

THE BCS PROFESSIONAL EXAMINATION
Professional Graduate Diploma

April 2004

EXAMINERS' REPORT

Computer Services Management

General

The number of candidates selecting this option continues to increase year on year, with a 37% rise for this year. The overall pass rate is 78% with a mean of 43%.

Many of the candidates demonstrated IT and management experience and consequently performed well in the examination. Although the answers given generally covered the required points, higher marks could have been obtained if the candidates had spent more time clarifying their thoughts before answering the question. This particularly applies where questions require an answer in report or memorandum format and where the intended recipients are not IT professionals.

As last year a minority of candidates did not read the questions adequately and either omitted sections or answered a question which they would like to have seen on the paper. Others wasted their efforts by filling answer books with comments about either their employers or proprietary hardware and software systems they were familiar with.

Those candidates who failed would find it helpful to examine the syllabus and to study this in conjunction with the operation of computer services within their own organisations. Candidates are encouraged to look at the distribution of marks in a question and to use this as a guide when planning the depth of their answer to each section. The few who continue to answer more than three questions are reminded credit is only given for three questions.

An indication is given below of the points expected; however any valid point which was relevant to the question received marks.

Question 1

You have been recruited as the Computer Services Manager for a large organisation that has recently installed a large, mission-critical, client-server system. Since installation the response time, as observed by all end-users, has progressively declined and the in-house departments responsible for the development and operation of the new system are blaming each other. You have been asked to prepare a plan which will lead to the positive identification of the cause of the slow response.

- a) Briefly describe FIVE areas that should be investigated when considering poor end-user response times. (15 marks)
- b) Suggest how the response time problems could have been identified and resolved prior to the implementation. (10 marks)

Answer Pointers

This question sought the candidates' understanding of the various factors that can lead to slow response in an application and how the use of an accepted development methodology could have avoided performance problems.

Part a - areas for investigation

Any reasoned five areas, but are likely to include:

Insufficient network capacity. The new system may have caused a heavy increase in network traffic and straining the infrastructure resulting in bottlenecks, contention etc. Alternatively a "rogue" network device could be flooding the network with error messages.

Insufficient PC processing capacity. The demands of the new systems, or the concurrency of this with other operational systems, may indicate that the PC needs upgrading.

Insufficient server capacity. The new system may have caused bottlenecks in processing, memory, disk transfer or the file transfer capacities of the server.

Database contention/data issues. There may be contention for certain areas of the database or there could be transactions, or combinations of transactions, that cause massive disk processing. This could be caused by poor database design or the accumulation of data caused by live operation.

Application performance issue. A system problem surrounding one or more transactions could be the cause of performance problems. This could be due to misunderstandings of the data structure, poor system design or inefficient use of code.

Lack of capacity planning. Capacity planning could have been skimmed or overlooked at the design stage. User expectations at the design stage may have been omitted or over-optimistic assumptions made.

(5x 3 marks, maximum 15 marks)

b) Identification/avoidance.

Candidates were expected to argue that the performance problems should be identified and rectified in the testing stages. The adoption of any formal methodology would allow for computer services staff to be fully involved in the development process, including performance testing prior to live implementation. Occasionally, computer services staff are required by their organisations to implement systems without this vital last stage of development. In the long term interests of their employer's organisation, computer services staff should resist this.

A methodology would have ensured that:

- Release testing is performed to test the full capability of the application, including all processes, people, technology and data volumes.
- Operational test. This is a full operational and performance test of the integrated system to test the application, technical infrastructure and operational infrastructure. This testing should use copies of the live production data.

Other acceptable answer pointers included use of theoretical capacity/sizing exercises, analysis of network peaks, use of monitoring software during testing and pilot schemes prior to full implementation.

(5 marks each for any two points explained, maximum 10 marks)

Examiner's Comments

This was a popular question and was selected by most candidates. Some provided exceptionally good answers, and appeared to be based on a combination of theoretical and practical knowledge.

Part a) was generally answered well.

Unfortunately, to answer part b), many just repeated the points they gave in part a) of their answer and for which gained no extra marks. A few candidates provided answers based on development lifecycles and gained little for their efforts.

The average mark obtained was 11 and some 68% of candidates who attempted the question reached a pass standard.

Question 2

The company for which you work, as the Computing Service Manager, has offices located in the centre of a major city. The Board is concerned that the area may be vulnerable to disruption from civil unrest or terrorist activity - the threat of which has been increasing in recent months.

Although no specific threats have been made, the company wishes to review its policy on business continuity planning. As part of this review, you have been asked to prepare information which will be used in a report to the next meeting of the Board.

- a) Briefly describe FIVE areas of potential IT related risk to business continuity which you would wish to see considered in the report. (15 marks)
- b) For one of the areas you have described in a), write a report-style analysis of the potential risk and how it could be addressed. You should include a discussion of the benefits and disadvantages that this approach would bring. (10 marks)

Answer Pointers

This question is sadly very topical and likely to remain so. Episodes such as the Baltic Exchange and Canary Wharf bombings in the UK and with demonstrations resulting in serious damage to property, mean that this is an area where I.T. professionals need to have a clear view.

