**Sample Only**

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**Project Name:** BarCode

**Team Members:**

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**Problem Statement**

Today’s highly competitive service industry requires companies to manage their operations more efficiently. Within the entertainment sector, the managers face constantly changing conditions in the market place. Therefore, the managers of bars and nightclubs seek the assistance of computerized models for planning and controlling their businesses.

This model will help the managers of nightclubs to plan and control the nightclubs’ cost and revenue analysis, and operational expenses. With respect to the results, this model will provide the managers to make decisions regarding their businesses. For example, they might decide to reconsider their cost structure, revenue streams, equipment purchases and etc. The entrepreneurs will gather an insight of nightclub business, thus project their investments in a one-year basis under the light of this model. Every nightclub has its own priorities in terms of their desired standards. By allocating different kinds of resources in terms of their standards, regarding quality and cost, managers will be able to evaluate their nightclubs business structure.

**Scenarios:**

In scenario 1 the model is built for urban areas, university villages and target market is students and customers with low income. (ex: Boston)

In scenario 2 the model is built for demographic segments with high population and growth potential. Target market is customers with up-scale income. (ex: NY)

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| **Scenario 1** | **Scenario 2** |
| * **Maximum capacity of the bar** = **175** Occupation Rates (weekly and monthly) are **lower**.

Since Boston is a university city, the customer base consists of **students** and people with **low income**. Weekly occupation rates on weekend are higher than those on weekdays, because students are more inclined to go to the bars during the weekend. Monthly occupation rates decreases during summer, as students leave Boston in the summer due to holidays. Since Boston has a fluctuating population, the maximum capacity of this bar is assumed to be **lower**.* **Part Time Workers:** This is related to both the maximum capacity of the bar and the occupation rates. Consequently, the number of part time workers is **less**.
* **Full Time Workers:** There are one manager and one accountant. Their working hours are not affected by the maximum capacity of the bar and the occupation rates.

Salaries of both part time and full time workers differ according to the average income level of the city. * **Machinery Equipment:** The price and the quantity of the machinery and the equipment are determined according the size of the bar.
* **Utility Cost:** Electricity, water, cleaning and heating costs are computed as a percentage of total revenue. Therefore, related costs are **low** due to **lower** revenue.
* **Entrance Fee:** As Boston is a student city and great part of the target market consists of students, the entrance fee is assumed to be **low** **($5**).
* **Beverage Analysis:** Regarding that students’ most favorable drink is **beer**, the consumption of beer is assumed to be **higher** among other beverages. In addition, beer has the **highest** reorder amount.
* **Income Statement:** According to the facts above, we deduced that the profit margin for the Boston-bar is on the lower side.
 | * **Maximum capacity of the bar** = **450** Occupation Rates (weekly and monthly) are **higher**.

Since New York is a metropolitan city attracting lots of **tourists**, the customer base consists of tourists and people with **high income**. Therefore we assumed high weekly and monthly occupation rates. These rates won’t fluctuate so significantly, because New York accommodates tourists in every season, and people with high income who prefer to go to bars more often throughout the year. Since New York is a big city, the maximum capacity of this bar is assumed to be **high**.* **Part Time Workers:** This is related to both the maximum capacity of the bar and the occupation rates. Consequently, the number of part time workers is **high**.
* **Full Time Workers:** There are one manager and one accountant. Their working hours are not affected by the maximum capacity of the bar and the occupation rates.

Salaries of both part time and full time workers differ according to the average income level of the city.* **Machinery Equipment:** The price and the quantity of the machinery and the equipment are determined according the size of the bar.
* **Utility Cost:** Electricity, water, cleaning and heating costs are computed as a percentage of total revenue. Therefore, related costs are **high** due to **higher** revenue.
* **Entrance Fee:** Since thetarget market consists of high-income people and tourists, the entrance fee is assumed to be **high ($18**).
* **Beverage Analysis**: Due to the mix population type we assumed that the consumption rates among beverages do not differ much.
* **Income Statement:** The profitability margins are high as a result of a high level of income and affluent tourism.
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**Lessons Learned**

* **Keep it simple:**

 During the construction period of our Barcode project, we tried to build a sophisticated model that would include all different variables that affect the operations of a bar. At the beginning, we devoted a considerable amount of time and effort in order to achieve this goal. However, while trying to put so many variables with many functions we noticed that this was making the model difficult to understand and use. Therefore, we decided to eliminate some immaterial variables that do not have a significant effect on the analysis, because our aim was to make an extremely powerful and easy-to-use model for bar managers based solely on array formulas, named ranges, a variety of named parameters and input streams. At the end, we learned that keeping the model simple, by removing all the complexities that will decrease users’ acceptance and usage, is the only way to succeed in building an applicable model to the real life and to day to day business decisions.

* **Revise the model:**

The BarCode Project left us with many possible changes for improvement. We didn’t have the opportunity to ask anybody to review our model in order to enhance it, thus we had to control the model by ourselves. Since we built the model, the sheets and functions were familiar to us so we didn’t have any difficulty in testing our model. It would be beneficial to hear some critics from an end-user.

 In addition to this, we were aiming to create a signaling system into our model, which would inform the bar manager that the stock amount of any beverage is below the threshold amount, by creating a macro. Since we had the opportunity to learn how to create macros just at the end of the semester, we were not comfortable in using those functions. Consequently, we could not realize this goal; we had to prepare our inventory control worksheet simpler than we were intending to do.

* **Gain complete understanding of the problem:**

 We started to work on the model with only a vague idea of what the model was really supposed to capture. However, when we were advancing in our modeling, we were able to picture it more apparently because determining all the parameters, building our input and output streams enabled us to see the situation in a more concrete way. However, during this formation stage we had to spend a great deal of time to make researches on bar management activities because none of us had an experience in this business. Our ‘Hotel and Restaurant Management’ course that we took in the CSS program, really helped us to find significant resources on bar operations and provided us with remarkable data on determining the utility costs as a percentage of a bar’s total revenue. Nevertheless, we think that before starting to model our Barcode project, it would be helpful to make some interviews with some bar managers in order to have an overall view of the main problems in this sector.