

ISE 583
ERP Sim Game
Practice Game Analysis

Team: **E** **28.5/30 Good job Team E!**

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Answer the following questions by referring to the data generated from the SIM Game. You should also use Excel (OData connection) to download the data in which you can create charts and pivot tables to analyze the data.

When you finish answering the questions, save your entire document and name the document as: *Team#_erpsim1*. Submit your document on the class web site. Please note: I will grade only one answer sheet per team. If more than one answer sheet is submitted, I will grade the most recently submitted document.

For help answering the questions, refer to: [Connecting to OData Source using Excel](#)
[OLAP Exercises using Excel Pivot Tables](#)

General Analysis

1. (1 pt) Briefly describe your team's initial strategy. Include your strategy on pricing, marketing, and production. Why did your team consider this to be a winning strategy? Was there a need to change your strategy? Why or why not?

If you were going to product many products in small batches, you would want to invest in lean manufacturing in order to reduce the set up time. Also, don't forget there is a position for Accountant.

2. (1 pt) If you changed your strategy during the game, what was your new strategy? Did your new strategy increase your net income? How? If you did not change your strategy, simply state N/A (not applicable).

Interesting strategy of advertising and pricing. Recall, you really only want to advertise in order to increase the rate of sales of a product because advertising can cut into the profit margins of the product.

3. (1 pt) What problems did your team initially encounter? These problems could be either transactional based, or business strategy related.

Yes, I can't emphasize enough the importance of your business cycle. You want to be producing while you wait for your raw materials to arrive for the products in your next business cycle. Therefore, plan on batches that will total about 300K boxes.

4. (1 pt) Were you able to correct these problems? What did you do (or change) to correct these problems?

Very good. And yes, as I mentioned in 1) above, your strategy would require an investment in reducing setup time.

Financially Speaking...

Your team was ranked against other teams based upon your *Company Valuation*:

$$\frac{\text{Yearly Profit}}{\text{Company Discount Rate}}$$

There are a number of factors that are used to determining your company's Yearly Profit and your Company's Discount Rate. Therefore, you should refer to the Participant's Guide for specific information regarding the formula so you can best increase your Company Value. But for now, let's take a look at your current financial health.

From your Balance Sheet...

5. (1½ pts) What is your current Bank Cash account balance?	991,039.93
What is the current amount your customers still owe you (A/R)?	1,010,160.02
What is the current value of your Machinery and Equipment?	24,000,000.00

6. (1 pt) What is the current amount of your Bank Loan?	5,000,000.00
What is the current amount you still owe your vendors (A/P)?	181,487.20

The sum equals your Total Liabilities.

From your Income Statement...

7. (2½ pts) What is the total amount you paid in machinery depreciation?	800,000.00
What is the total amount you paid in Warehouse costs?	3,000.00
What is the total amount you paid in Interest Expenses on your loan?	184,680.95
What have you invested in advertising (marketing)?	36,288.00
How much have you invested in the Lean Manufacturing Program?	0.00

You have some control over these expenses.

8. (1 pt) What is your current Revenue from Sales earned to date?	5,758,739.40
What is your cumulative Net Income earned after four Rounds?	2,154,958.85

9. (1 pt) Calculate the Total Expenses incurred after four rounds of doing business.

Remember: Income = Revenue – Expenses **3,603,780.55**

Considering all four Rounds, estimate your current, daily “cost of doing business”.

You can simply divide your total expenses by 80 days **45,047.26**

As you see, from your Income Statement, you have many expenses; some you can't control while others you choose to engage in. For example, you can control your advertising expenses, warehousing costs, and the amount of your loan which is directly responsible for your interest expenses. It is your job to routinely analyze these expenses and determine if they are optional and if you can reduce their direct impact on your Net Income

From your Investor's Perspective ...

Return on Share Holders Equity is probably the most widely used measure of how well a company is performing for its stockholders. Return on equity measures a corporation's profitability by revealing how much profit a company generates with the money shareholders have invested. Businesses that generate high returns on equity are businesses that pay off their stockholders well and create substantial assets for each dollar invested. You can view the Game's results posting to check your calculation.

10. (1 pt) At the end of the game, what was your team's Return on Share Holders Equity (%)? (Hint: $\text{Net Income} / (\text{Net Income} + \text{Shareholder's Equity})$) **9.73%**

The debt-to-equity ratio identifies companies that are highly leveraged and therefore represent a greater risk for investors. A high debt-to-equity ratio implies that the company has been aggressively financing its activities through debt and therefore must pay interest on this financing. Over the long-term, this could possibly lead to bankruptcy. You can view the Game's results posting to check your calculation.

