

**THE BCS PROFESSIONAL EXAMINATION**  
**Professional Graduate Diploma**

**April 2005**

**EXAMINERS' REPORT**

**Computer Services Management**

**General**

The number of candidates selecting this module continues to rise. Although many candidates had prepared well for the examination this year, and gained high marks as a result, there was evidence that some had not prepared adequately. Marks are not given for general knowledge, which anyone who uses a PC might possess, and it should be noted that at Professional Graduate Diploma level examiners require evidence of the deeper understanding that results from studying the recommended texts.

Candidates should carefully read the questions, as the precise words used provide valuable clues as to what is expected in the answer. For example, if asked to "list and describe", the examiner expects a list of items, with each item followed by a description. If only a list is provided, the candidates will not gain the marks allocated for the required description.

A number of candidates answered more than the required three questions. Because of time constraints, this meant that there were sometimes four or five poor answers rather than three good answers. As credit will only be given for the three best answers, future candidates are advised to attempt only three questions and to concentrate their thoughts accordingly.

On a more positive note, the best papers were of an extremely high standard and the overall pass rate was just above 76%.

An indication is given below of the expected answer points. However, marks were given for additional points if relevant to the question.

**Question 1**

1. You are the Head of Information Services for a knowledge based company employing 400 people at a single site on the edge of a major city.

A recent information security audit, carried out by an external auditor, noted that the organisation appears not to have a coordinated approach to the physical security of its information systems.

You have been asked by the Board of the company to build a project team to address this important issue.

- a) Describe the membership and the structure of the project team you would put in place. Within your answer you should describe in detail your justification for the inclusion of the three most important members of the team. **(10 marks)**
- b) With reference to three specific areas of risk, chosen from your understanding of the physical security needs of an IS environment, show how the membership and structure of the project team would allow the key issues to be resolved. **(15 marks)**

## Answer Pointers

This question tests several aspects of information system management:

- An understanding of the physical security requirements of an information system
- An understanding of the management of risk in a corporate environment
- A knowledge of project management concepts and techniques
- A knowledge of teams roles and structures

a) The candidates for key team positions might include, but not necessarily be limited to:

- IT systems manager
- IT networks manager
- IS security manager/information manager
- Organisational safety manager
- Telecoms manager
- Site security manager
- Facilities/Building manager
- Operations manager
- Management sponsor
- Corporate risk manager
- Supplier representative (in an outsourced environment)

The justification for inclusion, and the nature of their responsibilities needs to be cogently argued. Arguments may vary according to the defined assumptions made with respect to the nature and structure of the organisation.

Up to 4 marks for the discussion of the membership of the project team.

Up to 3 marks for the description of the structure which would be used for the project team.

Up to 3 marks for the justification made for the inclusion of the three most important members of the project team.

b) The nature of the specific areas of physical risk is likely to include some of the following, although other valid points were accepted with suitable justification:

- Fire in the building or adjacent areas
- Flooding from nearby water course, mains failure, internal pipework, rainwater goods failure.
- Major power outage to public supply either locally or regionally
- Significant hardware systems failure in either IT or building management systems
- Loss of air-conditioning systems to server systems
- Communications failure, failure of Telecom provider, local telecom wiring failure, LAN failure
- Lightning damage
- Theft of key equipment or resources

Management of information, decision making and decision support, coordination and communication should be core elements of the answer.

Up to 5 marks were awarded for the discussion associated with each of three risk areas.

## Examiner's Comments

Around 60% of candidates selected this question and over 70% obtained a pass. The answers to this question generally reflected the varied backgrounds of the candidates. In many cases, the responses were based on what appeared to be "real life" examples from the professional experience of the candidate. These candidates generally provided well structured accounts, but a number of candidates became too involved with the example - and told their story rather than reflecting the material asked for by the question. A good deal of superfluous material was included

as a result. While no penalty was imposed, these candidates did not benefit from points which had no relevance to the question.

The question was specific in its reference to physical security. A number of candidates provided an answer which was based almost completely on logical security. Although they received credit for relevant material, these candidates did not achieve the marks which they could have obtained if they had answered the question as set.

## Question 2

2. An established insurance company decided to outsource all its computer services functions in order to save costs. The work was put out to tender and was won by Zeus FM, a major outsourcing company who promptly agreed a Service Level Agreement (SLA) with the insurance company. As an experienced Service Delivery Manager working for Zeus FM, you have been given responsibility for managing the transition to the outsourced service.

Although the transition proceeds as planned, there is some resentment, as the users perceive that the level of service has deteriorated as a result of the outsourcing arrangement. Following an unplanned departmental move within the insurance company's office, Zeus FM charged for relocating computer equipment, an activity the in-house team would have performed free of charge. This was raised at the monthly Service Delivery meeting, where one of the executives angrily exclaimed, "Zeus FM has no idea of the concept of service". Three executives expressed agreement and promptly left the meeting; and relationships between Zeus FM and the insurer are now poor. This has come to the notice of the Chief Executive Officer (CEO) who has asked you for assistance in both understanding and resolving the issue.

