Professional Level – Essentials Module

Business Analysis

Wednesday 15 June 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

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The question paper begins on page 3.

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

The following information should be used when answering question 1

1 Introduction

The EcoCar company was formed six years ago to commercially exploit the pioneering work of Professor Jacques of Midshire University, a university in the country of Erewhon. Over a number of years he had patented processes that allowed him to use Lithium-ion batteries to power an electric car, which could travel up to 160 kilometres before it needed recharging. Together with two colleagues from the university, he set up EcoCar to put the car into commercial production.

Coincidentally, an area in the south of Midshire was suffering from major industrial decline. This area was centred on the former Lags Lane factory of Leopard Cars, which had recently been shut down by its parent company, bringing to an end 60 years of continuous vehicle manufacture on that site. Many skilled car production workers had been made redundant in an area that already suffered significant unemployment. Grants from the regional council and interest-free loans from the government allowed EcoCar to purchase and re-furbish part of the Lags Lane site and take on a hundred of the skilled workers made redundant by Leopard Cars.

The company now manufactures three car models: the original Eco, the EcoPlus, and the EcoLite. The EcoPlus is a luxury version of the Eco and shares 95% of the same components. The EcoLite is a cheaper town car and uses only 70% of the components used in the Eco. The rest of the components are unique to the EcoLite. A comparison of an Eco with a similar petrol-fuelled car (Kyutia 215) is given in Figure 1. This table also gives a comparison with a hybrid car (Xdos-HybridC) where the petrol engine is supplemented by power from an electric motor. Hybrids are a popular way of reducing emissions and fuel consumption. Petrol currently costs $5 per litre in Erewhon. There are also experimental cars, not yet in production, which are fuelled by other low-emission alternatives to petrol such as hydrogen.

Model	Eco	Kyutia 215	Xdos-HybridC
Power source	Lithium-ion batteries, electric motor	Petrol	Petrol with assistance from an electric motor
Price	$9,999	$7,999	$9,500
Emissions (CO_2)	Zero	180gram/kilometre	95gram/kilometre
Economy	Approximately $1 per 20 kilometres (electricity charge)	8 litres/100km	5 litres/100km
Performance	0–100 kph: 18 seconds Max speed: 120kph	0–100kph: 10 seconds Max speed: 180kph	0–100kph: 12 seconds Max speed: 170kph
Range	160 kilometres until the battery needs re-charging	550 kilometres on a tank full of petrol	1,200 kilometres on a tank full of petrol

Figure 1 Comparison of the Eco with comparable conventional and hybrid cars

The Eco model range can be re-charged from a domestic electricity supply. However, to supplement this, the government has recently funded the development of 130 charging stations for electric cars spread throughout the country. It has also given businesses tax incentives to switch to electric cars and is heavily taxing cars with high CO_2 emissions because of the detrimental effect of excess CO_2 on the environment. It has also enacted a number of laws on car safety which EcoCar has to comply with. Erewhon itself remains a prosperous, developed country with a well-educated population. The government is committed to tackling social and economic problems in areas such as South Midshire. EcoCar still receives significant government grants to help keep the company financially viable.

The EcoCar model range is largely bought by 'green' consumers in Erewhon, who are prepared to pay a price premium for such a car. They are also popular in the Midshire region, where the residents are proud of their car making tradition and grateful to Professor Jacques and the government for ensuring its survival, albeit at a reduced level. Only 5% of EcoCar's production is exported.

Universal Motors

One year ago, EcoCar was bought by Universal Motors, the second largest car manufacturer in the world. Professor Jacques and his two colleagues remain as senior managers and board members of the company. Car production of

electric cars is still very low (see Figure 2), but Universal Motors believes that demand for electric cars will be very significant in the future and purchased EcoCar as a way of entering this market. They believe that Lithium-ion batteries (the power source for the EcoCar range) will eventually become lighter, cheaper and give better performance and range.

