

# INFORMATION AND FINANCIAL MANAGEMENT

**Professional 1 examination  
June 2001**

## MARKING SCHEME

**Question 1**

(a)

(i) Stock turnover = (Average value of stock / Cost of goods sold) x 365  
=  $\{[(17.4 + 17.0) \times 0.5] / 99.5\} \times 365$   
= 63.1 days

The stock turnover period is the average length of time that items remain in stock before being sold – assuming opening and closing stock levels are typical. 2

(ii) Debtor conversion period = (Average value of debtors / Annual sales) x 365  
=  $\{[(29.7 + 28.0) \times 0.5] / 157.5\} \times 365$   
= 66.9 days

The debtor conversion period is the time taken by debtors to pay – assuming opening and closing debtor balances are typical. 2

(iii) Operating cycle = Stock turnover period + Debtor conversion period  
= 63.1 days + 66.9 days  
= 130.0 days

The operating cycle is the average length of time between purchasing stock and receiving payment from customers to whom it is subsequently sold. 2

(iv) Creditor conversion period = (Average value of creditors / Goods purchased) x 365  
=  $\{[(16.0 + 15.5) \times 0.5] / 99.9\} \times 365$   
= 57.5 days

The creditor deferral period is the time taken by the organisation to pay its creditors. 2

(v) Cash conversion cycle = Stock turnover period + Debtor turnover period – Creditor conversion period  
= 63.1 + 66.9 - 57.5 days  
= 72.5 days

The cash conversion cycle is the time taken from buying in goods for sale onto the customer, through to the receipt of payment, less the time allowed to the organisation by its creditors. 2

*1/2 mark for correct calculation using closing balances only*

- (b) Liquidity can be thought of as the cash (or assets which can be readily converted into cash) available to meet the maturing obligations of the business. These obligations can include trade creditors, taxation and interest payments. Clearly, to remain in business, North Kyle Supplies plc will need to maintain a degree of liquidity.

However, maximising liquidity will be done at the expense of profitability. Profitability is important to provide its shareholders with a return on their investment. It will also allow for surpluses that can be re-invested in the business without the need to seek external funding

Therefore, there is a need to trade off the extent to which an organisation uses current liabilities as a source of finance and the effect of this on profitability and liquidity. North Kyle Supplies plc will wish to assess the risks involved in their working capital management policy and relate these to the overall strategy of the organisation.

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

- (c) The effect of increasing North Kyle Supplies plc's creditor conversion period will be to reduce its cash conversion cycle and, hence, reduce its investment in working capital. This will have a number of immediate beneficial consequences:

- It can reduce its funding need.
- Any further growth in sales will require proportionately less finance.

However, a number of adverse consequences will emerge. First, it is likely to prove unsustainable as companies and organisations often trade on the basis of 30 days credit. Increasing the terms of trade beyond this may mean suppliers refuse to trade with North Kyle Supplies plc. At present, North Kyle Supplies plc is trading on the basis of 57.5 days which is high against an average of 50 days for UK companies, although it is difficult to judge as the terms of trade are not stated.

By "squeezing" its trade creditors, North Kyle Supplies plc is effectively financing itself using these organisations' funds. In many cases this will place these suppliers in financial distress, possibly forcing the organisation into liquidation.

A number of ways of remedying the late payment problem have been introduced, with varying degrees of success. These include:

- Confederation of British Industry's (CBI) prompt payment code in 1992.
- A voluntary British standard for late payers, BS7890, introduced in 1996.
- The 'Late Payment of Commercial Debts Act' giving creditors, the right to charge interest on overdue accounts.

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

(20)

## Question 2

(a) The three main methods of acquiring an information system are:

- bespoke development
- purchase an off-the-shelf system
- end-user development

The most likely scenario is purchase an off the shelf system. This is the case given such an organisation is unlikely to have a bespoke system developed, or utilise end-user development. However, it might license a system developed for another University – a hybrid position between off-the-shelf and bespoke.

*1 mark each for identifying the three main methods*

*1 mark for identifying “off-the-shelf”*

*1 mark for suitable justification (other reasonable answers with a justification accepted)  
up to a maximum of 5 marks*

(b) Potentially a new information management system could reduce costs and / or increase income. Other benefits could include improved service to clients.

