

## Business Finance 2 – Assignment 2010 (Semester 1)

*This assignment is intended to be done in a group up to 3 people. **Those who chose to do it individually must do case 1 and 3 only. Groups of 2 must do all 3 cases.** No groups in excess of 3 are permitted. The word limit is 1500 to 2000 words in total - appendices (including, for example calculations) can be attached and will not be counted in the word limit. Penalties may apply for assignments that are substantially over the word limit. Due date is Thursday 13<sup>th</sup> May, 4 pm and assignments are to be submitted into the assignment box in the UoA Undergraduate Student Hub on ground floor 10 Pulteney Street. Penalties of 5 % will apply for every day late.*

*If you are uncertain about the information provided you are required to make a "reasonable" assumption*

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### **Case 1** (worth 10 marks)

Burgan Computers, Inc. (BC) is an Australian-based corporation which designs and manufactures consumer electronics and computer software. Being in the business for more than thirty years, it has built and distributed a unique brand of desktop computers, laptop computers and an operating system which is preferred by media professionals around the world. Best of all, it has a reputation as the first developer of smart phones, since its launch of EzyGo five years ago. The research and development expenditure for that product line had come at a time when the company was facing stiff competition in the traditional market of desktop and laptop, while Burgan's top management held to a vision of a bright future for technology integration which aims to create a new generation of multi-functional personal appliances.

In addition to the normal functions of a traditional mobile phone, the EzyGo device came/comes with integrated applications for recording appointments, addresses and contact information as well as freeform text notes. It also includes internet browser for accessing websites and email servers. Not only is the content downloadable via WIFI, it can easily interface with a host computer for uploading and printing. Best of all, it offers multi-touch interaction with multimedia formats including newspapers, magazines, ebooks, photos, movies, music, and video games. While its first release was a big hit at the time, its market share has been troublesome in the last couple of years since its competitor started catching up and developed several different versions of smart phones which have improved on aspects of EzyGo. Most importantly, their devices would be connected to a variety of different computing platforms whereas EzyGo would only download and upload from a BC-brand computer. To make the matter worse, major software developers were beginning to support competing platforms at the expense of BC, and that was taking its own toll on market share. The most recent market report revealed that the sales volume of EzyGo last year, being approximately 20,000 cells, only represented 20% of the market. In particular, its market share had been declining on average 0.5% each quarter over the last two years. There has been speculation that this trend may continue at least in a couple of years ahead, due to a recent announcement made by its major competitor that compatibility with its platform, and not the BC, would be incorporated into a popular line of office software that are unavailable for EzyGo. On the emergence of new market conditions, a number of different proposals as to future directions for the EzyGo production line have been put forward to the Board with details given below.

The first proposal suggests re-allocation of its manufacturing facilities to China to lower production costs, as a consumer survey conducted early this year revealed that EzyGo has yet proven to be popular among young consumers, despite its engaging user interface and brilliant apps, due to a high price tag currently at \$800. This requires the closure of the existing factory in Western Australia established 5 years ago on the site owned by the

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company, which otherwise can be rented out today at \$400,000 per year (future annual leases will grow in line with the inflation at 4% pa). Manufacturing equipment purchased at \$2 million at the time, was expected to be fully written off after 10 years for tax purposes. The equipment's current market value is \$1.2 million while the company estimates it will remain capable of full scale production for another 10 years and get a salvage value of \$200,000 in 10-year time. All the current facility (and inventory) can be transferred to the new location at a cost of \$200,000 plus half of a month of revenue lost due to production interruption. Alternatively, new equipment can be purchased at \$1.7 million. The estimated life of the new system is 10 years with salvage value expected to be around \$400,000 but again it will be fully written off in the book. This option, however, requires an immediate increase in working capital of \$100,000 so that the existing factory is kept operational during the transition period. Either way, extra investment may be necessary afterwards as the current company operating policy requires the total working capital is always kept at 10% of estimated sales. Besides, BC will need to make an additional payment of \$1.5 million (including \$1 million of redundancy pay-out to its current workers in Adelaide site, \$0.5 million of training new workers). The lease contract for the new site can be negotiated at \$200,000 per annum, adjusted annually for the local inflation rate of 7% pa and comes with an option to renew the contract after 10 years. It is expected that reduced labour and material costs will introduce a production savings worth of \$50 per unit. If this entire saving is passed to consumers, it will help BC to regain 5.5% of the total market share each year in the next two years.

