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Intermediate Level

Systems and Project Management

10

ISPM

27 May 2004

Thursday morning

INSTRUCTIONS TO CANDIDATES

Read this page before you look at the questions

You are allowed three hours to answer this question paper.

ALL questions are based on the scenario, which is on pages 2 – 5. The Appendices to the scenario are on pages 6 and 7.

Answer the THREE questions in Section A.

Answer ONE question ONLY from Section B.

SCENARIO

READ THIS SCENARIO FIRST.

ALL QUESTIONS ARE BASED UPON THIS SCENARIO.

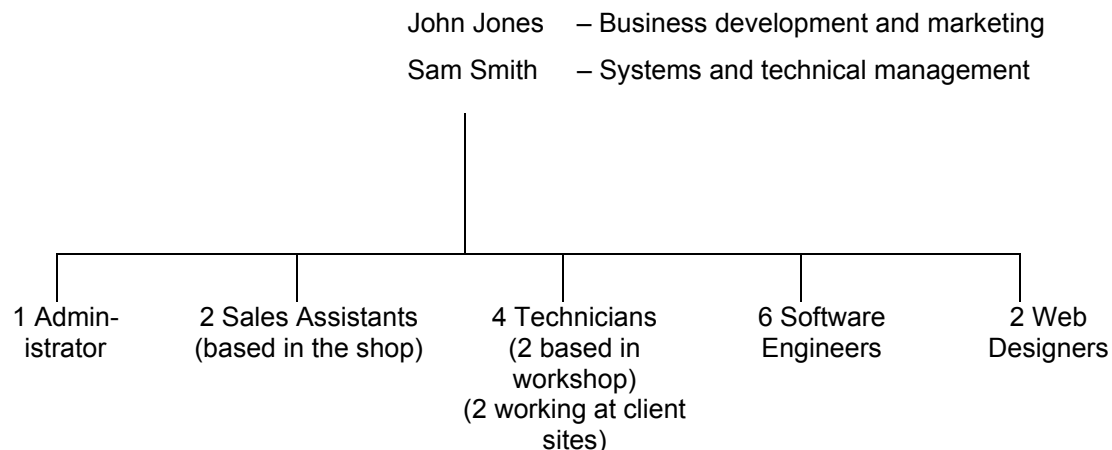
THE QUESTIONS ARE IN TWO SECTIONS.

ANSWER ALL THREE QUESTIONS IN SECTION A AND ONE ONLY FROM SECTION B.

Background

QS is a small software design company, set up in May 1996 by two graduates, John Jones and Sam Smith. Since it started, it has built a strong local reputation, working with a range of small-to medium-size businesses to design and develop software applications. It also occasionally advises businesses on hardware installation. It also runs a retail shop, where it constructs and sells custom-made computers to individuals and undertakes repairs and maintenance in a workshop located behind the shop. The design and development team are located above the shop.

Organisation chart:



Both owners recognise that the quality of products and services is vital in such a highly competitive market, and to date, QS has managed to maintain a high quality of customer service by focusing only upon individual customers and small to medium-size businesses.

New business opportunity – Regal Global Advertising (RGA)

In August 2003 John Jones attended a local business managers' conference, where he met an old university friend. His friend was working as the IT manager of a large local advertising and marketing company called Regal Global Advertising (RGA). It emerged that RGA was looking to invest in setting up a new customer database and website. The customer database, which had been developed in-house, had been in use for over 10 years, and was insufficient to handle the large number of customer account details (over 500 records, ranging from small local sole traders to large national corporations). In addition, RGA wanted to invest in updating its current basic website (which was developed in-house in August 2001) to allow customer access to the customer database to check account status and details of current advertising campaign progress. RGA was also considering re-investing in new hardware throughout the organisation, which would require an on-going maintenance facility. The customer database and website would need to be in place and fully operational by 30 May 2004.

On returning to the office, John began to put together an outline tender document and an outline project plan. However, Sam Smith, the other partner, was reluctant to take on such a large project as they had no previous experience of managing work on this scale and, more importantly, they already had sufficient work with existing clients for the foreseeable future. John's response to Sam's concerns of maintaining quality for existing customers was "Don't worry, we'll fit it in around everything else – there's plenty of time to get it all done". As John was responsible for new business, which in the past had always been successful, Sam agreed to allow the tender to progress.

