Professional Level – Essentials Module

Business Analysis

Monday 12 December 2011

Paper P3

Time allowed
Reading and planning: 15 minutes
Writing: 3 hours

This paper is divided into two sections:

Section A – This ONE question is compulsory and MUST be attempted

Section B – TWO questions ONLY to be attempted

Do NOT open this paper until instructed by the supervisor.

During reading and planning time only the question paper may be annotated. You must NOT write in your answer booklet until instructed by the supervisor.

This question paper must not be removed from the examination hall.

ACCA

The Association of Chartered Certified Accountants

Section A – This ONE question is compulsory and MUST be attempted

1 Introduction

Rudos is a densely populated, industrialised country with an extensive railway network developed in the nineteenth century. This railway network (totalling 6,000 kilometres), together with the trains that ran on it, was nationalised in 1968 and so became wholly owned by the government. By 2004, RudosRail, the government-owned rail company, was one of the ten largest employers in the country. However, in that year, the general election was won by the Party for National Reconstruction (PNR) with a manifesto that promised the privatisation of many of the large publicly-owned organisations, including RudosRail. The PNR argued that there had been a lack of investment in the railway under public ownership and that the absence of competition had meant that ticket prices and costs (particularly labour costs) were too high for the taxpayer to continue subsidising it. The combination of high ticket prices and large public subsidies was very unpopular. As a result the government split the railway network into eight sections (or franchises) and invited private sector bids for each of these eight franchises. Each franchise was for ten years and was for the trains, tracks and infrastructure of each section. Each franchise would be awarded to the highest bidder.

The East Rudos franchise, one of the eight franchises, was awarded to Great Eastern Trains (GET), a company specifically set up to bid for the franchise by former members of RudosRail's management. It was the only independent company to win a franchise. The other seven franchises were awarded to companies who were subsidiaries of global transport groups and, initially, were largely financed through investment from the parent companies. In contrast, GET was primarily financed through loans from the government-owned Bank of Rudos. The ten-year franchise started in 2006. GET is an unquoted company, owned by its management team.

GET – the early years

The first three years of the GET franchise were extremely successful, both in terms of profits and passenger satisfaction. This was partly due to government subsidies to help ease the transition of the network from public to private ownership. However, it was also due to the skill and knowledge of the management team. This team already had significant operating experience (gained with RudosRail) and they adapted quickly to the new private sector model. GET was the most profitable of the new franchises and it was held up as an example of successful privatisation. Its investment in new trains and excellent reliability record meant that it quickly built up a well-respected image and brand. GET uses a series of television advertisements to promote its services. These feature an old lady arriving at various stations and texting her family that she has 'arrived safe & on time!' In a recent consumer survey these advertisements were rated as both memorable and effective.

In the newly privatised rail system many passenger journeys crossed franchise boundaries, so that a journey often involved the use of two or more franchise operators. GET developed an innovative booking and payment system that also automatically reallocated revenue from fares between franchise holders. It also allowed Internet booking and gave discounts for early booking. This system was so successful that GET now uses the system to process the bookings of three of the other franchise operators. GET is paid on a transaction basis for the bookings that it processes on behalf of these other franchisees.

The fourth and fifth years of GET's operation were not as successful. No government subsidies were paid in those years and economic problems in the country led to a fall in passenger numbers. Financial information for GET for 2010 is provided in Figure 1. Figure 2 provides data for the rail industry as a whole in Rudos.

Figure 1: Selected information for GET in 2010

Extract from the statement of financial position: All financial figures in $m

ASSETS		
Non-current assets		$m
Property, plant, equipment		2,175
Intangible assets		100
	Total	2,275
Current assets		
Inventories		275
Trade receivables		10
Cash and cash equivalents		300
	Total	585
Total assets		2,860
EQUITY AND LIABILITIES		
Share capital		550
Retained earnings		110
Total equity		660
Non-current liabilities		
Long-term borrowings		2,000
Total non-current liabilities		2,000
Current liabilities		
Trade and other payables		199
Current tax payable		1
Total current liabilities		200
Total liabilities		2,200
Total equity and liabilities		2,860

Extract from the statement of comprehensive income
All financial figures in $m

Revenue	320
Cost of sales	(210)
Gross profit	110
Administrative expenses	(40)
Profit before tax and interest	70
Finance cost	(60)
Profit before tax	10
Tax expense	(1)
Profit for the year	9

Extract from the annual report

Number of employees	3,010
Number of rail kilometres	920

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Figure 2: Financial information for the Rudos rail industry as a whole

Measure	National rail industry average
ROCE	4·50%
Operating profit margin	10·00%
Gross profit margin	22·00%
Current ratio	2·1
Acid test ratio	1·2
Gearing ratio	48%
Revenue/employee per year	$85,000
Number of employees per rail kilometre	4·1

Current position

Despite the apparent success of GET, there has been considerable criticism of the overall privatisation of the railway. Much of this criticism is concentrated in two of the geographical areas where the franchisees have struggled to provide an efficient and economic service. The government has appointed auditors who are reviewing the operation of these two franchises and a government minister has stated that 'terminating the franchise and opening it up to re-bidding has not been ruled out as an option'. A major rail accident in Rudos (with many fatalities) has also led to concerns about safety and led to new legislation being enacted. Further safety legislation is expected concerning the relaying of track and all franchisees will be expected to implement the requirements immediately.

In 2009, the PNR was returned to power, but with a reduced majority. The leader of the main opposition party originally suggested that the railways might be re-nationalised if he were to gain power. However, he has since moderated his view, although he suggests that 'they should return a significant percentage of their profits to the taxpayer'. Road transport has also suffered under the PNR government, with many of the roads in the country heavily congested. Fuel costs have increased to reflect increasing scarcity, causing many companies to face spiralling transport and storage costs. For the first time in the country's history, an ecology (green) party has won seats in government, capitalising on the growth of the 'green consumer', particularly in urban areas.

International rail developments

The pioneering privatisation initiatives in Rudos have been observed by other countries and many have adopted similar policies. Recently, the Republic of Raziackstan announced that it intended to privatise its railway network. Raziackstan is approximately five hours' flying time from Rudos and is part of the former eastern trading bloc. It is a country where there is currently very little health and safety legislation. Although there is also little employment legislation, public service jobs are traditionally viewed as safe, and employees perceive that a 'railway job is a job for life'. At present the railway network, which is 1,500 kilometres long, employs 8,000 employees generating revenues of $180,000,000. The country itself still has a limited technological and financial infrastructure, with only an estimated 20% of the population having access to the Internet. However, all political parties are united in their desire to privatise the railways so that money can be invested elsewhere in the country, for example, for providing better health care.

Because of the poor condition of the railway, the proposal is to retain and upgrade the rail tracks under public ownership. However, the trains and infrastructure, such as stations, will be privatised. The government is looking for letters of intent from private companies who are willing to take over the complete network (excluding the tracks).