Produce a report for the CEO in which you:

- a) Define, within the context of computer services, *service level management*. **(5 marks)**
- b) List and describe ten items which should be included in a Service Level Agreement. **(10 marks)**
- c) Explain how the various unplanned activities could be accommodated within a revised SLA with no extra cost to the insurance company. **(10 marks)**

## Answer Pointers

### Part a) - Definition of service

ITIL Definition:

*"Service Level Management is the process of managing the quality of delivered IT service according to a written agreement or contract agreed between the users and the IT Services Section. This contract defines the responsibilities placed on these parties and in particular binds the IT Services Section to offer and agreed quality and quantity of service so long as the users constrain the demands they place upon the service within agreed limits."*

Marks: One mark for an answer in report format and four for a definition that includes the above main points; lower marks according to the level of omission.

## **Part b) - Contents of a Service Level Agreement**

An SLA will contain all or some of the following:

- Scope of agreement/Terms of Reference
- Signatories to the agreement
- Date of next review/renewal date/notice period
- Dates of previous amendments
- Brief description of service
- Charges/payments/penalties
- Service hours
- Service availability
- User support levels
- Performance
- Details of agreed minimum functionality
- Details of any service charges involved
- Change control procedures
- Details of any planned changes
- Contingency
- Anticipated growth
- Restrictions
- Central print facilities
- Central print distribution
- User training
- Changes to SLA
- Description of change control procedures for requesting SLA amendments
- Fault reporting
- Escalation procedures
- Any other valid item

Marks: One mark for each item listed and described up to a maximum of 10 marks.

## **Part c) - Accommodating unplanned activities at no extra cost**

This part of the question seeks to examine the candidates' understanding of how SLA's are managed in a real life situation.

**General point:** The SLA is not a fixed agreement; it can be changed with the agreement of both parties and this can include increases or decrease to the service. To accommodate office moves, Zeus may be happy to agree a set number of moves per year in exchange for changes that reduce their resources in other areas. (Four marks)

### **Types of changes**

- Reduce one service and replace with another
- Remove obsolete or unwanted services
- Degrade performance requirements
- Change the term of the SLA (if profitable Zeus may wish to extend; if unprofitable they may wish to shorten)
- Reduce weekend support requirements
- Increase user support for some functions – housekeeping, etc.
- Minimise reporting/accounting requirements
- Increase the maximum service failures
- Increase prime time downtime

- Decrease minimum percentage of workstations available

Marks: One mark for each valid point up to a maximum of six marks.

### **Examiner's Comments**

This was the most popular question with around 82% of candidates selecting this question of whom 86% obtained sufficient marks to obtain a pass.

Part a) was answered moderately well with many able to describe the essence of service management.

Most gained high marks for Part b), with many having a very clear idea of the contents of an SLA.

Part c) clearly differentiated the better candidates. The question sought to test the candidate's understanding of the practical dynamics of a SLA where both parties have to discuss and agree courses of action that meet both organisations' objectives. Although the answer pointers describe a trade-off approach, there were several imaginative and original answers that were equally acceptable. Many candidates lost marks by just making observations of the situation, rather than attempting to explain how the unplanned activities could be accommodated at no cost.

### **Question 3**

3. The sales organisation for which you work recently suffered a major loss of service when the server infrastructure supporting its Internet sales portal collapsed. On investigation, it appears that the launch of a special offer to customers coincided with a period of reduced capacity due to server software maintenance. The mismatch of supply and demand led to the collapse of the service. The organisation suffered substantial financial losses as a result of this incident, in addition to a considerable amount of bad publicity.

The Board has asked you to make a series of recommendations which would prevent the recurrence of such a problem.

- a) In a memorandum to the Board, outline three key areas of the organisation which need to be changed in order to resolve the situation. **(12 marks)**
- b) The Board has approved your proposals. Produce a project plan to show how these changes would be implemented, together with operational details of how the specific concerns would be addressed. **(13 marks)**

### **Answer Pointers**

This question is essentially about the important of good information and communication paths within organisations, but it includes a number of threads which have specific IS/IT impacts.

a) The questions asks specifically for a memo format for this section of the answer. It is important that candidates at this level can demonstrate that they can make cogent arguments in a standard business format. Marks will be lost for those who do not demonstrate this facility. Implicit in this is the need for the memo to be accessible to a non-technical manager – so the arguments need to be clear and unambiguous.

The overall cause of the problem was a major failure of communication within the organisation. Marketing and operation groups were not making each other aware of their needs and expectations. This needs to be addressed at a senior level – as the processes governing this communication should be a core part of the business structure.