However, the Managing Director has become more convinced that BC should outsource the production of EzyGo mobiles from other manufacturers in Asia. This view has been initiated by new management direction which stresses leadership in innovation and product design. After some market research effort and another \$10,000 spent on trying to find the best possible deals, he is very certain that outsourcing can bring down the selling price by as much as \$30 per unit if BC wishes to maintain the same profit margin (excluding depreciation) of \$100 per unit. This will translate to 5% improvement in the total market share of EzyGo after 1 year.

On the face of fierce competition, the research department of MM has been working on major upgrades to the EzyGo device as well as the BC interface software, with \$0.5 million being spent over the last couple of years. These improvements would make EzyGo compatible with almost every personal computer on the market. To continue this research, it would need an immediate outlay of

- \$ 200,000 to finish the development of the more advanced product
- \$ 1 million to purchase additional equipments
- \$ 50,000 immediate increase in working capital

New equipment will be depreciated over a 10-year period to a zero value while its scrap value at the end of its life is estimated to be \$100,000. Fortunately, BC will be able to use all existing facilities and inventory when the old production line is terminated. When the new product becomes available in exactly one year to replace the old model, it is likely that BC could regain as much as 10% of the market share in the first year, followed by a stable gain of 2% per year afterwards. Though it is decided that the new model will be sold at the same price as the current cell, its profit margin will be reduced by approximately 5% due to increased spending on advertising.

Given the competitive nature of the industry, these price point and cost estimates are expected to remain stable, only to grow in line with inflation for the next several years. In an

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analysts' report produced early this year, it is forecasted that the market demand will continue to grow at 5% pa. BC's management has been using a discount rate (weighted average cost of capital or hurdle rate) of 14% when evaluating capital budgeting projects so it is felt to be an appropriate discount rate in this instance as well. The company's marginal tax rate for planning purposes is 30%.

You are required to carry out a detailed analysis of the proposal and advise the company which one of these proposals they should adopt. In your report you should provide justification for the option preferred by your team, in consideration of other intangible factors that you feel are relevant.

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### **Case 2** (worth 10 marks)

Lisa, the general manager of GM has recently returned from a conference on quality and productivity. At the conference, she learned that many Australian firms have made significant progress in reducing the quality costs "to stay in the business". She is convinced that effective quality control will help GM to improve profit significantly and simultaneously strengthen its competitive position. Based on this vision, she has prepared an analysis detailing the costs and benefits of committing to a quality-improvement program to present to the Board, with two separate proposals as follows.

The first proposal involves the installation of the automated testing equipment for the inspection of final products. This technology can be acquired at \$800,000 and entails a set up cost of \$50,000. It is estimated to have a depreciable life of 5 years, a scrap value of only \$100,000 at removal. Its operation only needs attendance of one operator who will get paid \$ 40,000 per annum. It is followed that all inspectors currently employed will be made redundant and receive a payout of \$30,000 each. This new operation is expected to reduce the number of defective products being returned by customers as 50% would have been detected in the final inspection. It is followed by a saving of 40% of the cost of sale allowances.

The second proposal seems to be more costly because it requires a completely new design for the manufacturing process. The initial cost is estimated to be at \$5 million, including computerised equipment, software and installation. The new system will be written off over the 10-year period though a salvage value of approximately \$400,000 is reasonably expected. Once it is fully functional, half of the number of employees in the final inspection and the complaint department will be laid off (in which case the same redundancy payout will apply) while the rest of other employees will be required to take one-hour training, costing the company around \$5,000 of lost working hours. In return, this advanced technology will reduce the cost of sale allowances by 80%, also lower the number of units being rejected on the final inspection and the number of units being returned by customers by 50% and 60% respectively. Not only better quality is obtained, it is also expected that production savings (reducing direct material and labour cost per unit of product) will constitute for an increase in profit margin from 10% to 14%. In addition, improved efficiency through automated production can reduce working capital requirement from 15% to 10% of sales. By delivering better quality, the report suggests this may give the company a competitive edge and increase its sales volume by 5%.

