SJStudio
Final Report
Revision 3
 **1. Problem statement and approach**

Sarah Jane Studios (SJS) is a design company that specializes in original vintage children’s illustrations. SJS sells two product categories, art prints and stationary, online through its Etsy store and wholesale to various retailers. SJS is interested in developing a new product line, fabric patterns, and would like to assess the feasibility of adding this product category to its operations. Additionally, SJS is working with a potential investor to help the company move forward, and needs a better understanding of the current financial state of the company.

**Sample Only**

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SJS does not currently have a method for projecting sales, income, expenses, or any relevant financial data that is needed to make an informed decision. SJS would like to enhance their ability to project financials and improve their decision making capability to be based on actual financial data rather than estimates and suspicion. Complicating this desire is the lack of financial and technical knowledge held by SJS personnel, as the owner is an artist, not a financial or systems analyst. Another issue is that SJS does not currently have the resources available to hire a consultant who can deliver a financial model that is capable of producing accurate projections.

To provide a solution to SJS’s problems, we decided to undertake a project to develop a spreadsheet model that will display the financial projections needed by SJS to make informed decisions. The spreadsheet model is specifically required to assist SJS in determining the value of adding a new fabric pattern product line and analyzing the financial standing of the business. To meet these requirements, the spreadsheet model was developed to contain relevant financial information, organized in an easy to read format, which will allow SJS to analyze the model and make decisions that they are comfortable with. At the conclusion of this project, SJS should be able to make business decisions that are within their means and provide the best opportunity for the business to succeed.

Before design of the model was started, it was decided that a discussion with SJS was needed to gather requirements and ensure that both SJS and our team were aligned in regards to the requirements and objectives of the project. At the adjournment of this meeting, the following objectives were communicated and agreed upon:

*Objectives:* Provide Sarah Jane Studios with a business model that will:

1. Provide the information needed to analyze whether or not a fabric pattern line should be added to the portfolio of existing products.

2. Provide the information that will display which product line is most profitable.

3. Provide a best case and worst case scenario for both adding and not adding the fabric pattern line.

4. Provide the ability to alter sales price and number of sales in the projections so that Sara Jane Studios can analyze the effects of changing sales when making their decision.

Once the objectives were agreed upon, the team started to design the model. During design, it was decided that the model should contain expense, revenue, income, and profit margin data fields, and the information should be broken down into product and expense categories. Design versions of the model were shared with the business owner to ensure that the data being incorporated into the model was sufficient. After a couple of modifications, it was apparent that the model contained all of the information that SJS was looking for, and was presented in a user friendly format.

After signoff on the design of the model was received from SJS, the team decided to assign leads to the major deliverables of the project. An owner was assigned to the development of the model, the creation of the user guide, the creation of the reference guide, and the creation of the final report. The owner was responsible for developing the first draft of their respective deliverable, while the other team members were responsible for reviewing the deliverables that they were not owners of.

After all deliverables were developed and reviewed, they were shared with SJS. The deliverables were not considered complete until SJS accepted a final version of each deliverable.

**2. Descriptions of scenarios**

The model contains two scenarios that will be explored to help SJS with their decision. The first scenario is a best case scenario that predicts the financial outcome during periods that are considered high demand for SJS products. The second scenario is a worst case scenario that predicts the financial outcome during periods that are considered low demand for SJS products. The scenarios are identical, except that the input parameters are changed to reflect high demand for the best case scenario, and low demand for the worst case scenario. The model also provides the ability to alter the costs associated with producing the products, so the scenarios can be altered to meet current or future economic conditions. The value of this model is its ability to provide scenarios that predict the profitability of the business in any economic condition, and for any variation of SJS product demand.

The inputs on the first scenario simulate SJS sales that exceed expectations. This scenario allows SJS to see what the financial standing of the business would be under conditions that are much more optimistic than the second scenario. While the scenario is optimistic, it is realistic, and allows SJS to consider what the financial standing of the business would look like after adding or not adding the fabric pattern product line during ideal business conditions.