Key areas of the organisation which need to change could include:

- Communication (and communication and communication!)
- Marketing group
- Capacity planning team
- I.T. operations group
- Senior business group
- Corporate direction/structure

The recommendations should be very positive and blame free. The need is for the organisation to address the problems and move on – not to find someone to be punished.

Up to 3 marks for format and style of the memo.

Up to 3 marks for material relating to each of three key areas of the organisation.

b) The project plan could take a number of forms, depending on the background and experience of the candidate. A written description or an annotated Gantt chart are equally valid if they convey the relevant information at an appropriate level.

The project plan should demonstrate the experience of the candidate in the management of tasks at this level and scale. The project plan should address the issues and concerns outlined in part a).

Up to 4 marks for the project plan

Up to 3 marks for the operational details of each of three areas of how the concerns could be addressed.

### **Examiner's Comments**

The least popular question with less than half the candidates attempting an answer and of those 62% reached a pass standard. The main point of the question is the importance of having good communication paths within an organisation. A number of candidates showed good understanding of the key issues, and provided answers which would provide effective solutions in the circumstances described. Other candidates, however, chose to adopt a "blame" approach to the question, which both failed to address the question, or to offer an effective solution to the issues raised. The second group did not score well in this question.

A number of candidates who answered this question did not appear to have a detailed knowledge of the environment described. Credit was given for material which met the requirement - although it was often related to very small scale activities.

It is important to note that a technical solution was not being sought in this question. A number of candidates proposed solutions based (generally with limited justification) on a particular proprietary technology. The solution sought was a management based one.

The project plans which candidates provided generally reflected the background and experience of the candidate. No particular methodology was required or expected. All plans were judged objectively - on their merits in the context of the question.

#### Question 4

4. You are the Technical Services Manager of a large organisation that is planning to replace most of its legacy system with an enterprise systems solution. Responsibility for the development and implementation of the enterprise system has been given to a firm of management consultants and the project team consists of you and other in-house staff, plus contractors. On behalf of the computer services department you are to manage the provision of the hardware and software infrastructure for both project development and operational running.

All key staff have been asked to present their various roles at an initial project meeting. This has been arranged by the project manager so that each member of the project team understands the role of each member of the team.

Outline the main points you would include in the presentation to describe:

- a) The role of the Technical Support Manager. **(9 marks)**
- b) The degree of involvement that the computer services department needs in specifying, testing, accepting and implementing the developed application. **(10 marks)**
- c) The short term impact which the development may have upon the computer services department and how you could provide the extra resources required. **(6 marks)**

#### Answer Pointers

##### Part a): Technical Support Manager

##### General:

A Technical Support Manager is responsible for the application-independent software required to operate the computer facilities and to provide the infrastructure for the development and secure operation of all IS facilities within an organisation. Sometimes referred to as the Chief Systems Programmer. May report to the CIO or the Computer Services Manager. The Network Manager may report to the Technical Support Manager.

##### Responsibilities:

- managing the technical support and systems programming staff assigned
- installing and configuring computer systems and software
- taking responsibility for all parts of the computer network, including telephone exchange and equipment, communications links, file servers, workstations, printers, scanners and other peripherals;
- diagnosing and solving application-independent software faults (operating systems, DBMS software etc);
- establishing good working relationship with outside suppliers and internal IT co-workers
- software security and access
- provision of testing environments for developers
- keeping records of software licences

Marks: Two marks for any reasonable overall description, plus a further one mark for each of the responsibilities, up to a maximum of 7, total 9 marks)

## **Part b) - Role of Computer Services in specifying, testing, accepting and implementing.**

**Specifying.** Areas involving Computer Services will include:

- Ensuring that the proposed system is capable of reliable operation
- Checking compatibility with existing hardware and software (or agreeing incompatibility before development)
- The systems being replaced
- The degree of parallel operation
- The length of changeover period
- The testing environments required
- The number of staff needed for operation and support
- Data security requirements
- The expected on-line response times
- The expected overnight batch processes
- Hours of systems availability expected
- Agreed levels of systems availability, MTBF targets
- Expected DR Requirements
- Network capacity requirements
- Cabling requirements
- Desktop requirements
- WAN requirements
- Physical and system access control requirements
- Training needs

**Testing:** Areas involving Computer Services will include:

- Development method to be used - details of any proposed variances
- Test environment for computer services testing
- Degree of proposed computer services testing – both on-line and batch
- Capacity testing
- Security testing
- Availability/preparation of documentation
- Training needs

**Acceptance:**

- Database/file conversions/reorganisations
- Acceptance schedules
- Availability/preparation of documentation
- Training needs
- Criteria for sign-off

**Implementation**

- Planned implementation date
- Implementation phasing
- Parallel running with existing systems
- Decommissioning dates of existing systems
- Archiving

Marks: The purpose of the question is to determine the degree to which the candidate understands the importance of Computer Services becoming involved in the development process. One mark for each point raised, maximum 10 marks.



