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TOP CONSULTING INTERVIEW PREP



The NYU | Stern MBA MCA Casebook: 2018



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Read This First!

Before we begin, it is important to understand where casing fits in to the recruiting process. While incredibly important, it should not come at the expense of networking and especially behavioral practice. We urge you to begin each case with a behavioral question.

What follows is a collection of cases that are indicative of what you might encounter in an interview. However, we caution against forming expectations and rote memorization of frameworks. In an interview setting, cases are conversations. They are an effective way to see how you think and how you might approach a real world problem with a client.

Casing is not about the ‘right answer’. It is about how you handle ambiguity. It is about how you structure imperfect information to drive towards a solution applicable to the problem at hand. Casing is also about how you handle feedback. Take what your classmates and your interviewers say to heart.

You will need to put in time practicing how to structure problems and thinking strategically under pressure. But there is no magic number. Pace yourself and be yourself.

Good Luck!

The Casing Initiatives Team

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Casing Math

Casing math is one of the essential skills to master. While the specific mathematics are rarely complex, quick recognition, shortcuts, and application of key concepts is essential to progressing efficiently and saving time to focus on other aspects of the case.

What follows is a list of common concepts and constants that you should become familiar with. The list is by no means exhaustive but will provide a solid foundation for you to begin building speed and accuracy.

Finally, one of the most common mistakes made is with orders of magnitude. Find the way that most makes sense for you to keep track of zeros as they can make or break a case. For some, it's scientific notation while others prefer simply using letters.

example: $K * K = M$ and $B / K = M$

Numbers to Know

- Multiplication Table up to $20 * 20$
 - Be particularly familiar with perfect squares
- Division rules
- Be comfortable working with percentages
- Fractions as Decimals

1/6 .1667

1/7 .1428

1/9 .1111

1/11 .0909

1/12 .0833

1/15 .0667

1/16 .0625

1/18 .0555

Casing Math: Key Formulas

Net Present Value

- Know how to set up NPV calculations for both perpetuities and annuities.
- Do not forget to include initial investment costs, if applicable
- Perpetuity (if the cash flow is constant, $g = 0$):

$$NPV = \frac{\text{Cash Flow}}{\text{Discount Rate} - \text{Growth Rate}} = \frac{c}{r - g}$$

- Annuity:

$$NPV = c_0 + \frac{c_1}{1+r} + \frac{c_2}{(1+r)^2} + \frac{c_3}{(1+r)^3} + \dots$$

Break Even

$$\text{Fixed Cost} = \text{Quantity} * (\text{Price} - \text{Variable Cost})$$

- Has many applications to solve for any unknown
- $P - VC$ is the *contribution margin*

Percent Change

$$\% \text{ change} = \frac{\text{ending value} - \text{beginning value}}{\text{beginning value}}$$

$$\% \text{ change} = \frac{\text{ending value}}{\text{beginning value}} - 1$$

Rule of 72

Investments double in $\frac{72}{\% \text{ Annual Interest Rate}}$ years

Return on Investment

$$ROI = \frac{\text{Gain} - \text{Cost}}{\text{Cost}}$$

Casing Math: Accounting

Income Statement

<i>GAAP</i>	<i>Non-GAAP</i>
Revenue	
- COGS	
<hr/>	
= Gross Profit	
- SG&A	= EDBITDA
- Depreciation	
<hr/>	
= Operating Profit	= EBIT
- Interest, Taxes	
+ Gains	
- Losses	
<hr/>	
= Net Income	

note: Gains and Losses refer to Gains/Losses on, for example, the sale of PP&E.

Margins

$$\text{Gross Margin} = \frac{\text{Revenue} - \text{COGS}}{\text{Revenue}} = \frac{\text{Gross Profit}}{\text{Revenue}}$$

$$\text{Operating Margin} = \frac{\text{Operating Profit}}{\text{Revenue}}$$

$$\text{Net Margin} = \frac{\text{Net Income}}{\text{Revenue}}$$

Markups

$$\text{Markup} = \frac{\text{Price} - \text{Cost}}{\text{Cost}} \quad \text{note: do not confuse with margin}$$

Inventory Turns

$$\text{Inventory Turns} = \frac{\text{Annual COGS}}{[\text{Average}] \text{ Inventory}}$$

$$\text{Inventory Turnover Period} = \frac{365 \text{ Days}}{\text{Inventory Turns}}$$

Casing Math: Market Sizing

Market Sizing Approach

Market sizing is a common case interview component as it tests your structure, creativity, estimation skills, and mathematics. Familiarize yourself with the two most common approaches: top-down and bottom-up. Then follow this methodology:

- Lay out the problem **before** doing any multiplication
 - Structure the items you need, and how they'll interact (addition, multiplication, division, etc.)
 - Don't make it more complicated than it has to be
- Make and state assumptions. Be open to feedback from your interviewer and adjust if necessary.
 - Try to pick numbers that are easier to work with
- Always gut check your answer
 - There are wrong answers. If your sizing feels off, go back and challenge your assumptions.
 - If the number makes sense, don't stop there. Make an insight and drive the case forward.
- Market sizing questions can appear as part of a larger case or as the case itself
 - Recognizing the context of the question will help to inform the complexity of your approach

Always remember the scope of the market you are sizing (e.g., US vs Global) and never forget the **units** you are solving for!

Common Market Sizing Constants

- US Population: 320 M
- NYC Population: 8 M
- US Households: 120 M

- US Life Expectancy: 80 years
- US Population Growth (CAGR): $\sim 0.7\%$

- US GDP: 19T
- US GDP CAGR: $\sim 2\%$
- Median Household Income: $\sim \$60,000$

- Europe Population: 740 M
- Asia Population: 4.4 B
- Africa Population: 1.2 B
- Global Population: 7.4 B

Interviewer Tips

Being a good interviewer is just as important as being a good interviewee. As an interviewer you stand to gain a lot by knowing how a case should be solved and watching others as they work through it.

Before the case starts, agree on at least one objective or skill you both want to improve on from the case – it could be structured math or brainstorming. Pick a case that highlights the skills the interviewee would like to work on and ensure it is one they have not seen before. Use of the online case tracker can help greatly with this process.

Reviewing the case you are giving beforehand is critical! The interviewer should be familiar with the objectives of the case and mathematical solutions to allow the case to flow as if it were a real interview. As an interviewer, you may want to have a few cases you give regularly in order to allow them to develop as a conversation with the interviewee rather than a list of questions. Feel free to allow the interviewee to explore components of the case in any order that is logical. This allows them to gain confidence driving towards a solution.

Finally, provide detailed feedback (both positive and constructive) to the interviewee. Address the objectives the interviewee had so that they can monitor their progress over time. And don't forget to ask for feedback on your delivery style!

Industry Overviews

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Banking and Financial Services

Overview: Industry offers services like lending, insurance, and securities management

- Types of banks: commercial banking, retail banking, investment banking
- Products include credit cards, mortgages, loans, insurance, and checking/savings accounts
- Customers can be segmented by income levels, individual vs small business vs large business
- Highly competitive market: international and national players compete with regional banks and new online banks.

Revenue Breakdown

- Interest
- Fixed or Variable Fees (trading commissions, M&A fees, asset management fees)
- Premiums

Cost Breakdown

- IT (back-end processing, security, apps & websites)
- Real estate costs (physical branches)
- Losses on investments, such as loan defaults
- Labor (customer service commonly off-shored)
- Marketing

Important considerations:

- Growth of mobile banking; disruption in the industry from Fintech and online banks.
- Regulations within the industry – e.g. Dodd-Frank increased capital requirements for banks
- changes in customer demographics creating a larger market for retirement products.

Retail

Overview: Industry consists of department stores, wholesale retailers, discount stores, speciality retailers, and online retailers. Amazon and other online retailers caused major disruption in the industry by lowering operating costs and passing savings to customers. Technology also reduced bargaining power of retailers as customers can easily compare prices online.

Revenue Breakdown

- Traffic (foot / online)
- Conversion rate (visits vs purchases)
- Basket size (driven by consumer spending)
- Avg. price per item
- Other revenue – after sales services

Key Metrics:

- Sales per square foot
- Inventory turnover
- Total revenue = traffic * conversion rate * basket size * avg. price per item

Cost Breakdown

- Cost of goods sold
- Returns
- Inventory management (storage and stock)
- Distribution
- Delivery
- Labor
- Real estate
- Online retail – technology cost

Important considerations:

- Seasonality is a big factor in retail sales – large portion of sales occur in holiday season / end of year.
- Social media presence has a large impact on brand strength and perceptions.
- Omnichannel retail is growing through e-commerce development or acquisition.