11. (1 pt) At the end of the game, what was your team's Debt-to Equity ratio (%)? (Hint: $\text{Total Liabilities} / (\text{Net Income} + \text{Shareholder's Equity})$) **23.39%**

Demand Planning

Your customers are your only source of Revenue. Because of this, it's important to accurately predict what your customers want and be in the position to meet your customer demand. After all, the better you can meet your customers' demand, the higher the Revenue you will earn and thus the higher your Net Income. Let's take a look at what you produced during the game and determine if you were meeting your customer demand.

12. (1 pt) From your Production data table, what product did you produce the most during the game? Product name: **500g Blueberry Muesli** What was the total quantity of this product you produced during the game? **192,000**

The question remains, *Was this a product that your customers preferred?* This question can be answered by estimating the sales rate of each of your products to each of your customer types (hypermarket, grocery stores, and independent stores).

The “best case” sales rate can be estimated by a pivot table listing the sales that occurred each day of your products to each of your three customer types.

For instance, create a pivot table from your Sales data.

Review the results.

Identify three different products which had the greatest total quantity sold in a given day.

Filters 		Columns DISTRIBUTION_CHAN...	
Rows SIM_DATE MATERIAL_DESCRPTI...		Values Sum of QUANTITY	

13. (1½ pt) List, in order, those products with the greatest total quantity sold in a given day and indicate which distribution channel those products were sold to on that day.

	Product Name	Max. Daily Sales Qty Total	DC 10 Qty	DC 12 Qty	DC 14 Qty
1.	500g Blueberry Muesli	37,183	0	21,851	15,332
2.	1kg Original Muesli	31,952	0	31,952	0
3.	1kg Strawberry Muesli	25,726	0	8,295	17,431

14. (½ pt) Referring to your answers in Questions #12 and #13, are you producing the product which your customers seem to want to buy? (Yes/No) **Yes**

15. (1 pt) At the end of the game, what was your team’s production capacity in boxes per day? **24,000** Referring to your answers in Question #13, do you think you have the capacity to meet your customer demand? (Y/N) **No**

-1/2

16. (1 pt) Compare the number of boxes you produced (Production data) and your production utilization from the Results Page displayed after each round with the number of boxes you sold and the max. sales rate for what the market will accommodate (Questions #13). Should you invest more in production machinery and/or Reduce setup? Or, have you invested too much already?

At your capacity, you’re selling more than 25,000 per day, yet only able to produce 24K boxes. You need to increase capacity and reduce set up time

-1/2

What do you calculate to be the optimum production capacity for your team (boxes per day, not %)? **~26,000**

Product Contribution Margin

The contribution margin is computed as the selling price per unit, minus the variable cost per unit.

$$\text{Contribution Margin Pct} = \frac{\text{Sales Revenue} - \text{Variable Cost}}{\text{Sales Revenue}}$$

This measure indicates how a particular product contributes to the overall profit of the company. It provides one way to show the profit potential of a particular product offered by your company.

The Contribution Margin Ratio will change as you play the game and change the selling price of your products. Because of this, during the game you can use Tableau to monitor your products' contribution margin in real time. However, for analysis purposes here, you can simply look at the average of the products' contribution margin.

Create a pivot table from your sales table so you can compare the products which you produced with their respective Contribution Margin Percentage. Be sure to display the data as the average of the contribution margin percentage.

17. (1 pt) From your sales data, which product that you produced have the greatest average contribution margin percentage?

500g Raisin Muesli

-1/2

What was that contribution margin?

84.0%

18. (½ pt) (Yes/No) Is the product with the greatest contribution margin the same product which you produced the most of as reported in Question 12?

No

19. (½ pt) (Yes/No) Is the product with the greatest contribution margin the same product as those with the highest sales rate reported in Question 13?

No

Hopefully, this analysis highlights the importance of choosing products that ① have a quick sales rate, and ② provide a high contribution margin. Often, it won't be the same products. It will be up to you to determine a favorable business strategy which provides a good balance between the products that result in the highest total sales revenue.

In addition, you should review the formula for "Company Valuation" and the factors which go into its calculation. Know which factors you have control over and identify what you can do to increase the value for your company.

After you have completed the exercises and answered the questions, save your entire document and name the document as: *Team#_erpsim1*. Upload this document to the Class web page. I ask that only one answer sheet per team to be submitted.