INFORMATION AND FINANCIAL MANAGEMENT

Professional 1 examination
December 2000

MARKING SCHEME

Question 1

(a) The Internet is a network that links computers across the world. It consists of an infrastructure of servers and communication links between them. Historically, academic and military users developed the Internet. The Internet has many tools which enable users to navigate between information and resources and transfer files between servers. The most popular of the tools is the Internet browser (such as Netscape Navigator and Microsoft Outlook Explorer). The trust might use the Internet to increase the exposure of the organisation, as a library resource for its employees and as a means of communicating with individuals and organisations external to the trust.

An intranet by contrast, uses web servers, browsers and e-mail within an organisation. This enables the organisation to share information and software applications. The intranet is only accessible to the organisation's employees. Intranets are described as being: quick to set-up; cheap to maintain and easy to use and popular with users. Examples of use might include:

- details of vacancies within the trust;
- legal and ethical requirements and advice;
- the mission and values of the trust; and
- statistical and performance measurement information, agendas and minutes of meetings, internal telephone directories.

An extranet enables the organisation to share information with other stakeholders and collaborators. An extranet can be thought of as an intranet that is extended beyond the boundaries of a company. An organisation such as the trust might wish to offer patients within the health authority's boundaries the ability to e-mail health workers for advice on healthcare. It might also provide an interface with suppliers of medical consumables, improving links with these suppliers. This would reduce the necessity of holding large amounts of stock and provide health practices with a means of ordering consumables from a constantly updated catalogue with information on delivery times.

3 marks for description and applicability of each to the trust up to a maximum of 9

(b) E-mail: the sending of electronic messages from individuals/organisations to each other. E-mail allows users to attach files to the message, include word-processed documents and spreadsheets for others to read, save and adapt.

Usenet groups: Used by special interest groups to discuss matters of common interest. This might include medical researchers interested in communicating about treatment of a particular disease.

World Wide Web: The Web allows individuals and organisations to publish information and run applications over the Internet. An organisation such as the trust would publish its Web site using the World Wide Web.

FTP file transfer: File Transfer Protocol is used as a standard for sending files across the Internet. A common use of FTP is for sending amendments to software applications. FTP is a feature of Web browsers for downloading files.

Telnet: This service allows remote access to computer systems. For example, a system administrator on one site can log onto a computer elsewhere to ensure it is running successfully.

Gophers, Archie and WAIS: These tools are used for storing and searching for documents on the Internet. They were commonly used before the development of the Web and have now been largely superseded.

Internet Relay Chat: This is a communications tool which allows text-based discussion or 'chat' between different users who are logged in at the same time. It can be thought of as a text-based tele-conference, and can supplant meetings and be used for educational purposes when all participants are not at the same location.

1 mark for identification of tool, 1 mark for description
credit for other reasonable answers up to a maximum of 8

(c) Electronic commerce can be thought of as business transactions in which parties interact electronically. An example is the provision of on-line services. Electronic commerce activity exists in a number of different forms. A common feature to these is the use of electronic methods and techniques using computers and communication systems.

An example of electronic commerce relevant to an organisation such as the trust is electronic data interchange (EDI) or business to business (B2B). EDI is a set of communication protocols used extensively in inter/intra-company transactions. An EDI message might contain details of ordering, invoicing and payments.

The benefits of electronic commerce include:

- Improved organisational performance through better quality, decision making and customer satisfaction.
- Improved efficiency through cost saving.
- Improved transaction times through high speed, accelerated or real-time transactions.

1 mark for description of E-commerce.
2 marks for description/examples how it might assist an organisation such as the trust.

(3)

(d) Key risks associated with the development of the Internet/intranet include:

- Computer fraud, with for example, employees using the Internet to transfer funds, or external agents gaining unauthorised access (electronic eavesdropping).
- The introduction of computer viruses by e-mail.