A stipulation of the contract is that the bidder should have a significant industrial presence in the country. For some time GET has been interested in acquiring the company that undertakes most of the track and train maintenance in Raziackstan. This company SOFR (SOciety Fabrication de Raziackstan) was established in 1919 and has a long tradition of engineering. GET has used the company to refurbish some of its equipment and they have been delighted with the results.

The board of GET now senses a great opportunity. It would like to combine the speedy acquisition of SOFR with a bid to run the rail network in Raziackstan. In fact, early informal indications from the Raziackstan government suggest that the bid will be successful if SOFR has been acquired by GET as no other prospective bidders for the network have yet come forward.

Required:

(a) Using appropriate models and frameworks, analyse GET's current strategic position from both an internal and external perspective. (20 marks)

(b) GET's proposed strategy is firstly to acquire SOFR and then the franchise to run the rail network of Raziackstan. You have been asked to provide an independent assessment of this proposed strategy.

Write a report evaluating GET's proposed strategy. (16 marks)

Professional marks will be awarded in part (b) for appropriate structure, style and fluency of the report. (4 marks)

(c) Critical Success Factors (CSFs) and Key Performance Indicators (KPIs) are important business concepts in the context of franchising rail services.

Explain and discuss these concepts in the context of GET and the rail industry. (10 marks)

(50 marks)

Section B – TWO questions ONLY to be attempted

2 iCompute was founded twenty years ago by the technology entrepreneur, Ron Yeates. It initially specialised in building bespoke computer software for the financial services industry. However, it has expanded into other specialised areas and it is currently the third largest software house in the country, employing 400 people. It still specialises in bespoke software, although 20% of its income now comes from the sales of a software package designed specifically for car insurance.

The company has grown based on a 'work hard, play hard work ethic' and this still remains. Employees are expected to work long hours and to take part in social activities after work. Revenues have continued to increase over the last few years, but the firm has had difficulty in recruiting and retaining staff. Approximately one-third of all employees leave within their first year of employment at the company. The company appears to experience particular difficulty in recruiting and retaining female staff, with 50% of female staff leaving within 12 months of joining the company. Only about 20% of the employees are female and they work mainly in marketing and human resources.

The company is currently in dispute with two of its customers who claim that its bespoke software did not fit the agreed requirements. iCompute currently outsources all its legal advice problems to a law firm that specialises in computer contracts and legislation. However, the importance of legal advice has led to iCompute considering the establishment of an internal legal team, responsible for advising on contracts, disputes and employment legislation.

The support of bespoke solutions and the car insurance software package was also outsourced a year ago to a third party. Although support had been traditionally handled in-house, it was unpopular with staff. One of the senior managers responsible for the outsourcing decision claimed that support calls were 'increasingly varied and complex, reflecting incompetent end users, too lazy to read user guides.' However, the outsourcing of support has not proved popular with iCompute's customers and a number of significant complaints have been made about the service given to end users. The company is currently reviewing whether the software support process should be brought back in-house.

The company is still regarded as a technology leader in the market place, although the presence of so many technically gifted employees within the company often creates uncertainty about the most appropriate technology to adopt for a solution. One manager commented that 'we have often adopted, or are about to adopt, a technology or solution when one of our software developers will ask if we have considered some newly released technology. We usually admit we haven't and so we re-open the adoption process. We seem to be in a state of constant technical paralysis.'

Although Ron Yeates retired five years ago, many of the software developers recruited by him are still with the company. Some of these have become operational managers, employed to manage teams of software developers on internal and external projects. Subba Kendo is one of the managers who originally joined the company as a trainee programmer. 'I moved into management because I needed to earn more money. There is a limit to what you can earn here as a software developer. However, I still keep up to date with programming though, and I am a goalkeeper for one of the company's five-a-side football teams. I am still one of the boys.'

However, many of the software developers are sceptical about their managers. One commented that 'they are technologically years out of date. Some will insist on writing programs and producing code, but we take it out again as soon as we can and replace it with something we have written. Not only are they poor programmers, they are poor managers and don't really know how to motivate us.' Although revenues have increased, profits have fallen. This is also blamed on the managers. 'There is always an element of ambiguity in specifying customers' requirements. In the past, Ron Yeates would debate responsibility for requirements changes with the customer. However, we now seem to do all amendments for free. The customer is right even when we know he isn't. No wonder margins are falling. The managers are not firm enough with customers.'

The software developers are also angry that an in-house project has been initiated to produce a system for recording time spent on tasks and projects. Some of the justification for this is that a few of the projects are on a 'time and materials' basis and a time recording system would permit accurate and prompt invoicing. However, the other justification for the project is that it will improve the estimation of 'fixed-price' contracts. It will provide statistical information derived from previous projects to assist account managers preparing estimates to produce quotes for bidding for new bespoke development contracts.

Vikram Soleski, one of the current software developers, commented that 'managers do not even have up-to-date mobile phones, probably because they don't know how to use them. We (software developers) always have the latest gadgets long before they are acquired by managers. But I like working here, we have a good social scene and after

working long hours we socialise together, often playing computer games well into the early hours of the morning. It's a great life if you don't weaken!'

Required:

(a) Analyse the culture of iCompute, and assess the implications of your analysis for the company's future performance. (13 marks)

(b) iCompute is currently re-considering three high level processes:

(i) Advice on legal issues (currently outsourced)
(ii) Software support (currently outsourced)
(iii) Time recording (in-house, bespoke software development)

Evaluate, using an appropriate framework or model, the suitability of iCompute's current approach to EACH of these high level processes. (12 marks)

(25 marks)

3 HomeDeliver is a nationwide company that sells small household goods to consumers. It produces an attractive, comprehensive catalogue which it distributes to staff known as catalogue supervisors. There are 150 of these supervisors in the country. Each supervisor has approximately 30 part-time home-based agents, who then deliver the catalogue to consumers in their homes. Agents subsequently collect the catalogue and any completed order forms and forward these forms to their supervisor. Payment is also taken when the order is collected. Payment is by cash or cheque and these payments are also forwarded to the supervisor by the agent. At the end of the week the supervisor returns completed order forms (and payments) to HomeDeliver. Order details are then entered into a computer system by order entry administrators at HomeDeliver and this starts an order fulfilment process that ends with goods being delivered directly to the customer. The supervisors and the agents are all self-employed. HomeDeliver rewards supervisors on the basis of how many agents they manage. Agents' reward packages are based on how many catalogues they deliver and a commission based on orders received from the homes they have collected orders from.

In August 2010 HomeDeliver decided to replace the physical ordering system with a new electronic ordering system. Agents would be provided with software which would allow them to enter customer orders directly into the computer system using their home personal computer at the end of each day. Payments would also be paid directly into a HomeDeliver bank account by agents at the end of each day.

