

## A2 Module 5

### ***Information: Policy, Strategy and Systems***

#### 14.1 Policy and Strategy Issues

Understand the need for an information technology policy.

Understand the strategic implications of software, hardware and configuration choices for an organisation.

Appreciate the range of needs of different users.

##### **Methods of enhancing existing capabilities**

###### **Future proofing**

Discuss the reasons why organisations may wish to upgrade hardware/software provision. Factors could include hardware/software development, organisation ethos, task driven change, software change.

Understand that hardware and software exists which allows packages to run on different platforms, and the advantages and disadvantages of these approaches.

###### **Backup strategies**

Describe the different options available for backup systems and understand the implications and limitations of their use.

Understand the strategies for backup scheduling and storage of backups.

#### 14.2 Software

##### **Evaluation of software**

Describe the mechanisms/procedures for software evaluation e.g. establish client / user needs, establish software capabilities and match.

##### **Evaluation criteria**

Understand the need for establishing evaluation criteria, to include;

agreed problem specification

functionality

performance – use of benchmarks

usability and human-machine interfaces

compatibility with existing software base

transferability of data

robustness

user support

resource requirements including hardware, software and human

upgradability

portability

financial issues –

development cost

development opportunities.

##### **Evaluation report**

Understand the function of an evaluation report and know that the content will include:

methodology used

actual evaluation

recommendations

justification.

#### 14.3 Database Management Concepts

##### **Database Management Concepts**

Explain the purpose of a database management system (DBMS).

Explain the role of the database administrator.

Explain what is meant by data consistency, data integrity, data redundancy and data independence.

Describe what is meant by entity relationship and data normalisation.

## 14.4 Communication and Information Systems

### Communication and Information Systems

Describe the use of networked systems for various applications.

Describe the network infrastructure required to support the World Wide Web e.g. the role of routers and servers.

### Applications of communication and information systems

Select and justify an appropriate networked system for a particular application.

### Distributed systems

Understand that distribution can apply to both data and control.

Describe the uses of distributed databases and understand the advantages and limitations of such distribution.

### Client/server systems

Describe the concept of a client/server database.

Recall the relevant advantages of a client/server database over a non-client/server database.

## 14.5 Networks

### Network security, audit and accounting

Understand the particular security, audit and accounting problems associated with networks and recall the steps which can be taken to preserve security.

Describe the measures taken to protect network traffic against illegal access.

Understand the reasons for using audit software in providing a network service.

Understand the reasons for using accounting software in providing a network service.

### Network environments

Understand how a network environment affects the user interface provided, e.g. security, control of software, control of files, access rights.

## 14.6 Human/Computer Interaction

Describe the psychological factors that affect human/computer interaction, e.g. user friendly, give help to novices, provide short cuts for experts, make use of human long term memory to maximise efficiency.

## 14.7 Human/Computer Interface

Recall different approaches to the problem of communication with ICT systems and discuss the resource implications of sophisticated HCI.

Discuss the implications for customising software to develop a specialist HCI.

## 14.8 Software Development

Understand that there are different ways of providing software solutions to specialist applications, e.g. user written, internal development team/department, external software house to specification.

Describe the possible criteria for selection of software solutions to specialist applications and their place within the corporate strategy.

## 14.9 Software Reliability

Describe methods of ensuring that software is reliable □ testing, □ testing, agreements between software houses and purchaser for testing.

Understand the reasons why fully tested software may fail to operate successfully when implemented as part of an information technology system.

Understand the need for maintenance release(s).

## 14.10 Portability of Data

### Protocols and standards

Explain the need for portability of data, e.g. ease of transferring numerical, graphical and textual data between applications.

Describe the need for standards for interchanging numerical, graphical and textual data between different hardware and software platforms.

### Communication standards

Know of the existence, benefits and limitations of standards.

Understand the protocols and addressing mechanisms used to support the World Wide Web..

### Emergence of standards

Recognise the existence of de facto standards based on historic precedent and sales success in comparison to formal standards.