Items for section a) could include, but are not limited to:

Physical security of server room
Existence of cold or warm disaster recovery sites in different locations
Location of key documents and media
Emergency communications procedures
Mechanisms for notification of staff in emergencies
Fallback network communications systems - physically separate feeds
Arrangements with suppliers, customers and contractors
Testing of disaster plans with feedback paths to improve logistics
Up to THREE marks for each of FIVE risks.

Section b) should be based in report format, and candidates will lose marks if they do not provide their answer in this form.

The report should include positive benefits to the business - both in terms of the day to day running of the business as well as the emergency situation .

Up to TWO marks for presenting the answer in report style, up to FOUR marks for the benefits associated with one approach, up to FOUR marks for the disadvantages of the approach.

Examiner's Comments

The most popular question and the average mark obtained was 12 and pleasingly 87% of candidates who attempted the question reached a pass standard.

This is, sadly, a critically important area of understanding for IT professionals. The answers presented covered a very wide range of scenarios, reflecting the background and experience of the candidates. The majority of candidates demonstrated a sound understanding of risk management and its application to business systems.

Many candidates produced extremely effective business-style reports in response to the second part of the question. In a few cases the suggested risk mitigation, while possibly feasible, would not be financially sustainable in the majority of instances because of their complexity and depth.

A number of candidates did not present part (b) in report style and lost marks as a result.

Question 3

The Board members of a medium-sized company are deeply concerned with the high cost of the in-house IT services and have recently attended two presentations: one by an organisation that provides a traditional outsourcing service and another which is an application service provider. They were impressed by both presentations but need help to understand the differences between the two approaches. Prepare a memorandum for the Board which:

- a) contrasts the service provision, staffing and charging of the two alternative approaches. (10 marks)
- b) provides advice on establishing joint teams and committees which will be required to manage the IT services when these are provided by the outside organisation. (10 marks)
- c) recommends and describes the governance procedures that the company should contractually impose on the selected provider. (5 marks)

a) Application service providers

Service provision

- ASP companies host software applications and allow client companies to share the use of these standard applications. Often ASPs are accessed via an internet connection. The ASP is responsible and has full control of the maintenance of the application. Client organisations would have to adapt to the ASP's systems.
- Outsourcing companies take over an existing organisation's applications which are unique to that organisation. The outsourcing company will maintain the applications on the organisation's behalf, but the degree of maintenance, release state, etc. will be largely dictated by the client. The client would not need to change systems.

Staffing

- Outsourcing companies take on complete IT services from organisations and under TUPE are also required to take on the staff involved as well.
- ASP companies will have staff already in place and, unless there is a major transfer of functions, they will not take on the client organisation's staff

Charging

- Charging for ASP services is on a usage basis, whereas for an outsourcing company charging is for the total IT service provision, irrespective of usage.
- The ASP is responsible for application maintenance, communication with the software vendor and licensing. There are no transferred charges to the client company. An outsourcing company will pay all charges on behalf of the client organisation but will pass on these costs to the client organisation
- Subscribing to an ASP allows companies to avoid purchasing, installing, supporting and upgrading expensive software applications. Therefore the target market for ASPs is small companies or companies wishing to trial applications.

(2 marks for each point, maximum ten marks).

b) Managing suppliers of IT services.

There is no set answer to this question but the candidate will need to express an appreciation of the need to establish joint teams to manage the relationship and to have these working at different levels. Typically, an organisational structure to manage outside IT suppliers will consist of:

- Management Board. This will consist of senior/Board members of the client organisation and those of the outside suppliers. They would typically meet twice a year and would be concerned with strategic issues, IS architecture, contract renewals, price increases, client surveys, new systems etc.
- Management Committee. This would consist of middle managers from the client's users, IT managers from the client organisation and delivery managers from the suppliers of the IT services. They would meet monthly to review monthly service levels and operational issues, consider any changes to the services being provided, discuss tactical plans and review monthly charges.
- Operational teams. There would need to be teams established to handle the day-to-day operational issues that arise. These may involve the client's remaining IT staff and/or the clients user staff.

(5 marks each for any two points explained, maximum 10 marks)

c) Governance procedures

- All service levels must be within preset or benchmarked levels
- There must be agreed escalation and dispute resolution procedures
- The degree of "open-book" accounting must be determined
- There should be no exclusive agreements (new services can be put out to tender)
- There must be unambiguous charging, linked to realistic indices.
- There must be agreed exit procedures
- Limits of liability must be preset.
- Other at examiner's discretion

(One mark for each, maximum five marks)

Examiner's Comments

The average mark obtained was 11 and some 70% of candidates who attempted the question reached a pass standard.

This question was in three parts with each successive part requiring a deeper level of knowledge and understanding. Parts "a" and "c" were generally answered well, but the weaker candidates omitted any reference to application service providers and just concentrated on outsourcing companies and the respective advantages/disadvantages. Some candidates confused application service providers with internet service providers and failed to gain marks.

