latest phones which cost a lot of money. The reason for this is due to the upgraded design of the mobile for example:

* More camera lenses on the mobile phone
* increase in screen size
* Better and faster battery capacity
* More storage
* New features

However, it is much smarter to spend less money on a mobile phone as they can still be used to send text messages and voice calls. However, by spending more money, you are entitled to more features.

**P3.**

[10 Mobile Usage Statistics You Should Know in 2023 [Infographic] (oberlo.com)](https://www.oberlo.com/blog/mobile-usage-statistics#:~:text=There%20are%206.8%20billion%20smartphone,approach%20an%20in%2Dstore%20employee)

Many humans around the world are using mobile phone, however only a minority know how this affects our environment. There have been over 15billion developments of mobile phones. To create a mobile phone, irreplaceable elements are needed, for example lithium, gold, or cobalt. Eventually after a while, people get rid of their mobile phones, it is estimated after 2 years. When a user gets a new mobile phone, they tend to throw their old one away without the proper Recyling. This is a disaster for the environment as is generates a load of toxic waste Aswell waste of materials. Facts online show that 80% of every device is spent in the manufacturing stage. This includes:

* Mining
* Refining
* Transport
* Chemical assembly
* Use of iron for speakers and microphones
* Magnesium and aluminium for screens
* Copper, gold, and silver for circuits.
* Lithium and graphite used for batteries
* Silicon for processors
* Tin and lead for soldering

All mobile phone users and other device users are unaware of this, the production of every single device takes up earth resource which cannot be reproduced by humans. As time is passing, increased devices are being made which is limiting our earth supplies.

[This graphic shows what your smartphone is made of | World Economic Forum (weforum.org)](https://www.weforum.org/agenda/2021/08/this-visualization-breaks-down-the-metals-in-a-smartphone/)

**P4.** Many age groups use mobile phones for IT. Wheater this this for work, Reasearch, study or general knowledge. Without the use of a mobile phone, this will all need to be done on a computer or laptop. A huge advantage which we have is that mobile phone has access to IT and is portable. By not having access to IT, children and teenagers can be at a huge disadvantage. This is one of many examples. Across the internet, there are thousands of resources for education which is highly beneficial for the youths.

### **Social media platforms:**

The first social media platform was implemented in 1997. Over the 20+ years, social media platforms have become more popular around the world. Many users use social media in their daily lives. Facebook is proven to be the most popular social media platform which builds up of 35% of the population worldly. Statistics show there are over 195 social media platforms which can be accessed via app or web. The great demand and increase in social media have impacted society as it builds up more demand towards humans making device purchases.

As technology has evolved over time, users can now interact with social media in their own way. An example of this is Instagram. Wheather, you decide to use on an iPhone, android or even on the web from a desktop, we receive the option to log in or sign up. This was seen in the early 2000’s. Humans can also create content on social media now adays, this was not always the case at the beginning. This is causing more demand on social media which is helping the technology market grow revenue.

Platforms which are best for streaming twitch, YouTube, Facebook, Instagram, and many others. Give users the opportunity to connect and share video and audio onto the platforms. Wheather users prefer to upload photos or videos, with audio or without, greater demand is always the output. Content creators who like sharing their lifestyle on social media will tent do create live streams and videos more commonly than other users who are just viewers. However, a vast majority of these content creators can be spotted with the latest technology which allows a clearer camera and microphone quality. This also makes the views attracted to the devices alone.

The first ever social media platform was made in 1997 called six degrees. This platform was invented by Andrew Weinreich. The reason he developed this idea was for humans to be able to communicate with others online through the internet. Over the years, increasingly social media platforms have been developed for the same reasons and more for example networking.

However, as social media has lots of benefits and advantages such as:

* Immediate conversations online
* Online promotion
* Socialising with friends and family
* Keeps up with news around the world
* Allows promotion of education

[9 Reasons Why Social Media Is Actually Good for You (makeuseof.com)](https://www.makeuseof.com/why-social-media-good-for-you/#:~:text=9%20Reasons%20Why%20Social%20Media%20Is%20Actually%20Good,Shared%20Experiences%20on%20Social%20Media%20...%20More%20items)

### **Chat/messaging applications:**

### During the initial stages of social media development, most users used normal text messaging or apps such as WhatsApp or messenger. These are free apps which can be installed for free text messaging and calls along as internet connection is connected. Through the years, devices have become smarter and allow webcams which can be used for visual calling. Due to video calls, chats are seen as more realistic now adays.