Consumer Packaged Goods (CPG)

Overview: Industry consists of household durable and non-durable products. Mature industry and concentrated market in the US with most growth coming from emerging markets. Sales are impacted by type of product – luxury vs basic necessity. Customers can be retailers or end users.

Revenue Breakdown

- Sales direct to consumer (higher margins)
- Sales to retailers (lower margins)

Revenue Drivers

- Shelf placement in stores vs competition
- Packaging and price tiering
- Product portfolio (cannibalization vs complementary products)

Key Metrics: Price elasticity of demand

Cost Breakdown

- Cost of goods sold (raw materials)
- Manufacturing facilities (owned or leased)
- Packaging
- Distribution & inventory management
- Marketing
- R&D – new product innovation
- Environmental and regulatory costs
- Durables – spoilage

Important considerations:

- Discounts and price promotions have lowered margins.
- Cannibalization can be a concern when introducing new products.
- Tariffs and regulations play a role in imports / exports and where the firm is manufacturing or sourcing.

Technology

Overview: This industry consists of technological products including online services (security, productivity, platforms), hardware (computers, smartphones, servers), software (search, storage). Key customer segments include: large companies, small/medium businesses, retail/consumers

Revenue Breakdown

Online services

- Ad revenue (especially for free services)
- Subscriptions (mostly B2B)

Hardware

- Sales: price * number of goods sold
- After sales service

Software

- Licenses
- Managed services (SaaS)

Key Metrics: Product obsolescence

Cost Breakdown

- R&D
- Product development
- IT & back-end infrastructure
- Labor
- Hardware: component COGS
- Software: high up-front investment with lower operational and variable costs following product launch

Important considerations:

- Software sales are highly dependent on network effects.
- Firms are trying to create ecosystems (e.x. Google Home, Amazon Echo).
- Innovation in the industry has reduced product life spans.

Healthcare Providers

Overview: The industry consists of facilities, distributors, and service providers e.g. hospitals, emergency care facilities, clinics, nursing homes, pharmacies etc. Rising healthcare costs in the US (with overall decline in health).

Revenue Breakdown

- Collections from third party payers (insurance companies)
- Co-payments
- Inpatient & outpatient treatment costs (without insurance)
- Government re-imbusement

Key Metrics: Bed capacity utilization. Number of deaths in surgery. Number of patients seen

Cost Breakdown

- High upfront investment in hospital facilities and equipment
- Physicians – doctors & nurses
- Medical suppliers
- Insurance (malpractice liability)
- SG&A
- Other labor

Important considerations:

- Shortage of physicians and nursing staff.
- Frequency and cost of medical visits increase with age.

Healthcare Payers – Insurance

Overview: Industry provides insurance coverage to both companies and individuals
Insurance is heavily based on risk measurement and forecasting the inflows and outflows of cash. Fairly fragmented market. Mainly offered in individual, family or corporate plans.

Revenue Breakdown

- Insurance premiums
- Government subsidies

Cost Breakdown

- Payouts to healthcare providers - Insurance companies often negotiate directly with healthcare providers on reimbursement rates. Billed price is typically paid at a discount.
- Re-insurance
- Labor

Important considerations:

- Industry has been affected by healthcare reform – increases in bottom line due to pressure to eliminate / lower coverage caps, reduce denials based on pre-existing conditions, etc

Life Sciences / Pharma

Overview: Industry encompasses originator drug producers, generic drug manufacturers and pure R&D firms. It can take years to get a new drug approved and on the market. Strict and cumbersome regulatory processes. Customers can be doctors / providers or patients. First to market – best advantage for drug company; has a average of 5+ years protection

Revenue Breakdown

- Drug sales – difference in price comes from OTC / prescription drugs
- 3rd party payer reimbursement
- Government subsidies

Key Metrics: price of drug * number of doses;
Number of patented drugs

Cost Breakdown

- High R&D
- Regulatory and legal costs
- Manufacturing and production
- Distribution and sales
- Labor

Important considerations:

- High growth in emerging markets.
- Patents protect drugs for up to 20 years.
- FDA approvals last 5 years with a high failure rate of drugs.

Airlines

Overview: Two types: cargo and commercial. Within commercial airlines segments include international vs national vs regional, and low cost vs legacy carriers. Two main traveller types: leisure (price sensitive) vs business (price inelastic). Industry faces extensive price competition.

Revenue Breakdown

- Ticket fees
- Extra baggage fees
- In-flight purchases – F&B, entertainment
- Tiered amenities – extra leg room seats
- Ancillary revenue – reservation changes etc

Key Metrics: Load factor - % aircraft capacity filled by paying passengers

Cost Breakdown

- Gate leases
- Fuel
- Aircraft leases
- Insurance & Legal fees
- Maintenance / equipment
- Crew & ground staff salaries
- In-flight consumables – (F&B, entertainment)
- Marketing
- Technology

Important considerations: Major consolidation within industry due to high fixed costs.

- Rise in third party booking websites (Booking.com, Expedia).
- Airlines use rewards programs (miles) and partnerships with hotels, car rentals and credit card companies to increase loyalty / differentiate.

Media and Entertainment

Overview: The industry encompasses the creation, licensing and/ or distribution of video, audio, and print media. Major disruption in the industry due to digital content. Disruptors: Online news, online streaming (Netflix, Hulu)

Revenue Breakdown

- Advertising (largest revenue category especially media offered free to customers)
- Subscriptions
- Licensing fees
- One-time purchases

Key Metrics: Viewership / Readership

Cost Breakdown

- Media production costs – studios, equipment, printing presses
- Talent – actors, editors, writers
- Other labor
- Marketing
- Technology – especially for digital media

Important considerations:

- High importance of network effects to grow viewership / readership.
- Most media has shifted to omnichannel presence.
- Consumer and advertising spending is highly influenced by macroeconomic conditions

Oil and Gas

Overview: Oil & Gas is a stage based industry. Majority of market share tied to upstream operations

- Upstream: Drilling and extracting raw oil
- Midstream: Transporting the raw oil
- Downstream: Refining and selling the finished petroleum products

Revenue Breakdown

- Upstream: Crude oil price
- Midstream: Transportation fees
- Downstream: Sale of Gasoline, Oils, Fuel, and other Petroleum Products

Key Metrics: Price of Crude Oil – affected by oil futures market

Cost Breakdown

Upstream

- Exploration
- Drilling and Extraction

Midstream

- Crude Oil
- Transportation & Storage

Downstream

- Crude Oil
- Refinery – PP&E

Important considerations:

- Organization of Petroleum Exporting Countries (OPEC) – accounts for ~44% of global oil production and ~73% of the worlds proven oil resources. OPEC effectively controls the price of oil.

Industrials

Overview: Provides products and services primarily used to produce other goods; main sectors: electrical equipment / components, heavy machinery, construction, aerospace and defense; main customers: government, OEMs, B2B

Revenue Breakdown

- Volume (driven by product type and demand)
- Contract length
- Bundling of product and services (e.g. maintenance package)
- New technologies and products (automation)

Key Metrics:

- Capacity utilization
- Inventory turnover
- Book-to-bill ratio

Cost Breakdown

- Manufacturing – capital intensive (can be leased / owned)
- Labor (unions)
- Distribution and inventory management
- R&D
- Marketing & trade shows

Important considerations:

- Highly tied to gross domestic product (GDP) growth, production and capacity utilization and other economic indicators
- Greatly impacted by recession, as drop in overall capital and construction spend decreases

Cases



Drinks Gone Flat

Case Style: Interviewee Led

Difficulty: Easy

Case Prompt:

The beverage department of a regional supermarket has seen a drop in revenue over the last year and has hired your firm to determine the cause of the decline and recommend ways to reverse the trend.

