

Unit 37:

Contribute to the Design and Development of an Information System

Unit reference number: A/506/1950

QCF level: 4

Credit value: 5

Guided learning hours: 23

Unit summary

This unit is about the design and development of an information system that will meet identified needs in a business environment. Businesses and organisations use a variety of information systems to support processes needed to carry out their business functions. Each system has a particular purpose of focus, which will require regular analysis and review to ensure it continues to meet the changing needs of the business and its stakeholders.

In this unit, you will learn how an organisation uses information to meet the needs of internal functional areas as well as stakeholders. You will develop skills to analyse business requirements and make constructive contributions to design solutions to meet business needs. You will be required to demonstrate your awareness of system users and the most appropriate information systems to meet business and information requirements. You will explore budgets, functionality and security of a range of information systems and contribute to making informed decisions based on systems analysis activities. You will be following design and development projects through to implementation and using test results to make recommendations for further systems developments.

Learning outcomes and assessment criteria

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria outline the requirements the learner is expected to meet to achieve the unit.

Learning outcomes	Assessment criteria
<p>1 Understand information system design requirements</p>	<p>1.1 Analyse the requirements, advantages and limitations of different ways of storing and managing information in an organisation</p> <p>1.2 Assess the ways in which information can be used by an organisation</p> <p>1.3 Evaluate the implications of data protection requirements for the design of an information system</p>
<p>2 Be able to contribute to the specification of an information system</p>	<p>2.1 Identify the users and stakeholders of an information system</p> <p>2.2 Identify the information that will be managed within a system</p> <p>2.3 Analyse the impact of budgetary constraints on the design of an information system</p> <p>2.4 Specify the functionality of a system that is capable of delivering agreed requirements</p> <p>2.5 Specify access and security restrictions and systems that meet the design specification of an information system</p> <p>2.6 Identify resources needed to implement and operate the system</p> <p>2.7 Adhere to organisational policies and procedures, legal and ethical requirements when contributing to the specification of an information system</p>

Learning outcomes	Assessment criteria
<p>3 Be able to recommend options for the development of an information system</p>	<p>3.1 Evaluate the advantages and limitations of proprietary and customised information systems</p> <p>3.2 Evaluate the advantages and limitations of designing a system in-house and commissioning a system from an external source</p> <p>3.3 Identify the implications of testing information systems before finalising the specification</p> <p>3.4 Justify recommendations for the development of an information system based on an analysis of cost-effectiveness and functionality</p>

Unit amplification

AC1.1: Analyse the requirements, advantages and limitations of different ways of storing and managing information in an organisation

- *Information and data:* definition of information and data; sources of information; types of information
- *Information requirements:* needs for information, e.g. internal, external; storing information; information security; accuracy; relevance; outputs, e.g. payroll, invoicing, ordering, bookings, stock control, personnel records, goods tracking, decision making, marketing, customer service
- *Ways of storing information:* methods; location, e.g. local, remote, cloud; organisation of information; retrieval; archive; resources
- *Ways of managing information:* people; process, e.g. flows, procedures, security, testing; technology; content, e.g. relevance, validity, level of detail, accuracy; risk; analysis; reporting; monitoring; reviewing
- *Information systems:* types, e.g. business information systems, management information systems; knowledge information systems; proprietary or customised; in-house designed or commissioned
- *Advantages and limitations:* information characteristics, e.g. format, quantity, quality, source, reliability; budgets; effectiveness; technology; capacity, e.g. storage, memory; staff, e.g. capabilities, training; environment; usability; functionality; output; legal and ethical restrictions; product and/or service suppliers

AC1.2: Assess the ways in which information can be used by an organisation

- *Functional areas of an organisation:* typical areas, e.g. finance, accounts, human resources, stock control, sales, marketing, research and development, production, distribution, customer service, administration
- *Information needs:* requirements analysis, e.g. strategic, tactical, operational; data requirements, e.g. inputs, outputs, processing activities; information distribution requirements, e.g. location, department, individual
- *Sources:* internal and external; primary and secondary; formal and informal; team workers; customers; other stakeholders
- *Types of information:* e.g. text, numbers, graphics, audio, video
- *Information flows:* e.g. information flows between information generators and information users; information flows across functional areas; internal flows; external flows; content; level of detail; volume of information; timing; intelligibility; differentiating between essential and useful information; frequency; storage; retrieval; recording information flows; confirming receipt of information; acting on information

AC1.3: Evaluate the implication of data protection requirements for the design of an information system

