



**Operational Case Study (OCS) - 2024 November**

**Mock Exam 01**



## Section 1

Today is 1<sup>st</sup> November 2024. Sales growth has been a bit slow-paced during the previous months compared to the expected growth rate. The board is confident that it will soon start rapidly growing as we finalise our newest product, 'CycBag'- a backpack designed for people who cycle to work. You receive the following email from Leo Lane the Finance Manager

To: Finance Officer

From: Leo Lane, Finance Manager

Subject: Finalizing the 'CycBag' Launch

Hi!

Our team of engineers have finalised the design for 'CycBag' to optimize its space utilization and provide comfort to the user while cycling. The marketing team has completed their primary market survey on the target audience and the results suggest that the segment of premium users who cycle for work to maintain good health is lower than anticipated. Around 85% of people who cycle for work are people with low-income levels who might not want to purchase our premium product. Therefore, the pricing for this must be a bit different from our other products if we expect this to be profitable. Further, the feasibility of issuing credit sales for this product must be considered since its risk appetite is a bit higher than our other products.

I had a finance associate reach out to a firm called FactorFlex which has agreed to offer us factoring and invoice discounting as required. The information is attached (**Reference Material 1**). Also, another available method to proceed is to fund the working capital for this product using an overdraft. Prepare a briefing paper explaining,

- The financial and non-financial factors to be considered in deciding which of these three financing methods would be most suitable to deal with the trade receivables of the CycBag product.

**(subtask (a) - 28%)**

Further, since debt recoverability is a concern for this target market Hillary Sec, Finance Director gave me a proposal for a new credit limit system (**Reference Material 2**). She did not give me a comment on this proposal. Please also include in your briefing paper an explanation of:

- How the new system could reduce the risks of non-payment of accounts receivable.

**(sub- task (b)= 20%)**

From the initial meetings, the Senior Management Team(SMT) has decided to use cost-plus pricing for this new product. The costing information can be found in the attachments (**Reference Material 3**) which show the different cost bases we could use. Additionally, the sales team have surveyed our existing customers to gain their views on how we compare with two major global competitors. The results can be found in **Reference Material 4**. In the briefing paper please include,

- The issues we should consider from a cost perspective when using cost-plus pricing. Also include 3 factors, other than cost, that will affect the price we can charge.

**(sub-task (c) = 52%)**

Thank You.

**Reference Material 1**

*Factoring and Invoice discounting proposal from FactorFlex*

	Note	Invoice Discounting	Factoring
Debt ownership		FactorFlex	FactorFlex
Without recourse		No	Yes
Annual interest cost	1	3%	4%
Annual Administration fee	1	H\$30 000	H\$100 000

Note

1. A comparable overdraft will have an annual fee of H\$15 000 and an annual interest cost of 5%

**Reference Material 2**

*Proposed customer credit limit system for accounts receivable*

Category (note 1)	Financial Status	Payment	Credit term (days)	Maximum credit (H\$000)
1	Strong	Prompt	60	1 800
2	Stable	Prompt	45	1000
3	Weak	Prompt	30	200
4	Strong	Late	50	600
5	Stable	Late	45	300
6	weak	late	0	0

Note

1. Categorises will be reviewed every 6 months, and amendments made as required to reflect up-to-date risk levels.

### **Reference Material 3**

#### *Cost Information for CycBag*

	Production cost	Total cost	Marginal cost
Notes	1	2	3
Cost	H\$80	H\$100	H\$50

#### Notes

1. Production cost includes all production costs.
2. Total cost includes all production and non-production costs.
3. Marginal cost includes production and non-production variable costs.

### **Reference Material 4**

#### *Results of the market survey conducted*

Characteristic (Note 1 )	BackOffice	Competitor A	Competitor B
Value for Money	1	3	2
Environmental impact	2	3	1
Running costs	1	3	2
Desirability	3	1	2

#### Note

1. Each characteristic was ranked from best (ranked 1 ) to worst (ranked 3 )

## Section 2

Now it is 5<sup>th</sup> November 2024. You receive the following email from Leo Lane the Finance Manager.