The RGA project

QS was awarded the contract to undertake the project at the end of October 2003, following a detailed feasibility study carried out by a steering committee of RGA. Two other organisations tendered for the project, but QS was awarded the contract on the basis of its previous high standard of work. Also, QS guaranteed a 12-month maintenance and review facility after the new system was complete. The outline project plan is shown in *Appendix 1* which is on page 6.¹

Project scope

The project was to be completed by 30 May 2004, 30 calendar weeks after the award of the contract, with the design and delivery of a customer database, which could be utilised by the customers through access to a re-designed website. In addition, there was an option to extend the contract for a further 12 months for systems maintenance. This would be negotiated and finalised only after successful project completion and systems performance evaluation. Three stage payments would be paid to QS: one after the successful completion of the design phase, one after the integration and test phase, and the final payment to be made after the final handover. Penalties of 10% reduction in each stage payment would be incurred by QS, if these key stages were not met on the time scheduled and agreed in the project plan. The whole contract is worth £150,000 (excluding maintenance which is worth a further £70,000).

Project resources

Sam Smith was assigned the role of project manager, with responsibility for managing the delivery of the final project to RGA. It was planned that three of the software engineers and one of the workshop technicians would work full-time on the project. However, due to QS already being committed to other jobs, Sam allowed these core staff to be released from the RGA work when necessary. Other QS staff were to be assigned temporarily to the RGA project as and when they were needed. John Jones agreed to act as liaison between the project team and the IT manager of RGA, as he considered it to be his project, having won the contract. However, John would not be directly involved in the day-to-day activities of the project. Sam was not happy about being responsible for team management and co-ordination. He preferred the technical work to managing people and had little experience of team leadership and delegation. No contract undertaken by QS previously had required this level of project management.

¹ The stages of the project as shown in *Appendix 1* are to run consecutively in the order shown, due to manpower resource constraints.

Systems analysis

Work began on-site on 3 November 2003, with Sam Smith and two software engineers (the third engineer on the project team had been required to complete an existing customer design and so could not join the team for the first week. None of the other software engineers was available). Part of the analysis phase of the project was to interview the current users of the system, to identify how the database was being used and to identify its current weaknesses.

Information about existing customer records

In the first few days of analysis, the project team investigated how customer records were generated and then stored on the database. From interviews and a detailed review of procedures, the following information was discovered:

A customer contacts RGA "new clients" department where, following discussions with the advertising account manager, an advertising contract is prepared for the customer. If the contract is worth more than £5,000 then the order must be sent by fax. If the order is less than £5,000 it can be e-mailed. Orders in excess of £10,000 must be posted. Each contract is sent to only one customer, although each customer could have a number of contracts at one time. At this point, all customer details are added to the database.

Contract amendments must be sent to the customer within one week of the original contract being sent, with any change being agreed by the customer. Identical amendments are made to the copy of the order which is kept in the accounts department of RGA. Amendments are made to the customer database if necessary.

When the advertising contract is completed, the details are agreed to check that they have complied with the original order, and the customer records are then kept on the database for 12 months. If the customer does not contact RGA within the twelve-month period, the customer record is deleted from the database.

From further analysis and interviews with staff during the first two weeks of analysis, it was clear that the current database held only very basic data about each customer, and did not provide information about contract status, payment status or any additional customer analysis facilities, all of which are desirable features in the new database.

Systems design

The logical and physical design phase of the project began one week late, due to one software engineer working on another job. It was agreed at this point by Sam and John that, to save time on the project, the purchase of the hardware could be brought forward. However, this had financial repercussions for QS, as the first stage payment had not yet been made and the purchases had to be made by extending the overdraft facility. However, John was confident that the first key payment milestone would be reached and the financial concerns would be short-lived. Design proved to be complex, yet the website and customer database were completed on time. However, the prototype construction had to be delayed due to Sam allowing the technician to work on other client work during this time (he was not fully aware of all the details of the project plan as he had not been involved at the planning stage, and he and John rarely saw each other). This resulted in the deadline being missed and the first stage payment being delayed by one month (less the 10% penalty). During this time, Sam Smith was also sometimes absent from the RGA project as he was committed to completing other contracts.

Further project progress

Although technically the project was progressing as planned, the main concern for Sam Smith was the availability of staff to complete key stages. Although other existing work being carried out by QS was small in comparison to the RGA project, these customers also required a quality service and commitment to deadlines. QS had built much of its existing client base from word-of-mouth recommendation in the region, and it could not afford to let existing clients down.