Other risks might include:

- The risk that the trust is reliant on the Internet and has difficulty maintaining the site and ensuring the server is operational 24 hours a day, 365 days per year.
- The risk of not 'getting it right first time' exposing the trust to other operational difficulties. The NHS is currently suffering a burgeoning amount of clinical negligence claims against it.
- The risk of not taking risks. That is, by not using the Internet it fails to innovate and improve – priorities for all public bodies.

The risks might be managed by:

- The use of passwords and personal identification numbers (PINs) for employees and other authorised users.
- The use of firewalls – electronic filters placed between the trust's computer network and the outside world.
- The development of policies and procedures to manage Internet security issues.
- The use of experienced staff and consultants to develop Internet and associated applications.

1 mark for each identified risk (max 2 marks);
1½ marks for identifying how the risk might be managed (max 3 marks)

(5)

(25)

Question 2

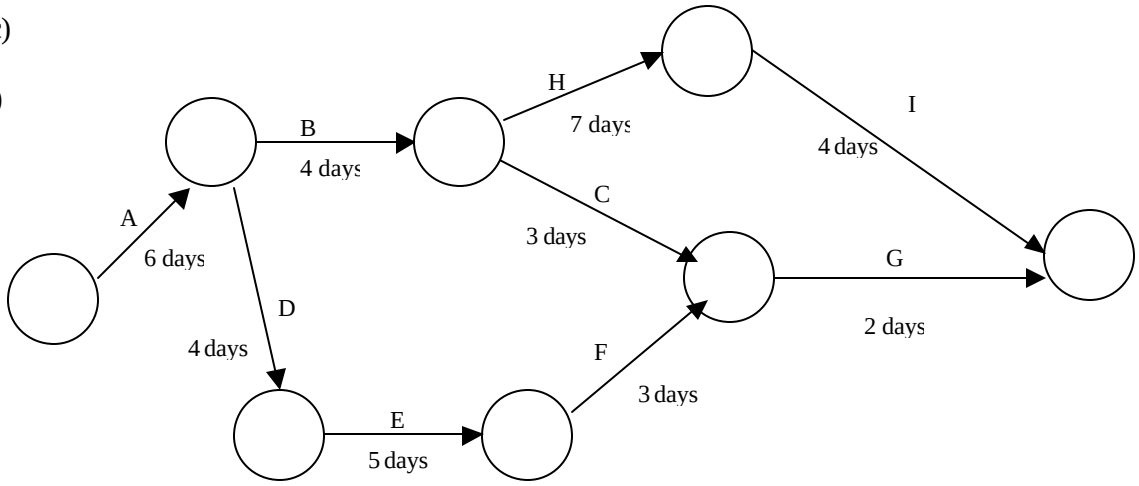
(a) The critical path is the sequence of activities that defines the shortest duration of the project. If any of the tasks on the critical path are delayed, then the overall project duration will be extended beyond the minimum time. ADEFG. *3*

(b) Delay in activities on the critical path will result in delay for the project overall. Therefore, the project manager should allocate dedicated and experienced resources to those activities on the critical path with the aim of meeting or beating the original time estimates. The project manager should also closely monitor the progress of activities on the critical path. Activities on a non-critical path may overrun their allotted time, by the difference of the latest and earliest finish times, without delaying the rest of the project. *2*

Figure 1

(c)

(i)



1 mark deducted for each mistake *(4)*

(ii) ABHI
21 days
1 day

1 mark for each point
(3)

(d) A Gantt chart could be used to identify and smooth resource requirements. Gantt charts show the duration of parallel and sequential activities in a project as horizontal bars on a chart as a means of summarising a project plan and as a means of showing how many activities can be undertaken in parallel at one time.

1 mark for Gantt chart, 2 marks for description
(3)

(15)

Question 3

(a) The Balanced Scorecard is a framework which intends to take a comprehensive approach to performance measurement. Traditional measures of performance usually focus on one aspect of the business (financial performance). Kaplan and Norton's Balanced Scorecard attempts to bring together in one report, disparate elements of the competitive agenda and to prevent sub-optimisation through the improvement of one area at the cost of another. The Balanced Scorecard collects financial and non-financial measures of performance from the organisation's mission and strategy. The scorecard attempts to find a balance between:

- External measures for stakeholders and internal measures of business processes;
- Outcomes of past performance and drivers of future performance;
- Objective and quantifiable outcome measures and subjective and more qualitative measures; and
- Short-term and long-term objectives.