The software to support the new ordering system was developed in-house to requirements provided by the current order entry administrators at HomeDeliver and managers concerned with order fulfilment and invoicing. The software was tested internally by the order entry administrators. At first, both the specification of requirements and initial software testing progressed very slowly because order administrators were continuing with their normal operational duties. However, as project delays became more significant, selected order administrators were seconded to the project full-time. As a result the software was fully acceptance tested by the end of July 2011, two months behind schedule.

In August 2011 the software was rolled out to all supervisors and agents. The software was claimed to be easy to use, so no formal training was given. A large comprehensive manual with colour screenshots was attached as a PDF to an email sent to all supervisors and agents. This gave detailed instructions on how to set up and use the software.

Unfortunately, problems began to appear as soon as the agents tried to load and use the software. It was found to be incompatible with one particular popular browser, and agents whose computers used that browser were advised to use an alternative browser or computer. Agents also criticised the functionality of the software because it did not allow for the amendment of orders once they had been submitted. It emerged that customers often contacted agents and supervisors to amend their order prior to it being sent to HomeDeliver. This was no longer possible with the new system. Many agents also claimed that it was not possible to enter multiple orders for one household. However, HomeDeliver confirmed that entering multiple orders was possible; it was just not clear from the software, or from the instructions provided, how this could be achieved.

Most of the agents were reluctant to print off the manual (preferring to read it on screen) and a significant number claimed that they did not receive the email with the manual attachment. Agents also found quite a number of spelling and functionality errors in the manual. At certain points the software did not perform in the way the manual stated that it would.

Internal standards at HomeDeliver require both a post-project and a post-implementation review.

Required:

(a) Explain the purpose of each of the following: a post-project review, a post-implementation review and a benefits realisation review. (6 marks)

(b) Evaluate the problems and the lessons that should be learned from a post-project review and a post-implementation review of the electronic ordering system at HomeDeliver. (12 marks)

(c) HomeDeliver does not have a benefits management process and so a benefits realisation review is inappropriate. However, it does feel that it would be useful to retrospectively define the benefits to HomeDeliver of the new electronic ordering system.

Identify and discuss the potential benefits to HomeDeliver of the new electronic ordering system. (7 marks)

(25 marks)

4 The Institute of Solution Developers (ISD) offers three basic certificates in Information Technology; Software Engineering; and Solutions Architecture. ATL is one of many training companies certified by the ISD to offer training courses to prepare candidates for these three certificates. ATL has, traditionally, taught these courses over five days culminating in a multiple choice examination. It has differentiated itself in the marketplace by offering high quality training in well-equipped training centres. Its prices are slightly higher than its competitors, but it is well regarded by both candidates and employers. ATL also provides training courses through sales intermediaries known as training brokers. These brokers negotiate a reduced fee with ATL and then add a profit margin to determine the price that they charge the end customer. All ATL courses are run in Eothen, an established industrial nation with a high standard of living.

In the last six months, ATL has developed an e-learning course for the certificate in Information Technology. There are three main reasons for this development. The first reason is to allow candidates to prepare for the examination in a flexible way, studying 'at their own pace in their own place'. Currently, courses are only run in Eothen and each certified course takes five days. In contrast the e-learning product will be delivered over the Internet. The second reason is to provide a cheaper route to the qualification. Course places currently cost $950 per person. Finally, ATL wishes to exploit a global market. It believes that there is a 'very large market' for e-learning for this qualification, particularly in countries where disposable income is less than in Eothen. It feels that overseas customers will be sensitive to price, but they have no estimate of this sensitivity.

Eothen, itself, is in a period of economic decline and the top 500 companies, which are specifically targeted by ATL, are reducing their training budgets. Figure 1 shows the results of research from MidShire University into the relationship between average training spend per employee and companies' gross profit. Data given below is from 10 of the top 500 companies targeted by ATL. Statistics produced by the Eothen government suggest that the average gross profit of the top 500 companies in Eothen will fall to $50m next year. In this analysis, the independent variable (gross profit) is x, which is being used to estimate a dependent variable y (average annual training spend per employee).

Company	Gross profit ($m) (x)	Average annual training spend per employee ($) (y)	Analysis
A	50	900	The regression line for the two variables is defined by
B	100	1,050	$y = 616{\cdot}23 + 3{\cdot}939x$
C	120	1,500	
D	30	750	And correlation by
E	15	600	
F	130	1,500	$r = 0{\cdot}801$
G	55	850	
H	20	400	
I	40	500	
J	300	1,500	

Figure 1: Training spend analysed against gross profit

The e-learning product has been specified by an experienced lecturer and developed by a business analyst. The latter will also be responsible for supporting students once the product has been released. ATL is the first company to produce an e-learning product for the ISD market. It wishes to quickly build on its success and to offer e-learning for the other two certificates – Software Engineering and Solutions Architecture.

Each certificate examination costs $125 and is available on demand in test centres all over the world. This makes it very accessible to the countries that ATL are targeting. The managing director of ATL has also discovered the following analysis of nationwide e-learning sales published by Training Trends, a respected Eothen-based publication. Here the independent variable is time (x) and e-learning sales is the dependent variable (y).

Year	Quarter	Period (x)	e-learning sales ($m) (y)	Analysis
2008	3	1	2.65	The regression line for the two variables is defined by
	4	2	2.66	
2009	1	3	2.74	$y = 2{\cdot}38 + 0{\cdot}12x$
	2	4	2.84	
	3	5	2.86	And correlation by
	4	6	2.97	
2010	1	7	3.15	$r = 0{\cdot}958$
	2	8	3.25	
	3	9	3.55	
	4	10	3.75	

Figure 2: E-learning sales in Eothen analysed by quarter (source: Training Trends).

The period column has been inserted to facilitate the regression analysis.

Required:

ATL needs to determine the price (or prices) of its e-learning product:

(a) Identify and discuss the factors that need to be taken into consideration when pricing the e-learning product. (15 marks)

(b) Figures 1 and 2 provide important, independent, statistical data:

Evaluate the potential of each set of statistical data for use in the pricing decision for the e-learning product, particularly highlighting any limitations in using such data. (10 marks)

(25 marks)

End of Question Paper

Answers

1 (a) The question asks for an assessment of GET's strategic position. The answer can be formulated in a number of ways. The following model answer uses an external analysis which forms the basis of the opportunities open to GET and the threats that it faces. The internal analysis summarises the strengths and weaknesses and includes an assessment of the company's financial position. Appropriate models and frameworks would be PESTEL and Porter's five forces (external analysis) and a resource audit (mainly used here in terms of financial terms and internal competencies).

External analysis

The political environment is very important to GET as it was the election of the PNR that effectively brought the company into being with the privatisation of the country's rail network. The attitude of the government to failing franchisees is also very significant. There is a chance that these franchises will be terminated and opened to re-bidding, which should be of interest to GET. However, the stance of the main political opposition has to be monitored and, if possible, influenced. The opposition initially suggested a re-nationalisation of the network, but have modified their view to taking a larger portion of the company's profits. Thus the profitability and perhaps even the continued existence of GET is potentially threatened in the long term.