By 29 March, phase 4.0 of the Work Breakdown Structure had not yet begun. The IT manager from RGA contacted John Jones to demand an explanation for the delays to the project and to warn him that a penalty would again be charged if the second deadline was missed. He was also concerned that so few staff of QS were working on the project, in particular the lack of visibility of the project manager. The IT manager mentioned that the maintenance aspect of the contract was unlikely to be awarded to QS if progress did not improve. He demanded a meeting with both Sam and John to review the current project status. He also suggested to John that QS should consider investing in project management software if it was to undertake projects such as this in the future. At the end of March, John also spoke to QS's bank manager who was concerned about the current overdraft facility. He recommended that the cash management of QS needed to be reviewed immediately.

A small business adviser was assigned from the bank to assist QS for the remainder of the project.

Project review meeting – 2 April 2004

After his conversations with both the IT manager of RGA and the bank manager, John immediately called an emergency meeting with Sam, the other key project team members, and the small business adviser, in order to understand the current project position more fully.

The main issues which arose from the meeting were as follows:

- The designers were concerned that they did not know which work to prioritise.
- The project team members were not aware of any deadlines for the RGA project, as no one had shown them a project plan or schedule of work.
- Sam argued that he was not a trained project manager and could not be expected to manage such a large undertaking and be responsible for all of the other smaller projects and jobs in progress.
- The cash resources of the business were in a critical state and QS could not afford to miss another deadline.
- The maintenance contract was potentially very lucrative for QS and it was important that the project was a success in order for this element of the contract to be undertaken.
- The administrator, who is currently responsible for the management of creditors, debtors and cash, mentioned that a number of debtors were outstanding for several months and credit facilities being offered to customers were time-consuming and expensive to look after. Regular cash flow analyses are not currently prepared, as she has little guidance from the managers.

Appendices 1 and 2 are on the next two pages.

This page will carry *Appendix 1*

Appendix 2 will go on this page

SECTION A – 80 MARKS

Read the scenario before you attempt the questions

ANSWER ALL THREE QUESTIONS

FOR QUESTIONS ONE AND TWO ONLY, YOU ARE TO TAKE ON THE ROLE OF THE SMALL BUSINESS ADVISER.

Question One

Required:

The bank manager has asked you, **as the small business adviser**, to prepare a report, which will

- (a) identify the problems currently being encountered by Sam in **managing the project team** of the RGA project;
(8 marks)
 - (b) recommend **four** ways in which the managers of QS could improve the management of the project team;
(12 marks)
 - (c) explain the importance of manpower resource planning for QS. Using the information provided in *Appendix 1*, include in your answer an example of a resource histogram for all of the QS Technicians for all work from 3 November 2003 to 30 May 2004.
(14 marks)
- (Total = 34 marks)**
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Question Two

Required:

Prepare a second report, **as the small business adviser**, for both the bank manager and the two owners of QS which will recommend the steps QS should take to improve cash management and identify **two** benefits to QS of improved cash management.

(10 marks)

FOR THIS QUESTION ONLY, YOU ARE TO TAKE ON THE ROLE OF THE PROJECT MANAGER.

Question Three

As the small business adviser is not a systems expert, he wishes to understand more about the issues involved in the development and maintenance of the new RGA customer database.

Required:

As the project manager, you have been asked by the small business adviser to produce for him a set of briefing notes, which will

- (a) explain the main activities involved in the analysis phase of the RGA information systems project, and identify the main problems likely to be encountered by the project team during the analysis phase;

(12 marks)

- (b) include an entity life history (ELH) for a customer advertising contract of RGA, as processed in the original RGA customer database;

(12 marks)

- (c) explain the main types of systems maintenance. Explain both the technical and commercial importance for RGA of ensuring that systems maintenance is undertaken, both for the first twelve months and in the longer term.

(12 marks)

(Total = 36 marks)

End of Section A

SECTION B – 20 MARKS

Read the scenario before you attempt a question

ANSWER ONE QUESTION ONLY

Question Four

Required:

(a) Discuss the differences between managing quality in a service business and the management of quality in a manufacturing business. Your answer should identify **two** measures which could be used to assess the quality of customer service of QS.
(12 marks)

(b) Explain how project management software could assist in the management of a project such as the RGA customer database.
(8 marks)

(Total = 20 marks)

Question Five

RGA's new system will allow customers to access the customer database via the RGA website.

Required:

(a) Explain which computer-assisted audit techniques could be used in a real-time environment such as a web-based customer database.
(8 marks)

(b) Explain what steps the Board of RGA should take to ensure that the project is successful.
(12 marks)

(Total = 20 marks)

End of paper