From: Leo Lane, Finance Manager

To: Finance Officer

Subject: Re- Finalizing the 'CycBag' Launch

Now most of the work regarding the CycBag launch is complete but there are still some pressing matters to be addressed. A marketing manager has researched the sales of backpacks that are made for cyclists on a competitor based in North America. I analysed (using linear regression) to produce a trend line and details are attached in **Reference Material 1**. The SMT believes that this can be used to forecast our sales for the new CycBag. Please prepare a briefing note for the SMT which explains:

- What my analysis, means and what it indicates about the usefulness of the data to make our sales forecast.

**( subtask(a) = 44%)**

Also based on your previous insight we decided to use an overdraft to fund the CycBag project working capital requirements. During the discussion, the SMT encountered some issues regarding the accounting principles related to overdrafts.

I have summarised the interest paid for Ocbotor in **Reference Material 2**. We normally use the indirect method to calculate cash flow from operating activities, but the SMT would like to investigate how the calculation would change if we moved to the direct method. Using the given information please include an explanation of,

- The difference between how cash flow from operating activities is calculated using both the direct and indirect method in IAS 7:Statement of Cash Flows, including how the overdraft interest would be recorded in the financial statements using each method.

**(subtask(b)=20%)**

Finally, our design engineers have managed to integrate a fitness tracker within the backpack which will be used to monitor the health and fitness conditions of the user. The data analytic part was custom-developed by our R&D team to identify and make predictions while the user is cycling. A separate app is developed where the users can log into the account and monitor their activity. They can also share their experience with other users interacting with each other and view the latest updates of our upcoming products.

The SMT wants to put KPIs in place to measure both the app's performance and customer engagement. As far as the KPIs are concerned app performance refers to its technical performance and App engagement refers to how users interact with the app and if they like it. In the same briefing paper include,

- Two KPIs measure app performance and two KPIs measure app engagement. For each KPI explain how it would be measured and why it would be appropriate.

**(subtask(c)= 36%)**

Thank You

**Reference Material 1**

*Backpack for Cyclist Sales*

	Analysis
Trend line	$Y=30,000 + 4605X$
Correlation Coefficient	0.25
Co-efficient of determination	0.0625

**Key:**

X= the quarter number (where X=1 is quarter 1 in 2020)

Y= annual salary in H\$

Note:

1. They introduced the product in early 2017.

**Reference Material 2**

Interest payable for October 2024

Date	Description	H\$	Date	Description	H\$
21.10	Bank	112 356	01.10	Balance b/d	156 344
31.10	Balance c/d	123 798	31.10	Profit or Loss	79 810
		<b>236 154</b>			<b>236 154</b>

# Answer

## Section 1

### Briefing Paper

Please find the below information useful for your requirements

### **The financial and non-financial factors are to be considered in deciding the most suitable finance method for the CycBag Product**

#### **Financial factors**

Whilst an overdraft has a pre-agreed limit for a set period with a bank, the number of available funds raised using invoice discounting or factoring can increase as the level of sales rises. This can be useful as sales rise. Especially since this is a new market it might be harder at first to reliably estimate the sales growth and it could be troublesome to change the agreed limit with the bank from time to time.

The annual overdraft fees (H\$15,000) are lower than the fees for either invoice discounting (H\$30,000) or factoring (H\$100,000). Discounting fees are usually lower than the factoring fees as, with invoice discounting, most sales administration will be done in-house but, with factoring, it will be done by FactorFlex. However, there will be a cost saving from using factoring, as we won't need sales processing or credit control functions. This may mean that, unless staff can be redeployed, there may have to be redundancies. The interest cost for the overdraft (5%) is higher than both the invoice discounting and factoring costs at 3% and 4%, respectively. As such, the value and duration of borrowing will determine which is the most cost-effective.

