ICT Level 2 – Transferring Data Part 2

1 of 20 – Welcome

Welcome to this session on transferring data.

By the end of this session, you will:

* Know what is meant by removable media
* Know a number of removable media devices
* Understand what these devices do
* Know some of their advantages and disadvantages

2 of 20 – Introduction to transferring data

**What does transferring data mean?**

In its simplest form, transferring data means moving data from one place to another. This might mean moving a document from a laptop to a college computer; or it might mean the data that moves through fibre optic cables in order to provide computer users with a faster broadband connection.

In this session we are going to focus on the first type of data transfer mentioned above – that is, moving documents, files, or other forms of media, from one digital place to another.

**Remember:** transferring data might not always be about simply moving data around; it can also be an exercise in keeping data safe or being able to access it in multiple places.

3 of 20 – Remember: data synchronisation

If you think back to an earlier session, then you might remember the term data synchronisation. This is when a user syncs their data between devices, making the same set of data available for viewing, listening, or editing in different places.

For example: a computer user might want to access their emails on the move, rather than just viewing their emails on their personal computer. For this, the user would synchronise their emails from their computer to their phone, meaning emails can be accessed on both devices.

Another example of data synchronisation would be a digital camera user syncing their photographs to their computer. Not only does this mean they can access their photographs, and perhaps even share them a little more easily, but it also means that the images are safely stored on two devices.

4 of 20 – How do you synchronise data?

Data that can be synchronised to different devices – such as emails, messages, music, or photographs – can

be shared between devices in a number of ways. Some common techniques for data sharing or synchronising are:

* Bluetooth
* Wi-Fi
* Via a cable

There are a few other methods that can be used to move data around. There are a number of removable media devices that are specifically designed to store reasonably large amounts of data, meaning they can be used to store or backup data, as well as move it between devices.

We will consider these in more detail a little later.

5 of 20 – Removable media

Removable media refers to storage devices that can be connected to, and then removed from, a computer or similar device, allowing for a data transfer of some kind. These removable media devices are very commonly used; you have probably used at least one of them yourself.

Common examples of removable media devices are:

* Smart phones
* USB memory devices
* CDs and DVDs
* External hard drives
* Memory cards

6 of 20 – Smart phones

Smart phones are now built with larger memory and storage capacities than ever before – largely because of the use of SD cards, and similar devices.

Because the storage capacity of smart phones is growing with time, they can now be considered as a removable media device themselves, as we are able to store more and more information on them – including messages and emails, as well as text documents and spreadsheets, which means that our data from our computers and laptops is largely available on the move with our phones, too.

Many smart phones can be connected to a computer or laptop using a cable – typically provided with the phone – which creates the connection needed to move, back-up, or sync your data.

Some smart phones can be connected to a computer system via a wireless (Wi-Fi) connection too!

7 of 20 – CDs and DVDs

CDs and DVDs were, up until recently, considered a reliable form of removable media. Not only were they used as a way to introduce new software to a computer system – as a program could be read from the disc – but they were also considered a useful method for backing up data, too.

These discs were often inserted into a computer’s optical disc drive in order for data to be written to them, making a backup of any important information stored on the computer system.

However, CDs and DVDs – much like the older floppy disc option – are now relied on less than they used to be, largely because many computers and laptops are now being designed and built without an optical disc drive (meaning there is simply nowhere to insert a disc).

However, given that CDs and DVDs are easily damaged and scratched, perhaps it is no surprise that alternative methods for data storage are now preferred.

8 of 20 – Memory cards

Memory cards can be found in – or often added or inserted into – a number of different technology devices. For example, they are often used in digital cameras, as they allow users to take and store more images before running out of storage space.

These cards can then be taken out of their original device – the original device in this case being a digital camera – and then inserted into a computer system (computers sometimes have special slots that are specifically designed for these cards, but a USB cable can also be used).

Using this type of removable media means that photographs can either be shared in two or more places, or they can be moved entirely from the camera (or rather, the memory card) over to the computer, thereby freeing up some of the storage space on the camera itself.

9 of 20 – USB memory drives

USB memory drives – also known as flash drives, memory sticks, and thumb drives – are a hugely popular method for transferring data.

They are small and portable devices that can be connected to a computer system via a USB port, allowing data to be moved from the computer to the connected memory drive.

The USB memory drive is then ejected from the original computer system and connected to a different computer system entirely, where the data can be accessed, shared, or copied, allowing it to be stored and accessed on two computer systems (and do not forget that it can stay stored on the USB memory drive too, meaning the data is actually saved to three separate devices).