To assist decision making, she also gathers the following information of the quality costs currently being incurred. The company employs six full-time employees in the complaints department, each earning \$40,000 a year. Also, six inspectors are employed to inspect final products, each earning an annual salary of \$35,000. At last year's sale revenues of \$8 million the company gave sales allowances totalling \$300,000 due to

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substandard products being sent to customers. During the year, customers returned 10,000 units needing repair. This accounted for 2% of sales volume while repair cost averages \$20 per unit. Also, approximately 20,000 units were rejected on final inspection and needed rework. The cost of rework is \$10 per unit. These figures are expected to grow in line with sales. In a financial report presented to the Board early this year, it won't expect any sales improvement in the next two years, though there is a very good chance that sales will regain a growth rate of 8% pa thereafter. The tax rate applicable to GM is 30% while the company cost of capital is 15%. The inflation rate is currently 4% and expected to remain at this level for the next 10 years.

You have been asked to advise the Board which one of these proposals should be adopted using NPV analysis. In addition you need to provide some sensitivity analysis using the numbers that could be questioned by the Board. This time, the main concern is that the expectation of the sale improvement in the second approach would turn out to be optimistic. You believe there would be a 20% chance that sales growth will go up by 20% and a 30% chance that they will be 20% lower. Salvage value of the new system in the second proposal may also be 20% lower (40% chance) or 20% higher (10% chance).

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### Case 3 (worth 10 marks)

Larissa Gerhardt is the financial manager of East Coast Yachts. She has been talking with the company's directors about the future of the company. To this point, the company has used outside suppliers for various key components of the company's yachts, including engines. Larissa has decided that East Coast Yachts should consider the purchase of an engine manufacturer to allow East Coast Yachts to better integrate its supply chain and get more control over engine features. After investigating several possible companies, Larissa feels that the purchase of Ragan Engines, Inc., is a possibility. She has asked Dan Ervin to analyse Ragan's value.

Ragan Engines, Inc., was founded nine years ago by a brother and sister - Carrington and Genevieve Ragan-and has remained a privately owned company. The company manufactures marine engines for a variety of applications. Ragan has experienced rapid growth because of a proprietary technology that increases the fuel efficiency of its engines with very little sacrifice in performance. The company is equally owned by Carrington and Genevieve. The original agreement between the siblings gave each 150,000 shares of stock.

Larissa has asked Dan to determine a value per share of Ragan stock. To accomplish this, Dan has gathered the following information about some of Ragan's competitors that are publicly traded:

	EPS	DPS	Share Price	ROE	R
Blue Ribband Motors Corp	\$1.09	\$0.16	\$15.19	11.00%	14.00%
Bon Voyage Marine	1.16	0.52	12.49	14.00	19.00
Nautilus Marine Engines	(0.32)	0.54	23.05	14.00	18.00
Industry Average	\$0.64	\$0.41	\$16.91	13.00%	17.00%

Nautilus Marine Engines's negative earnings per share (EPS) were the result of an accounting write-off last year. Without the write-off, EPS for the company would have been \$1.97. Last year, Ragan had had a return on equity of 25 percent, Larissa tells Dan that a required return for Ragan of 20 percent is appropriate.

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Dan has asked for some help in preparing a report, specifically around the following issues:

- As a jump off point for the valuation, if it were to be assumed the company could continue its current growth rate, what is the value per share of the company's stock?
- However rather than use this simple solution Dan has examined the company's financial statements, as well as examining those of its competitors. Although Ragan currently has a technological advantage, Dan's research indicates that Ragan's competitors are investigating other methods to improve efficiency. Given this, Dan believes that Ragan's technological advantage will last only for the next five years. After that period, the company's growth will likely slow to the industry average. Additionally, Dan believes that the required return the company uses is too high. He believes the Industry average required return is more appropriate. Under Dan's assumptions, what is the estimated stock price?
- He is keen on understanding the differences between the industry average price-earnings ratio and that of Ragan. Comment on any differences and explain why they may exist.
- Explain what would happen to value if we assumed the company's growth rate declines to the industry average after five years. Use this to interpret what percentage of the stock's value is attributable to growth opportunities? What future return on equity does this imply?
- Carrington and Genevieve have said they are not sure if they should sell the company. If they do not sell the company outright to East Coast Yachts, they have indicated they would like to try and increase the value of the company's stock. In this case, their plan is to retain control of the company and do not want to sell stock to outside investors. They also feel that the company's debt is at a manageable level and do not want to borrow more money. What steps could they take to try and increase the price of the stock? Are there any conditions under which this strategy might not increase the stock price?

How would you use this information to determine your decision to try to purchase the company and at what price you should bid.