The cost of irrecoverable debts will be removed with the factoring option, as FactorFlex is offering a no-recourse facility. This will not be the case for invoice discounting or overdraft, where we will continue to collect our debt. Using factoring or invoice discounting would also result in a one-off cash boost compared to using an overdraft, as money would be released on raising the sales invoice.

#### **Other factors**

With the current focus on environmental friendliness and sustainability, the concept of cycling to work can rise shortly. If that is the case and when sufficient reliable customers start to buy our product the risk of irrecoverably, we had mainly because the target market has a low-income level may not be the issue anymore. Then when we try to handle the receivables in-house again it would be not easy if we had used factoring since we have to hire new staff and set it up all again from scratch.

In factoring, FactorFlex would be communicating with the customers to get the debt. They might be aggressive and show no respect towards the customers as we used to do. Due to that our relationship with the customers might hinder. Also, they could get the idea that we are financially struggling and have to hire an external firm.

### **New credit limit system**

We are looking at two aspects when designing a new credit limit system:

1. The customer's payment record, whether they pay in line with their credit terms (prompt payers) or exceed their payment terms (late payers).
2. The customer's financial strength, obtained from the most recent annual financial statements, press reports or credit scores.

Under the new process, credit periods and limits will be made bespoke to customer groups to reflect the risk profile of those customers. The strongest and most prompt payers (category 1) will enjoy the most favourable terms, as they pose the least risk to us. This means they will have the longest credit period at 60 days and the higher maximum credit at H\$1.8 million. However, both the credit period and maximum amount of credit will be reduced in the lower categories down to category 3, which will have a maximum of 30 days credit and a total amount of H\$200,000 to reflect the increased risk to us.

For those who are late payers (categories 4-6), their credit terms will be reduced compared to categories 1-3 and range from 50 to 0 days depending on their financial strength. In addition, maximum credit amounts will also be reduced to reflect weaker financial statements and, for the weakest category (category 6), it is proposed no credit will be offered.

When combined with ongoing monitoring of accounts, this system should ensure that the risk associated with the amount outstanding is matched to a customer's financial strength and their historical payment record with us, thus reducing the potential for non-payment. However, it may be more logical for staff to organise the list in descending credit value rather than separating customers based on whether payments are on time or late payments and size.

### **Cost plus pricing**

Cost plus pricing determines the selling price based on a cost base, plus a mark-up expressed as a percentage of the cost base. Cost plus pricing requires two decisions. The first decision determines the product selling price based on what the market will bear, considering financial and non-financial factors. The second relates to the markup percentage used.

#### **Cost bases**

There are two cost bases: full cost and marginal cost. We are considering two full cost-plus bases: production cost and total cost +. Production cost includes fixed and variable production costs, including overheads, whilst total cost + includes those costs plus other non-production related costs such as administration and selling costs, leading to a higher figure of H\$100 compared to H\$80. In contrast, we are looking at one marginal cost base. This only includes variable costs, and the table shows a value of H\$50, the smallest proportion of total cost.

#### **Mark-up percentages**

The mark-up percentage will differ depending on the cost base used. Marginal costing will have the highest mark-up percentage, as the percentage has to cover profit and fixed costs. The lowest percentage will be when using total cost +, as variable and fixed costs for both production and non-



production areas are already included before the mark-up percentage is added. Once the percentages have been calculated, cost plus pricing is easy to calculate.

### **Allocation of overheads**

For production cost and total cost bases, there will be challenges associated with overhead allocation to the CycBag project. This is important as it can mean the selling price calculated can vary markedly, which may lead to over or under-pricing. In turn, this may lead to us losing backpack sales to competitors, making sales at a lower margin or, in some cases, making a loss. Such issues may arise as it can be difficult to trace costs accurately to the final product and even when identified apportionments may not be accurate. The higher the starting base (total cost plus), the less uncertainty there will be about having to ensure that our costs are covered by the markup, assuming that we have confidence in methods of allocating, apportioning and absorbing costs.

