

**OXFORD CAMBRIDGE AND RSA EXAMINATIONS
A2 GCE**

F297/01/CS

**BUSINESS STUDIES
Strategic Management
CASE STUDY**

TUESDAY 14 JUNE 2016: Afternoon

**DURATION: 2 hours
plus your additional time allowance**

MODIFIED ENLARGED

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VERDANT GHAR LTD (VGL)

Verdant Ghar Ltd (VGL) is one of the UK's leading recycling businesses. It has four sites across the Midlands which enables it to collect, sort and trade a wide range of recovered materials from business and household refuse collections. Its customer base ranges from local authority general household 'bin' collections through to specialist industrial waste solutions.

Currently, VGL has seven local authority contracts, all of which run until 2019. The business is able to process a wide range of materials:

aluminium – food and drink cans, foil, aerosols

cardboard – corrugated boxes, egg boxes, cereal boxes, other display and food packaging

glass – bottles and jars of any colour

paper – newspapers, magazines, catalogues, telephone directories and other papers

plastic – drinks bottles, food trays and containers, film and bags (including carrier bags and bubble wrap)

steel – food and drink cans

cartons – Tetra Pak and juice cartons.

Founder, Chair and Managing Director, Phoebe Khan, prides herself on VGL's ability to be locally focused, yet at the same time globally responsible. When established in 1979, Phoebe's idea of creating value from domestic waste was initially subject to doubt 'verging on ridicule'

among her friends and family. The intervening years have proved that her business is not ‘just a bunch of yoghurt weavers’, rather it is an efficiently run, dynamic and successful commercial operation. Phoebe is keen that the business continues to improve; the word ‘complacency’ is not often heard at VGL. The following objectives have been set for achievement by the end of the 2017 financial year:

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revenues to rise by 6% in real terms (from 2015 accounts)

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gain at least two additional local authority contracts

keep labour turnover below 10%

support one new major charitable community initiative.

The company has two main revenue streams. First, charging council and business customers for collecting materials. Second is selling the processed material on to national and international markets. For example, baled waste paper might be sold to the UK pulping industry or exported. Because it is a commodity, the price of recycled products varies according to global market conditions. VGL operates a policy of selling most of its product on international spot markets. This means it can sell at a time when the price is most advantageous, hence enabling it to maximise income. The policy has administrative and storage costs and can potentially create cash-flow issues. However, the need to cover quarterly expenditure means that, even at times of low prices, some product must be sold to gain cash.

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Martin Whitfield, VGL's Finance Manager, has been investigating the variability in the company's income index (SEE TABLE 1). This index is a weighted index of the volume and value of the various products sold by VGL. He wants to assess the continuing appropriateness of using Time Series Analysis as a means of forecasting revenues for budgeting purposes.

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TABLE 1**VGL's income index (Base = 2012 Q1)**

	2012	2013	2014	2015
Q1	100	96	104	96
Q2	58	64	64	56
Q3	208	212	216	
Q4	124	120	120	

Martin constantly monitors VGL's cash position, creating monthly cost and profit centre budgets to ensure VGL's liquidity stays within an acceptable range. Allied to this is his scrutiny of activity ratios, again to ensure that VGL uses its precious cash to maximum effect.

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The UK waste recycling industry is competitive, both at national and regional levels. The financial attractiveness of the market has led to increasing investment from non-UK-owned businesses, notably from Germany and Scandinavia. To survive in this environment, VGL focuses on price, excellent customer service and innovation. The key drivers for growth in the industry are numerous and complex.

