The Chartered Institute of Management Accountants®

OPERATIONAL CASE STUDY May 2018 EXAM ANSWERS

Variant 4

The May 2018 exam can be viewed at

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SECTION 1 - Evaluation of proposed partners

Financial evaluation

Based on the financial figures given, there is a significant difference in the two contracts in terms of the amount of development cost we would have to pay and the charge per bottle. Sensory Vision's development costs are much higher but the charge per bottle is much lower. The effect of this can be clearly seen in the CVP chart.

The CVP chart depicts the different situation with the two contracts. The red line depicts the contract with Seven Scents and the blue line the contact with Sensory Vision. The lines show the fixed cost (the development cost) which at zero sales units is L$450,000 for Seven Scents and L$600,000 for Sensory Vision. At point zero on the Y axis, where no profit is earned, the X axis shows the number of units that we would need to sell to cover the initial development costs. For Seven Scents this is at around 7,000 units and for Sensory Vision this is at around 7,500 units .It can be clearly seen that we would recoup the development costs more quickly if we choose Seven Scents.

The slope of the line shows the rate at which contribution is earned. For Sensory Vision, the contribution per bottle is higher and hence the slope of the line is steeper. Once we have recouped the initial development costs we make contribution at a faster rate. The point where the two lines cross (at 10,000 units) is the indifference point. Below sales volume of 10,000 units we would be better off with Seven Scents whilst above 10,000 units we would be better off with Sensory Vision.

Based on the financial information provided, I would therefore recommend Sensory Vision as the preferred partner as contribution is earned at a higher rate and based on estimated sales volume of 80,000 units, we would be significantly better off with this partner. Furthermore, if the contract is extended after the first year, there would be no need to incur further development costs and Sensory Vision, based on the current information, would clearly be the preferred partner.

Other factors

- We are relying on the partner company to produce the perfume on our behalf. We need to ensure that the chosen partner is reliable and financially secure. We should therefore carry out 'due diligence' and ensure that we are satisfied with the long term financial stability of the companies.

- The environmental credentials of the potential partners are very important. They are both perfume manufacturing companies, which involves the use of chemicals, and they are therefore at a disadvantage because of the nature of their business. We do not want to be linked with a company which is seen as being environmentally unfriendly and indeed we require all our suppliers to abide by our code of conduct for suppliers which include requirements relating to environmental management.

- The quality of the perfume is a major consideration as it will be marketed under the Mansako brand. We are informed that the amount of perfume oils used is a key ingredient in determining quality. Sensory Vision, despite the lower charge per bottle, are proposing to include a higher percentage or possibly higher quality oils in their perfume.

- Location is also an important factor. Sensory Vision is based in North America whereas Seven Scents is based in Europe. It is likely that delivery charges will be higher with Sensory Vision and we would need to assess the effect of these charges on total costs. The use of an overseas company may also expose us to currency risk depending on the terms of the agreement.

Accounting for development expenditure

Criteria for capitalisation of development expenditure

Development is the application of research findings or other knowledge to plan or design for the production of new or substantially improved processes, products or services before the start of commercial production. IAS38 allows for development expenditure to be capitalised provided it meets certain criteria:

- The technical feasibility of completing the intangible asset (so that it will be available for use or sale) - we have not yet completed the development of the perfume however the experience of the perfume manufacturing companies suggests that there is no reason to believe that the completion is not technically feasible.

- Intention to complete and use or sell the asset – it is certainly our intention to complete and sell the perfume. We have already announced our intentions to launch a new perfume range to the press.

- Ability to use or sell the asset – we have existing sales channels for the perfume through our stores and on-line.

- Existence of a market or, if to be used internally, the usefulness of the asset – the market for designer branded perfume is already well established.

- Availability of adequate technical, financial, and other resources to complete the asset – we have sufficient finance available to support the development of the product and the perfume company has the necessary technical expertise.

- The cost of the asset can be measured reliably – the development costs relating to the new perfume will be recharged from the perfume company and therefore can be measured reliably.

