

Section A – The ONE question in this section is compulsory and MUST be attempted.

1. Introduction

COMPUART is a privately owned high technology company established in 2007 by computer engineer, Ashraf Gubara. It is situated in the country of Canada, a prosperous developed nation with a stable well- established political system. Successive governments in Canada have promoted technology by providing grants and tax incentives. Tax credits are also provided to offset company investment in research and development. The government, like many governments worldwide, have invested heavily in a national telecommunications infrastructure. However, in 2010 the country suffered an economic downturn that led many companies to postpone technological investment.

By 2018 COMPUART employed 75 full-time employees in a new, purpose-built factory and office unit. These employees were a mixture of technically qualified engineers, working in research and development (R&D), factory staff manufacturing and assembling products and a small sales and service support team.

Product areas

In 2018, COMPUART had three distinct product/service areas – data communication components, network management systems and, finally, technical support.

COMPUART sells data communication components to original equipment manufacturers (OEMs), who use these components in their hardware. Both the OEMs and their customers are predominantly large international companies. COMPUART has established a good reputation for the quality and performance of its components, which are competitively priced. However, COMPUART has less than 1% of the domestic marketplace and faces competition from over twenty significant suppliers, most of who also compete internationally. Furthermore, one of the company's OEM customers accounts for 40% of its sales in this area. The international market for data communication components had increased from \$33billion in 2009 to \$81billion in 2018. Forecasts for 2019 and beyond predict growth from increased sales to currently installed networks rather than from the installation of new networks. The maturity of the technology means that product lifecycles are becoming shorter. Success comes from producing high volumes of reliable components at relatively low prices. COMPUART produces components in a relatively prosperous country where there is significant legislation defining maximum work hours and minimum wage rates. All new components have to be approved by an appropriate government approval body in each country that COMPUART supplies. This approval process is both costly and time consuming.

The second product area is network management systems. COMPUART originally supplied fault detection systems to a small number of large end-users such as banks, public utility providers and global manufacturers. COMPUART recognised the unique requirements of each customer and so it customised its product to meet specific needs and requirements. They pioneered a modular design which allowed customers to adapt standard system modules to fit their exact networking requirements. The success of their product led to it being awarded a prestigious government technology award for “technological innovation in data communications”. This further enhanced the company’s reputation and enabled it to become a successful niche player in a relatively low volume market with gross margins in excess of 40%. They only have two or three competitors in this specialist market. Unlike component manufacture, there is no requirement to seek government approval for new network products.

Finally, the complexity of COMPUART products means that technical support is a third key business area. It has an excellent reputation for this support. However, it is increasingly difficult and costly to maintain the required level of support because the company does not have a geographically distributed network of support engineers. All technical support is provided from its headquarters. This contrasts with the national and international support services of their large competitors.

Current issues

COMPUART currently manufacture 40% of the components used in its products. The rest of the components, including semiconductors and microprocessors, are bought in from a few selected global suppliers. Serious production problems have resulted from periodic component shortages, creating significant delays in manufacturing, assembly and customer deliveries.

COMPUART is still a relatively immature organisation. There are small functional departments for sales and marketing, technical research and development, manufacturing and procurement. Ray still personally undertakes all staff recruitment and staff development. He is finding the recruitment of high calibre staff a problem, with COMPUART’ small size and geographical location making it difficult to attract the key personnel necessary for future growth.

Financial situation

In response to poor internal investment decisions, Ashraf has introduced a more formal approach to quantifying costs and benefits in an attempt to prioritise projects that compete for his limited funds and time. His first formal cost-benefit analysis helped him select a new machine for producing certain components in his factory. The results of his analysis are shown in figure one. The cost of the machine was \$90,000, with annual

maintenance fees of \$5,000. Ashraf has seen the machine working and he believes that he can save the cost of one technician straight away. These savings are shown as reduced staff costs. The manufacturer of the machine claims that the accuracy of the machine leads to reduced wastage of “up to 10%”. COMPUART have detailed measures of the wastage of the current machine and Ashraf has used this to estimate wastage savings. The increased accuracy of the machine over time is reflected in his estimates. Finally, the manufacturer claims ‘energy savings’. COMPUART currently know the energy costs of the whole factory – but not of individual machines. However, Ashraf thinks that his estimates for energy savings are realistic. He concludes that “over five years the machine breaks even, so this seems a reasonable business case to me”. Overall summary financial data for COMPUART is presented in figure two.