The government is also enacting more safety legislation which is adding to GET's costs. Further safety legislation is expected concerning the relaying of track and all franchisees will be expected to implement any requirements immediately. These are likely to be costs that GET did not predict when they won the contract and so are almost certain to have an impact on profitability.

The economic health of Rudos is very important to GET as it affects the demand for its services. In the fourth year of the franchise no government subsidies were paid and economic recession led to a fall in passenger numbers. GET needs to monitor the economic health of the country and to bring its passenger number predictions into line with economic indicators.

There is evidence in the scenario that road transport has suffered from a lack of investment under the PNR, resulting in many of the roads becoming heavily congested. Fuel costs are also soaring, which reflects the increasing scarcity of oil and spiralling transport and storage costs of distributing that oil. Rail transport offers a congestion-free alternative to road transport, potentially using power that does not rely on oil. GET needs to reflect this in its strategy and its marketing.

Many industrialised countries have seen the rise of the 'green consumer' who makes ethical choices in the selection of products and services. This will apply to transport, where they may be willing to spend more to use a method of transport which is more energy efficient. Rail services appeal to this consumer group and GET needs to emphasise this in its marketing.

Finally, the principles of privatisation have spread throughout the world. GET needs to monitor the intentions of other countries, such as Raziackstan, who are keen to divest themselves of an expensive public service and, at the same time, raise capital for use elsewhere in the economy. It seems likely that many opportunities will arise in the future.

Within the industry itself, the power of customers is relatively weak, particularly as the potential substitute (road transport) is increasingly expensive and congested. The nature of the franchise means that consumers have no choice at all within each franchise section. All rail users travelling through East Rudos must use GET. The long-term nature of the franchise is an effective barrier to competitors. New entrants are barred until the opportunity arises for them to bid for the franchise.

Internal analysis

The management team of GET has gained important experience in running a newly privatised rail franchise. This team already had significant operating experience (gained with RudosRail) but they have adapted quickly to the new private sector model. The company is the most profitable of the new franchises and it is held up as an example of successful privatisation. These are important internal competences which GET might wish to exploit elsewhere.

The new ticketing system is also an important internal competence. It is so successful that it is used by three of the other franchise operators. GET is paid on a transaction basis for the bookings that it processes on behalf of these other franchisees. As well as providing an important internal competence it must also have brought in unexpected and regular revenue which could not have been foreseen when the franchise was originally won.

The company (GET) reports profitability levels well above industry norms. In 2010 it returned a gross profit margin of 34% compared with 22% for the industry as a whole. Its operating profit margin of 22% is also significantly higher than the profit margin for the sector as a whole (10%). Overheads appear to be well controlled.

The company also reports good liquidity levels with a current ratio of 2·93 (compared with 2·1 for the sector as a whole) and an acid test ratio of 1·55 which is also greater than the industry average of 1·12. The company can easily meet its short-term liabilities.

The efficiency of the company might be measured in a number of ways. Two potential measures are employee/route kilometre and revenue/employee. In both these measures, GET outstrips the industry norms. Revenue/employee is over $106,000, compared with $85,000 in the industry as a whole. Employee per route kilometre stands at 3·27 compared with 4·1 overall, which means that in these terms the productivity of GET is higher than the Rudos average.

The company has also invested in new trains and its excellent reliability record has meant that it has quickly built up a well-respected image and brand. This brand is rapidly becoming a significant asset of the company, rated highly by both peers and customers.

A clear weakness is the fact that the company is essentially a one-contract (franchise) company and is vulnerable to external factors that can affect the profitability and existence of this contract. The management team is experienced in the rail industry, but has little external perspective. The team would appear unable to bring external ideas and experience from a different industry or different country. There might be a concern that the team cannot think 'outside the box' and this might affect its ability to secure the long-term future of the company.

The company is highly geared, with a gearing percentage of 75% compared with an industry norm of 48%. This reflects the way that the company was initially funded. This might be of concern to their bank if the country is heading into economic difficulties.

Despite its profitability, its Return on Capital Employed (ROCE) is low (2·63%) compared with the industry average (4·5%) and this must be of concern to shareholders.

Tutorial note: *A number of financial ratios are calculated above. Marks will be given where legitimate alternative values are calculated, reflecting different ways of defining the ratio. These alternative values may lead to different conclusions, and again credit will be given for this. It is recommended that candidates explicitly show how each ratio has been calculated. The rationale for the ratios given is shown below.*

Gross profit margin = Gross profit/sales revenue = 110/320 = 34%
Operating profit margin = Net profit before tax and interest/sales revenue = 70/320 = 22%
Current ratio = Current assets/current liabilities = 585/200 = 2·93
Acid test ratio = (Current assets – inventory)/current liabilities = 1·55
Revenue/employee = Sales revenue/number of employees = $106,312
Employees/route kilometre = Number of employees/route kilometres = 3·27
ROCE = Net profit before interest and tax/capital employed (Share capital + reserves + long term loans) = 70/2660 = 2·63%
Gearing % = long term liabilities/(share capital + reserves + long term liabilities) = 2000/2660 = 75%

(b) **Tutorial note:** *This model answer is structured around the criteria of suitability, acceptability and feasibility, but this is not required by the question. Answers that take a different approach will be given appropriate credit.*

Report name: An assessment of the proposed strategy of GET
Author: Anne Examiner
Report date: 11 November 2010

Introduction
I have been asked to provide an independent assessment of the proposed strategy of GET to acquire SOFR and the franchise to run the railway services of Raziackstan. My evaluation will use an assessment of the suitability, acceptability and feasibility of this strategic direction.

Management summary
There are powerful suitability and acceptability arguments for pursuing this strategy. However, funding and risk issues may mean that a more conservative strategy might be preferred, perhaps waiting until the failing franchises in Rudos are offered for sale.

Suitability
Suitability is concerned with whether a proposed strategy addresses the circumstances in which an organisation is operating – its strategic position. In the context of this part question, does the proposed strategy of GET, to bid for the rail franchise in Raziackstan and purchase SOFR, correctly respond to influences in the external environment and exploit its internal competencies? As Johnson, Scholes and Whittington ask, does the 'rationale of the strategy make sense?'

There are obvious ways in which the proposed strategy makes sense. Firstly, it provides GET with an opportunity to exploit its acknowledged competencies in running a newly privatised railway. GET has an experienced and respected management team, together with a computerised booking system which is recognised by its peers as effective and successful. The contract in Raziackstan provides an opportunity to quickly implement tested management practices and supporting operational processes.

GET is currently a one-contract company, with a limited life span if it fails to win the Rudos franchise when it is offered again. The acquisition of the Raziackstan contract appears to reduce its dependence on the Rudos franchise and perhaps offers the company greater longevity.

