

OXFORD CAMBRIDGE AND RSA EXAMINATIONS

A2 GCE

F297/01/CS

BUSINESS STUDIES

Strategic Management

CASE STUDY

FRIDAY 13 JUNE 2014: Morning

DURATION: 2 hours

plus your additional time allowance

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Automotive Polymer Solutions Ltd (APSL)

Automotive Polymer Solutions Ltd (APSL) designs and manufactures thermoformed and polyurethane components for a variety of customer applications. These include automotive, agricultural, leisure and speciality markets. Typical products include shower cubicle trays, vehicle dashboards and casings for lawn mowers. Its most recent set of accounts shows an operating profit of slightly in excess of £1m from sales revenues of about £15.5m (SEE APPENDIX 1).

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The company was founded in 1976 and has developed a reputation within its industry as being quality focused and innovative. Its current owners and directors, John Bland, Peter Humphreys and Ka Bik (Kate) Wong bought the business via a leveraged management buy out (MBO) in the spring of 2008. John has more than 20 years' strategic managerial experience. Peter is a qualified Management Accountant and is the Company Secretary. Kate is a registered member of the Institute of Mechanical Engineers. A key 10 year strategic objective, which was set in 2008, is to improve the company's solvency ratios, in order to remove interest expense from the profit and loss account, and so, in turn, boost dividends and shareholder ratios. Six years after the MBO, the company is making some progress and the three owners are still confident that by 2018 this objective will be achieved.

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Soon after the MBO the new owners implemented the findings of a strategic review, based on Porter's analytical frameworks. They had been working on the strategic review, but in their own time, prior to the buyout. The moulding technology used by APSL is not difficult to acquire, hence entry into

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<p>manufacturing thermoformed and polyurethane components rests essentially on access to capital. Given existing competitors, and the threat of new entrants, the MBO team decided to realign APSL as a niche producer, specialising in low volume, low lead time, high quality parts. By abandoning the high volume, low added value end of the market, such as making paint containers, the company has gradually established itself as a 'transitory monopolist' in a small but valuable market. In order to protect this hard won strategic advantage, APSL seeks to add value wherever possible. For example, APSL now supplies a long established customer, a major caravan business based on Humberside, with a rear moulding which is delivered with its lights, manoeuvring handles and other parts already fitted. As the caravan business no longer has to fit these parts itself, it has been able to move from manufacturing to assembly and, in turn, use the freed up labour and space in its factory to increase its output of caravans.</p>	<p>35</p> <p>40</p> <p>45</p> <p>50</p>
<p>Last year (2013) nearly 90% of APSL's sales were generated from UK customers, around 9% from the rest of the EU, whilst the balance was other, non-EU, exports. In 2012 sales to the rest of the EU amounted to a little over £1.5m, with other exports being £132 159. Although UK sales have grown in the last two years, John, Peter and Kate are keen to reduce APSL's reliance on the domestic market and so they have set APSL a 2018 objective of exports rising to 15% of sales revenues.</p>	<p>55</p> <p>60</p>
<p>APSL's owners hope that a 2012 contract to supply polyurethane parts for air conditioning ducting for commercial vehicles, which are assembled in Turkey by a major multinational customer, is the</p>	<p>65</p>

beginning of a profitable export market opportunity. Given that UK customers often export their products containing APSL sourced components, APSL's exposure to the UK business cycle will be reduced. By way of example, APSL produces a thermoformed inner-door panel component for a luxury UK based motor car manufacturer. The majority of its cars are destined for the export market. In contrast, the parts which APSL sells to the UK caravan industry almost always tend to be sold to UK based caravan enthusiasts.	70
APSL currently employs 165 production staff, working two eight hour shifts; one week working 06.00 to 14.00 and the next week from 14.00 to 22.00. In addition, there are 23 salaried 'white collar' employees engaged in a variety of tasks, from administration through to product design and innovation. The shop floor staff are remunerated at an hourly rate which depends on skill and length of service. Following a series of quality complaints APSL no longer uses temporary staff. The company was able to trace the faulty output to temporary, agency staff, because each item made by APSL has a code pressed into it. Hence APSL now operates a strict 'employee only' policy.	80
The majority of the production staff are members of one of three trade unions. Those staff who are not union members can see little benefit in paying a weekly subscription given the excellent working relationships which exist at APSL. Rather than negotiate through a union, the staff are represented in quarterly discussions with management through a consultative committee. Past suggestions by Peter to complement wages with fringe benefits, for example a subsidised canteen, have been	85
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unsuccessful. Instead, the employees have
 consistently said that they would rather be paid 105
 the maximum possible and then be allowed to
 make their own individual choices about what,
 if any, additional perks they buy. The rate of pay
 is something which Peter monitors very closely
 so that APSL can attract staff with the necessary 110
 combination of abilities and attitude. Hence, he
 habitually analyses local labour market conditions,
 so that the wage paid by APSL is typically about
 10% higher than that available elsewhere to
 semi-skilled staff. Peter argues that this modest 115
 differential is enough to allow the company to
 select rather than accept staff. One aspect of the
 company's induction programme is signing the
 company's environmental policy (SEE APPENDIX 2).
 Once employed, management ensures that through 120
 non-financial motivation, staff output is sufficient to
 ensure that APSL's unit labour cost is low enough
 to produce the targeted margins on its near 1800
 potential product lines.