The development expenditure therefore meets the above criteria and should be capitalised and shown in our statement of financial -position as an intangible asset**.**

Treatment of capitalised development expenditure

The development expenditure once capitalised will be amortised, in accordance with the accruals concept, over its finite life. Amortisation will begin in the financial year in which the perfume is first manufactured.

SECTION 2 – Decision Tree

Explanation of the decision tree

The decision tree demonstrates that there is one decision to be made which is whether we should proceed with the development of the perfume or not. If we do not proceed with the development the financial effect is L$0, that is, there is neither a profit nor a loss.

If we decide to proceed with the development, there are two potential events, either the development fails or the development is successful. There is a 10% chance of the development failing.

If the development succeeds, we would then market the product. The net contribution that the perfume will earn is dependent on how successful the perfume is in the market. There is a 30% chance that the perfume will be very successful, in which case we would make a net contribution of L$2,600,000. There is a 40% chance that the perfume will be moderately successful in which case we will make a net contribution of L$1,100,000 and there is a 30% chance that the perfume will be a failure in the market in which case we will make a net contribution of L$(1,150,000). The expected value at Point A is therefore L$875,000 based on the net contribution figures weighted by their respective probabilities.

There is a 90% chance that the development will succeed therefore at Point B, the expected value of L$875,000 is multiplied by the probability of 0.9 to get the expected value of L$787,500. To this is added the net contribution from the development failing multiplied by the chance of failure of 0.1. This has a value of L$0 therefore the value at Point B is L$787,500. From this figure we need to deduct the development costs of L$600,000 to get an expected value of L$187,500.

In order to make a decision using the decision tree we need to compare the value of not developing the perfume of L$0 with the expected value of the proceeding with the development of L$187,500. It is therefore clear that the decision should be to proceed with the development of the perfume.

Limitations of expected value and risk associated with the decision

This does not mean, however, that an outcome of L$187,500 is guaranteed, nor is it one of the possible outcomes. The expected value calculation indicates that, if the probabilities and the estimates of revenue and costs are correct, and the decision is repeated many times, an average profit of L$187,500 would result. This decision however will not be repeated on many occasions, in fact, it is a one-off decision.

The expected value is also limited in that it tells us nothing about the risk of the project. If we refer to Table 1, there is a 36% chance of making a profit of L$500,000 and a 27% chance of making a profit of L$2,000,000 however there is a 27% chance of making a loss of L$1,750,000 on the project of the development succeeds and marketing fails and a 10% chance of making a loss of L$600,000 should the development fail. Management may decide that the risk of making a loss is too high for them to accept and may need to look at ways of lowering the risk or increasing the possible returns.

Treatment of equity investment

Determining the type of investment

If we were to acquire a 30% equity stake in Sensory Vision, then this would be classified as an investment in an associate. In accordance with IAS 28 Investments in Associates and Joint Ventures, an associate investment is one where the investor has "significant influence" over an investee entity and this is presumed to occur when the investor holds more than 20% of the voting rights of the investee.

"Significant influence" is defined as the power to participate in the financial and operating policy decisions of an entity but is not control over those policies. It is usually evidenced by representation on the board of directors and/or material transactions between the entities.

Clearly, we will own 30% of the voting rights of the company, we will have a seat on the board and there will be material transactions with the company.

How investments in associates are treated in the financial statements

We will need to apply equity accounting to our investment in the company.

In the statement of financial position this means that we will include a line within non-current assets called 'Investment in Associate'. At the year end the value of this investment will be calculated as the cost of the investment plus the share of the associate's profit (in this case 30%) since the date of acquisition, less any impairment loss.

In the statement of profit or loss our share of the associate's profit for the year (or from the date of acquisition in the first year) will be included as a single line after profit from operations.

The one complication, that will need to be adjusted for, arises from the fact that we trade with the company. At the end of financial year, we will need to assess how much inventory we hold from the company in terms of bottles of perfume. From this we will need to ascertain the profit element and then eliminate 30% of this profit from both the associate's profit for the year in the statement of profit or loss and our inventory in the statement of financial position.