Since purchasing the company Universal Motors have undertaken an external and internal analysis of EcoCar and invested further capital into the business.

Their internal analysis identified four main areas of weakness. These are given below:

(1) High cost of labour, skills shortage and production capacity problems

Although EcoCar was established in an area where there already existed a pool of skilled car workers, the subsequent retirement of many of these workers has left a skills gap. Although unemployment remains high in the area, applicants for jobs appear to lack the skills and motivation of the older workers. EcoCar is finding it difficult to recruit skilled labour and this shortage is being reflected in increased wages and staff costs at the Lags Lane site. The urban location of the Lags Lane site also causes a problem. Inbound logistics are made expensive by the relative inaccessibility of the site and the general congestion on Midshire's main roads. Finally, there is insufficient production capacity at the Lags Lane site to meet the current demand for EcoCar's products. EcoCar attempts to produce the most profitable combination of its products within this constraint. However, it is unable to completely satisfy market demand.

(2) Lack of control and co-ordination

The individual departments and functions of the company are poorly integrated. Although budgets are agreed annually, they are not properly co-ordinated or monitored. Recently, car production was halted by the shortage of an important sub-assembly. Components for this sub-assembly had to be purchased quickly at a cost 10% above the normal purchase price. Overtime also had to be paid to employees to minimise the delay in re-starting car production. A similar lack of co-ordination appears to exist within bought-in inventory items. A recent purchase order for superior quality car seats was agreed by senior management, despite the fact that few customers had ever specified this option on the EcoPlus model. The seats were delivered and stored, but the finance department was unable to pay for them within the supplier's agreed payment terms. This failure was leaked to a newspaper and a very public row took place between EcoCar and the supplier. Eventually short-term financing (at a premium interest rate) was agreed with one of the banks and the seat manufacturer was paid.

(3) Research & Development – succession and learning

In the initial growth of EcoCar, the technical capabilities of the three founding senior managers were very significant. However, these three managers are now aged 50 or over. There is concern that their technical expertise and thirst for innovation is diminishing. To some extent the senior managers recognised this themselves two years ago and instigated a graduate training scheme with the aim of 'bringing new thinking into the company and ensuring its future'. Four graduates were taken on and a graduate training scheme agreed. However, it was cut within a year because 'training costs got out of control' and all four graduates have subsequently left the firm. A resignation letter from one of the graduates criticised the 'poor management skills of senior managers'. Universal Motors is concerned that the research and management culture is inappropriate and outdated. As a result, the graduates were not properly managed or motivated and there is evidence that their contribution was not welcomed or recognised.

(4) The understanding of risk

Universal Motors is concerned that decisions are taken by the senior managers of EcoCar without a proper analysis of the associated risks. Although the three senior managers are individually quite risk averse, as a team they make quite risky decisions. At a recent meeting to discuss entering a car in an economy car rally (accompanied by a mobile charging system) various risks were discussed at length but not documented or analysed. After two hours of exhaustive discussion the three senior managers decided to vote on the decision. They all voted in favour. No further discussion was held about the risks they had just discussed. Furthermore, the risk of an employee leaving to join a competitor and taking valuable information with them is discussed at every board meeting. However, no action is taken to address the risk. There just seems to be a general expectation that it will not occur.

Outsourcing

To address the first internal weakness, Universal Motors is considering outsourcing the manufacture of the EcoLite model to an overseas company. Information relevant to this decision is presented in Figure 2. The potential manufacturer has quoted a production price to Universal Motors of $3,500 per car. The manufacturing plant is approximately 300 miles from Erewhon, which includes crossing the 40 mile wide Gulf of Berang.

There are 112 production hours available in total per week at the Lags Lane site (seven days per week, two eight hour shifts) which can be used for a combination of the three product lines.