At the heart of the thermoforming process are large 125
 presses. Each press represents a considerable
 capital investment. These presses use tools
 (moulds) designed to form the parts required by
 the customer. The individual tools are the property
 of the customer, but under a term in each contract, 130
 APSL undertakes to maintain and store them for
 a period of 10 years. Consequently, one of APSL's
 three units is a storage facility, filled with racking
 containing a plethora of tools, some of which have
 not been used for several years. Whilst this storage 135
 incurs a cost for APSL, it also provides the company
 with a strategic advantage in that customers are
 effectively 'captured' into placing repeat orders with
 it, rather than buying the part from a competitor.

Typically, changing the tool in a press takes 30 minutes. One product made by APSL is a single, square 2 m ² pressing which forms the roof for the cab of a tractor. The standard time to produce each individual piece is five minutes. This is enough time for a single sheet of red plastic material to be heated, formed and then cooled. Once cool enough, and therefore rigid, it is moved from the press by two workers. As the next sheet is being formed in the press, the workers use compressed air power tools to trim the part to the exact specification. A typical batch of this part would be 30 items. Depending on the customer's build schedule, and hence its orders to APSL, producing three batches in a week would not be unusual.	140 145 150
In 2013 about 40% of APSL's cost of sales was labour, about 50% raw materials and the remainder were overheads, almost half of which was energy. Like other businesses, APSL has seen its expenditure on energy steadily rise in the last few years (SEE TABLE 1). Until August 2013 APSL had a fixed tariff contract to hedge against price rises. When this contract ended it experienced a sizeable increase in its energy costs.	155 160

TABLE 1

APSL energy cost index, January 2011 = base				
	2011	2012	2013	2014*
Jan	100	110	126	148
Feb	98	106	120	138
Mar	102	110	124	142
Apr	100	108	120	148
May	106	114	128	154
Jun	108	118	130	154
Jul	112	120	132	156
Aug	114	122	132	
Sep	116	124	148	
Oct	116	124	136	
Nov	114	122	136	
Dec	100	108	134	

***forecast**

Consequently, Peter and Kate have been investigating the purchase of a device which harvests the waste heat emitted from the presses. 165
Through a series of heat exchanges it is possible to recover some of this energy to heat a portion of the factory's hot water requirements. Kate is keen to go ahead, and has been quoted a capital cost of £250 000 for the device by a supplier. The supplier's literature claims that the device could yield a saving of 4% per annum. Peter thinks that the financial return which this would offer APSL is too low to warrant the capital expenditure. However, John is 170

less sure the decision should be based solely on quantitative factors. 175

By their very nature the parts produced by APSL cannot be reworked if they are non-compliant with the customers' specification. Hence, everyone at APSL is made aware of quality issues and their financial costs in the Monday shift briefing. 180

Whenever possible, non-compliant parts are shredded in a granulating machine and then sold back to the raw material supplier. Parts which cannot be recycled are taken away by a specialist disposal contractor, Waste-away Ltd. Peter has 185

long argued that this disposal is something which APSL should do for itself. Kate and John both feel that doing so would be incompatible with APSL's strategic advantage, and contracting out this mundane work makes best use of APSL's 190

competencies. The debate about the degree to which the business should specialise came to a head recently when APSL received a letter from a farmer, Percy Gilman, threatening to take the company to court for fly-tipping (SEE FIG. 1). Mr Gilman's land is about five miles from APSL's site. 195

FIG. 1

Extract from Mr Gilman’s letter

'...about 15 tonnes of plastic and other industrial waste has been dumped, blocking the entrance to my field on the Retford Road. Last week was the third time this has happened in as many months. I had no option other than to clear this mess up myself, at considerable cost and not a little inconvenience. Some of the plastic is clearly identifiable as being from your business because it clearly has a kite mark stamped into it and lettering painted on it. I have been advised to write to you to bring this matter to your attention. If it should not stop then I will have no option other than to put the matter in the hands of my solicitors....'

APSL operates from three units, totalling 12 000 m², on a small industrial estate near Gainsborough, Lincolnshire. Kate thinks that the site is getting close to capacity. Her preference would be to increase capacity by relocating to a single 20 000 m² factory in Hull, some 40 miles away. There would be several advantages to consolidating all activity on a single site, not least the elimination of moving to and fro between the three existing units. It would also stop suppliers trying to deliver just-in-time to the wrong unit. Last year production was halted four times because of a lack of raw materials, with a total loss of 380 minutes. Peter is similarly keen to expand operations, but his preference is to introduce a third shift but with a smaller number of workers. He cites several advantages to APSL of this

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strategy, but his main argument is that this approach to expansion has zero capital cost. He believes that by a combination of external recruitment and transferring some existing staff, a permanent night shift could be created. This would enable the business to expand at its current site. If, later, each of the three shifts were of similar size then it might be sensible to rotate them on a weekly basis.

