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Problem/Opportunity Statement

The BEL123 Model will be used in forecasting a multitude of business variables such as sales, expenses, earnings, hiring, ordering schedules, and productivity curves. Currently, the problem management is encountering is that there is no value model to forecast these economic variables and financial figures. With uncertainty in the markets, shareholders would like management to develop a model that represents two different scenarios based on different economic factors. Based on this model, management will be able to make future strategic decisions such as whether to expand the business or downsize in order to save money. The model will incorporate all aspects of the business allowing management to take a broad look at the company and focus on the matters that need attention.

**Scenario 1: Moderate Growth**

In this scenario, BEL Inc’s experiences only moderate growth in profits because of certain negative business and economic factors. BEL’s main markets are experiencing rough times as the global economy heads for a slight recession after experiencing a booming expansion. This scenario takes into account high inflation rates which have multiple impacts on BEL Inc’s model. Inflation rates during this 12 period term are averaging 4.18%, increasing the costs of business and reducing the purchasing power of consumers. The high inflation rates increase the wages and salaries paid to BEL’s employees increasing expenses and dragging down net income. Besides increasing inflation-adjusted wages and expenses, high inflation rates also result in higher lease rates. This increases the amount of interest and payment amount BEL has to pay on its leasing agreements. In addition, this scenario takes into account external pressures from competitors. With an influx of new clothing competitors, BEL decides to keep prices for their goods in check to maintain their share of the market. This pricing strategy, however, will result in lower revenues, profit margins, and ultimately net income over the next 12 fiscal quarters. As a result, for the first three fiscal quarters, BEL incurs losses before recovering to make a profit. Its profit margins, averaging 38%, are relatively low compared to industry standards. To make matters worse, there was a sever drought in the south-eastern states of America, devastating cotton fields and as a result spiking the price of cotton to a seasonably high level of $3.25 per square meter. As our major source of raw materials, the increase cost of cotton will increase our cost of goods sold; further eroding are profit margins and net income. Despite the negative internal and external conditions facing our company during this period, the BEL123 model still forecasts moderate growth in net income. While not a worst-case scenario, management should feel secure and optimistic that even during a downtime, BEL Inc. can still find a way to make a profit over the duration of the 12 period term. This BEL123 model effectively displays that even in a scenario such as this, where business and economic factors are not working in the company’s favor, the company can still manage hold its own without having to rely heavily on tapping capital markets.

# Scenario 2: Exceptional Growth

The second scenario the BEL123 model is put through is characterized with favorable economic and business conditions resulting in exceptional growth for BEL Inc. During this period, low inflation, strong consumer spending, and a robust stock market fuel the booming economy. Consumers are in good shape and have increased their spending habits. As a result, consumers are spending more money on ‘top of the line’ goods, such as our clothing products. They realize that BEL Inc.’s high quality products are unique from competitors. By keeping the amount of goods produced constant, the demand for our hats and shirts outpaces our supply and as a result we are able to increase the price of our goods without hurting our market share. Our ability to raise the prices on our hats and shirts, without altering our production quantities is a great boost to BEL’s financial figures. Not only does it increase total sales, but BEL is also able to keep cost of goods stable. This results in phenomenal gross profit margins of 60% and higher. To add to the good news, the weather conditions in the south-eastern states of America were ideal for cotton, resulting in a seasonably low price of $2.00 per square meter. Not only are BEL’s profit margins and sales at record levels, but positive cash flow and net income are growing at exceptional rates as well. Also, since inflation has been benign, the federal government has been able to decrease interest rates giving a further spark to our business and the economy as a whole. These low rates kept our inflation-related expenses, such as salary, down while also allowing us to refinance our lease rates to a nominal 8.5%. Finally, management was able to reduce sales and marketing costs 33% by implementing information technology systems. These new systems incorporate the Internet into BEL’s value chain, increasing the company’s bargaining power with suppliers and distributors. In conclusion, management, employees, and shareholders are all pleased with BEL’s performance. After reviewing the BEL123 model, management has discussed plans for expansion of stores and product line to take advantages of situations like this.