The weekly overhead costs are $35,000 per week at Lags Lane. If the production of the EcoLite model is outsourced, it is forecast that overhead costs will fall by $1,250 per week. The transportation cost is estimated at $250 for each outsourced EcoLite produced.

	Eco	EcoPlus	EcoLite
Selling price per car ($)	9,999	12,999	6,999
Variable cost per car ($)	7,000	10,000	4,500
Weekly demand (cars)	6	5	6
Production time per car (hrs)	9	10	8

Figure 2: Information relevant to the outsourcing decision

(a) Universal Motors have explicitly recognised the need for analysing the external macro-environment and marketplace (industry) environment of EcoCar.

Required:

Analyse the external macro-environment and marketplace (industry) environment of EcoCar. (16 marks)

Professional marks will be awarded in part (a) for the inclusion of appropriate model(s) and the overall structure and clarity of the analysis. (4 marks)

(b) Universal Motors is considering outsourcing the EcoLite model to an overseas manufacturer, whilst retaining in-house production of the Eco and EcoPlus models.

Required:

Evaluate the financial and non-financial case for and against the outsourcing option. (15 marks)

(c) Three weaknesses identified by Universal Motors are (1) lack of control and co-ordination, (2) research & development – succession and learning and (3) the understanding of risk.

Required:

Analyse how each of these three weaknesses might be addressed at EcoCar. (15 marks)

(50 marks)

Section B – TWO questions ONLY to be attempted

2 8-Hats Promotions was formed twenty years ago by Barry Gorkov to plan, organise and run folk festivals in Arcadia. It soon established itself as a major events organiser and diversified into running events for the staff and customers of major companies. For example, for many years it has organised launch events, staff reward days and customer experiences for Kuizan, the car manufacturer. 8-Hats has grown through a combination of organic growth and acquiring similar and complementary companies. Recently, it purchased a travel agent (now operated as the travel department of 8-Hats) to provide travel to and from the events that it organised.

Barry Gorkov is himself a flamboyant figure who, in the early years of the company, changed his name to Barry Blunt to reflect his image and approach. He calls all the events 'jobs', a terminology used throughout the company. A distinction is made between external jobs (for customers) and internal jobs (within 8-Hats itself). The company is organised on functional lines. The sales and marketing department tenders for external jobs and negotiates contracts. Sales managers receive turnover-related bonuses and 8-Hats is known in the industry for its aggressive pricing policies. Once a contract is signed, responsibility for the job is passed to the events department which actually organises the event. It is known for its creativity and passion. The operations department has responsibility for running the event (job) on the day and for delivering the vision defined by the events department. The travel department is responsible for any travel arrangements associated with the job. Finally, the finance department is responsible for managing cash flow throughout the job, raising customer invoices, paying supplier invoices and chasing any late payments.

However, there is increasing friction between the departments. The operations department is often unable to deliver the features and functionality defined by the events department within the budget agreed by the sales manager. Finance is unaware of the cash flow implications of the job. Recently, an event was in jeopardy because suppliers had not been paid. They threatened to withdraw their services from the event. Eventually, Barry Blunt had to resolve friction between finance and other departments by acquiring further funding from the bank. The event went ahead, but it unsettled Kuizan which had commissioned the job. The sales and marketing department has also complained about the margins expected by the travel department, claiming that they are making the company uncompetitive.

There has been a considerable amount of discussion at 8-Hats about the investment appraisal approach used to evaluate internal jobs. The company does not have sufficient money and resources to carry out all the internal jobs that need doing. Consequently, the finance department has used the Net Present Value (NPV) technique as a way of choosing which jobs should be undertaken. Figure 1 shows an example comparison of two computer system applications that had been under consideration. Job One was selected because its Net Present Value (NPV) was higher ($25,015) than Job Two ($2,090).

