

The Impact of ICT INFO 2

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This Time

We will quickly look at the impact and uses of IT in society and then we will go through some past exam paper questions.

The Impact of ICT

ICT has changed the world in which we live beyond recognition!

Most sectors of society have been influenced by it's increased use.

We will particularly look at the impact on:

- Healthcare;
- Banking;
- Manufacturing;
- Office working.

The Impact on Healthcare

IT has allowed the development of lots of new equipment:

- **Scanners / X Ray** - ICT processes the images into a readable format;
- **Microchips** - Can be installed internally, e.g. as part of a pace maker to feedback data;
- **Life Saving** - e.g. life-support machines monitors the patients and alert nurses to problems ;
- **Robotics** - Operations can be performed to a precise degree, sometimes operated remotely;
- **Administration systems** - Can automatically monitor patients and record observations.

The Impact on Healthcare

IT has allowed the development of lots of new equipment:

- **Records Database** - Patient records are kept electronically and can be transferred from doctor to hospital. Regional trends and family connections can be analysed.
- **Internet** Web doctor sites can be used to gather information, or for diagnostics of illnesses; these tend to be *expert systems*. However, not all information is accurate.

The Impact on Banking

Banking has changed over the past few years with more and more people undertaking telephone or internet banking than ever before.

Cash Machines (ATMs) Gives you an access to cash and your account globally 24/7. Each transaction is recorded to your account in real time.

Online Banking Services allow customers to:

- Check account balances;
- Transfer funds between accounts and send money to others;
- Pay bills;
- Apply for new accounts/loans/mortgages;
- Request new cards/PINs/cheque books.

The Impact on Banking

Advantages of Online Banking:

- ✓ Online and telephone banking is available 24 hours a day;
- ✓ Electronic banking allows for *paperless* banking;
- ✓ Electronic banking reduces the carbon footprint as people do not need to travel to a bank;
- ✓ Use of online banking has an economic effect, as it makes shopping easier and therefore fuels the economy.

Problems with Online Banking:

- ✗ It increases online fraud and customers can lose control of their money;
- ✗ It might increase debt as people do not realise how much they are spending;
- ✗ Banks are closed and staff made redundant as they are no longer needed due to online banking.

The Impact on Manufacturing

Modern manufacture makes use of:

- **Computer Aided Design / Computer Aided Manufacture (CAD/CAM)** This is the creation of 2D and 3D designs using a computer. These designs can then be saved and later manipulated without redrawing from scratch. 2D designs can be changed into 3D designs. Once the design is complete the computerised tools can then make it a reality.
- **Just in Time (JIT)** A computerised system that organises workflow, allowing for rapid, high quality and flexible production from raw material to product, thus minimising waste and stock levels.
- **Stock Management** A computerised system that controls the holding of stock, telling you about how many products are left, how many have been ordered, if the company needs any more of the product to fit the demand of production.

The Impact on Manufacturing

Modern manufacture makes use of:

- **Order Management** It helps to control the manufacturing process, from ordering raw materials to production and delivery of the goods. This system is designed to bring together suppliers and delivery.
- **Robots** These are most commonly used in car production where the computer controls the mechanics of a robotic arm to perform a task. Robots, however, are now used in a number of different tasks which would be dangerous or impracticable for a person to perform.

The Impact on Manufacturing

Advantages of Robotics:

- ✓ Will produce consistent results once set up;
- ✓ Continuous work 24/7. Robots don't need tea breaks!
- ✓ They reduce costs of manufacture in the long run;

Problems with Robotics:

- ✗ Very expensive to install initially and to maintain;
- ✗ If robots replace human staff then it may lead to large number of staff redundancies;
- ✗ Increased energy usage so increases carbon footprint;
- ✗ Robots aren't perfect - can break down.

The Impact on Office Working

Working from home or *teleworking* is becoming more popular with the introduction of faster communication links and broadband.

This allows an employee to remain in touch with the office whilst working from home. This reduces the carbon footprint and traffic levels, as people do not need to travel to work in order to do their job.

A teleworker can work flexibly around their own family in an environment that is familiar; however, sometimes this flexibility can clash with family demands and as a result teleworking can be less efficient than normal working.

The Impact on Office Working

Advantages of Teleworking:

- ✓ Flexi-time possible;
- ✓ Home comforts;
- ✓ No commuting! Reduces carbon footprint and helps the environment.

Problems with Teleworking:

- ✗ Self-control needed to work productively;
- ✗ Homely distractions such as children or pets;
- ✗ Feeling of isolation;
- ✗ No human contact to discuss work issues.

Past Exam Paper

We will look at the INFO2 exam paper from May 2010.

Question 2

4 marks

Complete the following list of the components of an ICT system.

- Data
- Hardware
-
-
-
-

Question 1

4 marks

Describe, using an example for each, what is meant by an internal threat and an external threat to an ICT system.

Question 4

6 marks

How is the use of ICT affected by concern for the environment?

Question 6

A national supermarket chain surveyed their customers and found that 10% of shoppers who left a store without making a purchase said that excessive waiting time at the checkout was the reason for their decision. The chain has decided to introduce self-service checkouts.

An example of a supermarket self-service checkout is shown below.

Question 6 a)

8 marks

*The self-service checkout would be used by a variety of customers. Discuss what should have been considered when designing the **interaction** for users of the self-service checkout shown above.*

Question 6 b)

6 marks

The self-service checkout makes use of a Graphical User Interface (GUI).

Explain why a GUI enables effective communication between users and the self-service checkout shown.

Question 6 c)

6 marks

How else could ICT be used to improve customer satisfaction when shopping?