Conversely, the inputs on the second scenario simulate SJS sales that are below expectations. This scenario allows SJS to see what the financial standing of the business would be under conditions that are not ideal, but realistically possible. There are many factors that could lead to decreased sales and/or increased expenses. This scenario provides SJS with the ability to consider what the financial standing of the business would look like after adding or not adding the fabric pattern product line during a downturn in business conditions.

By providing these two scenarios, SJS should be able to predict the outcome of adding the fabric pattern product line based on current or future business conditions, whatever they currently are or predicted to be. SJS can also account for the best and worst case scenarios and put measures in place to account for both. SJS can actually produce forecasts that allow them to account for not only the best and worst case scenarios, but also the most likely. The flexibility of the model and the two scenarios can meet any number of conditions that SJS would like to simulate.

By providing the two scenarios, flexible inputs, and the display of data broken down into product and expense categories, SJS can determine which products are most costly or most profitable. SJS can then use these estimations to project how each product relates to bottom line totals in different business conditions. Not only does this provide the ability to determine if a product line should be added, it also can be used to decide if a product line should be dropped. The two scenarios supplied to SJS will prove to be a valuable model that predicts profitability of existing or new product lines as conditions change.

**3. Conclusions of the study**

After analyzing the model, it is apparent that SJS not only needs to add a fabric pattern line, but other avenues that will increase sales with a minimal increase to expenses should be explored. When a fabric pattern line is added, the first scenario revealed that SJS has the ability to earn $10,374 of net income when sales are forecasted aggressively, and actually operate at a loss of ($8,375) when business conditions are not as favorable. Without adding a fabric pattern line, the first scenario results in a net loss of ($2,052), while the second scenario results in a net operating loss of ($16,658). By adding a fabric pattern line, SJS greatly reduces the risk of operating at a loss, and significantly increases their earning potential.

When taking a closer look at the model, we can see why adding a fabric pattern line makes so much sense. In both scenarios, the fabric pattern line becomes the product line with the highest profit margin. It is in the second scenario where this becomes critical, as the fabric pattern line carries the business as the only product with a positive profit margin at nearly 16%. The low cost of producing fabric patterns, coupled with the product’s ability to generate decent revenue, make fabric patterns a valuable product during dire business conditions. These are the characteristics that give the product the potential to become the cash cow of SJS.

As we start to extend our analysis to the other product lines, prints become the product that requires more attention. The operating expenses associated to prints are the highest of any existing product line. Sales numbers for prints need to be high for the product to become profitable, as the line operates at a loss in the second scenario. In the first scenario when sales numbers are higher, prints generate $536 of income. The high operating expense results in a high sales price and the product line must sell well to become beneficial to SJS.

Stationary is a solid product line in both scenarios. Stationary have a slightly higher operating expense, but it is also the product line with the most demand. The demand for stationary is what makes it the most valuable product of the existing lineup. If it were possible to lower the costs associated to producing the stationary, the product could become highly profitable. It is suggested that SJS explore scenarios that would allow them to reduce the operating costs of stationary.

If a fabric pattern line is not added, SJS would have to consider the possibility that the business could be facing a situation that would require them to decide if staying in business is worthwhile or not. Without an additional product line, the risk of operating at a loss becomes much more realistic. Fabric patterns present an opportunity to add a product line with low costs and high demand. Not only should SJS add fabric patterns, they should seek similar opportunities to increase their product portfolio.

When a more holistic analysis is done to compare the two scenarios, it is clear that SJS must strive to meet the sales forecast of the first scenario. The difference in revenues and net income that result from the the obtainable increase in sales should be a motivating factor that SJS aggressively pursues. To meet these sales goals, SJS should consider improving operations related to marketing, sales, and research and development. Marketing efforts such as customer loyalty, brand awareness, and social marketing are areas that SJS could explore to increase sales. Similarly, sales strategies such as price changes, special offers, and rewards could be explored. Research and development of existing or new products will ensure that SJS is producing quality products at the lowest possible cost.