SECTION 3 – Cost based pricing

Marginal cost plus approach

Using a marginal cost plus approach would mean that we would set our price at the marginal or variable cost of the perfume plus a mark-up to cover the fixed costs and achieve a profit. In this case, to achieve a selling price of, for example, L$150 we would need to mark-up the costs by L$100 or 200%.

The difficulty with this approach is deciding what the mark-up percentage should be. The marginal costs of the perfume represent only 50% of the total costs. In order to cover the rest of the costs and achieve a profit, the mark-up applied would have to be relatively high. There is a risk in setting the mark-up, that it is not set high enough to give a reasonable profit or even to cover the fixed costs.

If the mark-up is set too low, whilst this may potentially result in more sales volume, it could also potentially result in an overall loss. In this type of market, it may be very difficult to later increase the selling price and could result in a negative perception of the brand.

If the mark-up is set too high, customers may not be prepared to pay the high price, resulting in lower sales volume and potentially the total revenue earned would not cover the total cost of the product.

Full-cost plus approach

Using a full cost plus approach would mean that we would set our price at the full cost of the product plus a mark-up to allow us to achieve a profit. In this case, to achieve a selling price of L$150, we would need to mark-up the costs by L$50 or 50%.

Clearly, the full cost plus approach has the benefit of ensuring that all costs are incorporated into the price charged for the product. The difficulty though is in determining the full cost for the product. To establish full cost, we will need to determine a fixed cost per unit based on total fixed costs divided by the expected number of units. The accuracy of the fixed cost per unit is dependent on firstly, an accurate determination of total fixed costs and secondly, an accurate determination of demand. The demand for the perfume is uncertain and therefore it is likely that the fixed cost per unit will not be accurate. The fixed cost per unit will only be accurate if we achieve this budgeted level of demand.

If the actual demand for the perfume were to be considerably lower than the budgeted demand, then the fixed costs of the perfume would not be fully recovered from the selling price charged. Whereas, if we were conservative in our estimate of budgeted demand when we set our budget, the fixed cost per unit would be high and would result in a selling price that customers may not be willing to pay.

Determining the profit margin that we should expect to achieve for the product is also a problem. Using the same mark-up applied to our other products would be inappropriate since, it would be unrealistic to assume that all products would achieve the same profit margin. The extent of the margin for most products will be determined by market conditions.

Elements of the marketing mix

The marketing mix is essentially the tactical details of the positioning strategy. We need to ensure that all elements of the marketing mix are consistent with each other.

Product

The core benefit of the product is its scent; it satisfies the wearer's requirement to smell nice. However, the actual product includes the following additional benefits which we are adding to differentiate the perfume in the market.

Key Features of the product - the product which we are offering is a perfume made with natural ingredients and containing a high level of perfume oils. Both these features highlight the quality of the product. The results from the surveys of consumer opinion have indicated that the perfume itself 'exudes quality.'

Design - our product development team has placed a major focus upon the design of both the bottle and the packaging. Initial product surveys have gained widespread approval and consumers have said that they love the bottle design and the packaging.

Quality - there is already a perception of the perfume as being of high quality and a 'must have'. The quality of the perfume is demonstrated in the ingredients used, the design of the bottle and the packaging. The perfume is being marketed under the 'Mansako' brand name which is itself associated with quality. The link to the brand is very strong especially with the use of the name 'Golden M'.

All of these elements suggest that the perfume should command a high price in the market to reflect the quality and the branding of the product and the customers perceived value of the product.

Price

Pricing decisions are complicated and need to reflect supply and demand, the costs of the product, and the perceived value of it in the mind of the consumer. A price that does not reflect these factors and is either too high or too low will lead to a loss in sales. The pricing decision for the perfume will be affected by a number of internal and external factors:

<u>Internal factors</u>:

- Fixed and variable costs - the effect of costs on the pricing decision has been considered above.
- Market targeting and positioning decisions – we are clearly targeting the premium end of the market and therefore our pricing should reflect this market position.