These devices are particularly useful due to their portability, but they can also have a relatively large storage capacity too.

10 of 20 – External hard drives

External hard drives are a hugely popular type of removable media device for a number of reasons – chiefly though, their appeal comes from the sheer amount of storage space they offer, typically matching the capabilities of the hard drives found inside a computer system.

These devices can be connected to a computer system via a cable that links the external hard drive to a USB port on the computer itself. Data can then be dragged across to the external hard drive, allowing for a duplicate copy of your most important and valuable files.

External hard drives are especially useful for backing up a computer’s stored documents. They have a huge storage capacity which means there is no real limit to the data that can be stored on them, and they provide a certain amount of security should anything happen to the main computer system.

11 of 20 – Advantages of removable media

There are a number of advantages to using these different styles of removable media storage, such as:

* Their portability – all of these devices can be taken on the move, meaning that a user does not need their computer system close at hand to access their data
* They can be connected to different devices – stored data can actually be accessed using any computer system, providing there is a USB cable available (when necessary) to connect the storage device to the computer
* They are quick and easy to use – these devices are designed for ease and speed; they are fast working which allows a user to backup or transfer their data easily enough, even when they are in a hurry

12 of 20 – Advantages of removable media continued

Alongside these general advantages, each device has its own specific advantages to consider too, for example:

* USB memory drives are not only easy to move around, but they are not vulnerable to scratches (although dropping them might cause a problem) and they are universally acknowledged – meaning they can be used in any computer system
* Meanwhile memory cards are known for being particularly durable – meaning they are not as vulnerable as some other storage devices – and it takes very little battery power to use them
* CDs and DVDs, despite being slightly outdated now, also have their own advantages, as they often have a high capacity for data storage (which is in part what led to their popularity to begin with)

13 of 20 – Disadvantages of removable media

However, while these devices have their uses, these devices also have some disadvantages. For example:

* They are physically fragile – if a device is dropped or damaged then the data that was stored on the device is probably damaged as well
* Their portability – while this is an advantage in some ways, it is a disadvantage in others; taking data on the move means keeping a close eye on it, as some of these devices – the USB memory drive, for example – are easy to misplace
* Security risks – connecting a removable media device to different computers does allow for easy data sharing, but it may also allow for easy data contamination. Connecting a device to an unknown computer can make it vulnerable to malware, and other associated problems

14 of 20 – Disadvantages of removable media continued

There are some more specific disadvantages that relate to individual devices too, for example:

* External hard drives are not only vulnerable to being knocked or being dropped, but if they are exposed to too much heat or direct sunlight, or if they are exposed to large amounts of dust, this can also compromise the workings of the device – meaning the data contained inside the device is compromised, too
* Meanwhile memory cards, despite being slightly less vulnerable should they be dropped, still have their own set of physical vulnerabilities. The size and fragility of these devices means that they can simply be snapped or cracked if enough force comes into contact with them, which would lead to any stored data being damaged or lost

15 of 20 – Question 1

Why are DVDs and CDs no longer popular storage methods?

1. Because people cannot store enough data on them
2. Because not all computers have optical disc drives
3. Because computers cannot always read data from them
4. Because they are especially complicated to use

The correct answer is B, because not all computers have optical disc drives.

16 of 20 – Question 2

Indicate whether the following statements are true or false.

Memory cards can be inserted into a computer using a special port, or via a cable.

True

False

The correct answer is: True

USB memory drives are largely popular because of their portability.

True

False

The correct answer is: True

External hard drives will safely store data, even if the device is dropped.

True

False

The correct answer is: False

External hard drives and USB memory drives have the same storage capacity.

True

False

The correct answer is: False

17 of 20 – Question 3

Categorise the advantages and disadvantages of removable media devices listed below according to if they an **advantage** or a **disadvantage**.

Physically fragile

Can be connected on the move

Quick and easy

Security risks

The correct answers are:

Can be connected on the move and quick and easy are **advantages** of removable media devices.

Physically fragile and security risks are **disadvantages** of removable media devices.

18 of 20 – Question 4

What security risks are associated with removable media devices?

1. Data can sometimes be lost when a device is disconnected
2. Data might accidentally be uploaded to the internet
3. Data can infect a computer system with malware
4. Data can be contaminated by malware and associated viruses

The correct answer is D, data can be contaminated by malware and associated viruses.

19 of 20 – End

Well done. You have completed this session on transferring data, part 2.

In this session we have covered:

* What is meant by removable media
* A number of removable media devices
* What these devices do
* Some of their advantages and disadvantages

If you have any questions about any of these topics, make a note and speak to your tutor for more help.