**Sample Only**

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1. **Problem Statement and Approach**

The purpose of TheSurf team was to create a model that would be used to predict the profitability of a seasonal Bed & Breakfast operation in an economic climate with ideal conditions (first scenario), as well as an environment with difficult economic conditions (second scenario). Our goal was to create a user-friendly model to assist the potential investor in determining if the proposed business, The Surf Hotel, a seasonal bed and breakfast located on Block Island, would be a profitable venture. Also the model was put together so that if the investor did decide to go forward with the project, the model would remain useful for the owner/operator of the business for the purpose of creating the annual budget in the future.

We have accomplished this purpose by creating a robust model incorporating all relative costs incurred, in addition to the initial investment, in order to predict the profitability of the business in its first year of operation. In order to accomplish our goal of creating a user-friendly model that would also prove useful in the future we have detailed all revenues and expenses of the business on separate worksheets, incorporating the “Ripple Principle”. These worksheets are entitled: *MortgageLeases*, *Personnel*, *RoomSales*, *FoodSales*, and *Depreciation*. The information from these worksheets is then linked to produce the outputs for our final worksheet entitled *RevenuesEarnings*, which encompasses the profit for the first year of operation.

The following is a summary of the contents and task accomplished by each worksheet in our model:

*MortgageLeases:* Details the leasing schedule for items that the owner would benefit from leasing rather than purchasing. It also calculates the monthly mortgage payment which would be $26,062 per month, based upon a $6 million purchase price, with 80% borrowed over a 30 year term.

*Personnel:* This worksheet details the staffing needs to successfully run the business, accounting for low and high season. This worksheet will also calculate the salaried labor, and will enable the user to budget labor costs for the operation.

*RoomSales*: Predicts the revenue generated by the operation considering the forecasted occupancy and average daily rate. Since occupancy and ADR are subject to change the user can easily adjust these parameters accordingly for the purpose of adhering to future sales goals.

*FoodSales:* Encompasses the costs incurred from the food and beverage department of the bed and breakfast. This worksheet demonstrates the revenue from food sales, as the price for food purchased in bulk is lower than the cost of goods sold (per serving). Although we don’t charge separately for food, the average breakfast price is included in the room price. It may also prove useful for example in the future if the owner would like to compare prices from different suppliers.

*Depreciation*: Used to predict the costs and useful life of furniture purchased as well as other leased equipment. It will prove useful in the future to determine depreciation for the income statement as well as determining when the furniture, fixtures, and equipment necessary for the inn should be replaced.

The above listed worksheets are vital for producing the output ranges in our final worksheet entitled *RevenuesEarnings*. This worksheet uses the information from the above listed worksheets to determine the profitability of the business in the first year of the operation. It is ultimately the outputs from this worksheet that the potential investor would be most interested in utilizing while making the initial investment decision.

In addition we have demonstrated the advantage of using this model to explore a worst-case scenario, should the user ever encounter such circumstances while operating the business. The purpose of this second scenario is to measure the profitability of the bed and breakfast during an economic recession. This was accomplished by simply using the same detailed worksheets as our first model, and only modifying the parameters, and input streams to predict profitability during a period of decreased demand.

1. **Descriptions of Scenarios:**

We have used our model to explore two scenarios the first, a best-case scenario, predicting the profitability of The Surf Hotel during excellent economic conditions, and the second explores the worst-case scenario, the potential for profitability during an economic recession. The second scenario is identical to the first, with the exception of the input parameters, and the input streams, which have been altered to account for decreased demand, influenced by the state of the economy. Each scenario achieves the purpose of predicting profitability for the investor by applying the respective economic conditions to explore revenues and expenses incurred throughout the year. Furthermore the model becomes more valuable for its user by demonstrating that it can easily be manipulated for the purpose of comparing alternate operating scenarios.

The first scenario consists of economic figures that would result for operating the bed and breakfast in the ideal economic conditions. With this in mind our room rates, and expected occupancy rates are much more optimistic in the first scenario. The parameters for the room rates charged for our luxury and standard accommodations are $250 and $350 respectively per night. These are rates that are easily attainable in good economic conditions for a luxury inn in its present location. With this in mind we also predicted strength in demand for scenario one as reflected in the input stream by strong occupancy levels throughout the year. In addition the marketing budget was determined to be 5% of revenue earned for the year. This marketing strategy relied heavily on the retention of existing clientele and on positive “word of mouth”, achieved by providing excellent customer service to the existing client base.