Furthermore, acquiring contracts outside Rudos also appears to make sense. Although the opposition political party in Rudos has slightly modified its stance, it still remains a potential long-term threat to both the existence and profitability of the franchise. In contrast, Raziackstan offers greater political certainty, at least in terms of its commitment to rail privatisation. It also has less stringent employment and safety legislation and so the expensive implications of recent legislation in Rudos will not be incurred.

GET might also be relatively confident about increasing profits in Raziackstan by bringing the rail network up to the efficiency levels it has achieved in the East Rudos franchise. At present, the number of employees employed per route kilometre (5·33) is greater than at GET and revenue per employee significantly less ($22,500 revenue/employee) If GET can cut staffing in Raziackstan to achieve similar levels of productivity as it currently achieves, then profits will improve without the need to raise ticket prices.

The acquisition of SOFR appears to allow the company to spread its risk, buying a company which is in a market which should be expanding as the country begins to upgrade its neglected rail network. GET may also find synergies between SOFR and its franchise operation in Rudos.

However, it must be recognised that the key functionality of its software (allowing franchise cross-charging and Internet booking) is less important in a country where the whole of the railway system will be allocated to one operator and less than 20% of the country's population has access to the Internet. The software application may be an important asset of GET, but it is not of great significance in this particular situation.

Acceptability

The acceptability of a proposed strategy is concerned with the expected performance outcomes of a strategy in terms of return, risk and stakeholder reactions. A consideration of risk is very important here.

There are a number of mismatches that need to be considered. Firstly, GET has experience of operating a rail franchise where it has total control over the track and the trains. In Raziackstan there will be a different model. Punctuality, safety and efficiency will depend on both the railway (running the trains) and the state (maintaining the tracks). Conflicts of interest and responsibility are likely. GET has no experience of working under these terms.

Secondly, GET has no experience of managing outside Rudos. There are clear indications in the scenario that both the social and industrial culture of Raziackstan is very different.

For example, railway employees perceive that a 'railway job is a job for life' and it seems likely that there will be a clash between the management culture of GET and the organisational culture of both the railway operation and SOFR. The apparent improvements in productivity may be hard to achieve. The risk is even greater at SOFR because GET has no obvious internal competencies to bring to bear. It has no experience of running an engineering company, let alone one in an overseas country with a different culture and expectations. Stakeholders in Rudos may also be concerned that the management of GET might be distracted from running the East Rudos franchise, resulting in reduced performance.

Feasibility

Feasibility is concerned with whether an organisation has the resources and competences to deliver a strategy. Financial feasibility is considered under this heading, identifying the funds required and the sources of those funds. This will be an issue for GET. Although it does have some cash, the company is already highly geared and this was identified as a potential weakness in the previous analysis. The franchise in Rudos was financed by the Bank of Rudos, but it seems unlikely that it would wish to increase its exposure, particularly to an investment in a distant country. The financial infrastructure of Raziackstan is immature and so also seems unlikely as a source of funding for GET. There are also potential financial and commercial risks that the government could change its strategy on railway privatisation and GET cannot be sure how profitable or secure its investment in Raziackstan will be in the medium to longer term. Resource deployment considers the feasibility of specific strategies by identifying the resources and competences needed for a particular strategy. For example, is it feasible for GET to establish expertise in engineering, particularly in another country where it has no experience of managing at all?

Conclusion

At first sight, the bid for the Raziackstan rail franchise and the associated purchase of SOFR appears to be a reasonable strategy. However, more detailed analysis suggests that the rationale is not as strong as it could be and there are many risks involved. Eventually, it comes down to the company's ability to find funds and its appetite for risk. In the long term it may be better for the company to await the outcome of the audit report on the failing franchises in Rudos. Bidding for these might be a more profitable and less risky strategy.

(c) **Tutorial note:** *The answer given here considers CSFs and KPIs as discussed by Johnson, Scholes and Whittington, and the balanced business scorecard as defined by Kaplan and Norton. Other interpretations exist and these will also be given credit if used appropriately in the answer.*

Johnson, Scholes and Whittington defined critical success factors (CSFs) as 'those product features that are particularly valued by a *group of customers* and, therefore, where the organisation must excel to outperform competition.' In the context of the case study scenario, the competition is represented by alternative forms of transport (car, bus or aeroplane) or indeed perhaps the decision not to travel at all. The marketing message of GET stresses safety and punctuality. These are likely to be important to the customer, although other aspects of service provision might be as important, for example: convenience (timetabling), cleanliness and security. The relative importance of CSFs is likely to vary with the market segment (the group of customers). For example, business travellers may value punctuality, while leisure travellers might value cleanliness and security. Rail companies (such as GET) will have CSFs concerning financial performance and passenger numbers.

CSFs are normally measured through key performance indicators (KPIs). These are targets that the organisation has to achieve. Acceptable punctuality is usually defined by a percentage of trains that have arrived at the scheduled arrival time or before. A certain amount of latitude is usually allowed – for example, in the United Kingdom a train is deemed to have arrived on time if it arrives at its planned destination station within five minutes (i.e. 4 minutes 59 seconds or less) of the planned arrival time. For longer distance operators a criterion of arrivals within 10 minutes (i.e. 9 minutes 59 seconds or less) is used. Critics of this approach have also suggested that it encourages train companies to be conservative in their train timetabling, so ensuring that they meet the target. Safety can be measured in terms of accidents or fatalities per thousand kilometres travelled. Cleanliness might be measured by the number of complaints received about litter and dirtiness. Security might be measured by the number of criminal offences committed on the railway.

The balanced business scorecard was established to help focus companies on non-financial, as well as financial measures of performance. The customer is one of its four perspectives and so this links directly to the critical success factors defined above. However, the other three perspectives of the scorecard are a rich source of KPIs and so many companies have KPIs for financial, internal business processes and learning and growth. Here are some examples from the perspective of GET:

- *Financial:* A target return on capital employed
- *Internal business process:* asset utilisation – trains should be used for a target number of hours per day. Utilisation of assets is important.
- *Learning and growth:* targets for increasing qualifications in the workforce

Although Johnson, Scholes and Whittington focus their definition of a CSF on the customer, other definitions are much wider. John Rockart originally defined CSFs as:

'The limited number of areas in which results, if they are satisfactory, will ensure successful competitive performance for the organisation. They are the few key areas where things must go right for the business to flourish.'

In practice many organisations use the term CSF for other elements of the balanced business scorecard, even though these are not directly evaluated by the customer when they are making their purchase decision. The concern, here, is that internal CSFs will only be valued by internal stakeholders and not by the customers that they serve.

A consideration of CSFs highlights the significance of Raziackstan's decision to split track provision from rail travel provision. It is easy to envisage a situation where safety is compromised by poor track maintenance and track faults lead to poor punctuality. The Rudos model seems much clearer, where responsibility is for everything within the franchise.