Chat messaging applications have many advantages. For example, if you are running late to work you can let your boss or other employees know. Chat messaging applications can be used to catch up with friends and family who don’t live too close or those who you haven't seen in a while.

### **Smart devices:**

The term smart device, is an electronic component which could interact, share and connect data to other smart devices. These can vary in size, shape, colour, processor, memory, and many other attributes. The role of a smart device is to interpret the commands of humans and produce assistance.

### A quite common mistake which is made by many is that smart devices are not just touch screen smart mobile phones. A few examples of smart devices are:

* Speakers
* Bulbs
* Refrigerator
* Cooker
* Washing machine
* Microwave
* Tv
* Showers
* thermostats

### Technology has evolved a lot over the years, many new devices can be voice controlled now. A less common example is biometrics. For example, some smart devices only operate with biometrics. This has a great advantage as it one of the most secure security methods.

Most of our lives have been impacted from smart devices. For instance, many of us in this generation use security cameras. Wheather it is for car, house, shop and others.

[What is a Smart Device? - Definition from Techopedia](https://www.techopedia.com/definition/31463/smart-device)

### **Videos:**

Videos can make use of audio and visual technology. Videos are a sort of media that may be used to replay a stream of images that are either digitally or physically recording anything. Video recordings are made and played back using audio and visual equipment.

Videos can be used in a variety of contexts, including live video chats with other users through programmes like Skype, instructional or informative videos for items like self-assembling furniture, documentation of real-life events by camera video recording, and for entertainment purposes like vlogs.

### **Sensors:**

Input devices called sensors keep track of information about the surrounding physical environment. Data is sent from sensors to the computer's microprocessor. They don't control any output devices or make decisions or choices. Several households, commercial, and industrial applications use various types of sensors.

If we look at sensors in the term of control, then: Physical properties like temperature, light, pressure, sound, and humidity are measured using sensors. They signal the central processing unit with signals.

In our daily lives, we use so many sensors that we are unaware of. The reason for this is because most sensors are built into a device. For example, we use:

* Gas sensors
* Smoke sensors
* Ir sensors
* Light sensors
* Colour sensors
* Camera sensors
* Sound sensors

https://www.bbc.co.uk/bitesize/guides/zh27kmn/revision/2

## **Impact on society:**

### **Relationships between people:**

Society was impacted both casually and professionally by the development of audio and visual communication technologies because it allowed individuals to communicate across great distances. These platforms allow users to plan events, communicate with others, and stay in touch while travelling. It is possible to establish friends and have conversations with people who live far away due to the capacity to stay in touch, which makes it possible for a group of people to get to know one another whether they are in the same nation. In general, this indicates that more people now than in earlier years have long distance connections or friendships.

### **Impact on the workplace:**

Professional applications began to utilise the advancements in audio and visual technologies, such as cameras and microphones. Business software like Microsoft Teams and Slack have made it possible for companies to connect remotely more recently in the past few of years. Instead of physically gathering in a room when a business must meet, a video chat tool can be employed.

These business applications have also been employed by businesses so that their workers can work from home, which has increased recently along with the popularity of working from home. To communicate with other employees, connect to a group on the application. There are numerous advantages to this contemporary method of working for both employees and businesses.

Many workplaces now a days tend use technology in ways to communicate and others. In the early days of workplace, there we only had a desk and table, now most workplaces have a laptop or pc set with printers and many other appliances.

**The ability to work over longer distances:**

Working from home is now becoming more popular due to changes made in society. For example, many owners of businesses may allow and prefer their employees to work from home or even from abroad. One reason for this is because, the cost has risen in all circumstances.

Employees who work from home have the advantage of working for businesses that are far away or unavailable to them. If their job can be done from home, a remote worker can nonetheless work for a big business. If applicable, work that can be completed remotely indicates that an employee is not required to physically visit an office.

**Benefit to the environment:**

There is less use of travel modes like cars because people do not physically need to drive to work. Due to the pollutants and haze that cars can create, they have a significant negative impact on the environment and people's physical and mental health. Since a person won't have to commute to work, there will be a general benefit to the environment as smog and other forms of pollution will be reduced. This is a great way to stop traffic and petrol.

It is show that over the years, due to the global covid-19 lockdown, there has almost 40% decrease in vehicles on roads. A big time this is seen is in the morning when everyone leaves for work.

**Increased productivity and a better work life balance:**

People can now better combine their career and personal lives by working from home. People who work from home generally are happier and more motivated when they choose to work because they have more flexibility in the hours they choose to work.