For a question that requires comparisons to be made, candidates would be advised to consider either comparison tables or list each point followed by a comparison of the differences. Clarity of explanation was particularly important for this question as it required a memorandum to be prepared for the Board.

Question 4

As the Director of Information Services you have been asked to justify the way in which staff are recruited to important IT posts within the company. You have been asked to produce a policy document which will be used as a basis for future recruitment.

- a) Describe FIVE elements which you would include in the recruitment policy document. (15 marks)
- b) For ONE of the policy elements you have described in a), discuss in detail a situation in which failure to follow this policy could seriously damage the business of your company. (10 marks)

Answer Pointers

This question addresses a number of different areas of service management and policy definition. The object is to get the candidate to provide evidence that they can build a policy that relates to real areas of potential risk in terms of recruitment.

The overall emphasis is on the management of corporate risk.

a) Policy elements could include:

Professional and personal references - how are these followed up and at what level
Security checks - what outside agencies are consulted when recruiting into sensitive posts within the organisation? How is this managed?
Qualifications - checking of university, college and manufacturer specific qualifications.
Action taken to prevent candidates having used identity theft to gather personal identification and supporting material.
Identification of areas of corporate risk versus job roles - does the post holder have access to sensitive information or control over significant funds/ intellectual property/ control of key assets. How is this managed to prevent fraud etc.?

The scenario used by the candidate needs to show an understanding of corporate management in terms of personnel and risk management. The candidate should balance this with their professional I.T. knowledge to provide specific risks that need to be managed. An example of this might be a member of staff who was recruited - without adequate checks - into a position dealing with key new technologies or products - details of which might be sold to competing organisations.

Marks:

- (a) Up to THREE marks for each of FIVE policy elements.
(b) Up to FIVE marks for detailed description of the situation, up to FIVE marks for an analysis of the damage to the business.

Examiner's Comments

The average mark obtained was 10 with only 56% of candidates who attempted the question reaching a pass standard.

A number of candidates gave weak answers to this question. The need to provide a transparent, auditable process for recruitment does not appear to be well understood.

The recruitment of staff is likely to be a fairly frequent exercise in many organisations, and it is important that IT professionals can demonstrate good judgement in this regard. The impact of a poorly defined and managed recruitment policy can be substantial in an IT environment – and can potentially have impacts well beyond the immediate organisational group.

Several answers to this question attempted to use the same material repeatedly in the first part of the question, with only detail being changed. This resulted in low marks being obtained, as the candidates limited the scope of their answers.

Question 5

In recent discussions between the IT Director and the other Heads of Department of your company there has been criticism of the lack of communication between IT staff and the rest of the company. There is a feeling that IT staff are unwilling to get involved in discussions and to share information.

- a) Describe THREE techniques that the IT department could use to improve communication with the rest of the company. (15 marks)
- b) Discuss in detail how you would introduce one of the techniques, described in a) into the organisation. Give a detailed plan of how you would implement the technique and the procedures you would use to measure the success or failure of the plan. (10 marks)

Answer Pointers

Unfortunately, this question relates to a common problem in many organisations. Much of the success of an I.T. service group rests upon "unmeasurable" factors such as confidence, trust and opinion. Service groups need to build systems which enable strong communication paths with their customers at all levels. Where this fails, the I.T. group may be viewed as failing in other important respects - whether this is true or not...

Communication can - and should - operate at multiple levels, and it should be the job of no one person to make it happen. Rather, it should be a part of the service culture which is managed as part of every customer facing role.

It is important that strong internal communication exists with the I.T. group - as it is not uncommon for a lack of communication to be based on a lack of available information. All staff should have easy access to current information on all relevant aspects of service delivery, policy and planning within the group.

Techniques for better communication could include:

Briefing sessions on new technologies and projects
Intranet pages which reflect current service information and policies
Regular involvement of customers in reviews and policy discussions
Managed use of feedback from customers in determining priorities for service improvement

Section b) should include visible elements of project planning and project management.

Marks:

- (a) Up to FIVE marks for each of THREE techniques which the IT department could use.
(b) Up to TWO marks for the answer being in the form of a plan, up to FOUR marks for the description of the technique implementation and up to FOUR marks for procedures for measuring success or failure.

Examiner's Comments

The average mark obtained was 11 and some 71% of candidates who attempted the question reached a pass standard.

In general, this question was answered reasonably well by the majority of the candidates attempting it. Judging by the content of the answers, a number of candidates had direct experience of the type of situation described in the question.

A number of candidates interpreted part (a) as a request for technical methods of communication (e.g. Fax, email, intranet). Credit was given for this interpretation where it was clear that the

candidate understood the role of the technology as being in support of a management exercise – rather than being an answer in itself.

The extent to which candidates suggested technological solutions to this problem suggests that they do not understand the importance of good interpersonal communication in the provision of a well-regarded service.

Only a few candidates gave answers to part (b) which gave a means of measuring the success or failure of the plan. Metrics are an important part of a service improvement programme. Similarly, few candidates used any formal techniques for the presentation of a project plan in relation to this section.