1 mark for each relevant point made; maximum 5 marks

(b) To be of value, performance indicators must meet a number of criteria:

- They must be of interest to the public rather than just being a management tool;
- They should deal with issues of cost, economy and efficiency as well as quality and effectiveness;
- They should support comparisons, over time and between organisations;
- They should cover the main services provided by organisations; and
- They should be generally acceptable to all parties concerned including the public, the public service and its employees and other interest groups.

All of these requirements makes the process of developing a useful set of indicators for an organisation difficult. One reason is that many indicators are useful but give a partial view of the overall picture. Also, some indicators are qualitative in their nature, while the hard quantitative end of assessing performance has been dominated by financial analysis. Again, the balanced scorecard has been seen as a means of dealing with this very heterogeneous situation.

½ mark per characteristic (max 2 marks); 1 mark per example (max 2 marks)

(4)

(c)

Financial Perspective	
Critical success factor	**Measure**
Survival	Cash flow
Budgetary control	Within allocation

Customer Perspective	
Critical success factor	**Measure**
Trainees gaining employment	Trainee Turnover
Trainees remaining in full-time employment	% Retention rate by employers

Internal Perspective	
Critical success factor	**Measure**
Employee health	Sickness levels
Employee skills	Number of training courses

Innovation and Learning Perspective	
Critical success factor	**Measure**
Increased investment	% total expenditure
New product/service developments	Time from evaluation to implementation

½ mark for identifying each perspective; ½ mark for identifying an appropriate CSF; ½ mark for correctly identifying an appropriate Performance Measure associated with CSF. Max 6 marks

(15)

Question 4

(a) (i)

$$C = \sqrt{\frac{2bt}{i}}$$

$$C = \sqrt{\frac{2 * £350,000,000 * £250}{0.07}}$$

$$= £1,581,139$$

2

(ii) No. of conversion transactions each year $= \frac{£350,000,000}{£1,581,139}$

$= 221$

2

(iii) average cash balance = ECQ/2

= £1,581,139/2

= £790,570

2

(iv) total cost = (£250 * 221) + (£790,570 * 0.07)

= £110,590

2
(8)

(b) The Baumol model is similar to the Economic Order Quantity model used for stock management. The Baumol model treats cash held for transactional purposes rather like stock. The assumption is that cash is drawn on at a constant rate until it is fully consumed. The model therefore assumes certainty and constancy of demand. Marketable securities are excluded from the model: they are sold to be used to top up the transactional cash balance when required.

The Baumol model assumes, rather simplistically, that cash flows occur into a business at constant predictable rates. This would be the case for instance, if all cash inflows, including the proceeds of the sale of marketable securities, occurred on the first day of every month. This 'inventory' of cash is then consumed at a constant rate during the month only to be replenished in full and immediately at the end of the month.

The Miller-Orr model is a more sophisticated and realistic approach to cash management. It allows for random and unpredictable changes in daily cash

balances and overcomes the simplistic assumptions of constancy and certainty of demand inherent in the Baumol model.

Based on control theory, the Miller-Orr model sets upper and lower control limits, within which the daily cash balance is allowed to fluctuate. If the daily cash balance reaches the upper control limit, cash is used to purchase marketable securities. The amount of the purchase of the marketable securities is determined by the difference between the upper control limit and the target cash level. If by contrast the cash balance dips below the lower control limit, marketable securities are sold and converted into cash to restore the cash balance to its target level.

In practice the Baumol model provides a useful starting point from which to develop more realistic cash management tools. It can be modified to allow for uncertainty to some extent by incorporating a level of 'safety stock' of transactional cash. However, the Baumol model is clearly not appropriate when uncertainty and irregularity of cash flows prevail.