Case Overview:

Industry: Retail

Case Type: Revenue Growth

Concepts Tested:

- Pricing
- Brainstorming

Overview Information for Interviewer:

- This is an interviewee-led case. Interviewer should let the interviewee drive the case, and offer up information / exhibits only when asked
- The case is a good test of time management of the interviewee. It can be completed in under 15 minutes.
- A good candidate will remain high level, only drilling deeply after having determined the interviewer has the asked-for information and not wasting time where there is no information

Drinks Gone Flat: Case Guide

Clarifying Information:

- Client is a leading regional grocer within the southeastern U.S.
- Competitive landscape has not changed in the last year
- Revenue decline is specifically within the beverage segment
- Client wants to find the cause of the declining revenue and recommendations for how to stop the decline

Interviewer Guide:

A Good Framework Will:

- Focus on revenue and its levers of price and quantity, staying away from costs
- Contain creative recommended options for brainstorming discussion to reverse the revenue decline trend
- Incorporate knowledge of existing marketing frameworks such as the 4P's

Necessary Information that should be given only when specifically asked for by interviewee:

- Exhibit 1
 - Provide when interviewee asks specifically for revenue / sales numbers segmented by beverage product category
- Exhibit 2
 - Provide after interviewee determines revenues are only declining in sodas and asks for further segmented information by brand

Interviewer Guide to Exhibit 1

	Gallons (MM)*		Price / gallon (\$)*		Cost / gallon (\$)	
Category	2014	2015	2014	2015	2014	2015
Sodas	100	120	0.9	0.7	0.3	0.3
Waters	20	22	0.7	0.65	0.2	0.2
Others	11	10	4	4.5	3.9	3.9

Notes to Interviewer:

- Revenue calculations:
 - Sodas – 2014: $100 \times .9 = \$90$ 2015: $120 \times .7 = \$84$ Change = $-\$6M$
 - Waters – 2014: $20 \times .7 = \$14$ 2015: $22 \times .65 = \$14.3$ Change = $+\$0.3M$
 - Other – 2014: $11 \times 4 = \$44$ 2015: $10 \times 4.5 = \$45$ Change = $+\$1M$
- Interviewee should notice that decline in beverage revenue is only from decline in sodas. This should prompt the interviewee to drive the case to further segmenting soda revenues

Interviewer Guide to Exhibit 2

	Gallons (MM)*		Revenue (\$M)*	
Category	2014	2015	2014	2015
Brand A	50	30	50	30
Brand B	25	30	25	30
Value Brand	25	60	15	24

Notes to Interviewer:

- Interviewee should notice the decline in revenue for Brand A immediately. Interviewee should also notice the decline in volume for Brand A and the large increase in volume for the Value Brand. This should prompt the interviewee to calculate the price change for each of the brands
 - Brand A – 2014 and 2015 price of \$1
 - Brand B – 2014 and 2015 price of \$1
 - Value Brand – 2014 Price: $15/25 = \$0.60$; 2015 Price : $24/60 = \$0.40$

Drinks Gone Flat: Brainstorming

Question #2:

The client would like to hear your recommendations for how to reverse the decline in revenue of the beverage segment.

Notes to Interviewer:

A great candidate will not need prompting of this question, and will drive the case forward remembering that recommendations for reversing the declining revenue were a part of the prompt

- Upon determining that the value brand is causing the overall decline in the beverage segment, a great candidate will move the case forward with recommendations

Objective for the interviewee would be able to provide a number of recommendations and stay structured while doing so

- Possible option would be to organize brainstorming recommendations around 4P's
 - Price
 - Promotion
 - Product
 - Placement

Drinks Gone Flat: Recommendation

Recommendation:

- Adjust price of Value Brand
- Improve differentiation from Brand A and Value Brand

Risks:

- Alienating value brand customers with price change
- Alienating suppliers of Brand A or B with any price changes of those brands

Next Steps:

- Explore pricing strategies for value brand
- Explore bundling opportunities to increase sales of other brands
- Explore marketing activities to differentiate value brand from brands A and B
- Explore shelf placement of value brand vs brands A and B

Bonus: Guide to an excellent case

- In an excellent case, the interviewee will efficiently drive the case, taking insights from each exhibit and moving the case forward with no prompting of the interviewer

Drinks Gone Flat: Exhibit 1

Revenues and Costs by Beverage Category

Category	Gallons (MM)*		Price / gallon (\$)*		Cost / gallon (\$)	
	2014	2015	2014	2015	2014	2015
Sodas	100	120	0.9	0.7	0.3	0.3
Waters	20	22	0.7	0.65	0.2	0.2
Others	11	10	4	4.5	3.9	3.9

* Average per store

Drinks Gone Flat: Exhibit 2

Sodas by Brand

	Gallons (MM)*		Revenue (\$M)*	
Category	2014	2015	2014	2015
Brand A	50	30	50	30
Brand B	25	30	25	30
Value Brand	25	60	15	24

* Average per store

Made to Measure

Author: Aatman Chaudhary (Stern '15)

Difficulty: Easy

Case Style: Interviewee Led

Case Prompt:

Our client owns a designer shoe-store that makes high end made-to-measure shoes for customers.

The high-quality product has gained popularity rapidly and the client wants to ramp up production. However, the highly-skilled labor that our client employs is hard to come by.

Our client wants us to help them figure out how to increase output without adversely affecting quality and the company's potential profitability.

Case Overview:

Industry: Luxury Goods

Case Type: Business Improvement / Optimization

Concepts Tested:

- Operations
- Math

Overview Information for Interviewer:

The case requires the candidate to explore the process involved in making the shoes. The solution lies in a change in the process, deploying resources in a more effective manner.

The interviewer should direct the candidate towards asking about the process and existing internal resources rather than external solutions.

Once the labor solution has been derived, the interviewee should move on to calculating the maximum weekly output and profitability.

Made to Measure: Case Guide

Clarifying Information:

- There are no additional skilled shoemakers available in the market
- The shoe-making process has 3 stages, cutting, stitching and finishing
- Currently there are 15 workers, each of whom take an average of 12 hours to produce one pair of shoes
- Each shoemaker performs all three steps of the process under the current system
- If the candidate asks whether the process can be changed to one where shoemakers perform specific tasks, say yes

Interviewer Guide:

This case is a simple process re-working. The challenge for the candidate is to ask enough questions about the process to identify the fact that the resources (i.e., the labor) are not being utilized in an optimal manner. The interviewer should steer the candidate away from technology or external solutions.

The exhibit is a result of a survey and groups the different employees based on their skill sets. The table provides the number of hours a group of employees takes for each task and should be provided when the interviewer asks for more details about the labor model and employee skill sets.

The key for the candidate is to identify that by getting the workers to perform specialized tasks, the average time per pair of shoes can be reduced from 12 hours to 9 hours, thereby increasing the output.

For the profitability question, a calculation guide has been provided for the interviewer.

Interviewer Guide to Exhibit 1

Hours per activity	Group 1 (5 employees)	Group 2 (5 employees)	Group 3 (5 employees)
Cutting	3	5	4
Stitching	4	4	3
Finishing	5	3	5
Total Hours	12	12	12

Notes to Interviewer:

- The candidate should be able to grasp that there is clearly a misalignment of skills and tasks, and that introducing specialization is a way to boost the output without compromising quality.
- The candidate should realize each group should focus on the activity that takes it 3 hours, reducing the total production hours per pair of shoes to 9 hours.
- The candidate should then continue to drive the case forward recalling the profitability question

Made to Measure: Profitability

Once the candidate has arrived at the optimal process, they should calculate the new output level, and the total new profit per week, based on the assumptions provided. The candidate should ask for the price, costs, and employee hours without being prompted.

Math Solution:

The calculations are relatively straightforward, the critical part is the first step, which involves calculating the new output level. This should be done assuming that under the new system the average time taken for a pair of shoes drops from 12 hours to 9.

The per pair hours and the total available hours and the total number of employees are enough to calculate the output level, which can then be followed by the cost calculations. Please refer to the calculation guide after the exhibit.

Math Information:

Employees work 9 hours a day, 5 days a week

Price : \$300/pair

Material cost: \$ 40/pair
Shipping: \$ 10/pair
Employee wages: \$15/hour
Fixed costs: \$ 1000/week

Made to Measure: Question 1

Calculation Guide:

Parameter	Units	Value
<u>Output Calculations</u>		
Hours per pair in new system	Hours	9
Hours per week per employee	Hours	45
Per week output per employee	Pairs	5
Total employees	Number	15
Weekly output	Pairs	75
<u>Profit Calculations</u>		
Shoe selling price	\$/pair	300
Materials and delivery cost	\$/pair	50
Gross profit per pair	\$/pair	250
Total gross profit per week	\$	18,750
Employee cost per hour	\$/hour	15
Total employee cost	\$	10,125
Weekly fixed costs	\$	1,000
Weekly profit	\$	7,625
Annual profit	\$	396,500

Made to Measure: Recommendation

Recommendation:

- The process should be changed into one where each group of employees does a specific task.
 - Group 1: cutting
 - Group 2: finishing
 - Group 3: stitching
- This will reduce the average time per pair of shoes to 9 hours, enabling the client to scale up the operation within the specified constraints

Risks:

- Any process change, especially heavily entrenched processes are fraught with risk.
- Employees may be used to the old system and there may be bumps in the road in implementation.
- There may also be one time costs associated with implementing these changes, especially if it involves a layout change in the workshop

Next Steps:

- Monitor the process as time progresses, consider implementing the change in phased manner, using a pilot group to test whether there are substantial gains to be made, and identify hiccups early.
- This may result in a smoother implementation, however the gains could be slower in coming.