- Staff cost savings: for example, the automation of a manual process will reduce the need for staff who were previously part of the process.
- Other cost savings: the introduction of new technology could reduce communication costs and also the need for paper based documents, reducing printing and stationery costs.
- Improved information for managers: managers may have access to more timely and relevant information as a result of the introduction of new systems.
- Improved information for clients and the public: universities have a duty to provide information to the public and its students. The Internet provides a means of providing up-to-date information at low cost of publication. An example might be allowing students online access to how their application is being processed.
- Risk reduction: the provision of more timely and accurate information made available to a wider range of managers may make them more aware of certain risks. For example, a system which maintains a log of Internet sites means that managers can take action against staff making inappropriate use of the Internet.

- Increased revenue: improved systems such as the Internet enable public sector organisations to better market their services. For example, a university might be able to market consultancy services, increasing utilisation of these services and increase revenue.

*Other reasonable answers accepted.*

*1 mark for introduction*

*2 marks for each example*

*up to a maximum of 8 marks*

(c) When considering the introduction of a new information system it is important to consider the benefits. It is also advisable to try to quantify those benefits in some way. This is particularly important when considering several alternatives or when scarce resources are being competed for. Using the examples above:

- Staff savings: It would be necessary to estimate how many staff hours might be saved by the introduction of new technology. This could involve creating a dummy run using the new technology or observing the new technology at work at another site.
- Other cost savings: an assessment would need to be made of the current position and to assess how staff might behave once the new technology has been introduced. For example, the introduction of e-mail might encourage staff to print out the documents themselves, simply passing a central cost onto a local cost.
- Improved information for managers: an assessment would need to be made of the control benefits of providing managers with access to improved information. This benefit might be difficult to assess.
- Improved information to public / students: this might be difficult to quantify as it is primarily a qualitative benefit. However, the risk of not doing so is that potential students or better qualified students may choose to study at another institution and the university may not fully exploit its alumni network.
- Risk reduction: information that reduces risk, may in the example above prevent the University being subject to a fine and reduce staff time wasted through misuse of the internet.
- Increased revenue: the marketing impact of the new information systems would need to be assessed, perhaps on the basis of the experience of other “early adopters”.

*Other reasonable answers accepted*

*1 mark for introduction*

*2 marks per example*

*up to a maximum of 7 marks*

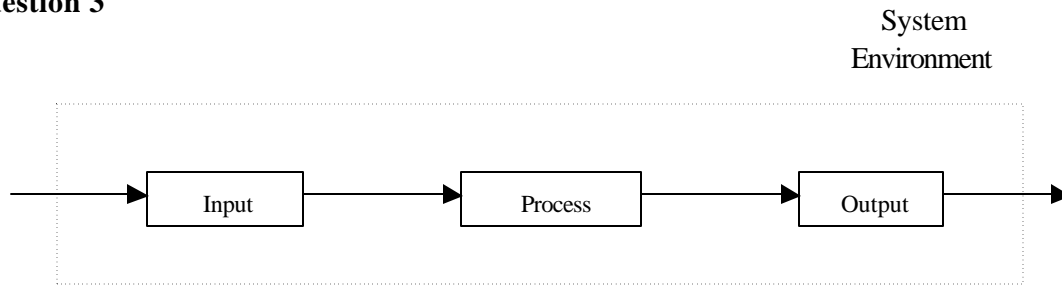
- (d) The finance department will have a number of concerns with regard to the design and development of the system. These include:
- Many systems will be concerned with transaction processing and as systems producing financial information. The Chief Accountant will wish to ensure that the system has adequate controls.
  - The finance department will also be concerned to ensure that financial information is fit for purpose and is effective.
  - The Chief Accountant has a responsibility to provide financial information and advice and will be concerned at the design of financial information and the criteria to be considered.
  - The finance department may also make a direct contribution to systems design through the use of spreadsheets and relational databases.
  - Also, information systems can be expensive. The Chief Accountant will be concerned that new information systems developments provide value-for-money.
  - Control of the project management of the information systems development.
  - Legal issues.