In contrast our model for scenario two predicts the profitability for The Surf Hotel during a recession. In these conditions the operation would strive to capture a majority of the market share during a period of significantly reduced demand. In attempting to capture this market share the room rates would be reduced to more competitive levels. In the second scenario we changed the parameters for room rates by one third of the regular price as follows: $180 for standard accommodations, and $270 for luxury accommodations. The stream of occupancy rates was also reduced throughout the year, forecasting the anticipated decrease in demand. In addition the model was altered to reflect a shorter operating period throughout the year so that the business only operates during the six months with the greatest demand. It was deemed unnecessary to operate the business during slower months when revenues would not cover the expenses incurred. In addition, due to the decreased occupancy levels, the staffing levels were also reduced to levels that would still allow for the business to maintain outstanding service standards, yet reduce unnecessary costs. Another modification made for scenario two was the reduction in servings for food needed to account for lower occupancy. Lastly for the second scenario we have increased the marketing budget to 7% of revenue earned, up 2% from the first scenario, in order to attract as much of the market from our competition as possible.

For each scenario the model achieves its purpose in determining the likelihood of profitability for The Surf Hotel. The model also serves the purpose of maintainability by providing important information for alternate operating situations given minor modifications. In this case there were only small changes made to the parameters, and input streams enabling the model to predict the outcome of the business during different economic circumstances. Ultimately the model has achieved its purpose as an invaluable resource to the potential investor for The Surf Hotel by predicting profitability as conditions change.

1. **Conclusions of the Study**

This model has exposed that The Surf Hotel has great potential as a future investment. Ideally the investor would begin the venture during a strong economic period allowing the business to thrive, as modeled with scenario. However even in the second scenario with dire economic conditions, profitability of the business is still possible with a reduced operating period. All in all we would recommend the investor proceed with the purchase of the Surf Hotel.

The first scenario of the model indicates that with ideal economic conditions the bed and breakfast would produce a substantial profit in its first year of operation. The Surf Hotel is legendary on Block Island and prior to closing its doors two years ago had a strong client base. We anticipate much of this client base would look forward to its return. In addition the prime location of the property being right on the beach, in the center of town is ideal for also attracting transient business. Given these two factors demand was expected to remain strong influencing favorable occupancy levels during the first year of operation. It was found that The Surf Hotel would easily achieve an average occupancy rate of 72.5% throughout the 8 months in operation for the year. These levels allowed the profits of the operation to exceed the expenses, producing a total profit of just above $1.9 million for the year. Given the performance in its first operating year, The Surf Hotel would be an excellent investment in a strong economy.

In order to demonstrate the worst-case scenario for the investor we used the model to predict earnings for The Surf Hotel during an economic recession. Though demand would be significantly reduced, we found that the operation still has potential to produce a profit. The scenario in model two considered the reduced occupancy rate due to a decline in the tourism industry that would accompany a recession. The average occupancy rate for The Surf Hotel in the second scenario was 59.8%. However we found that by eliminating two months during low season and operating only six months out of the year the operation would significantly reduce the expenses incurred which would be difficult to exceed in months with a significantly reduced demand. Due to the reduced operating period the operation would adapt an aggressive strategy to capture as much of the market share as possible. The room rates would be reduced by one third, and the marketing budget increased to 7% of earnings, up from 5% in scenario one, to reach a larger consumer base. In addition costs would be cut from staffing, and food because of the reduced occupancy levels. With these modifications in place the operation is still able to produce a profit of $511,000 in its first year of operation.

In conclusion we would recommend the investor proceed with the purchase of the property. As indicated by both models The Surf Hotel is capable of producing a profit even in the worst economic conditions. Based on the results of both scenarios modeled we would recommend The Surf Hotel as a sound investment.

1. **Budget and Schedule Performance**

In order to explain the deviation from our original schedule and budget below is the original schedule and budget followed by the actual to allow for a comparison:

Original

*Planning (12 hours)*

Problem Definition 5 hours

Evaluate 2 scenarios 5 hours

Tasks allocation among Team 2 hours

*Modeling (30 hours)*

Implementation of the model

and its components 30 hours

*Documents (33 hours)*

Midpoint Status Report 3 hours

Final Report 10 hours

User Guide 10 hours

Reference Guide 10 hours

*Execution (5 hours)*

Two Scenario Selection 2 hours

Observe the model behavior 3 hours

|  |  |  |
| --- | --- | --- |
|  | *Date* | *Milestone* |
| 1 | 5:35 Oct. 8 | Turn in Project Proposal & Requirements Checklist for Word Documents |
| 2 | October 9 | Begin Problem Definition, Objectives, Work Allocation, and Excel Checklist |
| 3 | October 17 | Finish Problem Definition and Objectives |
| 4 | October 24 | Finish Work Allocation and Excel Checklist |
| 5 | October 25 | Begin any revisions necessary; Begin developing model |
| 6 | 5:35 Oct. 29 | Turn in Midpoint Status Report & Requirements Checklist for Excel Documents |
| 7 | November 29 | Finish model construction with final conclusion to problem |
| 8 | December 1 | Begin User Guide, Reference Guide, and Final Report |
| 9 | December 16 | Finish User Guide, Reference Guide and Final Report |
| 10 | 5:35 Dec. 17 | Turn in Final Report, Reference Guide, User Guide, and Project Model |

