FenDog

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Final Report

Revision Number: 3.0

1. **Problem statement and approach**

The goal of the members of the FenDog team was to come up with a business model delivering an outcome that would illustrate which scenario would show the most profitability in the operation of a sausage stand outside Fenway Park. The business would be operated during the season when the Boston Red Sox are at home.

The team will review in this report the steps taken to come up with the project, the steps taken to build the project and why this project was selected, keeping in mind what was trying to be accomplished. The process leading up to approval of the project proved to be a long and, at times, frustrating path.

The interest of the team at the outset was to come up with a business model that would reflect many of the things taught in class that would also imitate real world experiences. The team began the process by deciding what business would be the easiest to understand that would involve a model. The team discussed several possible models in the form of hotels and real estate based and rentals on the experience of one of the team members.

As it turned out, the conclusion was that there was too much involved to do a project involving real estate. There would have to be an understanding of business finances to have the ability to determine whether or not the project delivered on reviewing two scenarios in evaluating a profitable enterprise. As a result, the team decided to go in the direction of an easy to understand business operation, choosing to do a model based on a street vendor at Fenway Park.

Street vendors at sports facilities and busy downtown areas are a familiar sight for many people around the country. It was decided that the project would involve a school teacher who had a side business of selling hotdogs at Fenway Park. (The team later changed the featured food product to sausages.)

The original project submitted called for the vendor to decide if a second sausage cart would provide enough of an income for the retirement years of the proprietor. Because the second cart would require additional employees, expenses and time, the model called for the street vendor to weigh the two options of whether to continue with his existing cart or add the second cart.

As a result, the goal of the model was to show if the second cart would generate the kind of income that would allow the teacher to retire. At the time, the team thought that this would be a good model the group could use to accomplish its goals.

It was believed that this proposal project would be a simplified version of a model that would reflect real world experiences that entrepreneurs encounter in many communities where vendors of this type operate.

The team had decided it would base the model on a twelve week period. But, it was also decided to present a second scenario of operating the business for the full season. This became a problem for the team in trying to make true comparisons of the two periods, making it difficult to compare each one equally. It was eventually decided that it was better to make two comparisons of twelve bi-weekly periods for each scenario the team would devise.

During the course of the semester, the consistent feedback the team was getting from the Teaching Assistants was that the original project had the potential for a model. However, based on the proposals submitted, there were continuing comments that this model was becoming more of a calculator. It was also communicated to the team that there was also a need to develop more dynamic dependencies that were illustrative of a real world business situation, something that was lacking in the proposed project.

The team struggled to come up with a model that would be approved. The submitted proposals had a good portion of the input steams were calculated fields and not inputs, such as the cost of inventory, salary and wages and the employees needed, based on demand. These calculated fields were not user modified, which made it more of a tool than a model.

It wasn’t till late in the semester that the conclusion of the team and teaching assistants was to eliminate the second cart in the proposal. It was thought this would make the project simpler and put the focus on the one cart. That way, the team would be able to model different foods, costs, different staffing and good versus bad season input streams.

The team ultimately prevailed as we decided with the teaching assistants to make the input streams be the varying temperature of the season, and the varying attendance at the baseball games and the number of winning games in each period. The model could then calculate demand of different products depending on weather and vary the demand depending on attendance and whether the team was winning or losing.

When those issues were finally resolved, the project was approved and the team was finally able to focus on putting together a successful model. Having a better understanding of what had to be done made a big difference.

1. **Descriptions of scenarios**

In approaching the creation of the two scenarios, the team took in several interesting factors that would play out in developing the model and the outcomes. The team learned that there are some noteworthy issues that came into play regarding the attendance at games and how this would have an impact on the model.

When the Red Sox are in town and experiencing a winning or losing season, different fans attend baseball games. This turned out to make a difference in the buying habits of patrons going to see the Sox play. As the Red Sox have had many years of continuous sell-outs, most of the people who purchase tickets are season ticket holders. The owners of the tickets usually went to games when the Red Sox were winning. Many of those season income ticket holders were companies, or patrons in a higher income bracket, able to afford tickets many others were unable to afford. The buying habits found that the season ticket holders and high income patrons were usually to bypass the street vendors in favor of the food stands in Fenway Park. The food items that were available in the ball park were pricier than what the street vendors offered. But, to these fans, price was not as much of an issue.

The season ticket holders were often “fair weather fans”. They didn’t show up to many games when the Red Sox were losing. These patrons would usually pass on their tickets to administrative support personnel, friends or ticket agencies that were licensed to resell tickets. Therefore, most of those patrons who attended losing games were families from lower income brackets. The patrons who were given the “hand me down” tickets would usually patronize the street vendors instead of the ball park food outlets. These fans were more sensitive to the higher prices charged at Fenway and they appreciated paying less outside the ball park.

The scenarios that the team came up with were devised to figure out how to respond to those two audiences. The first scenario created was to offer a more varied menu, to see if a larger menu would mean greater revenue. This scenario was created in response to the high attendance when the season ticket holders attended games. The thought was that the addition of more items would be enough to appeal to these fans. Among these varied menu items included clam chowder, funnel cakes, soft pretzels and chicken fingers. The thinking was that offering more of a variety would keep sales from going flat, but wouldn’t necessarily require additional personnel.