### **Marginal versus full cost**

Where only a small percentage of actual costs are covered, for example, marginal cost +, this can mean in times of increasing prices, the percentage markup does not cover cost increases where there are steep rises, for example, energy. As such, marginal cost is usually used as a short-term decision-making tool rather than as a long-term one.

### **Return on capital required**

As with any other organization we also have financial targets to meet. These are likely to include return on capital employed requirements. Therefore, it is important when determining a percentage markup that we ensure we are meeting those requirements, if not in the short term, then in the longer term.

### **Non-financial factors affect the price we can charge.**

Given that the cost is fixed; to change the price, we need to change the markup. However, this is a chicken and egg situation and, consequently, we need to consider the factors which will affect the price.

### **Customers perception**

Product price is dependent on customer demand which in turn is based on their perception of the product's value. Value relates not only to value for money but also to desirability and, whilst we are ranked 1st among our competitors in respect of value for money, we ranked last for desirability.

### **Competition**

The backpack market has a high number of manufacturers making backpacks, which may have some differences but are essentially substitutes for one another. Whilst theoretically, a higher number of substitutes should potentially lead to a lower mark-up percentage as customers can easily move to a competitor, we are rated top by customers for both value for money and running costs.

**Organisation objectives**

Despite this potential for charging a premium, it may be that, as a new product, we wish to increase market awareness of the benefits of the CycBag and due to this, we may wish to have a lower mark-up to encourage sales, at least in the short term till demand is established. This may also fit in with our objectives of being highly ranked for value for money as the information shows.

I hope you find the above information useful for your requirements. If anything, else is necessary please feel free to reach out to me.

Thank You,

Finance Officer.

## **Section 2**

### Briefing Paper

The issues regarding sales forecast, accounting for the overdraft interest and KPIs for the new mobile app are explained below

### **Regression Analysis of CycBag Sales**

#### **The analysis**

The regression trend line represents the trend of a specific type of backpack sales by a North American competitor over the period 2020 to 2023 inclusive and is represented by Y. The trend is the average position over time with any seasonal, cyclical or residual variations smoothed out.

30,000 represents the starting point for the trend. This would be the figure at the end of 2019, with a level of 34,605 in the first quarter of 2020. Each successive quarter, according to the equation, would see the sales of this product specifically made for cyclists grow by 4,605.

The correlation coefficient shows us the strength of the linear relationship between two variables, in this case, the time and volume of backpacks sold. Correlation is always between -1 and +1. Where a correlation has a positive number, as it does here, then the relationship shows that as time increases then so will the sales, which is not entirely unexpected. However, to call the relationship strong, it is expected that the correlation would be 0.8 or above. Therefore, the relationship we see here at 0.25, whilst positive, is very weak. That means in between quarters the sales value has both increased and decreased not resulting in a clean line with an increasing trend.

The coefficient of determination can refine that even further by showing the proportion of the total variation in the volume of products sold which is explained by the regression equation. So, in this case, where the coefficient of determination is 0.0625 or 6.25%. This shows that only 6.25% of the variation in the sales growth is explained by time. Meaning 93.75% of the variation is explained by other factors. Due to this, this is sort of an unsuccessful attempt towards time series analysis.

#### **How useful is this information to forecast the sales of 'CycBag'**

Time series analysis is a very famous method for forecasting in a lot of industries. However, the key to being successful is to have a comparable and sufficient amount of data. Past sales in 3 years are not sufficient to conduct a comprehensive time series analysis. Further, this is based on information about a competitor in North America where the seasonality, customer preference towards health and fitness, brand image and all these parameters could be different.