Bonus: Guide to an excellent case

- An excellent case would be marked by a candidate who focuses and quickly understands the process. An exceptional candidate should be able to move quickly from the exhibit to the solution, and leave enough time for the calculations.

Made to Measure: Exhibit 1

Employee Survey

Hours per activity	Group 1 (5 employees)	Group 2 (5 employees)	Group 3 (5 employees)
Cutting	3	5	4
Stitching	4	4	3
Finishing	5	3	5
Total Hours	12	12	12

Vibrants

Author: Rebecca Sperling (Stern '18)

Difficulty: Easy

Case Style: Interviewee Led

Case Prompt:

Your client, a national drug-store, is adding a new type of hair dye to its retail offering. “Highlights Dye” allows customers to comb in small amounts of various color to hair rather than the traditional method of dying the whole head. The client is considering launching it’s own in-house brand or carrying an existing recognized brand-name – “*Vibrants*”.

Should the drugstore carry *Vibrants* over the in-store brand?

Case Overview:

Industry: Consumer Products

Case Type: Product Launch/Profitability

Concepts Tested:

- Basic math
- Basic exhibits

Overview Information for Interviewer:

- This is a **interviewee-led** straightforward case that is good for beginners. Exhibits should be supplied **only** when candidate identifies the need for this information.
- The candidate should recognize the details in the prompts and exhibits to anticipate the direction of the case.
- The case is good practice for making product recommendations even if unfamiliar with a particular industry.

Vibrants: Case Guide

Clarifying Information:

- The retail chain already carries their in-house brand in many products (toothpaste, cotton swabs, etc) which includes traditional hair dye in both temporary and permanent varieties
- “Highlights Dye” is a type of fashion-forward product available in natural and florescent colors. Each application lasts roughly 30 days
- The target customer is under 30 years in age
- The business objective is profitability
- The timeline is 90-days to launch

Interviewer Guide

A Good Framework Will:

- Be specific to investigate the product’s unique attributes:
 - Application Length (Temporary vs Permanent)
 - Color Varieties (Natural vs Florescent)
 - Application Process (Home vs Salon)
 - Ingredients (Chemical vs Natural Dye)
 - Cost
- Consider market trends and competitors
- Identify the target customer demographic likely to buy *Vibrants*
 - Fashion Conscious – typically young/majority female
 - Natural/Aging - those covering grey hair/color changes
 - DIYers - those unwilling to pay salon prices
- Basic Costs & Margins – unit price, additional in-house costs
- The capabilities needed to develop an in-house product and the effects on launch-time, start-up costs. (R&D, Manufacturing, Packaging, Promotion)
- Opportunity costs, cannibalization of existing products (if any)

Interviewer Guide to Exhibit 1

Pricing	In-House Brand	Vibrants
Retail	\$5,000.00	\$6,500.00
Wholesale	\$2,000.00	\$4,500.00

Notes to Interviewer:

- The candidate should read the footnotes to adjust units and create clean math without excessive zeros.
- The candidate should calculate profit margins and recognize the in-house brand has superior margins.
- The candidate should not get mired in the \$750,000 market size and calculation of overall profit as the margins reveal the main insight.

Interviewer Guide to Exhibit 2

Gender	Age	Answer
M	33	Y
F	29	N
F	27	N
F	24	Y
M	25	N
F	29	N
F	26	N
M	31	Y
F	23	N
M	31	Y
F	28	N

Notes to Interviewer:

- The candidate should recognize the phrasing of the question means that answering “Yes” is a willingness to purchase the in-store brand while the case objective is framed inversely
- The candidate should recognize that the delineation of over/under 30 significantly determines customer preferences:
 - Under 30: 12.5% Answer Yes
 - Over 30: 100% Answer Yes
- Main takeaway: those under 30 (the target customer) overwhelmingly prefer *Vibrants*
- A strong candidate may question the sample size and can be told it is an accurate representation of a larger study

Vibrants: Recommendation

Recommendation:

- The drug-store **should carry *Vibrants*** despite the in-store brand having superior margins.
- The target customer segment is generally unwilling to purchase the in-store brand

Risks:

- Potential for trend/demand to lower, especially given fashion-forward nature
- Less flexibility in pricing

Next Steps:

- Marketing plan, procure orders, plan for shelf-space
- This may result in a smoother implementation, however the gains could be slower in coming.

Bonus: Guide to an excellent case

- An excellent caser will discover and cite the timeline of 90 days to recommend the existing *Vibrants* brand while also citing the complexity and costs associated with launching a new brand

Exhibit #1 - Pricing Considerations

Retail & Wholesale Price

Pricing	In-House Brand	Vibrants
Retail	\$5,000.00	\$6,500.00
Wholesale	\$2,000.00	\$4,500.00

Notes:

- If selling Vibrants, the drugstore is unable to change retail price or run price promotions on the product
- Prices are displayed per 1,000 units
- Anticipated market is \$750,000

Exhibit #2 – Sample Focus Group Answers

Would you purchase a store-brand version of *Vibrants* over the brand name?

Gender	Age	Answer
M	33	Y
F	29	N
F	27	N
F	24	Y
M	25	N
F	29	N
F	26	N
M	31	Y
F	23	N
M	31	Y
F	28	N

Sports Bar

Case Style: Interviewee Led

Difficulty: Medium

Case Prompt:

Your client is an entrepreneur looking to invest in a new bar. He needs to determine how profitable the company will be and convince his primary investor, his father, that it will be a viable business.

What factors would you consider and investigate?

Case Overview:

Industry: Food Services

Case Type: Profitability

Concepts Tested:

- Profitability
- Structured Math

Overview Information for Interviewer:

This case is math intensive so the candidate will need to stay organized. A great caser will lay out a chart with all the data and calculations as well as talk through the calculations to keep the interviewer apprised of his or her thought process.

By the end of the case, the candidate should make a clear recommendation as to how the primary investor can be convinced it is a viable business. He/she should approach it from an investment perspective and analyze the profitability of the business, along with any risks that aren't discussed. The total profitability should be framed in the context of other possible ways the father could invest his money.

Sports Bar: Case Guide

Clarifying Information: Profitability (only give information when asked)

Revenues:

- The average customer spends \$15 on food per visit
- The average customer spends \$20 on drinks per visit
- Capacity constraints and benchmarking should also be discussed here

Costs:

- Lease cost is \$10,000 per month
- Labor costs can be seen below
- COGS: Food has a 12% gross margin
- COGS: Drinks have a 50% gross margin
- There is no specific data on utilities, legal, insurance, licenses, training, remodeling , equipment, and other startup costs

Labor Needs:

- Kitchen (when open): 4 people @ \$10/hr
- Bar: 1 person @ \$5/hr
- Wait Staff: 3 people @ \$5/hr

Interviewer Guide to Exhibit 1

Market Research

Hours	Thursday – Saturday		Hours	Sunday – Wednesday	
	Food Customers	Drinks Customers		Food Customers	Drinks Customers
12pm – 8pm	15 customers/hr	5 customers/hr	12pm – 8pm	10 customers/hr	4 customers/hr
8pm – 2am	5 customers/hr	20 customers/hr	8pm – 12am	4 customers/hr	15 customers/hr

Notes to Interviewer:

- Exhibit 1 should be given when the interviewee asks for information regarding the number of customers
- The interviewee should notice the higher volume on weekends and immediately proceed to calculate profitability
- It is essential that the interviewee remain structured throughout the calculations. Interviewer should check all figures as they are calculated and prompt the interviewee to verbalize each step.