'I don't want to tell you about the specific details of the two applications, so I have called them Job One and Job Two' said Barry. 'However, in the end, Job One was a disaster. Looking back, we should have gone with Job Two, not Job One. We should have used simple payback, as I am certain that Job Two, even on the initial figures, paid back much sooner than Job One. That approach would have suited our mentality at the time – quick wins. Whoever chose a discount rate of 8% should be fired – inflation has been well below this for the last five years. We should have used 3% or 4%. Also, calculating the IRR would have been useful, as I am sure that Job Two would have shown a better IRR than Job One, particularly as the intangible benefits of improved staff morale appear to be underestimated. Intangible benefits are just as important as tangible benefits. Finally, we should definitely have performed a benefits realisation analysis at the end of the feasibility study. Leaving it to after the project had ended was a ridiculous idea.'

Job One				$000s			
Costs		Year 0	Year 1	Year 2	Year 3	Year 4	
	Hardware costs	50	0	0	0	0	
	Software costs	50	0	0	0	0	
	Maintenance costs	10	10	10	10	10	
	Total	110	10	10	10	10	
Benefits	Staff savings	0	40	5	0	0	
	Contractor savings	0	20	10	10	10	
	Better information	0	0	0	20	30	
	Improved staff morale	0	0	10	20	30	
	Total	0	60	25	50	70	
	Cash Flows	–110	50	15	40	60	
	Discount Factor at 8%	1·000	0·926	0·857	0·794	0·735	NPV
	Discounted CF	–110·000	46·300	12·855	31·760	44·100	25·015

Job Two				$000s			
Costs		Year 0	Year 1	Year 2	Year 3	Year 4	
	Hardware costs	50	0	0	0	0	
	Software costs	30	10	10	0	0	
	Maintenance costs	10	10	10	10	10	
	Total	90	20	20	10	10	
Benefits	Staff savings	0	30	10	5	0	
	Contractor savings	0	30	15	15	15	
	Better information	0	0	0	10	10	
	Improved staff morale	0	0	10	10	10	
	Total	0	60	35	40	35	
	Cash Flows	–90	40	15	30	25	
	Discount Factor at 8%	1·000	0·926	0·857	0·794	0·735	NPV
	Discounted CF	–90·000	37·040	12·855	23·820	18·375	2·090

Figure 1: NPV calculation for two projects at 8-Hats (with a discount rate of 8%)

Required:

(a) Barry Blunt has criticised the investment appraisal approach used at 8-Hats to evaluate internal jobs. He has made specific comments on payback, discount rate, IRR, intangible benefits and benefits realisation.

Critically evaluate Barry's comments on the investment appraisal approach used at 8-Hats to evaluate internal jobs. (15 marks)

(b) Discuss the principles, benefits and problems of introducing a matrix management structure at 8-Hats. (10 marks)

(25 marks)

3 The Institute of Analytical Accountants (IAA) offers three certification programmes which are assessed through examinations using multiple choice questions. These questions are maintained in a computerised question bank. The handling process for these questions is documented in Figure 1 and described in detail below. The IAA is currently analysing all its processes seeking possible business process re-design opportunities. It is considering commissioning a bespoke computer system to support any agreed re-design of the business processes. The IAA is keen to implement a new solution fairly quickly because competitors are threatening to move into their established market.