Also, this information is within 3 years after the product was launched to the market. By that time the product could be moving to the mature stage from the growth stage. Using this information to predict our sales while it is still in the introduction stage of the product cycle is not a very reliable method. It makes the comparison meaningless and the accuracy questionable.

According to the analysis at the start of 2020, they sold 30,000 products which increased by 4605 in each quarter. If we have our entire annual sales for office bags it is approximately 70 000. Therefore this competitor is very much larger than us in market share and several customers. So if any comparison is made the results must be adjusted to smoothen out the difference in market shares.

Further linear regression is not always a good method to do the predictions. It assumes that the dependent variable is not influenced by any other variables which is not the case since only 6.25% of the variation can be explained by the dependent variable in this case. Therefore scenarios with such poor correlation methods such as moving averages would give better results instead of linear regression.

### **IAS 7: Statement of Cash Flows**

The first main heading in the standard cashflow proforma is “cash flows from operating activities”. This can be broken down into cash generated from operations, tax paid and interest paid. Cash flow generated from operations can be calculated using either the direct or the indirect method.

#### **The indirect method**

Here, profit before tax is taken from the statement of profit or loss and adjustments are made to convert income and expenses from the accruals basis to the cash basis, leaving only cash flows generated from operations. Under this method, interest payable is not considered part of day-to-day operations and so the interest charged to the statement of profit or loss (H\$79,810 in October) is added back to calculate the cash generated from operations. The actual cash flow (which was H\$112,356 in October) will then be included as part of cash flows from other operating activities.

#### **The direct method**

This method involves simply totalling cash inflows and deducting cash outflows in respect of operating activities. Such cash inflows and outflows will include cash payments to suppliers, and cash receipts from customers for example. As such, no interest payable is ever included in the cash generated from the operations figure. Rather the payment of interest (which was H\$112,356 in October), as with the indirect method, is included as part of the cash flow from other operating activities.

### **Key performance indicators**

#### **Performance metrics**

This provides performance data which shows the app's technical performance, allowing issues such as slow loading, bugs, or other problems to be identified. Example KPIs can include:

*Devices used and operating system speed:*

This metric displays which devices and operating systems are most used by our potential customers, for example, whether they are using the app on a tablet, computer or different types of phones. Each device/operating system is calculated as a percentage of the total number of customers. Tracking this allows us to ensure our app works efficiently on the operating systems used by our customers and maintains operating system speed when starting and moving between screens. This improves the performance of our app, as it ensures performance quality is maximised for the highest number of customers.

*Crash reports:*

The capabilities of operating systems differ and due to this, apps may crash on occasion. This metric is calculated as the number of crashes for each problem type. The number of crashes should be minimised. Tracking this allows us to ensure customers receive a stable service with minimal requirements for triaging and troubleshooting in-app bugs.

## **Engagement**

Engagement metrics characterise how users interact with the app and whether they like it or not. Example KPIs can include:

### *Stickiness ratio:*

This relates to the number of times the user logs into our app. It is the number of daily active users of the app as a percentage of the monthly number of active users. We are hoping that the app becomes a valued source of data and information for customers, leading to a dependence on our brand. Stickiness measures the use of the app not only for monitoring their health and fitness indicators but for additional content which engages a user (for instance regular technical updates on our products, forums and so on). This will allow us to understand how the product is being adopted amongst target users and if it requires improvement.

### *Average screens per visit:*

This metric demonstrates the quality of the user experience design and its ability to engage users. The user might view the statistics of their activity such as heart rate, and pressure and also recommendations for more exercises with cycling, cycling time, speed-related metrics etc. It is calculated by counting the number of screens viewed per visit. This allows us to track the number of visits per screen. If this is high, the app is considered to have a user-friendly design which encourages transition between screens. If the number is low or falling, this would suggest additional design requirements to enhance user interaction with the app.

I hope you found the above information useful. Please feel free to reach out to me if anything else is necessary.

Thank you.

Finance Officer.