Sports Bar: Calculations

Total # of Orders:

Variables	Source (given in case unless stated)	Sunday - Wednesday		Thursday – Saturday	
		Food	Drinks	Food	Drinks
Day orders per hour		10	4	15	5
Day time hours		8 (12pm-8pm)	8 (12pm-8pm)	8 (12pm-8pm)	8 (12pm-8pm)
Day time orders	(hours) x (orders per hour)	80	32	120	40
Night orders per hour		4	15	5	20
Night hours		4 (8pm-12am)	4 (8pm-12am)	6 (8pm-2am)	6 (8pm-2am)
Night orders	(hours) x (orders per hour)	16	60	30	120
Total daily orders	(night) + (day orders)	96	92	150	160
Days per week		4	4	3	3
Total weekly orders	(days) x (daily orders)	384	368	450	480
Total weekly food orders	834				
Total weekly drink orders	848				

Sports Bar: Calculations

Revenue & Costs:

Variables	Source (given in case unless stated)	Food	Drinks	Calculations
Price		\$15	\$20	
Weekly orders	Previously calculated	834	848	
Weekly revenue	(price) x (weekly orders)	\$12,510	\$16,960	\$29,470
COGS		88%	50%	
Weekly COGS	(% cost) * (weekly revenue)	\$11,009	\$8,480	\$19,489

Variables	Source (given in case unless stated)	Kitchen	Bar	Wait Staff
Salary per hour		\$10	\$5	\$5
# people		4	1	3
Sunday – Wednesday hours	(4 days x (12pm-12am))	48	48	48
Thursday – Saturday hours	(3 days x (12pm-2am))	42	42	42
Total labor cost	(salary) x (total hours)	\$3,600	\$450	\$1,350
Total weekly labor cost	\$5,400			

Sports Bar: Calculations

Profitability:

Variables	Source (given in case unless stated)	Calculations
Weekly revenue	Previously Calculated	\$29,470
Weekly COGS	Previously Calculated	\$19,489
Weekly labor	Previously Calculated	\$5,400
Weekly lease cost (assume 4 weeks/month)		\$2,500
Weekly Profit	$(\text{revenue}) - (\text{COGS}) - (\text{labor}) - (\text{lease})$	\$2,081
Weeks per year	Assumed	50
Annual Profit	$(\% \text{ cost}) \times (\text{weekly revenue})$	\$104,050

Key Takeaway: Business is not projected to lose money but cost assumptions may be incomplete

Sports Bar: Question 1

Question #1:

Your client estimates that the start-up capital needed to open the Sports Bar (e.g., renovations, equipment, licenses) is \$500K. How long will it take for the business to break even? Over a 5-yr period, what would be the return on this investment? (Assume no interest)

Notes to Interviewer:

Variables	Source (given in case unless stated)	Calculations
Up-front costs		\$500,000
Annual profit	Previously Calculated	\$104,050
Break-even Point**	$(\text{up-front costs})/(\text{annual profit})$	4.8 years
5-year ROI**	$((\text{annual profit}) * (5\text{years}) - (\text{up-front costs})) / (\text{up-front costs})$	4.1%

- The client's father would have to compare this opportunity against other potential investments
 - 4.1% at the end of 5 years
 - Over the 5-yr period, less than 1% return per year
- Although calculations indicate that the business can be profitable, the margin is rather small relative to the initial investment required. Further, all costs may not be accounted for.
- Given these results, the client's father could likely find another investment opportunity with a faster payback period and higher ROI

Sports Bar: Recommendation

Recommendation:

- From a financial perspective, the sports bar is profitable, but should be compared to other ways the father can invest his money and when he is expecting a return
- The recommendation should focus on convincing the primary investor (his father) that it will be a viable business with strong returns in the long-term

Risks:

- There are other costs that have been excluded from this case that will need to be properly calculated in more detail and include:
 - Utilities
 - Marketing and promotions
- Location could also be an important factor in determining the success of the bar compared to competitors
- Other risks include sudden rise in COGS (food shortage), increase in minimum wages, or decrease in customers after a few months

Next Steps:

- Incorporate utilities, marketing etc. costs into the profitability calculation
- Explore additional ways to increase the revenue of the sports bar
- Investigate other opportunities for your client's father to invest money in

Bonus: Guide to an excellent case

- Strong candidates may also discuss ways to improve the existing business plan such as tapping other sources of revenue (jukebox, advertising) or following a different operating model (food vs. drinks)
- Strong candidates may also note:
 - In order to shorten the break-even period, the client should investigate substitutes for the fixed start-up costs, such as purchasing used equipment or a less significant interior redesign
 - Over time, if the business is successful in building a unique brand and customer loyalty, it may be possible to charge higher margins

Sports Bar: Exhibit 1

Market Research

Hours	Thursday – Saturday	
	Food Customers	Drinks Customers
12pm – 8pm	15 customers/hr	5 customers/hr
8pm – 2am	5 customers/hr	20 customers/hr

Hours	Sunday – Wednesday	
	Food Customers	Drinks Customers
12pm – 8pm	10 customers/hr	4 customers/hr
8pm – 12am	4 customers/hr	15 customers/hr

The Pricing Games

Author: Will Wang (Stern '19), Di Mo (Stern '19)
Firm Style & Round: BCG Round 1 (Interviewer Led)

Difficulty: Medium

Case Prompt:

Your client is Next Level Gaming (NLG), a start-up in the E-sports and computer gaming industry based in Los Angeles, California. NLG is planning to launch its first game – an online, multiplayer role playing game that is unlike any existing franchise. Being a new player in the industry, NLG's CEO, Bobby Beck, has asked for your help in deciding its business model. The company is considering 3 alternatives: a subscription model where players pay a monthly fee; a retail model where players pay full price at initial purchase, and a free-to-play model where the game is free to play but charges players for in-game merchandise. How would you advise NLG to proceed?

Case Overview:

Industry: Technology

Case Type: Product Pricing

Concepts Tested:

- Market Sizing
- Revenue & Profitability Forecast

Overview Information for Interviewer:

- The case will test the candidate on 3 concepts:
 - Market sizing. The case starts by asking the candidate to estimate addressable market size in # of players
 - Profitability calculations. Candidate will be asked to calculate profitability under each of the 3 business models
 - Brainstorming. The case concludes by asking for qualitative factors to determine the optimal launch strategy

The Pricing Games: Framework

Clarifying Information:

- **Time frame:** NLG is looking to launch immediately.
- **Competition:** The online gaming industry is dominated by 3 major players who control 35%, 25%, and 20% share respectively. There is a long tail of smaller gaming companies.
- **Target Market:** Based on preliminary market research, NLG expects the majority of players to be between the ages of 21 to 40.
- **Geography:** NLG is planning to launch its game in the US only.
- **Platform:** NLG's game is compatible for both Apple and Windows computers
- **R&D Cost:** NLG spent 10 million USD to develop its first game (the candidate should recognize this as a sunk cost and not factor it into the decision)

Interviewer Guide:

- **A Good Framework Will Mention:**
 - Breakdown drivers of profitability for each of the 3 business models
 - Consider # of players acquired and \$ revenue per player
 - Consider fixed and variable costs including infrastructure (fixed) and customer acquisition (variable)
 - Factor in qualitative factors for each business model
 - Consider potential competitive responses
 - Consider customer acquisition costs and long-term retention rate of player base
 - Explore other sources of income such as merchandising
- **A Great Framework Will Incorporate:**
 - Potential for future expansion
 - Launch 2nd generation game
 - Expand to other platforms including mobile and console
 - Expand to geographies outside of US
 - Host E-sports tournaments

The Pricing Games: Market Sizing

Question #1: Addressable Market Size

- What factors would you consider to estimate the number of players NLG can target with its first game? How large is this player base in the US?

Notes to Interviewer:

- *This is an example response. Good answers may vary based as there a several ways to approach the addressable market size. If candidate estimates a market size that is significantly different from 10M, gently guide candidate to pressure test assumptions*

Factors	Age 0 – 20	21 – 40	41+
Population Size	80M	80M	160M
% who owns computers	50%	75%	75%
% who play computer games	25%	25%	5%
% who is willing & can afford to try new genre of games	30%	40%	10%
Total Addressable Market	3M	6M	~1M

The Pricing Games: Profitability

Question #2: Profitability Calculations

- What is NLG's expected first year profitability with each of the 3 pricing models?
- Show candidate exhibits 1 and 2

Math Solution:

Revenues:

Subscription: $10M * 10% * \$10/\text{mon} * 12\text{mon}/\text{yr} = \mathbf{\$120 M}$

Retail: $10M * 12% * \$60 = \mathbf{\$72 M}$

Free-To-Play: $10M * 50% * 30% * \$100 = \mathbf{\$150 M}$

Costs:

Subscription: $10M * 10% * (\$50 + \$35) + \$5M + \$10M = \mathbf{\$100 M}$

Retail: $10M * 12% * (\$22 + \$18) + \$5M + \$10M = \mathbf{\$63 M}$

Free-To-Play: $10M * 50% * (\$13 + \$7) + 10M * 50% * 30% * \$10 + 5M$
 $+ 10M = \mathbf{\$130M}$

Profits (Margin):

Subscription: $\$120 M - \$100 M = \mathbf{\$20 M (16.67\%)}$

Retail: $\$72 M - \$63 M = \mathbf{\$9.0 M (12.50\%)}$

Free-To-Play: $\$150 M - \$130 M = \mathbf{\$20 M (13.33\%)}$

Math Information:

- All information required for calculations can be found on Exhibits 1 & 2
- Guide the candidate towards the footnote in Exhibit 2 if he/she misses it as it contains critical information
- Interviewee should note that the absolute profit amounts for subscription and free-to-play are identical
- Strong candidates will calculate profit margins

The Pricing Games: Brainstorm

Question #3: Qualitative Brainstorm

- What non-financial factors would you consider in the subscription vs. free-to-play business models?