3 marks for description of Baumol model; 3 marks for description of Miller-Orr model; 1 mark for comparing/contrasting each.

(7)

(c)

$$Z = \sqrt[3]{\frac{3Fs^2}{4K}} + L$$

$$= \sqrt[3]{\frac{3 * 250 * 750000^2}{4 * 0.0002}} + 150{,}000$$

$$= £957{,}913$$

$$H = 3Z - 2L$$

$$= 3*957{,}913 - 2*150{,}000$$

$$= £2{,}573{,}739$$

3 marks for target balance (Z), 1 mark deducted per mistake. 2 marks for upper limit (H), 1 mark deducted per mistake. (5 marks maximum).

(20)

Question 5

(a) Desirable features of control systems:

- Cost. Control systems are cost effective which means balancing risk and potential control benefits against the cost of the controls.
- The system must be fit for purpose and comply with the performance criteria specific to the requirements of the particular system.
- Organisational culture. The controls must be acceptable within the organisational context.
- Administrative controls, segregation of duties and authorisation procedures.
- Preventative controls to maintain data integrity.
- Existence of audit trails to facilitate checking by internal/external auditors.
- Compliance with legal and professional standards.
- Procedural controls which relate to the processing of data and production of reports. Examples include: input controls, processing controls, output controls and storage controls.

1 mark for each point made. ½ mark for description. Other reasonable answers accepted. Maximum 6 marks.

(b) Ideal standard: based on ideal conditions where no waste, inefficiency, idle time or breakdowns occur. It identifies the perfect position, and creates a vision of the future. Such a standard is almost hypothetical as it is based on unrealistic assumptions. Failure to achieve the ideal can cause motivational problems.

Attainable standard: based on achievable improvements in operational conditions. It is a high level standard, which is realistic and is good for motivation. Disadvantages include: standards are not perfect; and standards may be difficult to identify. The system requires support from management and also the workforce.

Current standard: the current standard is simply a standard based on current operating performance. It is easy to identify and easy to understand. However, it provides no measure of efficiency, assumes the current position is desirable and provides no incentive for improvement.

Basic standard: this standard remains unaltered over a long period of time and becomes accepted as the norm. As such, it is easy to construct and use and is good for long-term comparisons. It suffers from similar problems as the current standard. That is, it ignores the impact of change, is not a real standard and does not contribute to efficiency and improvement.

½ mark for identifying each standard. ½ mark for advantage, ½ mark for disadvantage. Maximum 6 marks.

(c) To be useful for management the reports should have the following features:

- Relevance: relevant to the purpose intended and to the management function and decision which requires information. Information should be aimed at the appropriate level of management function.
- Suitability: the presentation should be user-friendly and meet the needs of all users, as well as their backgrounds and perceptions.
- Affordability: providing benefits which justify the cost of developing and delivering the reports.
- Timeliness: is a very important aspect for budgetary control purposes. Information needs to be produced in time to satisfactorily inform the management process. This might mean producing a monthly variance analysis report a week to 10 days from the end of the month.
- Right level for decision making: information should follow the levels of devolution in terms of targeting detail to the responsible budget holders.
- Focus on business objectives: the report should not concentrate solely on inputs and outputs but relate financial performance to operational performance.

1 mark for each factor to be considered,
1 mark for the description of each up to a maximum of 8

(d) Traditionally, the provision of financial information and support has been from a centralised finance department. Here, the majority of finance work was concentrated and provided for the rest of the organisation. Structural change in the provision of financial support which might have affected West Ayrshire Council could be:

- A move towards more commercial practices, compulsory competitive tendering and market testing.
- A need to achieve greater efficiency and effectiveness in respect of all support functions, including finance.
- A move towards devolution and delegation within internal control structures, encouraging greater accountability.
- The concept of the customer and the need to consider customer requirements and quality management initiatives.
- The development of technology, encouraging the distribution of processing and the provision of information. Information systems developments have had a significant effect on organisational structure.

1 mark for each relevant point made up to a maximum of 5

(25)