Figure one: Business case for new machine

Year	0	1	2	3	4
All figures in \$000					
Cost of the machine	90				
Maintenance costs	5	5	5	5	5
Reduced staff costs	15	15	15	15	15
Reduced wastage	2	4	6	8	10
Energy savings	2	2	2	2	2

Figure two: Financial analysis COMPUART 2015-2018

Financial analysis extracted from the statement of comprehensive income

All figures in \$000	2018	2017	2016	2015
Revenue				
Domestic	6,235	6,930	6,300	4,500
International	520	650	500	300
Total	6,755	7,580	6,800	4,800
Cost of Sales	4,700	5,000	4,200	2,850
Gross profit	2,055	2,580	2,600	1,950
Overhead expenses	1,900	2,010	1,900	1,400
Profit before tax and finance costs	155	570	700	550
Finance costs	165	150	120	25
Tax expense	17	62	75	60
Profit for the year	-27	358	505	465
Extracted from	internal statistical reports			
Employees	75	75	60	45
% of orders late	6	10	7	5
Order book	2,500	3,750	4,150	3,505

Required:

- a) Evaluate the macro-environment of COMPUART using a PESTEL analysis. **(15 marks)**
- b) Analyse the industry or marketplace environment that COMPUART is competing. **(16 marks)**

Professional marks will be awarded in part (b) for clarity, structure and an appropriate approach. **(4 marks)**

- c) Figures one and two summarise two financial aspects of COMPUART
 - I. Analyse the financial position of COMPUART. **(9 marks)**
 - II. Evaluate the cost-benefit analysis used to justify the purchase of the new machine. **(6 marks)**

(50 marks)

QUESTION 2

SARI Electronic Services operates in a high labour cost environment in Sudan and imports electronic products from the Republic of Korea. It re-brands and re-packages them as SARI products and then sells them to business and domestic customers in the local geographical region. Its only current source of supply is MISTUBITSHI electronics based in a factory on the outskirts of Seoul, the capital of the Republic of Korea. SARI regularly places orders for MISTUBITSHI products through the MISTUBITSHI web-site and pays for them by credit card. As soon as the payment is confirmed MISTUBITSHI automatically e-mails SARI a confirmation of order, an order reference number and likely shipping date. When the order is actually despatched, MISTUBITSHI send SARI a notice of despatch e-mail and a container reference number. MISTUBITSHI currently organises all the shipping of the products. The products are sent in containers and then trans-shipped to EIF, the logistics company used by MISTUBITSHI to distribute its products. EIF then delivers the products to the SARI factory. Once they arrive, they are quality inspected and products that pass the inspection are re-branded as SARI products (by adding appropriate logos) and packaged in specially fabricated SARI boxes. These products are then stored ready for sale. All customer sales are from stock. Products that fail the inspection are returned to MISTUBITSHI.

Currently 60% of sales are made to domestic customers and 40% to business customers. Most domestic customers pick up their products from SARI and set them up themselves. In contrast, most business customers ask SARI to set up the electronic equipment at their offices, for which SARI makes a small charge. SARI currently advertises its products in local and regional newspapers. SARI also has a web site which provides product details. Potential customers can enquire about the specification and availability of products through an e-mail facility in the web site. SARI then e-mails an appropriate response directly to the person making the enquiry. Payment for products cannot currently be made through the web site.

Feedback from existing customers suggests that they particularly value the installation and support offered by the company. The company employs specialist technicians who (for a fee) will install equipment in both homes and offices. They will also come out and troubleshoot problems with equipment that is still under warranty. SARI also offer a helpline and a back to base facility for customers whose products are out of warranty. Feedback from current customers suggests that this support is highly valued. One commented that "it contrasts favourably with your large customers who offer support through impersonal off-shore call centres and a time-consuming returns policy". Customers can also pay for technicians to come on-site to sort out problems with out-of-warranty equipment.

SARI now plans to increase their product range and market share. It plans to grow from its current turnover of £5m per annum to £12m per annum in two years time. Osama, the owner of SARI, believes that SARI must change its business model if it is to achieve

this growth. He believes that these changes will also have to tackle problems associated with

- Missing, or potentially missing shipments. Shipments can only be tracked through contacting the shipment account holder, MISTUBITSHI, and on occasions they have been reluctant or unable to help. The trans-shipment to EIF has also caused problems and this has usually been identified as the point where goods have been lost. MISTUBITSHI does not appear to be able to reliably track the relationship between the container shipment and the Waybills used in the EIF system.
- The likely delivery dates of orders, the progress of orders and the progress of shipments is poorly specified and monitored. Hence deliveries are relatively unpredictable and this can cause congestion problems in the delivery bay.

