

# 7.4 Implementation

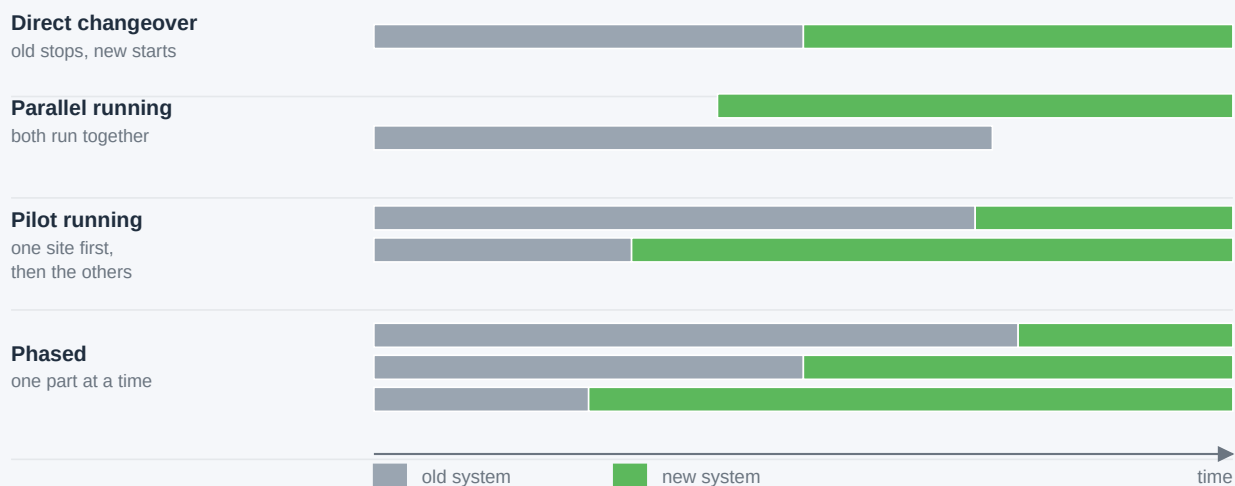
Syllabus 2026 - 2028

## WHAT YOU NEED TO KNOW

- Characteristics, uses, advantages and disadvantages of the four methods of implementation: direct changeover, parallel running, pilot running and phased implementation

**Implementation** is putting the tested new system into use in place of the old one. This includes installing the hardware and software, transferring the data from the old system (file conversion) and training the staff. There are four methods.

Figure 25: Methods of implementation over time



| Method                   | Characteristics and uses                                                                                                                                                                                              | Advantages                                                                                                                  | Disadvantages                                                                                                                 |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| <b>Direct changeover</b> | The old system is stopped and the new one starts straight away. Used when the system is not critical, when the old system has failed, or when there is no time for another method.                                    | Quick and cheap; only one system to run; no duplicated work; benefits are gained at once                                    | Risky: if the new system fails, there is nothing to fall back on and data may be lost; staff must be fully trained beforehand |
| <b>Parallel running</b>  | The old and new systems run together for a period and their results are compared. The old system is stopped when the new one is trusted. Used for critical systems such as payroll or banking.                        | Safe: the old system is a backup; results can be compared; staff learn gradually                                            | Slow and costly; work is done twice, needing more staff and equipment; can be confusing                                       |
| <b>Pilot running</b>     | The new system is introduced in one part of the organisation, such as one branch or department, while the rest use the old system. If it works, it is introduced elsewhere. Used by organisations with several sites. | Problems are found in a small area, so less damage; pilot staff can help to train others; less risky than direct changeover | Slower to reach the whole organisation; the pilot site may not represent others; two systems must be supported                |

| Method                       | Characteristics and uses                                                                                                                                                | Advantages                                                                                    | Disadvantages                                                                                   |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| <b>Phased implementation</b> | The new system is introduced one part at a time, such as stock first, then sales, and the old system is replaced gradually. Used for large systems with separate parts. | Problems are found early in one part; staff learn step by step; a failed part has less impact | Slow; the old and new parts must work together; takes longer to manage; full benefits come late |

## Comparing the methods

|                              | Direct  | Parallel       | Pilot                         | Phased       |
|------------------------------|---------|----------------|-------------------------------|--------------|
| <b>Speed</b>                 | Fastest | Slow           | Slow                          | Slowest      |
| <b>Cost</b>                  | Lowest  | Highest        | Medium                        | Medium       |
| <b>Risk</b>                  | Highest | Lowest         | Low                           | Low          |
| <b>Fall-back if it fails</b> | None    | The old system | The old system at other sites | The old part |

### EXAM TIP

Choose a method by thinking about the **risk**. For a hospital or payroll system, where a failure would be serious, parallel running is the safest. Do not describe pilot running as 'running two systems at the same time'; that is parallel. In a pilot the new system runs in **one place only**.

## Key terms

| Term                         | Meaning                                                        |
|------------------------------|----------------------------------------------------------------|
| <b>Implementation</b>        | Putting the new system into use.                               |
| <b>Direct changeover</b>     | The old system is stopped and the new one starts at once.      |
| <b>Parallel running</b>      | Old and new systems run together for a period.                 |
| <b>Pilot running</b>         | The new system is tried in one part of the organisation first. |
| <b>Phased implementation</b> | The new system is introduced one part at a time.               |
| <b>File conversion</b>       | Moving data from the old system to the new one.                |
| <b>Fall-back</b>             | Returning to the old system if the new one fails.              |
| <b>Training</b>              | Teaching the staff to use the new system.                      |

## Practice questions

Answer each question in full sentences. Command words used: State (give a short answer), Describe (say what it is like), Explain (give reasons), Analyse (break it down and examine it), Suggest (apply your knowledge to a situation), Compare and contrast (similarities and differences), Evaluate (weigh up and reach a judgement).

| No. | Question                                                                                                                  | Marks |
|-----|---------------------------------------------------------------------------------------------------------------------------|-------|
| 1   | <b>State</b> two methods of implementing a new system.                                                                    | [2]   |
| 2   | <b>Describe</b> how parallel running is carried out.                                                                      | [3]   |
| 3   | <b>Explain</b> one disadvantage of direct changeover.                                                                     | [2]   |
| 4   | <b>Compare and contrast</b> pilot running with phased implementation.                                                     | [4]   |
| 5   | <b>Evaluate</b> the methods of implementation that could be used to introduce a new patient records system in a hospital. | [6]   |

**Total: 17 marks**