Actual

*Planning (12 hours)*

Problem Definition 5 hours

Evaluate 2 scenarios 5 hours

Tasks allocation among Team 2 hours

*Modeling (45 hours)*

Implementation of the model

and its components 45 hours

*Documents (33 hours)*

Midpoint Status Report 3 hours

Final Report 10 hours

User Guide 10 hours

Reference Guide 10 hours

*Execution (5 hours)*

Two Scenario Selection 2 hours

Observe the model behavior 3 hours

|  |  |  |
| --- | --- | --- |
|  | *Date* | *Milestone* |
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| 5 | October 25 | Begin any revisions necessary; Begin developing model |
| 6 | 5:35 Oct. 29 | Turn in Midpoint Status Report & Requirements Checklist for Excel Documents |
| 7 | December 10 | Finish model construction with final conclusion to problem |
| 8 | December 10 | Begin User Guide, Reference Guide, and Final Report |
| 9 | December 16 | Finish User Guide, Reference Guide and Final Report |
| 10 | 5:35 Dec. 17 | Turn in Final Report, Reference Guide, User Guide, and Project Model |

At the time of our Mid-Term Status report The Surf team was on schedule and had adhered to the budget set forth in our proposal. However as we neared the project deadline we deviated from the original plan due to the model consuming more time than expected. We had originally planned for 30 hours to be dedicated to the model but actually spent around 45 hours dedicated to building the model. As the model progressed, there seemed to always be an addition or improvement to be made for enhancement. In addition the formatting and inspecting of the worksheets took longer than had been accounted for in the original budget.

The delay in the completion of the model caused the rest of the final project including the final report, user guide, and reference guide to commence at a later date than expected. These documents were originally slated have been started on December 1st, however the date was pushed back to December 10th upon completion of the model. The model was the main source of deviation from our original plan and looking back it would have been wise to set aside more time for the model, and as a result schedule to begin this sooner than originally planned.

1. **Lessons Learned**

In this section we have listed a few of many lessons we have each learned throughout the progression of the final project, they are followed by a brief summary:

a. Apply Formatting, Ripple Principle as you Build

Throughout this class we have used naming and the ripple principle learning first-hand the importance of each. As such there were periods while building the model that one becomes so consumed with the task that you continue moving forward with your vision all the while omitting these two essential features for building a complex model. Having to return to part of the model to apply the ripple/naming is a waste of time and extremely frustrating when you are under the impression that you have “finished”.

b. Plan the Model Before the Mid-Term Status Report

The mid-term status report requires you to essentially create a road-map of the model you intend to create. It is much more beneficial at this time to really create a “shell” for the end result you expect to achieve from creating this model. Meaning essential worksheets should be determined with the parameters, inputs needed for each. At this point you are expected to have decided upon your parameters, input streams, and your expected outputs. Our mid-term status report lacked essential details for creating the model. We also realized that we created proposed inputs in our mid-term report that were unnecessary for our outputs. This forced us to submit a request to change the parameters listed in our initial mid-term status report. Had we created our “shell” consisting of blank worksheets with the contents expected for each one, we could have avoided the miss-step.

c. Begin Early: The Model Takes Longer than You Think

Originally we had budgeted 30 hours for the model to be completed, however we deviated from this plan as the model took closer to 45 hours to complete. This did cause a delay in our original schedule since the reports are dependant upon this part of the project. The model itself came together smoothly, however there always seemed to be formatting improvements to be made. In the end the extra time spent was well worth it since we are proud of the end result. We feel that we accomplished our goal to create a robust, user-friendly model that can be easily maintained for future use.

d. Prepare on Your Own Before Meeting in a Group

Group meetings were found to be much more productive when each member had prepared on their own prior to the meeting. When each of us was versed in the requirements for the task it was much easier to delegate effectively and helped to avoid wasting time. It also allowed us to formulate ideas regarding making improvements to the existing documents/model.

e. Creating a Group Discussion Board Saves Time

We quickly realized it was much more productive for us to create a discussion board that each team member had access to post documents, rather than to e-mail back and forth. It saved a lot of time and avoided having numerous drafts of the same document that would have to be re-formatted to match each time. This was a lesson that luckily we discovered after the first deadline, and improved the process for the remaining deliverables.

f. Communicate Changes in Progress

Though the group discussion list proved to be an excellent resource it is extremely important to communicate changes being made to model. Unfortunately there was a situation when two group members had been modifying the model at the same time (different locales), therefore one document had to be formatted once again to include the changes that had just been added (essentially double work). If communication was clear indicating the changes that were in progress this situation would have been avoided.

g. Delegate Responsibilities, and Expectations Effectively

Our group worked very well together throughout the entire process, using our time before/after class to brainstorm and communicate progress. Due to various schedules it was extremely difficult to all meet in one location. In the beginning we procrastinated, but once we assigned tasks, and internal deadlines, the project progressed nicely. Once tasks were delegated we created our own deadlines making it possible to each other’s work and make modifications/suggestions.