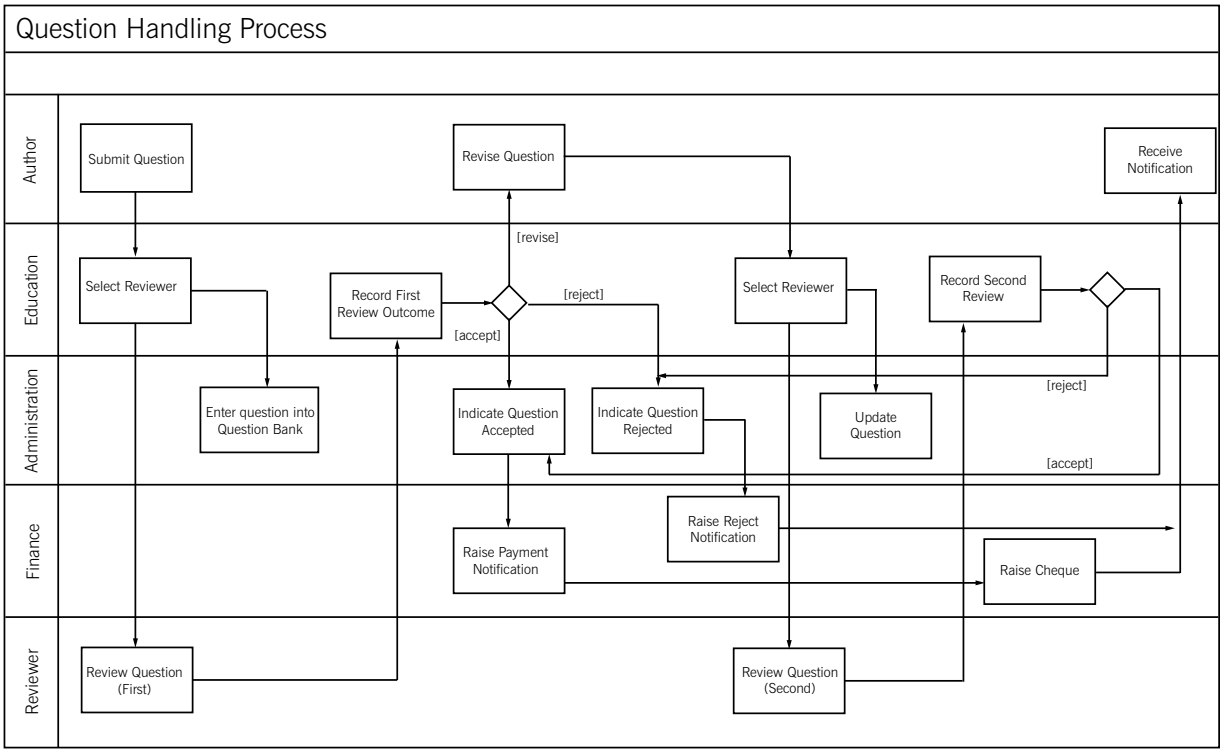

Figure 1: Question Handling process at IAA

The author (the question originator) submits the question to the IAA as a password protected document attached to an email. The education department of the IAA (which is staffed by subject matter experts) select an appropriate reviewer and forward the email to him or her. At no point in the process does the author know the identity of the reviewer. A copy of the email is sent to the administration department where administrators enter the question in a standard format into a computerised question bank. These administrators are not subject matter experts and sometimes make mistakes when entering the questions and answers. A recent spot-check identified that one in ten questions contained an error. Furthermore, there is a significant delay in entering questions. Although five administrators are assigned to this task, they also have other duties to perform and so a backlog of questions has built up. Administrators are paid less than education staff.

The reviewer decides whether the question should be accepted as it is, rejected completely, or returned to the author for amendment. This first review outcome is recorded by the education department before the administration department updates the database with whether the question was accepted or rejected. On some occasions it is not possible to find the question which needs to be updated because it is still in the backlog of questions waiting to be entered into the system. This causes further delay and frustration.

The finance department is notified of all accepted questions and a payment notification is raised which eventually leads to a cheque being issued and sent to the author.

The amended question is returned by the author to the education department who forward this onto the reviewer. A copy is again sent to the administration department so that they can amend the question held on the database.

On the second review, the question is accepted or rejected. Rejected questions (irrespective of when they are rejected) are notified to the finance department who raise a reject notification and send it back to the author.

Currently, 20% of questions are immediately rejected by the reviewer and a further 15% are sent back to the author for revision. Of these, 30% are rejected on the second review.

Required:

(a) The IAA would like to consider a number of re-design options, ranging from very simple improvements to radical solutions.