Notes to Interviewer:

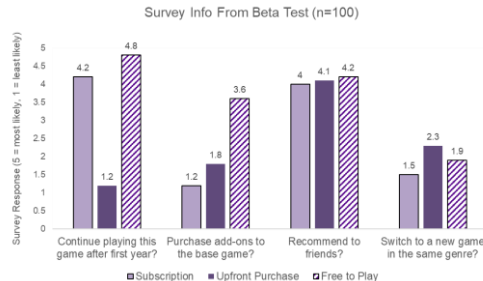
- *A strong candidate should display an organized structure while brainstorming. For example, grouping thoughts into mutually-exclusive buckets is a recommended practice. A strong candidate should mention, among other considerations:*
 - **Competitive response:** what if a new competitor launches a game in the same genre? How sticky is NLG's player base when faced with competition?
 - **Growth potential:** is there an opportunity for NLG to expand its product offering to attract more players? Potential paths for growth include:
 - New platform: expanding from PC to mobile or console
 - New geography: expanding outside of US
 - New game: launching 2nd generation game to create new content for players
 - **Alternate revenue streams:** can NLG explore alternate revenue streams such as merchandising? Can NLG participate in E-sports tournaments (contingent on reaching a large enough player base)
 - **Consumer preference changes:** will more players migrate to non-PC platforms such as mobile? Will a new generation of players lose interest in our game genre?

The Pricing Games: Chart Interpretation

Question #4: Qualitative Brainstorm

How does this information impact your outlook on the 3 different business models? [Show Exhibit 3]. After the candidate has processed the chart, push for a final recommendation.

Notes to Interviewer:



- Exhibit 3 contains qualitative information that candidates can use to guide their final recommendation.
- If the interviewee is unfamiliar with “Beta tests” in the video games industry, inform them that it is part of NLG’s market research to offer early trial experience to a select group of players
- Interviewee should realize that a higher value is not favorable for the last survey question
- Interviewee should note that the retail model would have low customer loyalty and low potential for additional revenue. The free-to-play and subscription responses indicate high levels of customer loyalty.
- A strong interviewee would comment on the statistical relevance of the survey as it has 100 responses, a statistically significant amount

The Pricing Games: Recommendation

Recommendation, Risks & Next Steps

- NLG's CEO, Bobby Beck, wants to meet for lunch to discuss your findings. How would you summarize your recommendation?

Recommendation:

- *The candidate may recommend either the subscription or the free-to-play business model. A strong candidate will display consistency based on his or her brainstorm from Q3 and cite relevant insights to support the recommendation, along with mentioning profit margins (if calculated) A strong candidate should also recognize short and intermediate-term risks and suggest tangible methods for mitigation.*
- *An example recommendation:*
 - “I recommend for NLG to pursue the free-to-play business model. This model captures the largest player base which puts NLG in a **strong position against competitive threats**. It also allows NLG to launch **future games**, expand to **new geographies**, or move into **other platforms** such as console or mobile. Even though short-term financial benefits are equivalent to that of subscription, the free-to-play model puts NLG in a more competitive position long-term.”
 - “Key risks associated with free-to-play model is generating a sufficient percent of paying players and growing revenue per player. To mitigate this risk, I recommend designing two types of in-game purchases. Players can either pay to “beautify” in-game characters to improve aesthetic appeal; or, players can pay to expedite the levelling journey and save time from “grinding” through stages. These efforts will help NLG capture a sufficient segment of paying customers based on two sustainable value propositions.”

The Pricing Games: Exhibit 1

Predicted Revenues

	Subscription	Retail	Free-To-Play*
Target Audience	10M	10M	10M
Predicted Market Share	10%	12%	50%
% Buy In-Game Content	-	-	30%
Monthly Subscription Fees	\$10	-	-
Retail Price	-	\$60	-
Annual In-Game Purchases	-	-	\$100

The Pricing Games: Exhibit 2

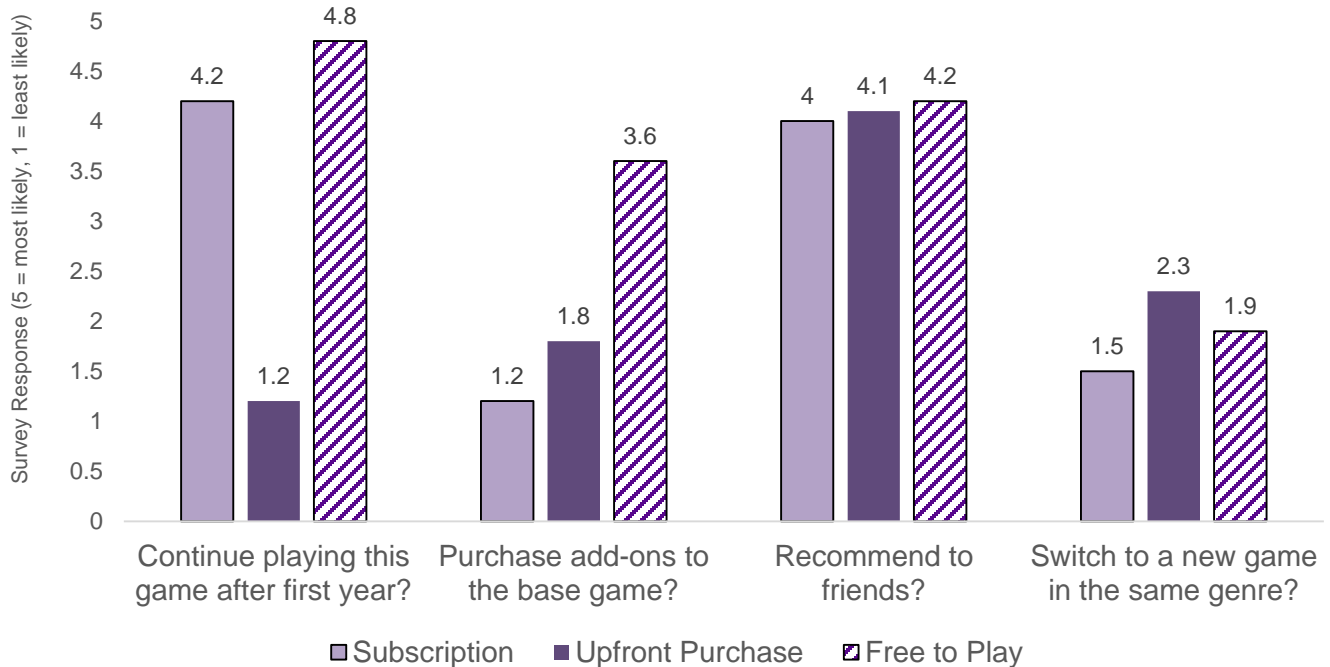
Cost Structure

	Subscription	Retail	Free-To-Play*
Annual Variable Cost	\$50	\$22	\$13
Customer Acquisition Cost	\$35	\$18	\$7
Annual Product Dev		\$5 M	
Server Costs		\$7 M	
Other Fixed Costs		\$3 M	

* Per customer costs in the table are for all customers, including non-paying customers. Paying customers incur an additional average variable cost of **\$10**

The Pricing Games: Exhibit 3

Survey Info From Beta Test (n=100)



Men's Extra Comfortable Essentials

Author: Peter Noorani & Anthony Russ (Stern '18)

Difficulty: Medium

Firm Style & Round: Interviewer Led

Case Prompt:

Our client, **Men's Extra Comfortable Essentials**, is a US-based manufacturer of basic apparel including socks, tanks, tees, and underwear. They manufacture each apparel line then brand and package them for distribution. Revenues in 2016 were \$60M, and the CEO has promised shareholders 4x growth by 2020, at which point, she promised 10.5% profit margin. She has hired us to determine whether these are these realistic revenue targets, and if so, how her firm could go about achieving them.