Osama also recognises that growth will mean that the company has to sell more products outside its region and the technical installation and support so valued by local customers will be difficult to maintain. He is also adamant that SARI will continue to import only fully configured products. It is not interested in importing components and assembling them. SARI also does not wish to build or invest in assembly plants overseas or to commit to a long-term contract with one supplier.

Required:

- a) **Draw the primary activities of SARI on a value chain. Comment on the significance of each of these activities and the value that they offer to customers.** (9 marks)
 - b) **Explain how SARI might re-structure its upstream supply chain to achieve the growth required by SARI and to tackle the problems that Osama has identified.** (10 marks)
 - c) **Explain how SARI might re-structure its downstream supply chain to achieve the growth required.** (6 marks)
- (25 marks)**

Question 3

Basha Auto Retail

Basha Auto Retail (BAR) 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 BAR'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 BAR'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, BAR 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.

BAR 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 BAR holds basic spare parts in inventory, 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 10.00am to 4.00pm. The mechanics work on shifts and so the garage is staffed from 7.00am to 6.00pm. 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 BAR'.

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 BAR.

(16 marks)

- b) Explain the principles of e-procurement and evaluate its potential application to BAR.

(9 marks)

(Total = 25 marks)

Question 4

Taka is a large region in the country of Gaulle. It is ethnically and culturally distinct from the rest of the country and it has aspirations for independence. The desire for this independence is reflected by consumers in Taka preferring to buy products which have been produced in the region.

Taka Regional (TR) is a manufacturer of giftware products aimed at the Taka market. Its products are bought primarily by residents of Taka and visitors to the Taka region. It is the third largest company of its type in the region, and the 50th largest producer of giftware in Gaulle. Its marketing message stresses the regional identity of the company and its employment of local skills and labour. It currently manufactures four products, designated here as products A, B, C and D. The company does not sub-contract or outsource any element of production and it has never done so. Data concerning products A, B, C and D are given in Table 1.

	A	B	C	D
Monthly production (in units)	2,000	5,500	4,000	3,000
Direct materials cost (\$ per unit)	3	5	2	4
Direct labour cost (\$ per unit)	9	6	9	6
Variable production overheads (\$ per unit)	2	3	1	2

Table 1: Production and marginal cost data for the TR product range

TR recently appointed a new managing director, born outside the region. He has been tasked with improving the profitability of the company.

After a short period of consultation, the new managing director produced a proposal for the board. Here is an extract of his proposal.

'First of all, we need to be clear about our generic strategy. Strategists have suggested that we have four alternatives. I have reproduced them in this slide (shown here as Table 2).

Cost Leadership	Differentiation
Cost Focus	Differentiation Focus

Table 2: Generic strategies

My vision for TR is that we should pursue a **cost leadership** strategy. I have already established that our products can be produced by an established company in the distant country of KAT at the following prices (see Table 3).

These costs include the delivery of products to our warehouse here in Taka.

	A	B	C	D
Buy-in price (\$ per unit)	11.5	16.5	12.5	13.5

Table 3: Contract prices per unit from the external supplier in KAT

Our financial director of TR has also estimated that we have company-wide fixed overheads of \$75,000 per month. He assures me that \$16,000 per month of these is directly attributable to the production of products A, B, C and D, evenly split across the four products, each having \$4,000 of fixed overheads. So, we could save overheads of \$16,000 per month by outsourcing all of our products to the KAT supplier.

I realise that this leaves us with \$59,000 per month fixed overheads, but I will be looking for savings there also. The information technology of TR is outdated and inefficient. Productivity benefits will follow from harnessing the power of modern technology.

However, returning to my main concern: production costs. My view is that increased profitability can only be achieved if we take advantage of the cheaper production costs now available to us. All four products can be produced more cheaply by the supplier in KAT. So, this strategy of outsourcing is the one we should pursue to achieve our cost leadership strategy.'

Required

- a) Evaluate the claim that 'all four products can be produced more cheaply by the supplier in KAT' and discuss the issues raised by outsourcing the production of TR's products to KAT.

(15 marks)

- b) Examine the relevance of each of the four generic strategies shown in Table 2 to the competitive environment in which TR operates and evaluate the choice of a cost leadership strategy by TR's managing director.

(10 marks)

(Total = 25 marks)