The model that was presented to SJS will allow the business owner to consider all of the options presented at the conclusion of this project. The model will provide SJS with the information that is needed to make informed business decisions. The project team was able to analyze the data and provide recommendations, but it is the completed model that will benefit SJS the most. SJS now has the capability to make their own projections, analyze any business scenario, and be confident that the decisions being made will have positive results.

**4. Budget and schedule performance**

The analysis of the budget and schedule performance is based on the projections made in the proposal and midpoint status reports, as well as the actual effort that was recorded throughout the semester. Please refer to exhibit one to view the details of the projected and actual budget that is analyzed in this section.

The project team was able to meet the target date for all deliverables that had to be submitted to the instructor, but often failed to meet internal deadlines that were set. It was apparent that the project team was motivated to meet deadlines that would negatively impact our academic standing for the course if the dates were missed. However, the team would easily adjust or look past deadlines that were set internally by the team. The internal deadlines were set to help the team avoid a situation where a final push was needed in the last days of the semester to complete the project. As noted in the lessons learned section, the project team would often delay project meetings or deadlines to repurpose the scheduled time for problem sets. It is difficult to assess what the impact of the delays was, as we were able to complete the project materials within the deadlines set by the instructor.

Overall, projected budgets were accurate, as there was only a 2.5 hour overage in the actual budget when compared to the projected budget. However, there were some milestones that had a greater variance than others. The variances were mostly in the creation of the final deliverables: the final report, user guide, and reference guide. There was a total of 3.5 additional hours spent on these milestones than projected. The team was able to recover some of this time in other areas, which prevented the overages from becoming a major concern.

The scheduled due dates that were not met can be attributed to two project details: the model being completed later than anticipated, and the team’s emblematic desire to delay meetings and internal deadlines. The delayed completion of the model had a trickledown effect on the remaining milestones. Many of the other milestones could not be started until the model was complete. The team was able to commit additional effort when required to meet deadlines set by the instructor, but could have benefited if internal deadlines were met more consistently.

**5. Lessons learned**

Our team was able to work well together to complete the project without any major setbacks. This was due to the willingness among all team members to reach consensus, step up when necessary, remain flexible, and be courteous and respectful. While working on this project it became clear that having a team of hard working, intelligent, and dedicated team members was a key ingredient in successfully completing our project. There can be a proven, well defined set of procedures and processes to complete a project, but without the right people working on the project, those processes and procedures may not be enough to ensure success. While we were fortunate to have a team of good people that worked well together, there are changes we should consider making to increase effectiveness and/or efficiency and produce even better results in the future.

*Team launch* - The formation of our team was informal and it took some time for us to find and be comfortable with our team's working style. We did not conduct formal team building exercises or try to determine individual roles on the team, instead we worked to generate consensus and cultivate collaboration. While the team was able to successfully communicate and build relationships, the process might have been easier if there was a more formal "get to know your teammates" period. Starting with more frequent meetings to foster trust and define procedures before launching project specific meetings. The team was successful and ultimately enjoyed the more informal and collaborative approach that was taken. There was not much of a negative impact to the informal approach on this project, but a project where startup time is more limited, more frequent meetings at least during the initial stages of forming the team would be beneficial.

*Meeting structure* - Team meetings were informal, without facilitation or a set process for creating agendas or publishing meeting notes. Nevertheless they were effective in that the team had productive discussions, formulated strategies and tactics, made decisions, and determined next steps. Additionally each team member understood the team's strategy and what we expected of each other. Although a more defined meeting process might have been more efficient, the informality of our meetings allowed us to maintain consistency and adapt to the changing nature of the project. In the future, it would be smart to explore ways to increase efficiency without sacrificing communication, consensus, or collaboration. Selecting a team member to take and publish meeting notes, conducting more meetings in person (if possible), and preparing each meeting's agenda in advance are all examples of changes that we would like to implement in the future.