The second scenario called for a more basic menu of just water, sausage and soda. This scenario would require additional personnel due to the high influx of business. The team found that there was also less usage of ingredients and paper goods because there was less variety of food products that were being sold. When more fans were purchasing from the food cart, an addition of more employees could improve throughput and more customers could be served the smaller product line. If the difference in the number of customers was great enough to require extra personnel, then greater simplicity of product line would be required, but increased throughput could compensate for the reduced sales from the larger product mix. Therefore, the model handles two different scenarios, either a high-product mix or more employees.

When the number of games is over a certain number (determined to be 5 games per bi-week for the starting version of the model, but this can be changed), the model determines that it is a winning season. The model then calculates the number of people purchasing from the cart. After all of the calculations are made, if the user inputs that there will be extra employees, then throughput to the cart is increased. We originally put .75% as the percentage of improvement, but this number could be changed.

Adding to both scenarios was the temperature on the day of games. The team found that the weather made a difference in what items would sell. The sausage stand would serve such items as hot chocolate and clam chowder when the weather was cold. In warmer temperatures, lemonade did well.

1. **Conclusions of the study**

Based on the outcome of the two scenarios, it was discovered that scenario 1 was more favorable. The finding in scenario 1 of a more diversified menu and product mix without adding employees produced more sales as opposed to scenario 2 with the basic food items and more employees. For one thing though, it wasn’t a burden, the cost of labor expenses was a savings for the sausage stand when there wasn’t the need of adding more staff. Combining both the pay and the fringe benefits, made it a little more costly when it was all added up in comparison to scenario 2, even when sales were entered as a factor.

However, the real answer shows that a more varied menu meant that each customer was spending more money at the cart, and that meant increased profits. The additional food items seemed to create additional sales, compared to the sales in the other scenario with a different audience. Food costs could have become a factor in the profit, but the model shows us that the increased costs don’t hurt profits at all. Having each customer buy more items, meant more profits than trying to get more customers through the cart.

This was surprising, as we originally thought that more customer throughput would make the best scenario. However, the way that sales are made at the ballpark is that there is a large amount of customers at the vendor carts before the game, but very few after the game starts. That means that, overall there is an increase in throughput, but not enough to offset the huge lines at the beginning of a game and then the lull during the game. The number of employees that would be necessary to increase throughput significantly before a game would become cost-prohibitive.

1. **Budget and schedule performance**

Below you can see the variation in the budget and schedule performance from our planned time spent to the time actually spent on each piece of the project. As one would predict, most items took more time then what was originally anticipated. The definition of the problem, which we predicted would take only five hours, we had such significant difficulties that it took more than three times the amount of time originally budgeted.

Setting up the model took 60 hours, rather than the 40 hours predicted. Most of this increase in time was due to revising the model after it was originally created, tweaking different input streams and calculations so that they made sense.

Documentation always takes more time than anticipated. Knowing this, we gave what we thought were large estimates for this part of the process. Even given our large predictions, documentation still took more time than we thought. Most of the increases were modest, but the reference guide was the most challenging.

The only times that were less than the original budget were in the execution of the model. Once the model is finished the different scenarios take very little time and observation, which only took 2 hours instead of 3 hours.

Overall, the project took a total of 116 hours, which was 27 more hours than our original budget, or 30 percent more time. The project was very challenging and the team learned a lot, but we hadn’t anticipated the level of effort accurately.

1. Budget

Budget Actual

Planning

Definition of Problem……………..…………5 hrs 16 hrs

Team Allocation…………………… ……….2 hrs 2 hrs

Schedule Creation……………………..……..2 hrs 2 hrs

Modeling

Implementation (model & components)…….40 hrs 60 hrs

Documents

Midpoint Status Report……………………….5 hrs 6 hrs

Final Report……………………………….....10 hrs 11 hrs

User Guide…………………………………...10 hrs 12 hrs

Reference Guide……………………………..10 hrs 14 hrs

Execution

Exploration of Two Scenario………..……….3 hrs 1 hrs

Observation…………………………….…….3 hrs 2 hrs

Total Time……………………………………………..90 hrs 116 hrs

1. Schedule

* 10/07/2010 Turn in project proposal and requirements for Word documents

Team discussed concept and requirements for proposal.

* 10/15/2010 Finish problem definition and objectives

Agreed upon definition and goal to submit proposal

* 10/18/2010 Submit second revision of proposal

Team interpreted feedback on project rejection. Problem was inputs became tool.

* 10/21/2010 First draft of Excel checklist and rough outline of the model

Still working on resolving rejected proposal dealing with calculated oriented inputs.

* 10/28/2010 Turn in mid-point status report and requirements checklist for Excel documents

Submitted status report advising teaching staff that team was unable to

concentrate on a complete model due to input issue.

* 10/31/2010 Submit third revision of proposal

Team submits proposal again after feedback on how to deal with inputs.

