Jacobs division essay

After completing the analysis and reviewing the NPVs and IRRs for each option, labor intensive and capital intensive, Soderberg should recommend that the Jacobs division move forward with production of Silicon-X using the labor-intensive option. The NPV and IRR methods make the same decisions if used for independent projects however, since these projects are mutually exclusive, the best NPV option should be used.

In this case the NPV for the labor-intensive option is positive at twelve percent, sixteen percent and twenty percent while the capital option is only positive at twelve percent and sixteen percent.

The labor-intensive option meets the expectations for both the company guidelines and Mr. Reynolds' personal guidance for the Jacobs Division. The company guidelines state that a return of sixteen percent for new products or processes is expected and Mr. Reynolds guidance is that he " tended to look for at least 4 percent more than the company standard before becoming enthusiastic about a project. With the labor-intensive option, the Silicone-X project should be undertaken.

One of the key advantages that weigh in favor of undertaking the Silicone-X project, outside of the NPV evaluation, is that with the labor- intensive option, Silicone-X could be on the market within a year. With the capital-intensive option the plant will likely take " two years to get the plant on stream, and the first year's operating volume was likely to be low-perhaps 700, 000 pounds at the most. " So, with the capital option plant, the first two years would have zero production and the third year would have almost two thirds the plant as unused capacity.

Soderberg states that he is unsure of the demand for Silicone-X and indicates that the demand could be as low as 500, 000 pounds and as high as 2 million pounds. In the event that Silicone-X only generates demand of 500, 000 pounds, the remaining two thirds of capital-intensive plant is wasted capacity.

For the labor-intensive plant, if demand should drop, personnel could be laid-off reducing costs. The problem arises with the labor intensive plant if demand exceeds 1. 5 million pounds.

In the event of increased demand, increased production needs can be addressed with additional shifts or instituting a seven day operating schedule with three operating shifts.

In both the labor-intensive and capital-intensive options, the break even point at a per pound price of $1. 90 will likely occur in the first year of production which as stated earlier will occur within a year of the decision to move forward with Silicone-X. The labor-intensive option break even point is at 540, 000 pounds which will likely be accomplished by the end of the first year of production.

By contrast, the break even point for the capital-intensive option will be at 325, 900 which, even in the best scenario, will occur a year after production would start at the labor-intensive plant.

Soderberg is concerned with the introduction of competition and the pricing for Silicone-X. In industry, it is best to be first to the market with your product, and if this is not possible, then your product should be superior. In

the case of Silicone-X, there is no patent protection and there is no foreseeable product that is superior, it is important that the company that manufactures this product for sale be first to the market.

In this case, competition will likely take a year to gear up after the introduction of Silicone-X giving the Jacobs Division two years of competition free sales. After the initial 540, 000 pounds, the remaining sales are profit. In the event that this product does not excel in the market place, the initial capital outlay for the labor-intensive option would not be lost as this equipment is very adaptable.

This is not the case for the capital-intensive option, where this equipment would likely be sold at a significant loss.

From the information presented above, the labor-intensive option is the best path forward for the production of Silicone-X. There is little risk with moving forward with this project as the equipment could be used elsewhere within the division if this project should fail. Additionally, competition would not be an issues as the break even point for the labor-intensive option will occur in year one and competition will likely take an additional year to prepare a plant for production, two years if they use a capital intensive plant.

The labor-intensive plant meets the NPV expectations set by the MacFadden Company guidelines and the expectations laid forth by the head of the Jacobs Division, Mr. Reynolds. Since the labor-intensive option meets both of these expectations, Soderberg should move forward with the recommendation for the labor-intensive option. 2. If the project goes forward, should the labor-or capital- intensive plant be used to produce it?

Now assuming that the project goes forward, one of two choices must be made regarding the plans for the plant.

Either the company designs the labor-intensive or the capital-intensive plant.

Both have positive and negative aspects, but the labor-intensive plant seems to be the better of the two choices. This is not an obvious choice, so it is necessary to compare the pros and cons of both plants in order to come to a legitimate conclusion. First, it is important to look at what types of products are currently being manufactured within the Jacobs Division.

Jacobs Division specializes in producing a wide variety of products, none of which make over $5 million dollars. Typically this division sells smaller amounts of a product, because they do not concentrate on one chemical as do the other divisions of MacFadden.

The labor-intensive plant is closer to Jacob’s typical model type, because it would produce a smaller amount of chemicals, initially 1. 5 million pounds, while the capital-intensive plant would produce 2 million pounds per year.

The cost to expand is one of negatives of the labor-intensive plant, as compared to the capital-intensive plant, but large expansion does not seem to be the trend if we look at Jacob’s history. Another big factor in deciding which plant to use is to consider who will be making the final approval in deciding whether or not the product goes forward. Mr.

Soderberg should target his proposal towards Mr. Reynolds, the division manager.

This division is presently one of the most successful of MacFadden, and much of its success is attributed to Mr. Reynolds, so it would be wise to choose the plant that most closely fits his criteria because due to his success, Mr. Reynold's standards should be given respect. Mr. Reynolds has set very high standards for his products, expecting a return of 20% percent for new products. When Mr.

Soderberg did an analysis on the two products with a 20 % return, the labor-intensive plant was a positive value, while the capital was negative.

