ICT Level 2 – Developing Systems and Identifying Issues

1 of 19 – Welcome

Welcome to this session on developing technology systems and identifying associated issues.

By the end of this session you will:

* Understand why different technology systems are developed
* Know the health and safety, and environmental, issues that have to be addressed
* Understand how computer security is used for technology systems
* Know what is meant by copyright

2 of 19 – What are technology systems used for?

**Remember:** technology systems have different uses, depending on the person, company, or sector that is using them.

These different systems can be useful in many ways. They can:

* Provide ways of drawing, designing and planning projects
* Monitor financial markets
* Track sales and stock of a company

…and many more things besides these!

3 of 19 – Developing existing systems

You might wonder why organisations – or sometimes individuals working alone – look to change or alter these technology systems, especially when the systems are already doing so much work for the people using them.

There are several reasons behind the move to change or develop systems, such as:

* Gaining some kind of advantage over the competition
* Reducing the company’s current expenses and costs
* Improving the company’s planning and performance rates

4 of 19 – Gaining advantage over the competition

By using a more advanced or more efficient technology system, a company may be able to develop an advantage over their current competition.

Whether this means they work faster, or their products are better designed, it will mean that they are giving their customers something that a similar company isn’t. In this way, technology systems can be key to good business.

An example of this is Rolls-Royce who now have the technologies available to monitor the functions of their aircraft while they are in the air and carrying passengers. Not only is this new technology giving them an edge over their competition, but customers also pay extra for this feature, which means a financial gain for Rolls-Royce as well.

5 of 19 – Reducing expenses and costs

Technology systems can reduce costs in two ways. Firstly, they allow a company to reduce their staff levels, which means there are fewer people to pay at the end of the month. For example, if you are using a self-service checkout at a supermarket, that’s one less till operator that the company needs for that day.

The second way that better technology systems can reduce costs is by helping with the planning stages of a project. For example, think about how long-distance drivers plan their journeys; if a new or updated technology system can find a quicker route, then this will cut down on the time – and eventually the payment – that it takes for a job to be completed.

6 of 19 – Improving planning and performance

Using an updated, or even a better suited, technology system inside any given company will allow that company to run more efficiently.

For example, the right design technology will allow an architect to plan a building more quickly, and the building is likely to be better planned with the right design system in place.

Or, think back to the self-service example, where customers could scan their food shopping themselves, meaning they cut down the waiting time of using a normal till system.

Updating technology systems that are already in place will also make life easier for the staff of a company, but only if they have been properly trained to use these new systems.

7 of 19 – Question 1

What are the three main reasons for developing, or updating, technology systems?

Choose all that apply:

1. Gaining a competitive advantage
2. Spending even more money
3. Cutting costs and expenses
4. Improving planning and performance
5. Annoying your competitors

The correct answers are A, C and D, gaining a competitive advantage, cutting costs and expenses, and improving planning and performance.

8 of 19 – Question 2

Which company has recently used updated technology systems to gain an advantage over their competitors?

1. Rolls-Royce
2. BMW
3. Vauxhall
4. Mercedes Benz

The correct answer is A, Rolls-Royce.

9 of 19 – Question 3

Rolls-Royce recently developed a new technology system that allowed them to do which of the following?

1. Monitor the functions of aircraft during flight, which is something that competing firms had, at the time, not yet managed to do. This also meant Rolls-Royce could charge more for their services.
2. Simulate the experience of being inside an aircraft during flight, which was a very new technology when they first released it. This gave them an edge over other companies.

The correct answer is A, monitor the functions of aircraft during flight, which is something that competing firms had, at the time, not yet managed to do. This also meant Rolls-Royce could charge more for their services.

10 of 19 – Health and safety issues

Health and safety is an important issue to consider, no matter what workplace you are used to; it even covers certain things to do with a company’s technology system. Remember, technology systems are more than just the systems you use on your computer screen. Companies have to consider:

* Where the technological equipment is – is it comfortable for users? Easy to get to? Is it likely to cause anyone using it any strain or discomfort?
* Can users be, or have they been, properly trained to navigate their way around new systems, and do they understand how to operate systems carefully?
* Does the new system comply with health and safety regulations for electrical equipment?