2 (a) The culture of an organisation can be explored from a variety of perspectives and through a number of frameworks and models. No specific model or framework is required by the question so a variety of appropriate approaches are acceptable. This model answer uses selected elements of the cultural web.

Stories are told by employees in an organisation. These often concern events from the history of the organisation and highlight significant issues and personalities. In the context of iCompute, there is evidence of stories that celebrate the earlier years of the organisation when founder Ron Yeates had an important role. 'Ron used to debate responsibility for requirements changes with the customer.' In contrast modern management is perceived as weak, giving in too easily in negotiations with customers. Not only is this perceived weakness affecting morale, but it also appears to be affecting profit margins and this is an important consequence for the organisation.

Symbols include logos, offices, cars, titles and the type of language and terminology commonly used within the organisation. The language and symbols of technology appear to dominate at iCompute. Software developers constantly scan the horizon for new technological opportunities. They embrace these technologies and solutions and, as a result, continually distract the organisation. As soon as a technical direction or solution is agreed, or almost agreed, a new alternative is suggested causing doubt and delay. One of the managers claimed that the company was 'in a state of constant technical paralysis'. This paralysis has implications. Furthermore, technological objectives can quickly outweigh business and financial objectives, to the detriment of the company as a whole.

The perceived inability of managers to effectively participate in technological discussions is derided by software developers who suggest that they are technically out of touch. Ownership and understanding of up-to-date mobile phones is perceived to be important, particularly by the software developers who are an important and powerful group within the organisation.

Finally, the language of the manager who suggested that support should be outsourced is very illuminating. Support calls are not from customers but from 'incompetent end users, too lazy to read user guides'. Re-focusing managers on customers appears to be long overdue.

Routines and rituals concern the 'way we do things around here'. At iCompute this involves long working hours and after-work social activities such as football, socialising and playing computer games. The latter of these reinforces the technical focus (discussed in symbols) of employees. The routines and rituals of the organisation are largely male-oriented (football, computer games) and would probably exclude most females. This would almost certainly contribute to the company's inability to recruit and retain women employees. Furthermore, long working hours and after-work activities will also alienate employees who have to get home to undertake family commitments or simply do not wish to be 'one of the lads'. This must contribute to almost one-third of all employees leaving within their first year at the company. The consequence of this culture is an expensive recruitment and training process.

The *control systems* of the organisation include measurement and reward systems. Within iCompute technical expertise is only rewarded to a certain organisational level. To earn more, technically adept employees have to become managers. Evidence appears to suggest that many are unsuited to management, unable to deal appropriately with their former peers. These managers also seem anxious to show that their technical expertise is not diminishing, emphasising the importance of technology as a symbol within the organisation. Consequently, they often try to demonstrate this expertise (for example, through programming) but are unaware that this brings derision rather than respect. The absence of measurement systems has recently been recognised by management within the company. This has led to the initiation of an in-house project to improve time recording. However, software developers within the company see this as an unwelcome initiative.

Paradigm and discussion

Initially, iCompute was an entrepreneurial organisation with a significant work ethic based on long hours, technical innovation and competitive management. Although the organisation has superficially matured, the stories told by employees and the recruitment and retention of similarly minded people, has led to the continuation of a male-oriented, technologically focused workforce managed by unprepared and unsuitable managers. Managers' reaction to conflict is to avoid it (agreeing with customers over requirements), outsource it (software support) or put in formal computer systems to control it (the implementation of a time recording system). The failure to recruit and retain female staff appears to be a direct consequence of the organisational culture of iCompute. The 'work hard, play hard work ethic' is only suitable for employees with certain objectives, characteristics and minimal childcare responsibilities. This culture needs to change if the company is to employ a more balanced and representative workforce that is focused on business rather than technological objectives.

(b) The question does not suggest an appropriate framework to use in the candidate's answer. This model answer uses the Harmon process-strategy grid as its reference point. However, credit would be given for any appropriate alternative framework.

The primary purpose of the Harmon process-strategy matrix is to ensure that organisations focus their process redesign efforts in the most appropriate areas. The grid has two axes. One is concerned with process complexity and the other with strategic importance. For each quadrant of the grid Harmon suggests appropriate solution options. For example, straightforward commodity processes with low process complexity and low strategic importance should be either outsourced or automated, using a commercial off-the-shelf software package. Elements of this grid can be applied to the three high level process applications identified at iCompute.

Advice on legal issues Bespoke systems development is risky. There is evidence in the scenario of litigation between iCompute and two of its customers. Contracts have to be carefully worded and advice taken to head off or manage legal disputes. Although iCompute is considering moving this process in-house, it seems unlikely that it will be able to afford, attract or motivate an internal legal team. Advice on legal issues could be classified as a process of high complexity and low strategic importance on the process/strategy matrix. Consequently, it seems that continuing the outsourcing arrangement should be the preferred option. The current supplier employs experts who keep up-to-date in an increasingly complex field. They can also advise on employee legislation.

Software support is provided by the company to support both its bespoke and package solutions. This used to be organised in-house, but was outsourced a year ago. Subsequent customer feedback has been poor, but even without this feedback, it could be argued that outsourcing was a poor decision. Service is one of the primary activities of Porter's value chain. It directly influences the customer's perception of the supplier and the likelihood of a repeat purchase. In the context of iCompute, feedback from end users to their managers is likely to influence future software purchasing decisions. Consequently, not only is support relatively complex (as acknowledged by the manager who made the outsourcing decision) but it is also of strategic importance to iCompute. This suggests that iCompute should bring support back in-house, perhaps by the use of an automated system.

Time recording The management of iCompute requires much more detailed time recording information, showing how long employees have worked on certain tasks and projects. Some contracts are on a time and materials basis and time recording data is required for accurate and prompt billing. However, most contracts are on a fixed price basis and better internal information is required on which to build quotes for this type of work. The company has decided to develop software in-house to support this high level process. This appears to be a questionable decision for at least three reasons. Firstly, it uses resources which could be employed on external fee-earning contracts. Secondly, accurate time recording is a key requirement in many professions (lawyers, accountants, etc) and it seems highly likely that a range of off-the-shelf packages would be available to fulfil their needs. Finally, it could be argued that the application is a relatively simple low-value process in the process-strategy matrix and so should be carried out either through a software package or an outsourced solution.

3 (a) A post-project review takes place once the project has been completed. In fact, it can often be the last stage of the project, with the review culminating in the sign-off of the project and the formal dissolution of the project team. The focus of the post-project review is on the conduct of the project itself, not the product it has delivered. The aim is to identify and understand what went well and what went badly in the project and to feed *lessons learned* back into the project management standards with the aim of improving subsequent project management in the organisation.