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In the household market the volume of waste is a function of macroeconomic variables, most notably economic growth and employment. Through experience rather than any formal quantitative research, Phoebe believes household waste has a positive, inelastic, income elasticity of demand. Further, she thinks that the volume of domestic waste is an informal indicator of UK households' standard of living. Seasonality also plays a minor role. In contrast, greater environmental awareness,

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caused by both media and customer pressure, has encouraged retailers to reduce packaging. Consequently, in the food industry in particular, the amount and type of waste VGL processes is changing. 85

For VGL's business customers the amount of waste that needs to be managed depends on how busy firms are, which in itself reflects commercial confidence and order books. Other significant factors affecting business customers are environmental legislation and taxes, both of which act as an incentive to send waste for processing rather than to landfill. 90

When waste enters one of VGL's Materials Recycling Facilities it undergoes a visual pre-sort to remove any materials which might damage the downstream machinery. The visual pre-sort will also take any inappropriate materials off the line (for example, finding a dead animal in household waste is, regrettably, not uncommon). The first sorting machine separates glass before the remainder of the waste is processed using a combination of magnets, aspirational systems and vibrating screens. The aim is to ensure individual product recovery without contamination. 95 100

The factory floor is a challenging place to work because it is busy, dirty and noisy. Maintaining concentration amongst operative staff is crucial to reduce the risk of personal injury or a sub-standard product. Consequently, staff may not take phones or other devices on to the factory floor as experience has shown that these can distract them from their task. All staff on the factory floor must wear prescribed safety clothing. Further, all of VGL's employees have to undergo a two-day induction course before being allowed to be close to any of the 105 110

production machinery. Attracting, motivating and retaining staff is recognised by VGL as being vital. With commercial profit margins being tight the emphasis is on non-financial methods of motivation, although two financial bonuses exist. The first is a quarterly individual punctuality and attendance bonus. The second bonus is based on a combination of quantity and quality of output and is paid to all members of a shift.

A major metric for VGL is product quality. Indeed, any sub-standard or contaminated product will realise only a fraction of its potential revenue. Careful pre-sorting can help to improve product quality, but it is the commitment of production line employees that can make the major difference. Despite being a cost, staff training is considered to be essential in ensuring commitment. In the recent past VGL's Production Manager, Michael Seabrook, has argued that the training given by the shift supervisors needs to be extended. VGL operates 24 hours a day, six days a week, using three shifts. Currently all shift supervisors are responsible for delivering basic on-the-job training which focuses on the essentials: 'what to do', and 'how to do it'. Michael insists that unless employees know 'why' the task is important they will be less effective. The 'why' is readily explained by reference to VGL's 'Four Pillars', a statement of Phoebe's business philosophy (SEE APPENDIX 1).

On his own initiative, Michael enlisted the help of shift A's supervisor to test his theory. Michael and the shift supervisor met with shift A employees to discuss VGL's Four Pillars. He also collected intra-shift data which measures the level of contamination. Michael collected this data by taking samples at a time of day which was convenient for him, and then used these samples to

calculate mean weekly levels of contamination (SEE TABLE 2).

TABLE 2

Intra-shift data; weekly percentage contamination

Week	A	B	C
1	2	3	2
2	3	2	3
3	2	6	2
4	4	2	2
Michael's meeting with shift A employees takes place			
5	0	4	2
6	0	3	2
7	2	3	1
8	1	4	0
9	4	2	2
10	2	1	2
11	1	1	1

The supervisors of the other two shifts became unhappy 150
when they found out about Michael's meeting. They
argued that contamination is not always internally
controllable, particularly when sorting household
waste. Indeed, different postcodes exhibit considerable
variation in the type and quantity of the waste they 155
produce. The best postcodes, those with a large
proportion of households from the higher
socio-economic groups, pre-sort everything, even going
to the trouble of washing containers before putting only

recyclable items in the correct recycling bin. At the 160
other end of the spectrum there are postcodes where
the recycling bins contain all types of household waste;
food and garden waste, as well as the targeted recyclable
materials. When Michael mentioned this to Phoebe she
wondered how VGL could better communicate with 165
householders and, in particular, what function social
media might play in this. She asked Asad Chowdhury,
VGL's Marketing Manager, for analytics of VGL's website
(SEE TABLE 3).