# Comparison of Two Scenarios:

While the likelihood of either scenario fully developing out is rare, management will be able to estimate the most probable outcomes by comparing the business variables and financial results of the two scenarios. What is helpful about the BEL123 model is that it gives management the ability to compare what kind of effects a change in one isolated variable can have on the company’s end results. With this kind of information and modeling capability, management can run risk analysis of a multitude of scenarios and be prepared for whatever the industry and economy as a whole presents. From looking at the two scenarios, the variables and input changed were as follows:

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| **Scenario 1** | **Scenario 2** |
| Average Inflation Rate of 4.18% | Average Inflation Rate of 2.81% |
| Cost of Cotton $3.25 | Cost of Cotton $2.00 |
| Sales and Marketing 3% of Sales | Sales and Marketing 2% of Sales |
| Lease Rate 10% | Lease Rate 8.5% |
| Average Selling Price $21.86 | Average Selling Price $22.64 |
| Average Net Income $56,122.43 | Average Net Income $399,640.66 |
| Average Profit Margin 40% | Average Profit Margin 64% |
| Average Operating Expenses $585,787.20 | Average Operating Expenses $502,742.70 |

# Lessons Learned

***Teamwork is a Critical Success Factor***

When working on a team to develop a model, it is essential to have a working communication mechanism between the group members. This allows feedback and ideas to quickly be addressed and implemented into the model. Lack of such a mechanism will result in a model that is not homogenous and ultimately not efficient. It is essential that each stage of the model is built using the prior stage as the basis. In order to accomplish this, it is difficult to assign certain stages to team members without having conversations as to how to link the stages properly. Since each person is an individual, his or her style will influence his or her respective stage. A proper design process that encourages the values of teamwork (feedback, communication, and cooperation) is pertinent in making the model a sum, rather than a combination of components.

***Perfection is the Finishing Touch***

It is important to not get caught up in the minor details of each stage of the model. Leave the fine-tuning for the end or the model will not progress. In other words, if the design team gets too caught up perfecting each component of the model, then they will lose focus of the bigger picture. It is appropriate to take a top-down/general-specific approach when designing the model. Make sure each component fits in the model, than verify that each component is properly linked, and then lastly, work on the minor details of each component.

***Preparation is Key***

Before engaging in the design process, it is absolutely necessary to have the model’s objectives, input/output streams, and parameters established. Members of the model design team must pursue a function over style form when designing the model. In order to do this, they must have all data on hand and work in a manner that accomplishes the model’s goals and objectives. Without this preparation, the model will be of little use if any at all. The designers must keep in mind that the model is a way to present the data on hand in a manner that is of use to the end user. Designing a model should be seen as a process similar to baking a cake. All the right ingredients need to be available and organized for the final product to be perfect!

***Flexibility and Adaptability***

A key point that we learned was that the model should be very flexible and easily adaptable. Some external/internal political or economic force can change the parameters and consequently modify our final results. That is why it is very important to have all the spreadsheets properly linked. We cannot forget about the ripple principle! It will save time and cost for the organization and due to the fact that we were always remodeling our model and making new change, I can guarantee that it also saved a lot of time.

Another important point is that we should make all the spreadsheets very easy so that everyone can understand. We named and defined all the parameters, input streams and ranges and clearly labeled charts and tables. By doing this, we expect that this model will be very simple and effective.

***Keep the Model Simple***

In the beginning of the project, the whole group brainstormed and came up with ideas about how our model should function. As we started, we had many great ideas on how to develop the model; however, at times it was getting so complex that we ended up having circular references and other errors. Many times we had to add a new parameter or input just to make these new ideas work. We realize that if we put all the relating variables in the model, it would never finish. In addition, some of those variables affected the model in an ambiguous way that we could not really measure the effect of its variation. So we got rid of all the bells and whistles that our model had. At the same time that we were increasing the model complexity, we were decreasing its functionality and acceptance by the users.

We ended up creating a very useful and helpful model that forecast the profit and loss of the company based on some projections and assumptions, without forcing fancy and complicated functions to fit into our model. We used array formulas, some familiar functions, named ranges, parameters and inputs.