Identify a range of re-design options the IAA could consider for improving their question handling process. Evaluate the benefits of each option. (15 marks)

(b) Eventually, the IAA decided not to develop a bespoke solution but to use an established software package to implement its multiple choice question management and examination requirements. The selected package, chosen from a shortlist of three, includes the delivery of tests, question analysis, student invoicing and student records. It is already used by several significant examination boards in the country.

Explain the advantages of fulfilling users' requirements using a software package solution and discuss the implications of this solution for process re-design at IAA. (10 marks)

(25 marks)

4 Cronin Auto Retail (CAR) is a car dealer that sells used cars bought at auctions by its experienced team of buyers. Every car for sale is less than two years old and has a full service history. The company concentrates on small family cars and, at any one time, there are about 120 on display at its purpose-built premises. The premises were acquired five years ago on a 25 year lease and they include a workshop, a small cafe and a children's playroom. All vehicles are selected by one of five experienced buyers who attend auctions throughout the country. Each attendance costs CAR about $500 per day in staff and travelling costs and usually leads to the purchase of five cars. On average, each car costs CAR $10,000 and is sold to the customer for $12,000. The company has a good sales and profitability record, although a recent economic recession has led the managing director to question 'whether we are selling the right type of cars. Recently, I wonder if we have been buying cars that our team of buyers would like to drive, not what our customers want to buy?' However, the personal selection of quality cars has been an important part of CAR's business model and it is stressed in their marketing literature and website.

Sales records show that 90% of all sales are to customers who live within two hours' drive of CAR's base. This is to be expected as there are many competitors and most customers want to buy from a garage that they can easily return the car to if it needs inspection, a service or repair. Consequently, CAR concentrates on display advertising in newspapers in this geographical area. It also has a customer database containing the records of people who have bought cars in the last three years. All customers receive a regular mail-shot, listing the cars for sale and highlighting any special offers or promotions. The company has a website where all the cars are listed with a series of photographs showing each car from a variety of angles. The website also contains general information about the company, special offers and promotions, and information about its service, maintenance and repair service.

CAR is keen to expand the service and mechanical repair side of its business. It would particularly like customers who have purchased cars from them to bring them back for servicing or for any mechanical repairs that are subsequently required. However, although CAR holds basic spare parts in stock, it has to order many parts from specialist parts companies (called motor factors) or from the manufacturers directly. Mechanics have to raise paper requisitions which are passed to the procurement manager for reviewing, agreeing and sourcing. Most parts are ordered from regular suppliers, but there is an increasing backlog and this can cause a particular problem if the customer's car is in the garage waiting for the part to arrive. Customers are increasingly frustrated and annoyed by repairs taking much longer than they were led to expect. Another source of frustration is that the procurement manager only works from 10.00 to 16.00. The mechanics work on shifts and so the garage is staffed from 07.00 to 19.00. Urgent requisitions cannot be processed when the procurement manager is not at work. The backlog of requisitions is placing increased strain on the procurement manager who has recently made a number of clerical mistakes when raising a purchase order.

Requests for stationery and other office supplies also go through the same requisitioning process, with orders placed with the office supplier who is offering the best current deal. Finding this deal can be time consuming and so employees are increasingly submitting requisitions earlier so that they can be sure that new supplies will be received in time.

The managing director is aware of the problems of the requisitioning system but is reluctant to appoint a second procurement manager because he is trying to keep staff overheads down during a difficult trading period. He is keen to address 'more fundamental issues in the marketing and procurement processes'. He is particularly interested in how the 'interactivity, intelligence, individualisation and independence of location offered by e-marketing media can help us at CAR'.

Required:

(a) Evaluate how the principles of interactivity, intelligence, individualisation and independence of location might be applied in the e-marketing of the products and services of CAR. (16 marks)

(b) Explain the principles of e-procurement and evaluate its potential application at CAR. (9 marks)

(25 marks)

End of Question Paper