UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
General Certificate of Education Advanced Level

BUSINESS STUDIES **9707/33**

Paper 3 **May/June 2012**

CASE STUDY

3 hours

Additional Materials: Answer Booklet/Paper

READ THESE INSTRUCTIONS FIRST

If you have been given an Answer Booklet, follow the instructions on the front cover of the Booklet.
Write your Centre number, candidate number and name on all the work you hand in.
Write in dark blue or black pen.
You may use a soft pencil for any diagrams, graph or rough working.
Do not use staples, paper clips, highlighters, glue or correction fluid.

Section A
Answer **all** questions.
Section B
Answer **one** question.
The businesses described in this question paper are entirely fictitious.
You are advised to spend 40 minutes on Section B.

At the end of the examination, fasten all your work securely together.
The number of marks is given in brackets [ ] at the end of each question or part question.

This document consists of **5** printed pages and **3** blank pages.

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Chilled Air Limited (CAL)

In 1990 Ed Gallas qualified as an electrical engineer. He formed a private limited company selling and repairing air conditioning units. The business was called Chilled Air Limited (CAL). His determination and drive helped the business reach all the ambitious growth targets that Ed set for it. For example, in the first year of operations, total sales revenue was $13 000 but four years later this had risen to over $100 000.

The business grew internally (organically) with four new retail and repair outlets opening each year. Some of these outlets were in other countries as Ed wanted to achieve market development. Then in 2006 he convinced CAL's other directors that external growth through a carefully selected takeover of another business was the right strategy. The Board of Directors agreed with Ed's analysis of the air conditioning industry contained in a report which he had submitted to the Board. This report stated that long term profit margins could only be increased in this competitive industry by vertical integration. In CAL's case this could be with a company manufacturing air conditioning units, removing one link in the supply chain and allowing CAL to sell its own branded products. In 2006, CAL's takeover bid of $35m for Frozen Air Assembly (FAA) was successful.

Now, in 2012, Ed is considering further vertical integration by taking over a supplier of components to the air conditioning factory (such as a manufacturer of electric motors).

Manufacturing air conditioning units

CAL's factory assembles a big range of air conditioning units from components bought in from a large number of suppliers. The factory was losing money when it was taken over by CAL and Ed had been determined to reverse this situation. He appointed a new Operations Director, Brett Ling, to manage the factory and gave him the following targets.

- Supply all CAL retail outlets with CAL branded air conditioning units according to demand.
- Reduce unit production costs by 10%.
- Meet strict quality assurance targets.

These targets were met but other problems arose. Brett introduced Just-in-Time production and this has led to some production delays caused by insufficient inventory. Brett cut down the number of suppliers so that for each major component there was only one preferred supplier. These firms were asked to sign a contract agreeing to supply materials in the quantities required up to four times each day to minimise CAL's inventory holding costs. This had worked well until extensive road building works caused long transport delays. In addition, a recent delivery of components had been of poor quality and two of the suppliers had gone out of business (closed) due to overseas competition.

Brett was considering some options to prevent the problem of insufficient inventory from arising again. He had narrowed these down to the following three options:

(1) Continue to use Just-in-Time but also hold a 'buffer' inventory level for all major components.
(2) Expand the existing factory so that some components – such as electric motors and fans – could be made by CAL in one of its own factories.
(3) Increase the number of preferred suppliers for each component to three including one from overseas.

Forecasting future sales

The demand for air conditioning units worldwide is increasing rapidly as emerging market countries experience fast economic growth. The demand for air conditioning units is seasonal in some countries that have cold winters and hot summers. In other regions of the world the demand is not seasonal. As both a retailing and a manufacturing business, accurate sales forecasts are very important to CAL. Workforce planning in the factory and the accurate

ordering of materials and components are two important tasks made easier with sales forecasts. The CAL marketing manager forecasts sales by using time series analysis and the moving average technique. See Table 1.

Table 1: CAL past sales data and moving average calculations

Year	Quarter	Sales Revenue £m	4 – period moving average	Moving average trend	Seasonal variation
2008	3	120			
	4	140	145		
2009	1	190	147.5	146.25	43.75
	2	130	152.5	150	−20
	3	130	160	156.25	−26.25
	4	160	167.5	163.75	−3.75
2010	1	220	167.5	167.5	52.5
	2	160	170	168.75	−8.75
	3	130	u	172.5	−42.5
	4	170	v	176.25	−6.25
2011	1	240	180	178.75	61.25
	2	170	177.5	178.75	−8.75
	3	140	172.5	w	y
	4	160	167.5	x	z
2012	1	220			
	2	150			

Employee performance

Ed is not a very good ‘people person’. He leaves all human resource decisions to the Human Resources Director and departmental managers. Despite this, even Ed noticed the following recent trends in employee performance data and they worried him.