TABLE 3**VGL's website enquiries; for the previous 12 months**

	Pages	Hits	Mean duration of enquiry (minutes)
Bin collection schedule	1	9985	1.0
What is recyclable?	2	6585	10.0
Why recycling matters	14	214	4.0
VGL in the community	20	3670	20.0
About us	1	1247	1.0
Contact us	1	8	2.0

Increasing competition has caused VGL to consider diversification into the textiles recycling market. At about two million tonnes per year, textiles are thought to make up almost 4% of UK household waste. The majority goes to landfill, some is sold in emerging economies and a small fraction is subject to recycling. Industry sources report that every tonne of cotton reused saves 20 tonnes of CO₂ in production, processing and distribution. Initial research by Asad has suggested that textile waste falls into one of three categories:

- 1 good quality clothing and textiles which can be sold intact. Typically this is exported to emerging economies

- 2 poor quality textiles which, after shredding, are repurposed. A typical use would be producing thermal insulation material for house building 185
- 3 non-commercial recovery which goes to landfill.

Sorting mixed bags of textiles is labour intensive and has a degree of skill associated with it which is not currently available in the existing workforce. The staff on any textile line would, therefore, require both training and additional pay. Prices of recycled clothing suffer from the clothing's relatively poor durability, as well as competition from imported clothing available from discount retailers. Asad believes that a tonne of mixed fabrics bought in at £300 could create revenues of £700 per tonne if it is of high enough quality to be exported as intact clothing. Martin is more cautious. After some telephone calls, posing as a possible buyer of recycled textiles, he believes any planning should incorporate a range of selling prices (SEE TABLE 4). 190 195 200

TABLE 4

Selling price probability distribution

Selling price per tonne (£)	Probability
300	10%
400	20%
500	30%
600	30%
700	10%

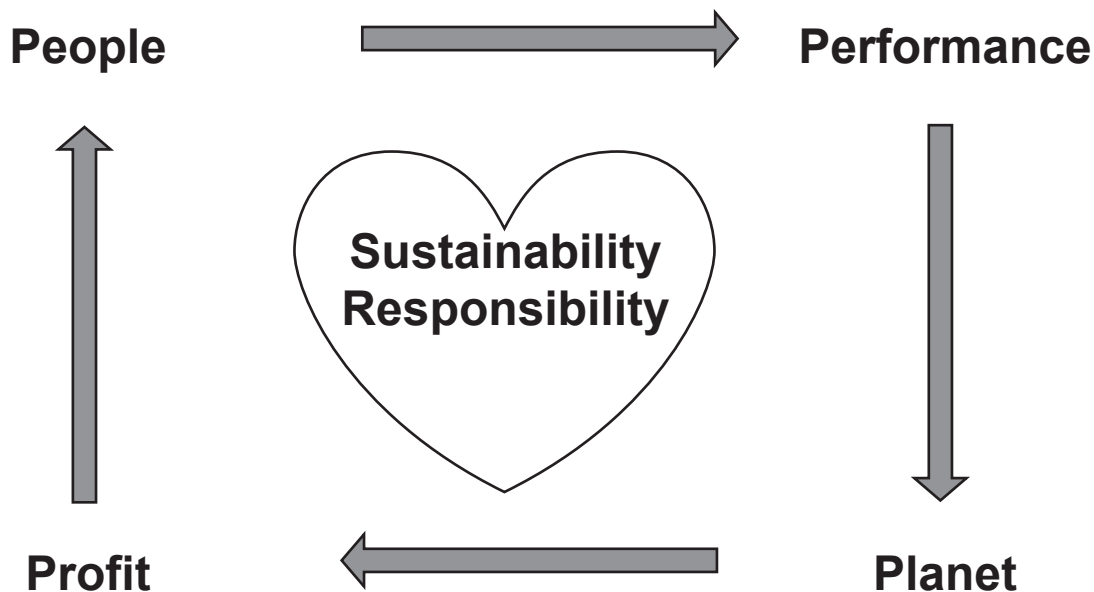
Michael thinks that unless VGL can process about 200 tonnes per week the venture is too small to be worthwhile. The space needed for textile sorting could be created by reducing the area currently designated for storing bales of recycled materials. If a second-hand baler and vehicle were to be purchased the venture would have a capital cost of about £80 000. Four sorting staff and a new driver would be needed; therefore, Martin has budgeted £100 000 annually for staff, transport and machinery maintenance.