*Model creation* – While our model was created within the budget, it was completed later in the timeline than originally intended. This had many downstream effects, as the reference guide, user guide, and final report all had to be delayed until the model was complete. There was still plenty of time to complete the guides and final report, but we may have benefited if the model was completed earlier by having more time to go back and enhance the model after the guides and report were complete. The team did not have much time to add the “nice to have” enhancements to the model that were discusses throughout the semester. While the team is satisfied with the model that was created, there is a feeling that an opportunity was missed to add additional functionality.

*Record lessons learned* – While crafting the lessons learned for the final report, it was realized that we should have recorded lessons as they occurred during the semester. There were multiple times during the semester where we realized certain aspects of the project would have been easier if they were handled differently. The problem is that it is hard to recall all of these scenarios after the fact. If lessons learned were recorded as they happened, we would not have to spend the time recalling details weeks after the fact, and would be able to more effectively address the problem areas of the project.

*Time management* – Project meetings had to be rescheduled often due to team members needing meeting time to complete problem sets and other course related tasks. The team was ultimately able to work around the schedule changes, and the flexibility of team members was appreciated, but the lack of time management did alter the ability of the team to meet scheduled deadlines. Improved time management would benefit each team member individually and also enhance the velocity of the project.

*Model design and use of coursework* – There are many aspects of the model that use items that were studied throughout the semester, but the project team would have liked to put a few more course items to use in our model. Inventory modeling, spreadsheet project management, and graphics are just a few of the course items that we would have liked to leverage within our model. The inability to incorporate this functionality into the model can be attributed to the delay in getting the model created, and the failure to include the desired functionality in the original design. A greater emphasis would have been placed on integrating these items into the model if the expectations were set in the design.

**6. Appendix**

Exhibit 1

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| --- | --- | --- | --- | --- |
| *Milestone* | *Target Date* | *Actual Date* | *Projected Cost (in hours)* | *Actual Cost (in hours)* |
| Research project | 10/1/2010 | 10/5/2010 | 5 | 4 |
| Project proposal | 10/7/2010 | 10/7/2010 | 3 | 4 |
| Word requirements checklist | 10/7/2010 | 10/7/2010 | 2 | 3 |
| Develop project plan | 10/14/2010 | 10/14/2010 | 2 | 1.5 |
| Data collection | 10/22/2010 | 11/1/2010 | 4 | 4 |
| Design and develop model | 10/28/2010 | 11/14/2010 | 6 | 6 |
| Midpoint Status report | 10/28/2010 | 10/28/2010 | 3 | 2 |
| Excel requirements checklist | 10/28/2010 | 10/28/2010 | 2 | 2 |
| Update project plan | 10/28/2010 | 10/28/2010 | 2 | 2 |
| Complete model | 11/11/2010 | 12/4/2010 | 4 | 3 |
| Draft user guide | 11/18/2010 | 12/12/2010 | 3 | 4 |
| Draft reference guide | 11/18/2010 | 12/12/2010 | 3 | 4 |
| Draft final report | 11/25/2010 | 12/12/2010 | 6 | 7.5 |
| Complete user guide | 12/2/2010 | 12/14/2010 | 2 | 4 |
| Complete reference guide | 12/2/2010 | 12/14/2010 | 2 | 4 |
| Submit model to client | 12/2/2010 | 12/14/2010 | 1 | 1 |
| Update model based on client feedback | 12/6/2010 | 12/15/2010 | 3 | 3 |
| Client acceptance | 12/9/2010 | 12/15/2010 | 1 | 1 |
| Complete final report | 12/15/2010 | 12/15/2010 | 3 | 1 |
| Review all documents | 12/15/2010 | 12/15/2010 | 2 | 1 |
| Submit project | 12/16/2010 | 12/16/2010 | 1 | .5 |
| *Total Cost* |  |  | 60 | 62.5 |