

Implementing an IT improvement plan

Background information

Simone is an IT manager in a logistics company. Her role is to manage the IT systems in the business and look at how they can be modernised.

The company is located in a building in Birmingham containing a warehouse and offices. The company uses 10 stand-alone desktop computers in several offices around the building. There are no computers in the warehouse where goods are received and dispatched.

When goods arrive at the warehouse they are recorded on paper forms by the warehouse staff. These forms are then sent to the office staff to input into the company stock control database which is on one computer in one of the offices. Before a lorry leaves the depot with stock the office staff print a list of the goods to go on the lorry, called an inventory, and give it to the driver. When the driver has delivered the goods, he gets the customer to sign the paper inventory to confirm all the goods have been delivered. When the driver returns to the warehouse, he gives the paper inventory back to the office staff who process it to remove the delivered items from the stock control database.

Each stand-alone computer has an individual purpose. For example:

- the computer in human resources only stores the staff and payroll records.
- the computer in stock control stores a database of all the stock in the warehouse.

Simone has drawn up an IT improvement plan and now needs to investigate how she can implement it.

Simone's IT improvement plan

- connect all the computers in all the offices to create a network
- use barcodes and barcode readers to track stock movements in and out of the warehouse
- set up a central database of stock items. This database needs to contain all the information about the stock received and dispatched from the warehouse. This can then be linked to barcode readers to keep track of the stock available
- install a wireless network connection in the company's building so additional devices can connect to the network
- ensure the IT system is secure

Your task

Your group has been allocated one of the areas listed below to investigate to help Simone implement her IT improvement plan. Research this area and answer the questions listed. You will present your findings to the rest of the class for discussion.

The areas to be researched are:

1. Creating a network of computers
2. Using barcodes and barcode scanners
3. Installing a wireless network
4. Network security
5. Considering the staff

1 Creating a network of computers

Your tasks

- List the hardware the company will need to buy to create a computer network.
- A STAR topology has been suggested for the network. Explain what this is and draw a diagram of it.
- List the advantages and disadvantages of networking a series of computers compared to using stand-alone computers.

Useful websites

- [BBC Bitesize – Introduction to networks](#)
- [BBC Bitesize – Computer networks and topologies](#)
- [Isaac computer science – network basics](#)
- [Isaac computer science – network topologies](#)
- [Isaac computer science – network hardware](#)

(Please note - to use the free Isaac Computer science website, users need to register:

<https://isaacomputerscience.org>)

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2 Using barcodes and barcode scanners

Your tasks

- Describe how barcodes and scanners could be used by Simone's company.
- List the advantages and disadvantages of using barcodes and scanners to monitor stock levels compared to using a paper-based system.

Useful websites

- [BBC Bitesize – Inventory management](#)
- [BBC Bitesize – Barcode reader](#)
- [Isaac Computer Science – Input devices](#)

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3 Installing a wireless network

Your tasks

- List the hardware the company will need to buy to set up a wireless network.
- List the advantages and disadvantages of having a wireless network compared with wired one.

Useful websites

- [Isaac Computer Science – Wired and wireless networks](#)
- [BBC Bitesize – Wired and wireless networks](#)

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4 Network security

Your tasks

- List the possible threats to a company's computer network.
- Describe how a computer network containing a wireless network can be made secure.

Useful websites

- [Isaac Computer Science – Network security](#)
- [BBC Bitesize – Network security](#)
- [BBC Bitesize – Network security - Forms of attack](#)

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5 Considering the staff

Your tasks

- How could the new IT systems be introduced to staff?
- What impact will the installation of a new computer network and the introduction of barcodes and scanners have on the following staff?
 - Office staff
 - Warehouse staff
 - Drivers

Useful websites

- [BBC Bitesize – Impact of digital technology on employment](#)

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