These days, many businesses use technology to streamline the hiring process. Instead of doing in-person interviews, these businesses can hire workers by conducting online interviews with the use of these tools.

**Use in teaching in education:**

The growth and acceptance of these platforms has had an impact on how education is imparted as well. Lesson-teaching media like videos and audio recordings have become more popular during the past two decades. Videos and audio are frequently used in education platforms that may be found on websites devoted to giving kids access to educational resources. These platforms do this to support the teaching of ideas or topics. As they make difficult abstract concepts more understandable to the viewer, videos have been shown to increase student engagement in classroom settings.

furthermore, some colleges, universities, and schools are delivering their lectures using online video conferencing tools like Microsoft Teams. Since students are in their own homes and personal spaces, teachers can deliver live lessons to them through conference calls. This method of instruction differs greatly from traditional teaching.

Students who have no trouble concentrating in their own space will feel more at ease working there than in a classroom, which can be both advantageous and disadvantageous. The fact that students are in their own personal space, however, means that those of them who have trouble focusing on a work may get easily distracted by other things like gaming and social media, which can ultimately result in reduced productivity for students.

[10+ Advantages and Disadvantages of Technology in Students Life » Hubvela](https://hubvela.com/hub/technology/advantages-disadvantages/students-life/#:~:text=Advantages%20of%20Technology%20in%20Students%20Life%201%201.,6.%20New%20teaching%20methods%20are%20being%20developed%20)

### **Assistance with disabilities:**

The accessibility of computers and the internet has improved because of advancements in audio and visual technologies. These advancements make it possible for someone who is unable to use a mouse or keyboard to connect with a computer and traverse its user interface.

There are loads of available software's and even videos online which can help those vulnerable with disabilities. However, this was not allowing the case. For example, on the keyboards that we have and use today, the F key and the J key have something on them which is used to guide blind people. This was not always around it had only been introduced over the last 2 decades.

Similar technologies, including speech recognition, are helpful for people with disabilities to utilise computers. A computer can identify and convert speech into text using high fidelity microphones. People who would typically be unable to use a computer can now make full use of one thanks to advancements in audio and visual technology that enable advancements in accessibility. The way text to speech has been developed is helpful for many users.

### **Privacy and security:**

Integrated security systems, like the Google Nest, use cameras and sensors to notify a home's owner of any action on the outside. These cameras can be used to notify a person of any activity outside their home, including burglaries. Due to the high visibility of these smart doorbells, cameras like these are also helpful as a deterrence for any crooks.

Although cameras and microphones are extremely useful and have a wide range of applications, they can also be misused. Some malware programmes will record the user's voice or their use of the computer to obtain any crucially vital personal information like credit card numbers or for other purposes. This is especially frequent when using laptop webcams and microphones.

Many laptop manufacturers have found a way around this by including built-in camera shutters that can physically prevent the user from seeing the camera or by including a kill switch that can turn off the microphone and camera. The user can feel secure knowing they are not being seen or listened to thanks to the privacy features included into these shutters.

Privacy and security had been heavily impacted over the few years as we design and develop stronger sources of technology. This can be seen through both hardware and software; they are both improving and getting smarter day by day.

## **Accessibility:**

Although there are a variety of situations in which these technologies come in very handy, many facets of society are relying more and more on them, and in some cases, these technologies are replacing certain processes entirely. The standard methods in which these processes function is being phased out due to their dependence on current technologies.

Users of the procedures utilising new technology may experience difficulties, particularly elderly and technologically unaware users. For instance, a senior citizen who needs to take part in a conference but possesses a device might not be able to set it up.

The usage of this technology by those who lack technical literacy might be made difficult or impossible due to computer errors and other problems. A user might not be able to set up these drivers appropriately if a device, such as a microphone or camera, requires one to run.

People's accessibility problems are also exacerbated by unfriendly user interfaces; for most people, a computer can only be used with a well-thought-out, straightforward user interface.

# **Sources & References**

<https://www.oberlo.com/blog/mobile-usage-statistics#:~:text=There%20are%206.8%20billion%20smartphone,approach%20an%20in%2Dstore%20employee>.

[10+ Advantages and Disadvantages of Technology in Students Life » Hubvela](https://hubvela.com/hub/technology/advantages-disadvantages/students-life/#:~:text=Advantages%20of%20Technology%20in%20Students%20Life%201%201.,6.%20New%20teaching%20methods%20are%20being%20developed%20)

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