

**ADVANCED SUBSIDIARY GCE**  
**APPLIED BUSINESS**  
Understanding the Business Environment

**F242/CS**

**CASE STUDY**

**Tuesday 12 January 2010**  
**Morning**

**Duration: 1 hour 30 minutes**



**INFORMATION FOR CANDIDATES**

- This is a clean copy of the Case Study which you should already have seen.
- You should refer to it when answering the examination questions which are printed in a separate booklet.
- You may **not** take your previous copy of the case study into the examination.
- You may **not** take notes into the examination.
- This document consists of **8** pages. Any blank pages are indicated.

## HHO Ltd

### About HHO Ltd

*HHO Ltd*, a manufacturer of hydrocycles, is an e-commerce business. It is owned and run by Steve Hawk and Gillian Thompson. They are both retired teachers – Steve having been a Physics teacher and Gillian a Business Studies teacher. They are adamant that retirement does not equate to filling their days with baby sitting their grandchildren or baking cakes for the local fair. Steve and Gillian still have a lot of energy and plenty to contribute to society. With more than half a century's teaching experience between them, they are certainly not short of the know-how to run a business such as *HHO Ltd*.

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When the business started, Gillian made sure that it was set up as a private limited company, rather than any other form of business ownership. To lose their family homes and hard earned savings at this stage of their lives would be unthinkable. Steve is in charge of the technical aspects of the hydrocycle, while Gillian concentrates on sales, marketing and administration.

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### The product

Due to global warming, scientists all over the world are painting a doom and gloom picture. Water is a source of energy that is fast establishing itself as the fuel of the future. Steve, being a scientist, has always been intrigued by the possibility of harnessing the power of water as a fuel. Towards the end of his teaching career, he hit on the idea of producing and selling electric bicycles powered by water (the hydrocycle). It seemed the perfect solution for a world which is choking itself to death. The number of cyclists has risen over recent years because of three main reasons: an increased environmental awareness (**see Appendix 1**); volatile petrol prices (**see Appendix 2**); and various campaigns funded by both central government and local authorities for the promotion of cycling as a solution to the problems of congestion and climate change (**see Appendix 3**).

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The hydrocycle was designed by Steve, who had been a serious cyclist for many years. The cycles are built with a water powered cell to generate energy. The hydrocycles can run for a maximum of 120 miles before the fuel cell needs to be recharged. Alternatively, cyclists can resort to using their muscles, if they fancy some exercise! The hydrocycles can be folded in half and they are small enough to go into the boot of a car – ideal for people who work in city centres where parking is often restricted or expensive. The fuel cells are much lighter than conventional batteries and the hydrocycles are extremely lightweight. As an added bonus, they are silent and pollution free. Currently, the hydrocycle is available in one size (20" wheels) and one colour (lime green).

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Gillian has managed to source supplies for the fuel cells and bicycle parts in China. Every stage in the supply chain has been carefully chosen to ensure that there is no child labour involved. The product is then assembled by Steve in an old workshop which *HHO Ltd* rents at a cost of £5 000 per month. Steve, unfortunately, struggles to produce more than 20 hydrocycles a week with the result that *HHO Ltd* is only just meeting current demand. Gillian has never been busier taking orders on the company's website. She has recently been contacted by one of the major European sports shop chains for an order of 120 hydrocycles a month. 'Growth' is a word that both excites and worries Gillian. She is glad that the business is set up as a private limited company rather than a partnership.

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Gillian considered how *HHO Ltd* could finance the expansion which would be needed to accept the order. It would be a pity to turn it down. *HHO Ltd* would need bigger premises with more up-to-date equipment and machinery which would mean a capital investment of a total of £300 000. A workforce of five assemblers would need to be hired to produce a total of 50 hydrocycles a week. Assuming that they are paid the minimum wage, direct labour alone would cost around £5 000 a month. These workers would, however, need training – with the result that output would only gradually increase to 50 hydrocycles a week. Steve and Gillian would also pay themselves a director's salary of £2 000 each per month. "It's time we came up with some cash-flow forecasts", said Gillian to Steve.

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Although Steve is excited about the potential of this new, major order, he remains much more interested in improving the product itself. He wants to focus on this and leave Gillian to sort the finances. Lime green is not everyone's favourite colour and he is planning to offer the hydrocycle in a range of colours. He is also keen on offering different wheel sizes to suit different needs. For all this to be possible there are production issues, as well as the need to update the website to make sure that customers are able to place their specific orders online. 50

**A dark cloud on the horizon?**

The profitability of *HHO Ltd* hinges on the value of sterling against the Chinese Yuan (**see Appendix 4**). The continued growth of *HHO Ltd* also depends on the economic conditions in the UK. Expansion is a good strategy when the economy is buoyant, although there will be growing competition to worry about. Alternative fuel is big business, but so is the risk! 55

## Appendix 1

Driving a car or using electricity is not wrong. We just have to be smart about it. Some people use less energy by carpooling. For example, four people can ride together in one car instead of driving four cars to work. Here are some additional ways you can help make the planet a better place!

### Save electricity

Whenever we use electricity, we help put greenhouse gases into the air. By turning off lights, the television and the computer when you are through with them, you can help a lot.

### Bike, bus, and walk

You can save energy by sometimes taking the bus, riding a bike or walking.

## Appendix 2

Year	Average price per litre (p)	Average price per gallon (£)	Retail Price Index
2000	76.9	3.50	168.4
2001	77.9	3.54	173.1
2002	69.9	3.18	174.5
2003	77.9	3.54	179.9
2004	77.9	3.54	184.6
2005	79.9	3.63	190.5
2006	88.9	4.04	195.0
2007	87.9	4.00	204.4
2008	103.9	4.72	212.1
2009*	104.4	4.75	212.5

\* August

### Appendix 3

#### Manchester's cycling campaign wins Green Award

Manchester's cycling campaign wins Green Award.

An eco-campaign to get Manchester's car commuters to ditch four wheels in favour of two has won first prize at the Green Awards.

The 'Love Your Bike' campaign was created by Creative Concern, a Manchester ethical communications agency, for Friends of the Earth and Manchester City Council.

'Love Your Bike' raised public awareness of cycling in order to reduce carbon emissions, noise and pollution levels as well as peak time traffic congestion in the city centre.

The award for Best Integrated Campaign under £100 000 was presented to Manchester Friends of the Earth at the Guildhall in London.

Launched in early spring across more than 40 city centre billboards and over 100 bus backs, the campaign went live with a far-reaching postcard drop, featuring the fun visuals, as well as a dedicated website, [www.loveyourbike.org](http://www.loveyourbike.org)

### Appendix 4

#### The value of £ (sterling) against the Chinese Yuan (2004-2009, annual average value)

2004	15.9 yuan
2005	14.2 yuan
2006	15.3 yuan
2007	14.5 yuan
2008	12.4 yuan
2009	11.1 yuan

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