In line with APSL's ethical objectives, John has been investigating the use of other raw materials. As a product of the petrochemical industry, plastic is inevitably a non-renewable resource. John was, therefore, excited to learn at a trade fair of an innovative product developed by a Dutch company. Marketed as 'Flaxiboard', it is a fibre product made from sugar beet waste. When woven into a mat, and with some additional processes, the product can be used in applications which traditionally use thermoforming. With excellent strength characteristics, yet light in weight, it has two further advantages. First, if ignited it does not give off the toxic fumes associated with burning plastic. Second, being organic in source, it is both renewable and biodegradable on disposal. However, small scale trials conducted by Peter and Kate have shown Flaxiboard to be more difficult to work into complex shapes. The Dutch supplier is keen to sell to APSL and so has offered a very attractive introductory Euro price. One possibility for APSL is to use Flaxiboard for the door of an overhead luggage bin on an aircraft (SEE TABLE 2).

TABLE 2**Comparative material data for the overhead luggage bin door**

	Plastic	Flaxiboard
Weight, per m²	450 g	352 g
Material cost, per m²	£1.50	£2.70
Press cycle time	4 minutes	5 minutes
Hand finishing	30 seconds	1 minute
Quality: compliance rate	100%	90%
Staffing	1	1

Currently APSL sells such a plastic door to Albion Aerospace, a prestigious customer. Several months ago John mentioned Flaxiboard to Albion but thought little more of it. Consequently, he was rather taken aback when Albion recently asked about ordering 60 doors made from Flaxiboard. Before deciding whether to accept this order John met with Peter and Kate to discuss the relevant quantitative and qualitative factors.

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APPENDIX 1

Balance sheet, APSL, as at end of financial year	2013	2012
	£000s	£000s
Fixed Assets		
Equipment	4020	3693
Investments	<u>10</u>	<u>10</u>
	4030	3703
Current Assets		
Stock	1362	1266
Debtors	2776	2664
Cash	<u>18</u>	<u>9</u>
	4156	3939
Current liabilities		
Trade creditors	(2830)	(2500)
Net current assets	1326	1439
Creditors falling due after one year	(1700)	(2000)
Net Assets	<u>3656</u>	<u>3142</u>
Equity		
Share Capital (1)	750	750
Profit & Loss Account	2906	2392
Equity shareholders' funds	<u>3656</u>	<u>3142</u>

(1) 750 000 £1 ordinary shares; Mr J Bland 450 000,
Mr P Humphreys 150 000, Ms K Wong 150 000

Profit & Loss Account, APSL, for the financial year ending	2013	2012
	£000s	£000s
Revenue	15 572	12 599
Cost of sales	<u>13 034</u>	<u>10 217</u>
Gross Profit	2 538	2 382
Salaries, administration & overheads	757	693
Marketing, distribution & product development	<u>731</u>	<u>549</u>
Operating profit	1 050	1 140
Depreciation	155	101
Interest	82	59
Profit before taxation	<u>813</u>	<u>980</u>
Taxation on ordinary activities	170	196
Net Profit	<u>643</u>	<u>784</u>
Dividends	129	156
Retained profits	514	628

APPENDIX 2

APSL Environmental Policy

We recognise that developing, manufacturing and distributing our products has an impact, whether directly or indirectly, on the environment. Environmental impact is a key concern for all at APSL, and it influences the way in which we undertake our business. Our environmental policy has three, equally important, strands.

1. Staff

Environmental impact has to be a concern for everyone working at APSL. Through raising awareness of and training about environmental impact, we seek to ensure that everyone works in a way which is consistent with our Environmental Policy. Further, we require all staff to monitor what they do and to seek to minimise their individual, and so our collective, impact on the environment.

To comply with our environmental policy we will set measurable goals and aim to achieve a standard of performance which is better than compliance. These goals are subject to continuous review and improvement.

2. Suppliers and Customers

When engaging in relationships with suppliers their environmental performance and how they discharge their obligations are uppermost in our minds. Similarly, through our own environmental policy, we are able to reassure our customers of our own obligation to ensure that our impact on the environment is minimised. When working with customers APSL will cooperate with their requirements and initiatives so as to reduce our own impact.

3. Community

APSL aims to be a good neighbour. To this end we are committed to the most efficient use of resources, the minimisation of waste and appropriate management of any which is produced, whether via reuse, recycling or disposal.

As a responsible business we will ensure that all our activities always exceed the environmental protection standards required by regulation and legislation.

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