### Part c) - Impact of development

**Hardware/software** – testing and parallel operation will double or triple the current requirement for hardware or software. Could be met by a combination of using ASP resources, leasing additional hardware for a short term, buying secondhand equipment nearing end of life (dispose of after development is complete) or an arrangement with DR suppliers (use DR equipment on agreement that you immediately vacate in the event of an invocation).

**Staff** - Additional staff will be needed during development stage. Could be met by recruiting some additional permanent staff, using contract staff, retaining staff beyond retirement age, temporary transfers from user departments, undergraduates on block release, overtime, suppression of leave, update moratorium etc.

Marks: One mark for each valid impact identified plus a further mark for the measure proposed, maximum 6 marks.

### Examiner's Comments

This question was attempted by 55% of the candidates. In general the answers were of poor quality with many on the margin of a pass/fail mark and around 48% obtained a pass.

For Part a), many candidates repeated or expanded on the content of the question, rather than explaining in detail the function of a Technical Support Manager. Some answers were just based around the three words of the job title.

Part b) sought to test the candidates' understanding of how computer services staff should be involved in a project development process. Unfortunately, many described development methodologies and made little or no reference to the vital contribution that computer services staff should make.

Part c) continued on from part b). This part required candidates to consider the implications that a large development system may have upon a Computer Services Department. Only a few candidates had any real understanding of the issues and hardly any gained full marks for this part of question 4.

### Question 5

5. Your organisation, a diverse business operating on sites in several cities, last upgraded its PC desktop hardware in order to avoid Year 2000 problems. Five years later, it is increasingly apparent that the hardware is failing to meet current needs, with reliability as well as performance being inadequate. To add to the urgency of hardware replacement, your key software supplier is ceasing support for the operating system you currently use – forcing an upgrade which cannot be supported on the current hardware.

You have been tasked with delivering a complete change in the desktop hardware and software environment over the next six months, while ensuring that the business of the organisation continues to operate successfully.

- a) Write a report for your senior management discussing four key aspects of the project which must be addressed in order for the operation to be successful. **(13 marks)**
- b) For one of the key aspects you have discussed, expand your report into a detailed series of activities – together with a description of why each activity is important. **(12 marks)**

## Answer Pointers

This question represents a set of circumstances that will be familiar to most candidates who work in an operational IT management role. While the concepts are IT service based, the potential impacts on the business are a key part of the expected answer.

The organisation has reached a position where a “big bang” project of hardware and software replacement cannot be avoided. Key aspects which must be addressed include:

- Agreement at high level of the importance of the project and its delivery.
- Visible support from senior management.
- Development of a project team with suitable skills and adequate resources.
- Procurement of hardware and software at a quality, price and schedule which can be accepted by the business.
- Testing and piloting the new environment to ensure that it meets the needs of the organisation in terms of quality and performance.
- Training of both IS/IT operational staff and the end users in the new features and working practices of the new environment.
- Building an implementation team and technical support structure for the rollout.
- Contingency planning in case of unforeseen problems or delays with the rollout.
- Agreeing plans for the continuity of key business functions during the rollout.
- Development of new support structures, training of Helpdesk staff to react correctly to the new environment.
- Planning of the implementation to allow the training and desktop replacement to flow in a logical sequence.
- Publicity preceding all key stages of the operation.
- Formal conclusion of the project and an analysis of lessons learned.

Up to 3 marks for report style and format

Up to 2.5 marks for each of 4 key aspects of the project which must be addressed.

b) The answer to this part should be a cogent analysis of the detailed delivery of one of the key aspects the candidate described in a). The justification of the importance of the activities should demonstrate an understanding of the delivery of service change in a business or similar environment.

Up to 6 marks for the series of activities

Up to 6 marks for the justification of why each activity is important.

## Examiner's Comments

The second most popular question with around 63% of candidates making an attempt and 63% reached a pass. The material within this question was clearly familiar to many of the candidates who attempted this question. A number of candidates provided answers which provided a good basic solution.

In some cases, however, candidates did not read the question completely or thoroughly and provided solutions to what was effectively a different question. Credit was given for those aspects of the answer which provided the material requested - but a number of candidates were unable to gain marks as they answered a question they would prefer rather than the one set.

Some candidates chose to use this question as a platform for discussing the merits of different operating systems, technologies and software products. This was not relevant to the question, and they lost time as a result and gained no marks.

The type of activity given in the question is commonplace and central to the provision of an effective information service. Candidates need to be equipped to respond confidently and competently to this type of challenge.