* 11/17/2010 Submit fourth revision of proposal

Team meets with teaching assistant to go through each issue cited

In reworking project proposal.

* 11/29/2010 Finish first draft of model construction

Team able to draft model after approved proposal and better understanding of issues.

* 11/29/2010 Finish draft of model construction with final conclusion to the problem

Completed creation of model and worked on fixing bugs.

* 12/09/2010 Rough draft of user guide, reference guide and final report

Team collaborating with each other on required documents.

* 12/16/2010 Submit final report, reference guide, user guide and project model

1. **Lessons learned**

The team learned quite a bit during the course of the semester in developing the project model and the documentation involved. Each member learned that group dynamics in a project such as this gave each team member an education in working together, putting the goal of a successful project first, in spite of earlier frustrations in getting project approval.

The team realized from the beginning that we could identify the strengths and weaknesses of each team member. This became an obvious factor as the various tasks were undertaken. One team member was more adapt towards working comfortably in creating spreadsheet models, another was very detail oriented in picking up on various things in requirements that weren’t originally identified and a third was very helpful in putting the team’s thoughts on paper.

The problem, as mentioned earlier in this report, was that we couldn’t really understand what was required in the model. We didn’t properly understand input streams. Therefore, our input streams were always calculated, and didn’t require input of different numbers over time. Through various proposals, we continually missed understanding of what was required of the input streams, distracted by our owner’s story, rather than focusing on the requirements of the project. Each time our project proposal was rejected, we would communicate with the teaching staff via email and believe that we had a better understanding of the problem. During the period that the team was seeking project approval, we repeatedly missed out on understanding the issues that were raised each time the project was rejected. Therefore, we missed crucial time that could have been spent delivering on the project.

Feeling frustrated, but not giving up, it wasn’t until the latter part of the semester that the team sat down with a teaching assistant and went through each individual input stream to get an understanding of what was wrong. From that point on, everything clicked and fell into place.

The team strongly feels that if they had sat down with the teaching assistant at the beginning of the semester and thoroughly reviewed each of the issues that prevented project approval, a lot of time and headaches would have been prevented. The team is convinced of that because the team communicated through email that crucial understanding was missing. It was more helpful when the time was taken to go through each step of the model with the teaching assistants, which finally created a better understanding.

Another thing that the team learned was that we were able to function without having a project manager despite the encouragement to assign someone. The personalities allowed for this group to function without a “boss.” Perhaps the size of the group was a factor. The lack of egos and a willingness to work with each other didn’t create the need for one leader to oversee the project. Each team member was a leader overseeing what each other was doing. However, if there had been a project manager, the team wouldn’t have been scrambling around with last minute deadlines, trying to complete work that would have been done sooner with one person in charge. We learned that one project manager might have helped us to focus earlier, and get our project approved earlier, as one person would have felt the responsibility to get the issues resolved.

In line with this learning point, the team could have done better in utilizing its time. It wasn’t till deadlines were coming up that the team would work in completing a project assignment. Even with the schedule outlined, giving everyone an idea of how to plan their time, it was not enough to avoid the rush near the end of the semester in completing required work.

Not that this is an excuse, but team members found that they were putting off working on the project due to the challenging homework assignments. The homework would require a lot of time and effort, creating a feeling that the project could be addressed later. Despite this, if the team could forecast that it would have had trouble getting the project approved, the team might have worked more diligently in allocating its time earlier in the semester. The team learned from this experience how it could approach projects like this if confronted with something similar in the real world.

The team was fortunate that one of its members was able to take advantage of the technology of that member’s workplace. The advantage was the creation of a website that the team was able to post its various documents for each member to review. However, there could be confusion at times over what was the most recent document that had been revised by one of the team members. We believe that we did spend less time worrying about versions than we would have without a website that allowed posting in one place. We learned that technology helping us to manage versions of a project can be very beneficial.

Something else the team learned was how valuable the material delivered at each class made a difference in the understanding of how to be successful in financial spreadsheet modeling. The homework assignments were grueling and always challenging. However, the assignments gave each team member the tools to produce a project model in which the group can take pride in.

The team feels satisfied with the choice of a project that was submitted. As previously mentioned, there were many discussions on how the team could come up with something that would be easy to work with. The real estate models sounded interesting and challenging. However, the team wanted to work on a project that would be clear and easy to understand.

Though the sausage stand was easier to work with in comparison to highly complex real estate models, the team learned that there is a lot more involved than anticipated. The attention to details in running the sausage stand business was an eye-opener for some members of the team. The many variables involved showed us how complex the operation of a sausage stand can be.

In some respect, the sausage stand business is a mini-version of a restaurant without leasing or owning the real estate. The operation of a restaurant is a complex business entity and this project was a reflection of what is involved in a successful venture.

It was felt that the team as a whole didn’t realize at the beginning how much is involved and perhaps could have been better prepared in knowing how to approach the many varied issues that were involved. Perhaps, if the complexity had been taken into consideration, it could have had an impact overall on planning and time for the course project.