Soderberg knew that this analysis would be unacceptable, so he would have to somehow manipulate the data in order to get approval from Mr. Reynolds. It is important to acknowledge that at an 8 percent rate, both plants have a good return, but capital's is significantly better. The labor-intensive model would meet Reynold's approval at both the 20 and 8 percent return, while the capital-intensive would only be acceptable under the 8 percent rate, making it a difficult sell for Reynolds to accept.

It is also necessary to look at the results if the product failed.

The labor plant would be able to reuse its equipment in other productions and the loss would not be too significant, while the capital plant would not be able to reuse most of its equipment. Being able to reuse equipment is something that would be very useful in a division that produces many products, because there may be an immediate use of the equipment which could be used to start producing a profit. There are two unknowns that make this decision very difficult – predicting demand and predicting competition of which there are only educated guesses.

Under the labor plant, a low demand is best for the following reasons. As stated earlier, the labor plant will only be able to produce 1. 5 million pounds of Silcone-X each year, and the cost to expand the plant will be costly. Labor also cannot handle competition because its cost of production is too high to lower the $1.

90 price. The plant can be ready in one year which will give the division a better chance to get ahead of the competition, since there is no patent on Silicone-X. The capital plant will be able to produce 2 million pounds each year, and the plant would be capable of expansion at a cheaper rate.

Because its cost of production is lower, it would be able to lower its prices to discourage any competition. This plant would take two years to be operational, and it would only be capable of producing 700, 000 pounds its first year which might leave an opportunity for competitors to get ahead. Demand and competition will determine the success of the product, so these factors present the greatest risk.

At this point, Soderberg needs to utilize the predictions made by the market researchers.

Concerning competition, the researchers doubt that the product could be developed cheaper or better, and demand is predicted to stay within demands of 500, 000 to 2. 0 lbs per year. Again, it seems that labor is still the better choice, because this plant would be ready to go within one year and would be able to meet close to the highest predicted product demand. The biggest risk in this scenario is if other companies try to compete by selling the product at a lower price, because if the product simply tries to

break even and the price drops, labor would have to produce 900, 000 lbs. f product while capital would only need to sell 540, 000 lbs.

But on the other hand, the capital plant might invite competition more readily as it would take a longer time to begin producing plus it could be significantly short of meeting the demand for the first year which may cause buyers to search for other alternatives. Either choice is definitely a risk, and either one has the potential for success or failure depending on what happens in the market and economy. Soderberg himself felt that many of conclusions were no better than guesses.

In fact, he was very concerned that the labor plant left out too many factors. But even if the labor-intensive plant does not comprehensively cover all possibilities, it still presents itself as the better of the two choices.

3. How should management think about the pricing decision and its effect on the attractiveness of Silicone-X? The pricing decisions by management should hedge against risk and provide flexibility for production because priced at $1. 90 and anticipated sales hitting $3 million, Soderberg’s analysis predicts competition.

Though there are management philosophies in place, Jacobs is a ‘ non-traditional’ division in comparison to its peers as will be discussed below. Understandably, good management will seek to maintain shareholder value —long-term endeavors can hurt short-term performance—but with limited information on demand estimates and an outlay of strengths, weaknesses, opportunities, and threats, we believe competition risk and production flexibility should be taken into consideration.

For instance, Reynolds wants better returns than corporate requirements because 1. key variable in appraising management performance at MacFadden was the growth of residual income (Reynolds did not like the idea of investing in projects that were close to the target rate of earnings imbedded in the residual-income calculation; 2.) many new projects have high start-up costs even though they might achieve attractive returns over the long run, such projects hurt earning performance in the short run; and 3.) Reynolds believes estimates are overstated by 2-5% so looks for returns at least a 4% more than the company standard before becoming enthusiastic about a project.

On the other hand, the Jacobs Division is a subsidiary of MacFadden, the newest organization with the greatest sales and smallest division. Jacobs is non-traditional to MacFadden’s other divisions in that it is not centered around a particular chemical that its products are specialty industrial products with various chemical bases sold in relatively small lots to diverse industrial customers. This in itself diversifies Jacobs’ outlet to a wide variety of consumers and should encourage projects that meet corporate requirements (does Capital Intensive meet requreiments??? , but not necessarily Reynolds’. Finally, market research, though unable to gauge the most probable applications for consumer groups, believe that once Silicone-X becomes established, the average demand would grow at a healthy rate leveling off after 8-10 years. In this case, the model will need flexibility to meet increasing demands.

Even in the case of loss, tax write-offs and some salvage value are safeguards to recovering from project failure. Neither models are risk-free,

but the Capital Intensive model most closely compensates risk and reward.

SWOT Analysis Labor Intensive Model

Strengths: 1.) Lower start-up costs; 2.) Faster recovery of equipment outlay, tax write-offs an option should project fail (according to Soderberg, start-up costs and losses are the real risk) Weaknesses: 1.

) Limited production capacity of 1. 5 million pounds a year; debugging costs $50, 000 ; 2.) needs 540, 000 pounds of sales to break even (vs. Capital Intensive – 325, 900) Opportunities: 1.

) Positive present values compared with negative present values of 20% and 8%, looked attractive; 2.) Will work well only if demand is low and provide a higher rate of return