A post-implementation review focuses on the product delivered by the project. It usually takes place a specified time after the product has been delivered. This allows the actual users of the product an opportunity to use and experience the product or service and to feedback their observations into a formal review. The post-implementation review will focus on the product's fitness for purpose. The review will not only discuss strategies for fixing or addressing identified faults, but it will also make recommendations on how to avoid these faults in the future. In this instance these *lessons learned* are fed back into the product production process.

A benefits realisation review also takes place after the product has been delivered. It is primarily concerned with revisiting the business case to see if the costs predicted at the initiation of the project were accurate and that the predicted benefits have actually accrued. In effect, it is a review of the initial cost/benefit analysis and any subsequent updates made to this analysis during the conduct of the project. It may be part of a post-implementation review, although the long-term nature of most benefits means that the post-implementation review is often held too soon to properly conduct benefits realisation. In fact, it can be argued that benefits realisation is actually a series of reviews where the predicted long-term costs and benefits of the business case are monitored. Again, one of the objectives is to identify *lessons learned* and in this case to feed these back into the benefits management process of the organisation.

(b) **Post-project review at HomeDeliver**

The following issues could have been raised at the HomeDeliver post-project review. They are presented here with lessons learned that should be fed back into the project management process.

- The late allocation of HomeDeliver order administrators full-time to the project. Initially, employees were allocated part-time to the project. However this hampered project progress as these administrators also needed to undertake their normal operational duties. Consequently, the project began to significantly slip. Even though selected order administrators were added full-time to the project it was too late and the software was delivered two months behind schedule.

  Lessons learned: it is likely that deadlines will slip if appropriate employees are not allocated full-time to the project.

- The failure to consult catalogue supervisors and agents.
  There is evidence in the scenario that internal stakeholders were identified and consulted throughout the project. However, external stakeholders, such as the catalogue supervisors and agents, were not consulted at all. This meant that they had little understanding of the software prior to its implementation. It also meant that their requirements were not taken into consideration when developing the software. Hence the need to amend an order was not included in the software solution.

  Lessons learned: ensure that stakeholder analysis includes both external and internal stakeholders and make sure that external stakeholders are included in the requirements gathering process where appropriate.

- The scope of implementation, implementing all supervisors and agents immediately. In retrospect, implementing all supervisors (and their agents) was too ambitious and risky. It would have been wiser to establish a pilot project where only selected supervisors and agents used the new system. Experience from this pilot could have been used to modify the software and fix faults and omissions before rolling out to the rest of the organisation. The scope should have been defined in the project initiation document and this should have been risk assessed.

  Lessons learned: the risk assessment of the scope of projects is important and project managers should look to mitigate risk by reducing scope.

Post implementation review at HomeDeliver

The following issues could have been raised at the HomeDeliver post-implementation review. They are presented here with recommendations that should be fed back into the software development process.

- Faults and omissions in the computer software. The omission of the order amendment facility has already been considered. However, the failure of the software to work with a popular browser needs investigating. Testing should consider a range of browsers. The post-implementation review should also consider why these faults were not found before the software was released. A possible reason is that the software was tested by full-time employees of HomeDeliver in a controlled office environment. It was not acceptance tested by the part-time, home-based agents who were actually going to use the software. These people were likely to be less familiar with computer applications and were also likely to use a wide variety of hardware and software.

  Lessons learned: acceptance testing should be undertaken by real business users in the hardware and software environment they are actually working in. Testing across multiple browsers must be considered.

- Faults in the documentation. The documentation supporting the implementation was both inappropriate and inappropriately distributed. Distributing the user manual as a PDF file raises at least two issues. Firstly, whether the email, and its attached file, had actually been received by the agent. A significant number of them claim that they did not receive the email. Secondly, it seems unreasonable to expect self-employed agents to print out a large, colour manual at their own cost. A failure to print out and study the manual probably contributed to agents being unable to use the software to enter multiple orders for one household. Spelling and functionality faults in the manual undermine confidence in both the documentation and the software it supports.

  Lessons learned: documentation must be carefully inspected before software release and its physical distribution should be carefully considered. Distributing documentation electronically may seem easy and cheap, but it may have important unanticipated consequences.

- Training of employees. It was perceived that the software was easy to use and so no formal training was given to agents. However, this missed the opportunity to find early faults (for example, not running under a certain browser). The inability of many agents to claim that the system could not support multiple orders from one household also suggests that the software was not as easy to use as its developers claimed.

  Lessons learned: As well as imparting skills, training provides an opportunity to build rapport with users and to identify possible issues and faults with the software at an earlier stage.

(c) The potential benefits to HomeDeliver of the new electronic ordering system might include:

- Staff savings from the reduction or elimination of order administrators at HomeDeliver. This benefit should be relatively easy to quantify.

- Staff savings from reduced catalogue supervisor costs. In the new system, supervisors appear to have significantly less work and so each supervisor should be able to co-ordinate more agents. However, supervisors are currently rewarded on the basis of how many agents they administer. So savings could only be made if this contractual arrangement was changed.

– Improved cash flow, because money is now sent daily rather than at the end of the week. Improved cash flow will reduce borrowing costs or increase investment income. This benefit should be relatively easy to quantify.

– The system should lead to the customer receiving their goods more quickly. Orders are entered at the end of the day, not in the week after the order has been placed. This is a benefit for the customer, not HomeDeliver. However, it could be argued that improved customer service may lead to more customers and, because there is less elapsed time between order and delivery, to fewer cancelled orders. It would be relatively difficult to quantitatively predict both of these benefits in advance.

4 (a) This part of the question is concerned with factors that will influence ATL's pricing of its e-learning product. It can be answered from a number of perspectives and credit will be given as appropriate. This model answer focuses on four main areas. Firstly, the pricing objectives of the company, the overall goals that describe what ATL wants to achieve through its pricing efforts. The second area is the customer; the value of the product to them and how many products they are likely to buy at what price. The third area is the costing approach used and finally, different pricing strategies are considered. It is argued that all of these areas will need to be taken into consideration when determining the final price (or prices) of the e-learning product.

Pricing objectives

Pricing objectives need to be aligned with the organisation's corporate and marketing objectives. ATL positions itself as a premium quality training provider, where conventional courses with above average prices still sell because of high quality training delivery. The company may wish to directly reflect this in its pricing of the e-learning software. However, other objectives must be borne in mind and may be more appropriate in the context of the e-learning product; for example, targeting market share or creating cash flow to develop products for the intermediate and advanced levels qualifications. ATL is an early mover in the field and it may wish to establish barriers to entry based on price and market share.

Determining customer demand and the ability to buy

ATL has at least three distinct customers in mind. The price sensitivity and demand from each of these is difficult to assess. The first is an individual consumer (B–C) purchasing over the Internet from anywhere in the world. ATL believes that a significant number of these customers will come from less wealthy countries. It is sure that these customers will be very sensitive to price, but has no feel for this demand elasticity or for total demand except that they believe it to be 'very large'. The second differentiated customer is the large companies of Eothen. It has targeted the e-learning product at the top 500 companies and has obtained data on current training spend (Figure 1). This can be used to help establish a price (see part (b)) that companies are willing to pay by estimating the price elasticity of demand for courses. Depending on price elasticity over a particular range of prices, it may be worth either increasing or reducing prices to increase revenues and profitability.