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APPENDIX 1

VGL's Four Pillars



PEOPLE

All people who interact with VGL matter.

- 1 Our workers are happy, confident and empowered. Our employment strategy combines wellbeing, personal development and respect, regardless of ethnicity, sexuality, faith or disability, such that we are a great place to work.
- 2 Our suppliers are treated fairly.
- 3 We respect and listen to our customers.
- 4 We embrace the role we have in our community: locally, nationally and internationally.

PERFORMANCE

We constantly aim to improve our performance.

- 1 Waste is at the heart of what we do. Reduction of waste through reuse, recycling or repurposing is a key business focus.**
- 2 Investing in people is important to enable them to play a greater role in our business.**
- 3 Materials matter, such that we will source our supplies in a responsible and sustainable manner, using as little as is possible to minimise our environmental impact.**
- 4 Water and energy will be managed in terms of volume, quality, efficiency and sustainability.**

PLANET

We have a custodial responsibility for our shared planet and its future generations.

- 1 All our business decision-making must include consideration of possible ecological impacts.**
- 2 Climate change and carbon dioxide emissions pose a real global threat; consequently we strive to mitigate our impact through efficient materials, transport, emissions and energy usage.**
- 3 Our Community Friend Scheme supports, through paid absence, those employees who get involved in community-based ecological projects.**
- 4 Our activities must have a beneficial impact on the planet and cannot be at a cost to future generations.**

PROFIT

To be sustainable and to act responsibly we have to be profitable.

- 1 Profit provides part of the reward for our visionary risk-takers.**
- 2 Our business activities reflect a number of objectives, of which profit is just one.**
- 3 The lives of our communities can be improved through the sharing of profits.**
- 4 A keen focus on costs, and thus an improvement in profits, benefits each of our Four Pillars.**

APPENDIX 2

Profit & Loss Account (year ending 30 June)

	2015	2014
	£m	£m
Revenue	33.0	30.1
Cost of sales	<u>16.8</u>	<u>19.6</u>
GROSS PROFIT	16.2	10.5
Salaries, administration & overheads	3.8	3.6
Marketing, distribution & product development	<u>0.2</u>	<u>0.4</u>
OPERATING PROFIT	12.2	6.5
Depreciation	5.8	3.7
Interest	1.2	1.3
PROFIT BEFORE TAXATION	<u>5.2</u>	<u>1.5</u>
Taxation on ordinary activities	0.4	0.1
NET PROFIT	<u>4.8</u>	<u>1.4</u>
Dividends	3.8	0.3
RETAINED PROFIT	1.0	1.1

VGL's Balance Sheet (as at 30 June)

	2015	2014
	£m	£m
FIXED ASSETS		
Property, plant and equipment	100	95
Investments	<u>1</u>	<u>1</u>
	101	96
 CURRENT ASSETS		
Stock	14	15
Debtors	4	7
Cash	<u>4</u>	<u>10</u>
	22	32
 CURRENT LIABILITIES		
Trade creditors	(14)	(17)
 NET CURRENT ASSETS	8	15
 CREDITORS FALLING DUE AFTER ONE YEAR	(60)	(63)
 NET ASSETS EMPLOYED	<u>49</u>	<u>48</u>
 EQUITY		
Share Capital	4	4
Profit & Loss Account	45	44
EQUITY SHAREHOLDERS' FUNDS	<u>49</u>	<u>48</u>



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