Case Overview:

Industry: Consumer Goods

Case Type: Growth Strategy

Concepts Tested:

- Market Sizing
- Brainstorming
- Growth Rates

Overview Information for Interviewer:

- Candidate must remain organized with math to translate given information into current market revenues, current market sizes, future market size, future revenues, current margins, and future margins
- Candidate will need to determine how to cut unprofitable product lines to improve margin
- Candidate must brainstorm effectively

Men's Extra Comfortable Essentials

Clarifying Information:

- The firm purchases the fabrics through contracts with suppliers across the US
- Firm receives uncut fabrics, and must process them into each apparel line in-house
- The firm currently only produces products for men
- Current Product Mix:

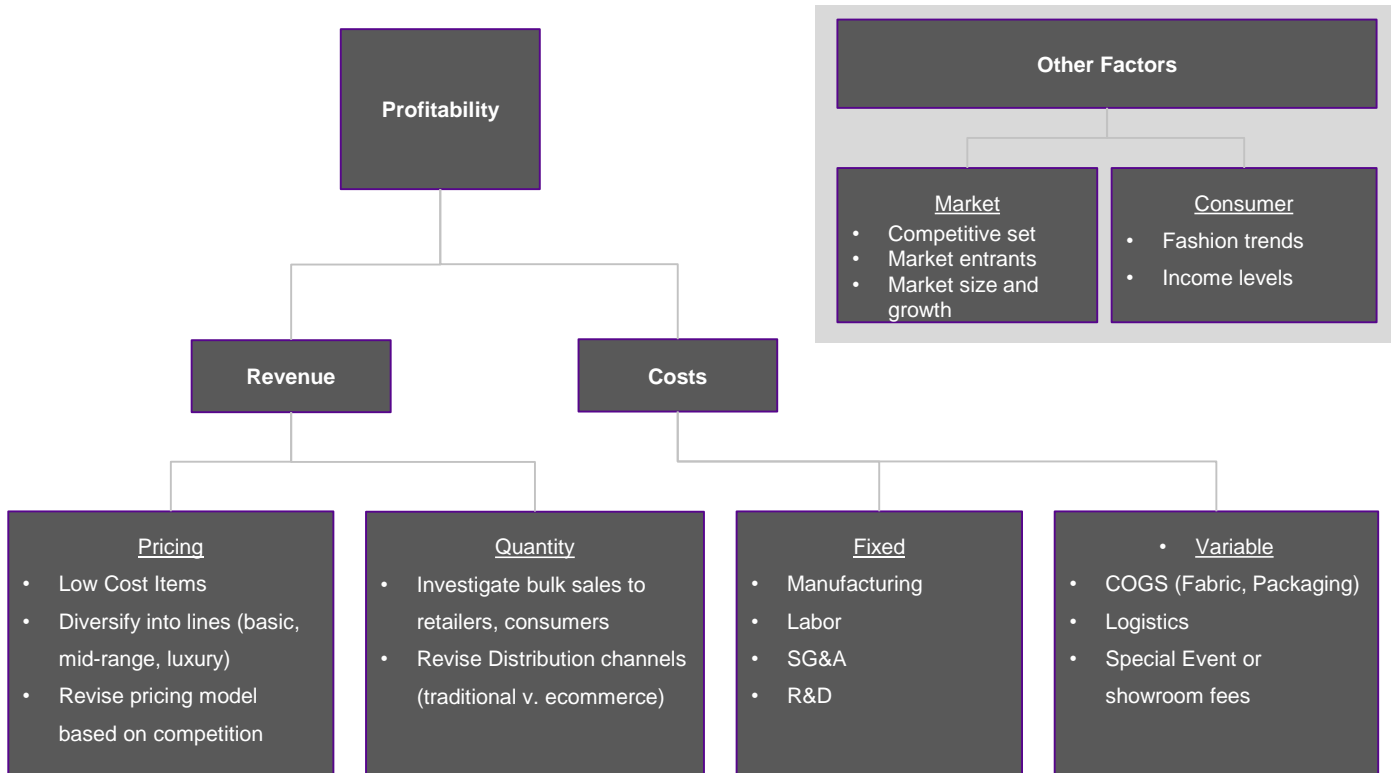
<u>Product</u>	<u>% of Revenue</u>
Socks	40%
Tanks	25%
Tees	15%
Underwear	20%

Interviewer Guide:

- **A Good Framework Will:**
 - Cover all major revenue and cost levers
 - Include all market size and growth dynamics included in the case calculations
 - Include potential external competitive factors
 - Be case specific
- **Necessary Information that should be given only when specifically asked for by interviewee:**

<u>Product</u>	<u>Market Share 2016</u>	<u>Estimated Market Share 2020</u>	<u>2016-2020: Market CAGR</u>
Socks	15%	15%	↑ 5%
Tanks	2.5%	10%	↑ 6%
Tees	5%	5%	↓ 3%
Underwear	1%	10%	↑ 20%

Men's Extra Comfortable Essentials: Sample Framework



Men's Extra Comfortable Essentials: Question 1

Math Question:

- Given the data you have, what will be our client's 2020 revenue by product type?

Math Solution:

Current revenue by product

Socks:	$40\% \text{ of revenue} * \$60M = \$24M$
Tanks:	$25\% \text{ of revenue} * \$60M = \$15M$
Tees:	$15\% \text{ of revenue} * \$60M = \$9M$
Underwear:	$20\% \text{ of revenue} * \$60M = \$12M$

Current market size by product

Socks:	$\frac{\$24M}{15\%} = \$160M$
Tanks:	$\frac{\$15M}{2.5\%} = \$600M$
Tees:	$\frac{\$9M}{5\%} = \$180M$
Underwear:	$\frac{\$12M}{1\%} = \$1.2B$

2020 market size by product

Socks:	$\$160M * 1.05^4 = \$194,481,000 \approx \mathbf{\$200M}$
Tanks:	$\$600M * 1.06^4 = \$757,486,176 \approx \mathbf{\$750M}$
Tees:	$\$180M * 0.97^4 = \$159,352,706 \approx \mathbf{\$150M}$
Underwear:	$\$1.2B * 1.20^4 = \$2,488,320,000 \approx \mathbf{\$2.5B}$

Math Information:

- Current revenue by product:
 $\% \text{ of Revenue} * \text{Total Revenue}$
- Current market size by product:
 $\frac{\text{Product Revenue}}{\text{Market Share}}$
- 2020 market size by product:
 $\text{Current Market Size} * (1 + \text{CAGR})^{\# \text{ of years}}$

Note: It is unlikely the candidate can complete the 2020 market size within a reasonable time. If the candidate has demonstrated sufficiency in previous calculations, simply ask candidate to explain how he or she *would* calculate, then provide the rounded figures.

Men's Extra Comfortable Essentials: Question 1 *continued*

Math Question:

- Given the data you have, can you calculate our client's revenue by 2020 by Product Type?

Math Solution:

Estimated 2020 revenue by product

Socks:	$\$200M * 15\% = \$30M$
Tanks:	$\$750M * 10\% = \$75M$
Tees:	$\$150M * 5\% = \$7.5M$
Underwear:	$\$2.5B * 10\% = \$250M$

TOTAL 2020 REVENUE = \$362.5M

Candidate should observe that \$362.5M in revenue for 2020 far exceeds the \$240M the CEO promised to shareholders.

Math Information:

- Estimated 2020 revenue by product:
 $2020 \text{ Market Size} * 2020 \text{ Market Share}$

Note: \$240M target the CEO promised to shareholders comes from the case prompt, where the CEO promised 4X revenue growth on current revenues of \$60M

$$\$60M * 4 = \$240M$$

Men's Extra Comfortable Essentials: Question 2

Math Question:

- Given the following gross margin information what is the gross margin for the firm in 2020? [Exhibit 1]

Product	2016 Revenue	2016 Margins % ¹
Socks	\$24M	15%
Tanks	\$15M	-5%
Tees	\$9M	0%
Underwear	\$12M	10%

Notes to Interviewer:

- Candidate must notice the footnote indicating that gross margins are expected to remain constant through 2020

2020 Gross Margin by product

Socks: $\$30M * 15\% = \$4.5M$

Tanks: $\$75M * -5\% = (\$3.75M)$

Tees: $\$7.5M * 0\% = \0

Underwear: $\$250M * 10\% = \$25M$

- Gross Profit = $\$25.75M$
- Candidate should calculate that $\$25.75M$ in gross profit on $\$362.5M$ in revenue for 2020 yields a gross margin of $\frac{\$25.75M}{\$362.5M} = 7.10\%$
- Finally, candidate should point out that 7.1% is lower than the 10.5% the CEO promised to shareholders.

