MGAB03

CASE ASSIGNMENT

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The recommended admission price set for the Camp is calculated at $33.71 per person for the campers and $40.45 per person for the YLC program members. The admission price has been calculated after taking into consideration the net profit before taxes which is $500,000.

Appendix II

Quantitative analysis

The two methods used to calculate the per unit cost are Normal Costing and Activity-Based Costing (ABC). As written in the document the Academy currently allocates store support costs to product lines based on the cost of goods sold for each product line. For Normal costing, there can be 2 cases:

Case 1: When manufacturing overhead is based on the percentage of the cost of goods sold for each product line.

Case 2: When the Overhead rate is calculated by dividing the total other costs (costs that are not CGS) incurred by the total cost of goods sold.

The operating income as a percentage of the sales in both cases is the same:

	Soft Drinks	Fresh Hot Food	Packaged Food
Operating Income (%)	1.70%	7.17%	3.30%
Per unit cost	$6.19	$1.77	$3.82

Using Activity-based costing by allocating costs using more allocation bases such as purchase orders, deliveries, hours stocking etc, gives the following answer:

	Soft Drinks	Fresh Hot Food	Packaged Food
Operating Income (%)	10.78%	0.60%	8.75%
Per unit cost	$5.62	$1.89	$3.61

Qualitative Analysis

Activity-Based Costing focuses management's attention on the activities that cause the costs to be incurred. It not only leads to better product and pricing decisions but also eliminates activities that do not add value leading to improvement in activities and processes. In the given situation - when we use Normal costing the profit generated by the fresh hot food product line is the most whereas in activity-based costing it is soft drinks. This is because Activity-Based Costing assigns overhead based on the activities that drive the overhead costs. The cost of $4,800 is incurred only for the soft drink product line, however, in normal costing, it is still allocated to the other product lines. Similarly, the number of purchase orders and deliveries differ for each product line and must be taken into consideration to assess the profitability and per unit cost of each product line. Thus we would recommend that the organization uses Activity-Based costing to make decisions.

There are a few disadvantages as it does not conform with GAAP and substantial resources are required to implement and maintain it, but this method is more accurate.

Appendix III

Karen was asking us for advice on whether they should buy or rent new equipment for supporting their new tech program.

Quantitative analysis:

Purchase the equipment

Quantitatively, The user permission for alternative 1 is accessed by all campers (basic and YLC). The Academy should aim at an annual incremental earning of $150,000 on top of $500,000 for the purpose of "getting the money back in two years. It gives us a target EBT to maintain above $650,000 [($300,000/2) + $500,000] for the next two years. In this question, we make **two assumptions** to make these answers more complete.

Assumption 1: These equipment follow a straight line method of depreciation for **10 years**, and there is no residual value.

In this case, the depreciation rate is **300,000/10 years=30,000**/year. The fixed cost for the next two years will be 2,000,000+30,000=**2,030,000**. Therefore, the new adjustment admission price for the basic program should follow the formula(100,000x + 20,000*1.2x - $1,680,000 - **$2,030,000** = $650,000). Thus, the new admission prices for the basic program are $35.16, and for the YLC program are $42.19. The rate of the changing price for both are 4.31% [($35.16 - $33.71)/$33.71] and 4.31% [($41.90 - $40.45)/$40.45]

Assumption 2 : **No depreciation** should be included in this case

Therefore, the new price for the basic program should follow the formula (100,000x + 20,000*1.2x - $1,680,000 - $2,000,000 = $650,000). Thus, the new prices

for the basic program are $34.92, and for the YLC program are $41.90. The rate of the changing price for both are 3.59% [($34.92 - $33.71)/$33.71] and [3.59%($41.90 - $40.45)/$40.45].

Rent the equipment-Same for assumptions 1&2

Alternative 2 indicates an additional $50 variable cost to those 30,000 additional campers for the tech program. Thus, the new variable cost is $64($14 + $50). The admission price of basic, tech, and YLC campers should be 1:1.1:1.2; moreover, a constant EBT of $50,000. Hence, the admission fees will be (1.1x*30,000 + 1.2x*20,000 + 100000x − $14*(100,000 + 20,000) - $64*30000 - 2,000,000 = $500,000): **$38.85, $42.74, and $46.62** respectively for **basic, technological, and YLC programs**. However, concerning the request to "ensure members not to bear a price increase of more than 10%", the increase rate of new admission fees will be by 15.26% (($38.85 - $33.71)/$33.71) and 15.26% (($46.62 - $40.45)/$40.45), which fails to meet the request.

Final Recommendation:

Statistically speaking, alternative 1 offers better admission prices without harming neither party's benefits (members and the Academy). Additionally, a guaranteed 3-year warranty is included in alternative 1. After the 2-year payback period has been completed, The Academy can earn as much as $650,000 EBT without the burden of covering equipment costs. Furthermore, some equipment will still be in great condition after 3 years, The Academy can repurchase for a certain amount to optimize the

earnings and equipment life span under the premise of providing members technological education.

Qualitatively, alternative 1 provides technical education to all the members for an additional 10 hours each week of "learning about computer programming, office applications, and some "Kidz-time" privileges", instead of as a separate program. This completely fulfills the goal of facing children of any age (5-12 years) at an earlier stage.

Appendix IV

Karen was asking our recommendation whether to produce 75,000 battle bottle monitors themselves or to accept HEX's offer of $38 per monitor.