Individual candidates from companies do not pay for the e-learning product themselves. So the transaction is business to business (B–B) and it is the price that the business is willing to pay that is relevant here. E-learning is taking off in Eothen and demand can be estimated from the figures given in Figure 2. However, it is also likely that businesses will expect *discounted prices* for multiple purchases. Finally, the third customer group also reflects a different channel of communication. This is the third-party reseller who has traditionally brokered course places and now wishes to offer e-learning services. They will need to make a margin and so ATL will have to factor this into its pricing decision.

Costing assumptions and policy

Costs need to be understood, not only continuing costs, but the company's attitude to recovering the costs it has already incurred in the development of the product. One of the benefits of e-learning, from the perspective of ATL, is the low variable cost of each sale. This should give ATL greater price flexibility, with the implication that ATL could set its prices to maximise its revenues as most of its costs are fixed in the short term. The employment of dedicated support staff is an overhead cost directly associated with the supply of e-learning. However, it is difficult to predict these costs as not only are they related to demand for the product, but they will also be determined by the product experience. If the product is easy to use and is effective in preparing users for the examination, then there may be very few support calls. It is likely that such support costs will be stepped, with volumes reaching threshold values that require another member of staff to be added. Therefore support is likely to behave as a stepped fixed cost.

The cost of the product also needs to reflect other costs associated with e-learning, such as promotion and product enhancement. It might also be expected to contribute to the overheads of ATL as a whole; finance, human resources, administration etc.

The costs of product development have already been incurred and can be considered as a sunk cost. However, by exploring a range of margins and costing approaches, ATL might attempt to explicitly recover its investment in the product.

Selection of a pricing strategy

A pricing strategy is, according to Dibb et al, an 'approach designed to influence and determine pricing decisions'. There are many different pricing strategies, some of which will contradict each other. At ATL the most relevant are summarised below.

Negotiated pricing is an accepted convention in the company's traditional market and so may also be relevant in pricing the e-learning package. *Secondary market* pricing may also be a significant consideration. One of the reasons for the development of the e-learning package was to target overseas candidates who had considerably less disposable income. Local pricing must be an important consideration. Negotiated and secondary market pricing are both examples of a differential pricing policy. A psychological pricing policy might also influence the pricing decision at ATL. For example, *reference pricing* might be used to compare the price of the e-learning product with the conventional classroom alternative. *Bundle pricing* may also be attractive; bundling in the examination fee, after negotiating a reduction in fee from the Institute.

Any pricing decision can usually be quickly flexed to reflect actual trading conditions. It is a flexible and convenient way of adjusting the marketing mix. ATL can adjust prices quickly; other components of the marketing mix do not really have this flexibility.

(b) The two analyses (Figures 1 and 2) both use linear least squares regression and correlation to express the relationship between two variables. Figure 1 considers the relationship between the dependent variable (y), average training budget per employee per year, and gross profit of the company (x – the independent variable). The hypothesis is that the average training budget per employee depends, to some extent, on the profitability of the organisation. An understanding of this relationship might help ATL determine the *price that the corporate customer is willing to pay* for its product. This is an important part of the pricing process. In Figure 2, least squares regression is used to establish a trend line in the data. In this instance time is the independent variable and e-learning sales the dependent variable. The trend line could be used by ATL to help establish the future *demand for the product*, another important part of the pricing process.

Least squares regression fits a line of best fit through the data. The regression equation ($y = a + bx$) can then be used to predict values of y from values of x. The strength of the linear relationship between the two variables is measured by the correlation coefficient (r). The value of r ranges from -1 (perfect negative correlation), through 0 (no correlation) to $+1$ (perfect positive correlation).

Government statistics predict that the average gross profit of the top 500 companies will be $50m next year. Entering this value into the equation for Figure 1 suggests an average training budget spend of $813 per employee. This is less than one conventional course place ($950) at current course prices. In the sample data set the ten companies recorded an average annual gross profit of $86m, giving a predicted average spend of $955. This suggests that there will be pressure on prices in the coming year (particularly for conventional courses) and that e-learning may be a very attractive option. The data provides useful input into understanding the price corporate customers will be willing to pay to fulfil their training needs.

In Figure 2, demand for the e-learning products overall can be estimated by extrapolating the trend line. For example, it suggests that demand in the fourth quarter of 2011 (period 14) will be about $4·06m. Extrapolation of data is problematic because it concerns predicting values outside the scope of the sample.

However, care has to be used in interpreting the data. The limitations of the technique itself have to be recognised. The technique fits a straight line ($(y = ax + b)$ is the equation of a straight line), when perhaps a curved line would be more appropriate. This is particularly noticeable in Figure 2, where sales appear to be disproportionately increasing in the last four quarters of the data. A simple scatter diagram would show an upward curve in the last part of the time series. Furthermore, the correlation between the variables is a statistical measure; it does not imply meaning or proof of a causal link. High coefficients may be due to each variable being independently related to a third variable, sometimes called a control variable, such as interest rates, or are just due to pure chance. Conventionally, the *coefficient of determination* has been calculated for expressing the strength of a relationship. The coefficient of determination is r squared, in the case of Figure 1, 0·64; which suggests that 64% of variability in average training spend per employee is due to gross profit. 36% is attributable to other factors.

The representative nature of the sample used in Figure 1 also needs consideration. Figure 1 is based on a sample of only 10 of the 500 top companies in the country. This is a relatively small sample and so a significance test would have to be undertaken on the results. The theory of this is beyond the syllabus, but the principle, which is being wary of basing decisions on small and perhaps unrepresentative samples, is not.

1 **(a)** 1 mark for each appropriate point up to a maximum of 20 marks.

(b) 1 mark for each appropriate point up to a maximum of 16 marks.

1 mark each for report structure, style, and fluency up to a maximum of 4 professional marks.

(c) 1 mark for each appropriate point up to a maximum of 10 marks.

2 **(a)** 1 mark for each appropriate point up to a maximum of 13 marks.

(b) Up to 1 mark for the suggested framework.
Up to 4 marks for each high level process.

Up to a maximum of 12 marks for this part question.

3 **(a)** 1 mark for each relevant point up to a maximum of 2 marks for each type of review and up to a maximum of 6 marks for this part question.

(b) 1 mark for each relevant point up to a maximum of 6 marks for each type of review. Two types of review, giving a maximum of 12 marks for this part question.

(c) 1 mark for each relevant point up to a maximum of 7 marks.

4 **(a)** 1 mark for each appropriate point up to a maximum of 15 marks.

(b) 1 mark for each appropriate point up to a maximum of 10 marks.