

Case 9: Vindaloo Corporation

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Case Question

- Our client, Vindaloo Corporation, is a small biotechnology company that has developed a new seed for sugar beets, which produces twice as much sugar as the seeds that are currently in use. They now want to sell the company, and wonder how much it is worth.

Case tracker

- Industry:**
Consumer products
- Level of Difficulty:**
Medium
- Case format:**
Developing a new product
- Concepts being tested:**
 - Basic NPV
 - Marketing Strategy
 - Operations

Fit Questions

- Spend first 15 min on fit**
- What do you read?
 - What is the most important issue facing the industry of your last job?
 - Describe your methods of diagnosing client's needs.

Guide to interviewer

- This is a valuation case and, as such, has a lot of number crunching. To calculate the NPV, the interviewee will have to size its impact up and down the value chain and determine its value using assumptions about market penetration and growth rates.
- There are also several important qualitative insights for the candidate to make, the main one of which is that the new technology will halve the land rather than doubling production, which would cause an immediate worldwide sugar glut and rapidly falling prices.

8

Quants.

4

Structure



Basic NPV
Mkt. Stgy
Opps.

Clarifying answers and case guide

Clarifying answers to provide if Asked

Industry Characteristics/Market Economics

- The market has grown at GDP over the last few years. It is predicted to grow at 2% annually.
- Sugar is a mature commodity. The wholesale market is \$2 billion worldwide per year.

Competitive Dynamics

- We can assume a 100% market penetration, since there are no competing products, and the efficacy of the product is proven.
- There is no imminent threat of competition and a patent would protect the investment for a number of years

Interviewer Guide to Case

A sample case structure would include the following:

- 1) Start with understanding of product benefits and potential impacts
 - 2) Identify cost structure and places in value chain where costs would drop
 - 3) Calculate NPV of product to value Vindaloo's product
- Beets grown from the new seeds will produce sugar in a 1:2 ratio rather than the current 1:1 ratio. Now 100 beets produce 100 pounds of sugar. 100 beets grown from the new seeds will now produce 200 pounds of sugar, or 2 lbs/beet.
 - The elasticity of demand for sugar is 1.
 - The value chain can be broken down into four primary processes:
 1. Farming (planting, harvesting, and selling beets), which is 40% of cost
 2. Trucking, which is 10% of the cost
 3. Refining, which is 30% of the cost
 4. Distribution, which is 20% of the cost.
 - Farmland that is not used for sugar can be repurposed to grow cabbage, which is currently one fifth as profitable as sugar.
 - Trucking costs for sugar are 5% fixed and 95% variable, with the variable costs directly related to the weight of what is being trucked.
 - Refining costs are all variable, and it will cost 25% more per beet to refine the new beets than it cost to refine the old beets.
 - There are no cost savings in distribution from the reduced volume.

Calculations

Math question

- What are the cost savings/increase in profits from farming?

Math solution

- **Solution - Farming**

- The product allows farmers to grow the same amount of sugar on half of the land. So we can assume that farmers will keep half of their land for sugar and repurpose the rest of the land for growing cabbage. Previously, one acre of land produced “X” profits of sugar - now half an acre can produce profits of “X” while the other half produces profits of “.1X” of profits from cabbage. Recall that cabbage is a fifth as profitable as sugar currently - this means that it will be only a tenth as profitable as the “new” sugar. Since profits per acre go from X to 1.1X, there is a 10% increase in profits from farming.

- **Common mistakes:**

- Candidates who think that farmers will just use the same amount of land and produce twice as much sugar have not thought the question through. If everyone in the world produced twice as much sugar as they were producing before, there would be far more supply than demand.

Calculations (cont.)

Math question

- What are the cost savings from Trucking, Refining, and Distribution?

Math solution

- **Solution - Trucking**
 - Variable trucking costs, which represent 95% of the total cost structure, will decrease by 50%, leading to an overall costs savings of $95\% \times 50\% = 47.5\%$.
- **Solution - Refining**
 - Refining costs drop by half because only half as many sugar beets are being refined. However, then there is a 25% increase in costs per beet. So the costs go from “X” to “.5X” to “.625X”, an overall savings of 37.5%.
- **Solution – Distribution**
 - There are no cost savings in distribution.

Calculations (cont.)

Math question

- What are the total cost savings in the value chain?

Math solution

Step	A – Cost Portion	B – Cost Savings	Weighted Cost Savings (A x B)
Farming	40%	10%	4%
Trucking	10%	47.5%	4.75%
Refining	30%	37.5%	11.25%
Distribution	20%	0%	0%
Total	100%		20%

Calculations (cont.)

Math question

- How valuable is this product?

Math solution

- **Solution – Net present value of cost savings**
- Our client's product will save 20% a year in sugar costs - multiplied by \$2 billion, that cost savings comes out to \$400 million per year. The final question then, is how valuable is that? Here, it would be valuable for the candidate to know the perpetuity formula, which is:
 - $\text{Value} = \text{Annual Cash} / (r - g)$
- We are given the growth rate, g , as 2%. " r " or the discount rate is not given, but we can go with the standard assumption of 10%. Therefore the company can be valued at:
 - $\text{Value} = \$400\text{M} / (10\% - 2\%)$
 $= \$5\text{B}$

Solution and recommendations

Solution & Recommendations

- This product will only allow our client's clients (sugar growers) to produce sugar more efficiently. It won't cause the sugar to taste any better or cause consumers to demand more of it. Therefore the product cannot be expected to grow revenue, but it will reduce costs. The value of Vindaloo Corporation is directly related to cost savings.
- After running the NPV analysis, Vindaloo Corporation should be valued at \$5B.
- The interviewee should also identify a number of risks and potential benefits (i.e. adoption rates, competitive response, other uses etc.) before making their final recommendation.

Bonus/Guide to an Excellent Case

- This is a quantitatively heavy case. Look for the interviewer that is quickly able to identify the important drivers of cost and can crunch numbers quickly and with little error.
- Additionally, an excellent case will require less guidance from the interviewer, particularly on next steps on getting through calculations.