- Productivity at the factory has fallen by 5% in a year despite the introduction of some automated equipment.
- Labour turnover and absenteeism have increased amongst workers in the factory.
- It is taking longer than usual to replace staff who leave (because national rates of unemployment have fallen).

The Human Resources Director had recently recruited new managers for both the factory and the retail and repair division of the business. During recruitment he had insisted that the new managers should have a reputation for getting the best out of workers and keeping labour costs low. He expected managers to take clear decisions and quickly communicate these to workers. A new level of supervisors was added to the management hierarchy. One of the responsibilities of the supervisors was communicating instructions to factory workers and retail shop staff and repair engineers. Quality circles have been reduced in number and the popular works council no longer meets.

Proposed new contract

CAL promotes itself as being a company that ‘makes air conditioners that are not sold under any other brand name’. Is this policy about to change? CAL’s Marketing Director had been asked by the buyer of a major chain of electrical retailers to produce 5000 air conditioning units under the retailer’s brand name. The retailer is based in a country that

CAL does not currently sell to. The CAL factory has spare capacity during some periods of the year. However, the order would still put workers and equipment under pressure to meet the delivery deadline. The price offered by the retailer's buyer was $400 per unit including delivery. CAL's Marketing Director was at first keen to accept the contract believing it could lead to further orders. However after obtaining the factory cost data shown in Table 2 he was less enthusiastic.

Table 2: Cost data for air conditioning units

Labour cost per unit (assuming no overtime worked)	$125
Material and component costs per unit	$180
Allocated production overhead costs per unit (based on current annual output of 50 000 units)	$100
Allocated marketing overhead costs per unit (based on current annual output of 50 000 units)	$50
Additional packaging and transport costs per unit for proposed new contract	$25

Future strategies

Ed is now planning the next stage of CAL's development. Constant change is a feature of all businesses involved in technology based industries. Environmental pressure groups are publicising the vast amount of energy used to operate the growing number of air conditioning units. There is pressure to make the industry 'greener' and more environmentally responsible. Advances in product development have given two of CAL's competitors a competitive advantage. Ed believes the highly regarded customer service offered by CAL is helping to prevent a loss of sales. In many countries, growing legal protection for workers has led to more firms being forced to purchase air conditioning to keep workplace temperatures below maximum legal limits. All these external factors present CAL with threats and opportunities. Apart from further vertical integration, Ed has identified two potential strategies.

Strategy A: Spend more on long term research and development of a new type of air conditioning unit powered by its own solar panel and by other renewable energy sources.

Strategy B: Invest in a customer relations programme by spending more on retail staff training and a database of all existing customers. Ed believes this will allow CAL to continue to offer the best 'before and after sales service' of any business in the industry and this could be a unique selling point of the business.

Ed proposed these strategies at the latest Board meeting and said: 'Deciding between these two strategies will require the analysis of many factors and the use of appropriate decision making techniques.'

Section A

Answer **all** questions in this section.

1 Analyse **two** possible effects further vertical integration could have on CAL's future success. [10]

2 **(a)** Refer to Table 1. Calculate the values of:

(i) u (1 mark)

(ii) v (1 mark)

(iii) w (1 mark)

(iv) x (1 mark)

(v) y (2 marks)

(vi) z (2 marks)

(b) Assess the usefulness of sales forecasts to CAL. [12]

3 Discuss which option CAL should choose to overcome the inventory problems occurring within the factory producing air conditioning units. (Lines 27–42). [14]

4 **(a)** Refer to Table 2. Calculate the contribution if the order from the electrical retailing business is accepted. [6]

(b) Recommend whether CAL should accept this order. Justify your answer using your result from **4 (a)** and other relevant information. [14]

5 Evaluate the extent to which changing the leadership style at CAL will solve the problem of poor employee performance. [16]

Section B

Answer **one** question from this section.

6 Evaluate the usefulness to CAL's directors of doing PEST analysis before choosing between strategy A and strategy B. [20]

7 Discuss the strategic decision-making techniques that CAL's directors could use when making the choice between strategy A and strategy B. [20]

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