*Other reasonable answers accepted.  
1 mark for each relevant point made up to a maximum of 5*

(25)

**Question 3**

(a)



- (i) An open-loop control system is one in which there is an attempt to reach the system objective. However, there is no attempt to modify the process or its input once the process has started. Open-loop systems also have no mechanism for ensuring goals are met once the system is underway. Open-loop systems are generally inadequate in organisational settings because of the complexity of organisational systems and their environments.

An example of an open-loop system is a legal system. Legislation is amended, created and applied and is influenced by a variety of factors, including public opinion. However, it can also be argued that the introduction of legislation can influence public opinion and behaviour.

*1 mark for definition, 1 mark for description, 1 mark for example. Maximum 3 marks*

- (ii) Closed-loop systems, in contrast with open-loop systems, employ a control mechanism. This control can take the form of:

- Feedback control, where the output is monitored and compared to the desired output. Corrective action is taken if a deviation exists. Feedback control systems provide a relatively cheap method of control and are an effective method of bringing back a system under control.
- Feedforward control, where the environment and system processes are monitored to provide corrective action if it is likely that a system goal will not be met. Feedforward systems incorporate a predictive element in the feedback control loop. The predictive element overcomes the time-delay disadvantages associated with feedback systems.

Examples include budgetary control and stock control systems, which work to a planned sales level of material usage rate.

*1 mark for definition, up to 2 marks for description, up to 1 mark for example  
Maximum 4 marks*

- (iii) Positive feedback usually occurs due to a badly constructed feedback loop where continued inputs lead to deterioration in system performance rather than its improvement. The problem causing the positive feedback might be anywhere in the feedback loop (eg an inadequate sensor or incorrect standard). Systems with positive feedback increasingly become out of control. In some circumstances however, such as performance related pay, positive feedback is intended to improve performance. Positive feedback is intended to push the system further in the direction it is already going.

Negative feedback occurs in systems with correctly constructed feedback loops where deviations from the required standard are properly identified. Changes are then made to the inputs of the system to bring the performance of the system back to the required standard. Systems with negative feedback will perform to the criteria specified in the system's standard. With negative feedback, the system is being correctly controlled. The emphasis in negative feedback is to reverse the trend.

*1 mark for each relevant point made (no more than three marks for each description)  
up to a maximum of 5*

- (b) The Information Systems Department was an example of a **closed (or semi-closed)** system. Such systems have little interaction with their environment. The Department has been dependent on a strategy developed by a Board of Directors taken from a fairly homogenous group (long-standing employees).

Closed systems tend to experience an increase in entropy. **Entropy** is characterised by increased uncertainty and disorganisation. In the context of Carlton, this could lead to organisational failure. This **entropy** may be countered by bringing in new information from outside the ambient environment. The appointment of a new Information Systems Director has provided this **negative entropy**. The "breath of fresh air" refers to the new inputs and ideas, which have made the Department more **open**. This openness has increased the level of interaction of the Department with its environment and improved its business performance.

*½ mark for each systems concept identified 2 marks for general explanation  
up to a maximum of 3*

(15)



#### Question 4

(a) Benchmarking can be thought of as:

“The process of searching for, and achieving, excellent levels of performance”

This is achieved through a systematic comparison of performance and processes in different organisations, or between different parts of the same organisation, to learn how to do things better. Its purpose is to continuously improve performance by identifying where changes can be made, in what is done and how it is done.

A benchmark is a measure that can be used to compare performance. This comparison can indicate where a review of processes might be worthwhile. Benchmarking involves using benchmark information to seek continuous improvement.

The benefits of such an exercise will include:

- A knowledge of inputs, outputs and impacts allowing members to better assess their performance and possibly construct more efficient bids to seek funding support
- Share information across the group, increasing the learning curve effect
- Act as a mechanism for guidance
- Stimulate organisational and individual learning
- Stimulate commitment to organisational goals
- Bring together those responsible for designing, using and delivering the various elements of the systems and the performance

However, benchmarking can result in perverse and detrimental behaviour as a result of performance measures derived from benchmarking exercises. Overemphasis upon measures may also encourage the wrong sort of behaviour as people concentrate on ways of maximising efforts to get the ‘correct’ result. If implemented, the Chief Executive may find it problematic to find common measures of input, output and impact between projects.