11 of 19 – Environmental issues

Technology systems, like most things, have good and bad points, especially when it comes to their impact on the environment.

Technology systems are useful in many ways; for example, they help sustainability by cutting down on people’s need to travel places – most of what we need can be ordered online now.

They also allow us to video chat with each other, which means we can talk to people we know – or even meet people, in a sense – who are in a completely different part of the world.

However, these same systems also have some bad points. Hardware devices – especially ones that must be connected to power, like desktop computers – can use a lot of electricity, and they are often left turned on (even when they’re only on standby). They can waste electricity in this way and leaving machines on for prolonged periods of time will generate more heat too.

12 of 19 – Question 4

Indicate whether the following statements are true or false.

Healthy and safety does not really matter when it comes to computers.

True

False

The correct answer is: False

Technology systems means more than just the system you’re using on your computer.

True

False

The correct answer is: True

New technology has to comply with many safety regulations for electrical equipment.

True

False

The correct answer is: True

Users don’t need to be trained to use new technology systems.

True

False

The correct answer is: False

13 of 19 – Question 5

Which of the following are reasons why technology systems can be bad for the environment?

Choose all that apply:

1. They reduce time spent travelling
2. They generate heat
3. They waste electricity
4. They mean we talk to each other less

The correct answers are B and C, they generate heat and they waste electricity.

14 of 19 – Computer security

**Computers** – especially computers inside a large company – often store huge amounts of sensitive and sometimes private data, or information. When using or updating a technology system, a company needs to make sure that this data stays secure.

A common threat to any computer or technology system is **malware** – things like viruses, spyware, and worms that can ‘infect’ your computer, and then spread to the entire system that your computer is a part of.

**Attacks** – such as viruses being introduced – often come from outside of a company, and are done for financial gain, to steal private information, or sometimes to damage the reputation of the company itself.

Don’t forget that much of this stored information is being transferred somewhere else, often via an **internet connection**, and this is something else that can be a security risk for computer systems.

Different methods of computer security are often used to try and overcome these threats before they even happen.

Companies often:

* Introduce passwords or ID log-in systems to protect their data
* Limit access, so only certain members of staff can access certain areas of a system
* Use different safeguards or anti-virus software, to detect ‘infections’ early on

15 of 19 – Copyright

Copyright is the legal ownership given to the creator of something – whether it is art, music, or something else entirely – that prevents other people from using it without their permission.

When we’re using the internet, we’re likely to come across all sorts of different materials that are covered by copyright, but we may not realise it at the time. If you download this information without permission, you are actually breaking the law.

Whatever you download can be traced – like a digital footprint in many ways – back to your technology system, and this is something that all computer users – including large-scale companies – have to keep in mind.

16 of 19 – Question 6

Using the following choice of words; **security**, **sensitive data**, **internet** and **malware**, fill in the blanks for the paragraph below:

Computers often store huge amounts of private or **blank**. That’s why they need to be protected from outside threats. **Blank**, like a computer virus, can compromise the **blank** of your computer and everything stored on it. Transferring data via the **blank** can also be a threat to your technology system.

The correct paragraph should read:

Computers often store huge amounts of private or **sensitive data**. That’s why they need to be protected from outside threats. **Malware**, like a computer virus, can compromise the **security** of your computer and everything stored on it. Transferring data via the **internet** can also be a threat to your technology system.

17 of 19 – Question 7

What three techniques listed below can companies use to protect their technology against threats?

Chose all that apply:

1. Introduce passwords and ID logins
2. Question members of staff
3. Install anti-virus software
4. Limit access to certain computer areas
5. Deny staff access to computers

The correct answers are A, C and D, introduce passwords and ID logins, install anti-virus software and limit access to certain computer areas.

18 of 19 – End

Well done. You have completed this session on developing systems and identifying issues.

In this session we have looked at:

* Why different technology systems are developed
* The health and safety, and environmental, issues that have to be addressed
* How computer security is used for technology systems
* What is meant by copyright

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