<u>External factors:</u>

- Competitors - we need to be aware of the competition in this market. There is a high level of branding in the market and whilst initial surveys have been very favourable, we must be careful not to over price our products, especially given the fact that our perfume brand is relatively new to the market.
- Target market behaviour and willingness to pay – a price below the perceived value can lead to both a loss in potential additional revenue but also a loss of our target consumers who may judge the quality of the perfume through its price. If this price is raised later on, the existing customers may feel like they are being

unfairly burdened. A price set too high can result in potential buyers staying away altogether.

- Industry trends - it was clear from the article in Perfume Monthly that this is a challenging market. However, the article also suggested that ‘niche’ and ‘high-end’ products are doing better compared to other segments of the market.

SECTION 4 - Corporate and Social Responsibility (CSR)

Legal responsibilities:

There is an obligation for any business to follow the laws and regulations of its country. We have always followed government regulation with respect to the products we produce in Lowerland and would expect any organisation with which we are associated to do the same.

It is unlikely that Sensory Vision, even if they have been using animal testing, has broken any laws since animal testing is not banned in parts of North America. However, If Sensory Vision has indeed been testing their products or ingredients on animals, it would be against the law for us to retail those products in Europe and they would be breaking their contractual obligations to us.

Ethical responsibilities:

There is also an ethical responsibility for a business to act in a manner which is fair and just. The perfume company needs to consider the impact that its business has on society and the environment. Many consumers believe that animal testing is unethical and our own CSR policy stipulates that none of our raw materials has been tested on animals. As such we would expect the company not to carry out this type of testing.

If the company has been using animal testing, it would be unethical for the company to sign an agreement stating that animal testing would not be carried out and then to carry on using animal testing.

Benefits of being perceived as socially responsible:

As we are associated with this company it is imperative that we ensure that the company has a clear strategy on CSR.

The company's CSR strategy with regard to areas such as the environment, and particularly animal testing, can act as a method of differentiation. The commitment to not use animal testing will help in portraying a positive image as a socially responsible company. The company will be seen as caring about the welfare of animals. External stakeholders may more readily associate with the company, indeed, we only entered into the relationship with the company on the understanding that it did not use animal testing. This positive image should attract consumers who would not be prepared to purchase from a company which uses animal testing.

Internal stakeholder support may be gained as a result of its improved image and it should be able to attract and retain the best employees. Employee motivation may increase and a positive company culture will result. The combination of all these factors will generate a positive image for the company both internally and externally, increase customer loyalty and generate a more positive attitude towards the company. The improved company image should ultimately result in increased sales revenue.

Environmental cost reporting

In an environmental cost report, there are four categories of environmental cost: prevention, appraisal, internal failure and external failure**.**

Environmental prevention costs:

These are the costs that we incur to prevent an environmental impact from happening.

As the employees of a perfume company are regularly working with chemicals it should expect to incur costs of training staff on health and safety issues.

Environmental appraisal costs:

These are the costs incurred in order to assess whether we are complying with internal or external environmental standards and policies.

The chemical industry has significant regulation regarding the treatment and disposal of chemical waste. The company should expect to incur appraisal and inspection costs, such as the costs of carrying out an environmental audit, to ensure compliance with these regulations and to avoid penalties for failing to comply.

Environmental internal failure costs:

These are the costs that are incurred in order to mitigate any environmental impacts that the business has created. These are costs that are borne by the business.

During the manufacturing process, the perfume company will incur chemical wastage. An example of an internal failure cost is the cost that the company will incur in disposing of the chemical wastage.

Environmental external failure costs:

These are the costs that the environment suffers as a result of the actions of our business in generating harmful emissions or causing other external failure costs as a result of our product.

The manufacturing process in the factory is likely to cause pollution of the atmosphere. Whilst the costs associated with the pollution, such as health care costs, may not be directly borne by the company it is important from a CSR perspective that the company is seen to mitigate these costs.