*2 marks for description of benchmarking  
½ mark for each relevant point made  
up to a maximum of 6*

(b) (i) ISO9000. To gain ISO9000, organisations must:

- Review and document their systems
- Have these systems subjected to an external inspection
- Once validated, the organisation is subject to regular external audit to retain certification

*Other reasonable answers accepted  
1 mark for identification  
up to 1 mark for each relevant point up to a maximum 3*

(ii) The advantages are as follows:

- Quality management standards support a quality approach and are an integral element of ISO9000
- Quality standards focus on key systems
- They assure consistency and documentation
- They require regular review internally and externally
- They signal to customers they are committed to quality
- Essential for competing in certain markets
- Quality standards are accepted nationally and internationally

Disadvantages include:

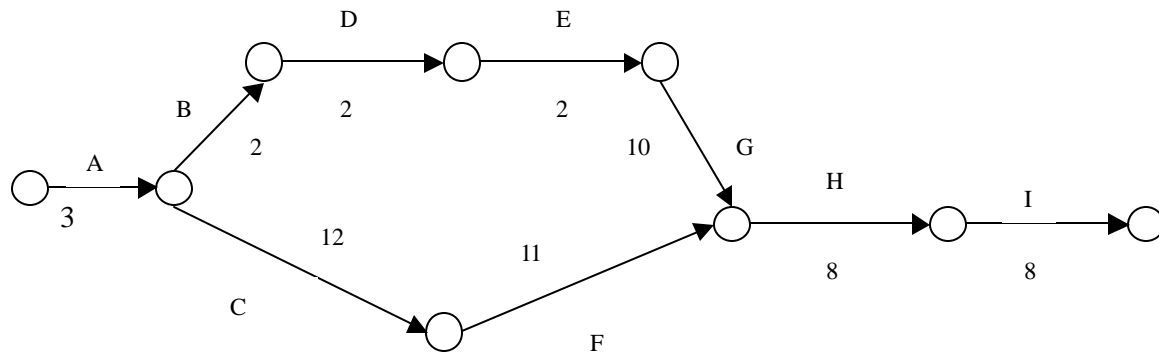
- They concentrate on systems and procedures rather than outcomes
- Quality standards are essentially bureaucratic, with an emphasis on documentation and assurance
- Sceptics may regard a quality standard as “window dressing”

*½ mark for each relevant point (maximum 1½ marks advantage/disadvantage)  
up to a maximum of 3*

(15)

**Question 5**

(a)



Critical path = A C F H I

Project duration = 42 days

Cost of normal activities = £ 32,400

*7 marks for networking analysis  
1 mark each for critical path, duration and cost  
up to a maximum of 10 marks*

(b)

Crashing the network involves the reduction of overall project time. Some of the activities may be speeded up by putting more resources into them. This process takes into account the:

- Criticality of activities
- Arrangements for bringing about reductions
- Resource implications

*1 mark for definition  
2 marks for explanation for how this might be achieved  
up to a maximum of 3 marks*

(c)

### Options appraisal

Option I:

Reduce Activity F by 3 days at a cost of £1,500

- Overall cost = £33,900
- Duration of project = 39 days
- No new critical path

Option II:

Reduce activities B and I by one or two days each at a cost of £500 per day, or D by one or two days at a cost of £400 per day.

B and D do not lie on the critical path. Reducing activity I by two days means:

- Overall cost = £33,400
- Duration of project = 40 days

### Conclusions

Both options meet the time constraints – but not the cost constraints - set by the project. Option II is the more cost effective. However, Option I allows scope for one day's unforeseen delay. The decision to select option I or II is therefore dependent on the confidence the department has in the forecast durations.

*2½ marks for identifying the position for each of the options (ie 5 marks for options appraisal). 3 marks for conclusion  
Up to a maximum of 8 marks*

(d)

Another means of representing the project would be by means of a Gantt chart. 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. Such a plan shows how many activities can be undertaken in parallel at any one time. Other variants of network analysis include PERT charts where the fixed activity duration is substituted with a statistical distribution.

*1 mark for identifying Gantt chart  
3 marks for identifying attributes, discussion of Gantt chart  
up to a maximum of 4 marks*

(25)