Quantitative analysis:

There are two assumptions made in the quantitative analysis as it is unknown whether the overhead cost is a fixed or variable cost and irrelevant or not.

Case 1

In the first case, we assume that the remaining overhead cost is relevant; thus, we put it as a variable overhead cost in the calculation. As a result, the total cost to manufacture the monitor is $3,077,500 (DM+DL+Variable OH) and the total cost to buy the monitors from HEX (Purchase - saving in product line supervisor pay - saving in utility cost) is $2,740,000. Subsequently, the operating income increases by $337,500 if the Academy purchases the monitors from HEX instead of manufacturing them.

Case 2

In the second case, we assume that the remaining overhead cost is irrelevant; thus, it is not included in the calculation. Hence, the total cost to manufacture (DM+DL) is

$2,812,500 while the total cost to buy is the same as written in case 1 ($2,740,000). This results in an increase in operating income by $72,500 when the Academy decides to buy.

Qualitative analysis:

1) Level of quality control

   If the Academy decided to purchase the monitors from HEX, the level of quality control of the product required should be put into consideration: What level of control do they want to have on their monitor's quality? And will 3 responses from HEX's former customers be enough to confirm its products' quality? Furthermore, the Academy might need to do a thorough comparison between HEX's and the Academy's monitors since similar components don't guarantee the same performance.

2) Upgrading manufacturing facilities

   The Academy is considering upgrading its manufacturing facilities. Although the financial support for this remains uncertain, it's very likely that the company will decide to upgrade to maintain its position as a market leader. Therefore, the Academy must have a thorough evaluation of how the upgrade of facilities has affected the production of the battle bot monitors. If the upgrade doesn't directly affect the production of the monitors (e.g. it's an overhead cost that can be counted towards other production processes), the upgrade is irrelevant to this production or purchase decision. However, if the upgrade affects the production

directly (e.g. can change the cost of direct labor), then the Academy will need to re-evaluate the quantitative analysis of this decision.

3) Labor layoff consideration

All three HEX consumers confirmed that there were no quality concerns and all orders were filled on time. Nevertheless, since there will be an inevitable layoff of labor if the Academy decides to accept HEX's offer, there will be a labor layoff that disadvantages the workers.

Based on the analysis, in both case 1 and case 2, the total cost of purchasing the monitors is lower than producing them. Therefore, it is suggested that the Academy accept the deal from HEX despite the labor layoff.

Appendix V

Karen wants to know if the town's proposal to build a new stadium is financially advantageous and beneficial for Barrie Blizzards (BB). She is concerned that if the stadium is not upgraded the team will move to another town.

Assumptions made to arrive at the calculations:

1. In the given case the discount rate is not given. Decision makers often use the weighted average cost of capital (WACC) as the discount rate. Since no information is given about the sources of finance and its marketing value, we have set the discount rate equal to the cost of capital. This may ignore variations in risk for certain projects as a lower discount rate is appropriate for projects that have less risk and vice-versa. However, since no additional information has been given to form the basis we will use the cost of capital as the discount rate.

2. Take the sales of 10,200,000 as an estimate to compare the incremental cash flows from revenue for the old stadium and the new stadium for 25 years.

3. In this case it is mentioned that the tickets peak at an average of 90% of the total capacity in year 7. Since the number of tickets in year 7 represents the peak (highest) value, the sales are assumed to be static for the upcoming years. According to the estimate, the number of tickets would not deviate from the peak value by an excessive amount in the upcoming years.

Risks of the Towns Proposal:

The increase of 6% in the number of tickets sold after the first year is based on Karen's estimation. This means that if the expected increase in sales does not meet the values calculated there may be a decrease in the expected cash flows. As mentioned in the case, Karen wants to avoid cash flow difficulties. However, in the first few years of leasing the new stadium, the incremental income earned is negative. The stadium will generate a negative cash flow for the first few years and sufficient resources should be made available to cope with it. Since the new stadium offers a better experience for both players and customers, there is an increase in the operating costs by 650,000. In addition to this, the lease payment has increased by 800,000 for 25 years. These incremental increases in costs are fixed for each year. Any decrease in sales will lower the profit margin.

Opportunities of Proposal:

By accepting the new proposal, the fan experience would improve dramatically as there would be more funds to improve the stadium, increase the quality of the experience and

comfort offered to the viewers, etc. The players would also largely benefit from this because there would be higher quality fitness equipment and other facilities. Since the fan experience would get much better, there would be a possibility for the number of viewers to increase after the 90% capacity as mentioned is met in the 7th year, thus having a chance of increasing the seating capacity and the number of tickets that would be sold (as well as the prices of the tickets). An increase in the price of the tickets would increase revenue. After 25 years of paying the lease for the new stadium, the ownership would be transferred to BB for just $1. As mentioned in the case, with proper maintenance and upkeep, the stadium could last for 50 years, much more than the original stadium, thus providing a long-term benefit for BB and the town. The chances of the franchise moving to another town are lower.

Overall Recommendation:

The Net Present Value calculated for 25 years is positive and is equal to

$ 10,692,809.97 (with tax adjustments) and **$ 8,399,739.75** (without tax adjustments). Karen should agree to the town's proposal to build a new stadium. It is beneficial for the long term. Although there is resistance from the management, the financial information depicts that the new stadium will generate profits in the upcoming years. The lease payment can be lowered by negotiating with the town managers. They should continue to enhance attendees and player experience to increase the number of tickets purchased.