- *Legal issues:* relevant and current data protection legislation, e.g. Data Protection Act 1998, Freedom of Information Act 2000; other relevant legislation, e.g. Computer Misuse Act 1990
- *Ethical issues:* codes of practice, e.g. use of email, internet; 'whistle blowing'; organisational policies; information ownership
- *Operational issues:* security of information; backups, e.g. hardware, peripherals, software, storage media, local storage, remote storage, cloud storage; organisational policies, procedures and processes; staff training
- *Implications of data protection:* access; information security, e.g. internal threats, external threats, data corruption; cost; reputation; effects on business sustainability
- *Managing risk:* cyber-crime, e.g. diverting financial assets, communications sabotage, intellectual property theft, denial of service attacks; preventive technologies, e.g. firewalls, access control methods, secure payment systems; disaster recovery

Information for tutors

Suggested resources

Books

Bocij, P., Greasley, A. and Hickie, S. – *Business Information Systems: Technology Development and Management for the E-Business* (4th edition) (FT Prentice Hall, 2008) ISBN: 9780273716624

Chaffey, D. and White, G. – *Business Information Management: Improving Using Information Systems* (2nd edition) (FT Prentice Hall, 2010) ISBN: 9780273711797

Lucey, Y. – *Management Information Systems* (9th edition) (Cengage Learning, 2004) ISBN: 9781844801268

Websites

www.data-protection-act.co.uk - Data Protection Act made easy website, providing guides to and information about the data protection act

www.skillscfa.org – the website of the Sector Skills Council, Skills CFA, where information and standards for business administrators can be found

Assessment

To pass this unit the evidence that the learner presents for assessment must demonstrate that they have met the required standard specified in the learning outcomes and assessment criteria and the requirements of the Assessment Strategy.

To ensure that the assessment tasks and activities enable learners to produce valid, sufficient, authentic and appropriate evidence that meets the assessment criteria, centres should apply the *Unit Assessment guidance* and the requirements of the Assessment Strategy below.

Wherever possible, centres should adopt a holistic approach to assessing the units in the qualification. This gives the assessment process greater rigour and minimises repetition, time and the burden of assessment on all parties involved in the process.

Unit assessment requirements

This unit must be assessed in the workplace in accordance with the Skills CFA Assessment Strategy for Business Administration, Customer Service and Management and Leadership, in *Annexe A*. Simulation is not allowed for this unit. All evidence of occupational competence should be generated through performance under workplace conditions; this includes evidence of achievement for knowledge-based learning outcomes and associated assessment criteria.

Unit assessment guidance

This guidance supports assessors in making decisions about how best to assess each unit and the evidence needed to meet the assessment requirements. Centres can adapt the guidance for learners and the particular assessment context, as appropriate.

The primary source of evidence for meeting the requirements of learning outcome 2 and learning outcome 3 is direct observation of the learner carrying out their work activities relating to contributing to the design and development of an information system.

The evidence from the direct observation for learning outcome 2 and learning outcome 3 could be supported by examining work products such as notes from meetings, project plans, technical specifications, budgets, reports, implementation strategies, records, e.g. flow charts, spreadsheets, notes, forms etc. and non-verbal communication to colleagues, managers and/or stakeholders, e.g. emails etc. – this provides further evidence to meet the requirements, for example AC2.1, AC2.2, AC2.4, AC2.5, AC2.6, AC3.1, AC3.2, AC3.3 and AC3.4. To achieve AC2.7, learners need to provide evidence of adhering to organisational policies and procedures, legal and ethical requirements when contributing to the specification of an information system either through checklists, forms and/or the draft specification. Witness testimony could be used to support the evidence from direct observation for this assessment criterion as well as for AC2.1, AC2.2 and AC3.4.

The primary source of evidence for meeting the requirements of learning outcome 1 could come from a professional discussion where the learner demonstrates an understanding of the principles of contributing to the design and development of an information system. Learners responses during the professional discussion must be at the appropriate breadth and depth to meet the level of demand for the knowledge assessment criteria; for example, the responses must have sufficient detail about the requirements, advantages and limitations of different ways of storing and managing information in an organisation (AC1.1), the ways in which information can be used by the organisation (AC1.2) and the implication of data protection requirements for the design of an information system (AC1.3). Reflective account can be used to support the evidence from professional discussion for learning outcome 1 as well as for AC2.3, AC3.1, AC3.2, AC3.3 and AC3.4.

Evidence of Recognition of Prior Learning (RPL) can also be used within the unit to confirm competence. Wherever possible, the learning outcomes in this unit should be assessed holistically across the qualification.