

GMOptimization[□]

As a junior analyst for GMOptimization (GMOptim), you were looking forward to an exciting career. You imagined assignments evaluating new technologies in far-off, exotic locations. As your bus traveled through the heartland of U.S. cornfields, you wondered about your job choice.

Your background research, however, has changed your first impression of being assigned to an agricultural consulting engagement. You have discovered that farming is no longer a small potatoes operation. Perhaps, given the changes in the size of farming businesses in the U.S., agribusiness might be a lucrative consulting specialty.

Belgrove Farms Inc. (hereinafter referred to as Belgrove Farms) is an old, family-owned business that has acquired various smaller farms over the years and has managed to maintain a profitable business enterprise through economies of scale. So far, the firm has specialized in the production of Grade AA yellow corn. Kevin Thorp, Operations Manager for Belgrove Farms, has proposed replacing the current production of AA yellow corn with a new genetically modified (GM) variety of yellow corn (see Exhibit 1).

Robert Belgrove, CEO of Belgrove Farms, engaged GMOptim to evaluate Mr. Thorp's proposal and make recommendations. The firm's research staff has pulled together information regarding the new product (see Exhibit 2) and the past two year's income statements for Belgrove Farms (see Exhibit 3). Your team has a few days to review the materials and prepare its preliminary analysis before meeting with the client.

Required

Prepare a business report to the client setting forth your team's analysis and recommendations. In the report, address any risks associated with the recommendations. The team will also deliver its analysis and recommendations in a formal, personal presentation to the client. You may wish to review microeconomics concepts 1, 2, and 4; management accounting concept 8, and statistics concept 8.

The Exhibits follow on the next pages.

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Thanks to Dr. Janice Bell for her assistance with the accounting aspects of the case.

Exhibit 1: Thorp Proposal Letter

Belgrove Farms Inc. 17342 Mendow Circle, San Jose, CA 95129 Phone (408) 555-CORN

January 10, 2009

Mr. Robert Belgrove
124 East Ocean Ave.
Santa Barbara, CA 93105

Dear Uncle Bob:

As we discussed last fall, I have been looking into switching the company's output from Grade AA yellow corn to a new strain of Genetically Modified (GM) yellow corn. I think you will be pleased with the following results of my analysis and the potential impact on our profitability.

Output and Revenue Analysis:

Based on our output from last year, if we plant Grade AA yellow corn again we can anticipate: Total Revenue (TR) = \$ 1,450,000 (290,000 x \$ 5.00)

If we switch to the new genetically modified (GM) yellow corn:
Total Revenue (TR) = \$ 2,653,750 (482,500 x \$ 5.50)

As you can see, our output would increase and the GM yellow corn is of somewhat higher quality generating a higher anticipated price. This change would increase output by 192,500 bushels or 66% and increase TR by \$ 1,203,750.

Cost Analysis:

Our average production cost was \$ 2.48 per AA yellow corn bushel this past year. We estimate it will be \$ 2.70 per AA yellow corn bushel this year. If we switch to GM yellow corn, our processing, overhead and planting expenses will not change, but the increased price of GM yellow corn seed will raise average production cost per bushel to \$ 3.25.

AA yellow corn Cost: 290,000 x \$ 2.70 = \$ 783,000.
GM yellow corn Cost: 482,500 x \$ 3.25 = \$ 1,568,125.

Increased Cost: \$ 785,125

Profit Analysis:

Increased total revenue = \$ 1,203,750

Increased cost = \$ 785,125

Increased profit: \$ 418,625

Total Profit: \$ 1,085,625

I hope you are as excited about this potential as I am. There has been some bad press about the genetically modified products in Europe, but I think that's just the usual fear of new technologies.

Sincerely;

Kevin

Kevin P. Thorp Operations
Manager Belgrove Farms
Inc.

Exhibit 2: Estimated Production by Farm

Projected Year 2009: Production Summary for AA Yellow Corn by Sub-division:

1. Brookhurst Farm:	200 acres	20,000 bushels	(100 per acre)
2. Fordum Estates:	500 acres	50,000 bushels	(100 per acre)
3. Gatos Peligo:	300 acres	60,000 bushels	(200 per acre)
4. Sally's Place:	800 acres	160,000 bushels	(200 per acre)
5. Belgrove Farms Total:	1,800 acres	290,000 bushels AA yellow corn	

Projected Year 2009: Production Summary for GM Yellow Corn by Sub-division:

1. Brookhurst Farm:	200 acres	22,000 bushels	(110 per acre)
2. Fordum Estates:	500 acres	50,500 bushels	(101 per acre)
3. Gatos Peligo:	300 acres	90,000 bushels	(300 per acre)
4. Sally's Place:	800 acres	320,000 bushels	(400 per acre)
5. Belgrove Farms Total:	1,800 acres	482,500 bushels GM yellow corn	

Exhibit 3: Belgrove Farms: Income for the Two Years Preceding 2009

	1 st Prior Year (Last Year)	2 nd Prior Year (Year Before Last)
Sales and Changes in Value of Crop Inventories	\$1,254,250	\$1,160,181
Expenses and Losses		
Cost of Production	720,360	677,138
Selling, General, and Administrative Expenses	313,200	269,352
Technological Expenses	93,960	79,866
Other	11,745	10,336
Income From Continuing Operations Before Taxes	114,985	123,489
Income Taxes	32,196	34,577
Net Income	\$82,789	\$88,912
<u>Basic Earnings Per Share</u>	<u>\$0.32</u>	<u>\$0.35</u>

Exhibit 4: Marketing and Price Analysis

GMOptimization Group - Marketing Division

Background:

The Marketing Division was asked to analyze the expected prices and probabilities for AA yellow corn and Genetically Modified (GM) yellow corn for the summer harvest.

Analysis:

Estimating the future demand and supply of the commodity derives the projected market prices. The factors considered in the demand portion of this analysis include population growth, consumer preferences, and income. Relative prices of substitutes and complements were considered as static or unchanged. The supply portion of the analysis considered current input prices, existing technology, existing stocks on hand (domestic and foreign), and government policies (domestic and foreign). Exchange rate estimates were taken from our International Division's current forecast.

Price Forecast:

AA Yellow Corn (domestic): Price per bushel: \$ 5.00.

GM Yellow Corn (domestic):

Two alternative price scenarios should be considered. The demand acceptance of GM products in general is in question. There have been numerous reviews by governments all over the world, but particularly in Europe.

- **Scenario #1: Price of GM Yellow Corn (domestic): \$ 5.50.** Europe adopts few restrictions on the importation of GM products, but prohibits European production.
- **Scenario #2: Price of GM Yellow Corn (domestic): \$ 4.70.** Europe adopts heavy restrictions on the importation of GM products.

At this time, we consider the probabilities to be: Scenario #1: 60%; and Scenario #2: 40%.

The futures markets will have determined which price will occur before it is time to plant the summer crop.