Men's Extra Comfortable Essentials: Question 3

Question:

- How can the firm reach the targets promised to shareholders?

Solution:

- This candidate should immediately recognize that there are two products in 2020 that are below the target gross margin and seek to eliminate them while being cognizant of the 2020 revenue target.
- Candidate should determine that terminating the Tanks product line would decrease revenue to **\$287.5M** (which is still above the \$240M target) and increase gross margin to **\$29.5M**. This would force the gross margin percentage up to **10.26%**
- Candidate should also determine that terminating the Tees product line would decrease revenue to **\$280M** (which is still above the \$240M target) and leave gross margin at \$29.5M. This would further increase the gross margin percentage above the 10.5% target (to **10.54%**)

Men's Extra Comfortable Essentials: Question 4

Question:

- The numbers make sense, but of the remaining two product lines, only socks market share can remain constant (at 15%). Underwear's market share must increase from 1% to 10%; what are some ways the firm can attempt to do this?

Solution: Candidate should take some time to create a structured brainstorm

Customers

- Segmentation
 - Luxury Line (e.g. Nicer material, or use of more material per item)
 - Legacy "Basics" line; Women's line of underwear
- Product Mix → Boxers, Boxer briefs, Briefs, Athletic
- Marketing
 - Steal share from Hanes, etc.
 - Introduce new customer → B2B customers, such as selling to other companies for branding
- Distribution → New channels (Grocery stores? Pharmacies? Gas stations? Airports? Special vending machines?)
- E-commerce → Add-on purchases at checkout with other brands (e.g. Checking out at Club Monaco website, buying pair of trousers "Would you like to add *Men's Extra Comfortable Basics* underwear to your order?")

Operations

- Re-tool production lines (focus on underwear products rather than tees or tanks)
- Renegotiate supplier contracts
- Potentially look for suppliers outside the US
- Logistics considerations (Adjust locations of warehouses, how products are packaged for transportation)
- Outsource the manufacturing of the apparel (increase profitability without market size)
- Marketing push on Underwear products

Men's Extra Comfortable Essentials: Recommendation

Recommendation:

- Drop the Tanks and Tees product lines in order to achieve the margin goal
- Embark on a campaign to increase market share of Underwear lines (via new products or a female product lines)

Risks:

- Potentially alienate loyal customers
- Cutting product lines could impact sales of other items, particularly if customer buys products together (e.g., underwear & socks)
- Taking market share for underwear could incite competitive response across in other categories

Next Steps:

- Determine messaging internally and externally about why the product line cut is made
- Determine target for underwear expansion
- Determine most efficient way to re-purpose equipment and labor from tanks and tees to socks and underwear

Bonus: Guide to an excellent case

- An good candidate will recognize the need to calculate 2020 market size and the need for CAGR
- An excellent candidate will utilized shortcuts for math to eliminate unnecessary steps and quickly identify that the 0% margin product can be cut to increase corporate margin
- The **BEST** candidate will recognize the firm name acronym is MECE

Men's Extra Comfortable Essentials: Exhibit 1

Gross Margin by Product

Product	2016 Revenue	2016 Margins % ¹
Socks	\$24M	15%
Tanks	\$15M	-5%
Tees	\$9M	0%
Underwear	\$12M	10%

¹ Firm expects 2016 margin % to maintain constant through 2020

WiFi in the Sky

Author: Jasmine Dyba (Stern '18)

Case Style: Interviewer Led

Difficulty: Medium

Case Prompt:

Your firm has won an RFP to help a domestic airline carrier examine their in-flight connectivity (IFC) strategy. With 80% of US-based aircraft already outfitted with IFC technology and competitive pressures rising, offering WiFi service is becoming table-stakes. Your client has yet to enter the game, but they know it's something they need to consider to stay competitive. What are some of the key things the client should think about when assessing their go-to-market strategy for IFC?

Case Overview:

Industry: Airline

Case Type: Market Entry

Concepts Tested:

- New Product Launch
- Breakeven

Overview Information for Interviewer:

- Candidates are likely to spend the bulk of their time on break-even analysis
- The difficulty in the case lies in recognizing the implications of different business models, and thinking creatively about how to triangulate data to uncover critical information
- Candidates should not get caught up on the specifics of WiFi technology or how it works, but rather consider high-level implications of investing in nascent technology

WiFi in the Sky: Case Guide

Clarifying Info:

- Th airline flies primarily domestic routes within the continental US, as well as select flights to Canada, Mexico, and the Caribbean
- IFC includes only WiFi connectivity. In-flight entertainment (IFE) is delivered via an on-board server through a separate system, but the two can be integrated into one user experience
- The airline's main objective is to stay competitive
- RFP = request for proposal
- Airline has 90 planes and services ~30K flights per year

Interviewer Guide:

- **A good framework will consider:**
 - **ROI and/or profitability**
 - Price and pricing model (free, ad-supported, pay per data usage, pay per time, pay by speed tier, subscription service, etc.)
 - Market demand (take rate, market segments)
 - Costs (upfront investment, ongoing costs)
 - **Vendor contract structure** (revenue/business model, split of investment costs and OpEx, branding, contract length, technology)
 - **Product/user experience** (built-in screens v. BYO-screen, white-label v. vendor-branding, speeds available, interoperability with in-flight entertainment, add-on services like calling or texting)
 - **Technology** (speed, bandwidth, latency, availability when flying over water)
 - **GTM** (rollout timing, marketing, crew training, ad sales)
- **Necessary Information that should be given only when specifically asked for by interviewee:**
 - IFC is typically installed and managed by an outside vendor, either through a branded service (e.g., GoGoAir) or a wholesale, white label solution (e.g., Row44). Contracts are typically 10+ years long.
 - Different vendors use different technologies, which vary in quality
 - Total bandwidth is shared across passengers, so the more passengers buy a session, the slower the service (some carriers intentionally charge high prices to limit usage and ensure better service)

WiFi in the Sky: Question 1

Question #1:

There is a wide range of potential business models and your client wants to better understand them before making a vendor decision. Your analyst pulled these benchmarks on what two competitors are doing today. What are your thoughts on these two models? [Give **Exhibit 1**]

Notes to Interviewer:

- Candidate should recognize that these are not the only two possible models, and good candidates will consider other possible structures. Further, candidates should not limit themselves to discussing only the elements listed in the exhibit - strong candidates will consider other critical features of the model (see examples below)
- A simple way to assess these models is to discuss the pros and cons of each:
 - **Competitor 1's Model**
 - Pros: less operational burden on airline, potential for customer experience continuity (e.g., allow subscriptions across airline carriers), limited costs
 - Cons: limited control over pricing (high price could drive low take rates and anger customers), brand fit considerations
 - **Competitor 2's Model**
 - Pros: control over pricing, control over user experience, potential for better ROI, easier to integrate with airline's other products (e.g., in-flight entertainment system)
 - Cons: more operational burden on airline, higher costs
 - **Other considerations:** who will pay for the initial investment, what is the ongoing cost structure, potential to adopt more than one model across the fleet, technology limitations (vendors don't come equal)

Interviewer Guide to Exhibit 1

	Competitor 1	Competitor 2
Airline description	Major domestic and international carrier with 65% fleet IFC coverage	Domestic discount carrier with 90% fleet IFC coverage
Branding	Vendor-branded	Airline-branded
Pricing (for customers)	Determined by vendor, average \$25/session	Determined by airline, Free
Revenue model	Revenue share	Wholesale

Notes to Interviewer:

- Clarifications (if candidate asks):
 - Assume 1 session buys a passenger WiFi connectivity for the duration of the flight
- The Exhibit is intentionally missing critical information (e.g., cost structure, technology, product features, interoperability with in-flight entertainment system). If candidate limits discussion to the elements in the table, ask the candidate if they think there are any other important considerations.

WiFi in the Sky: Question 2

Question #2 (Math Question):

After some initial analysis, the client has decided to partner with a white-label IFC vendor to outfit all 90 of its planes. The airline and vendor will share the initial investment, and then the airline will pay the vendor a per-session fee to cover operating expenses. The airline wants you to figure out what percentage of their passengers need to purchase a session for the airline to break even in 2 years. They have provided you with some useful data. [Give **Exhibit 2**]

Math Solution:

- To calculate the initial investment:
 - Airline share of investment = $\$250K \times 40\% = \$100K$ per plane
 - Total investment = \$9M (solution below):
 - Wide body = 10 planes \times \$100K/plane = \$1M
 - Narrow body = 80 planes \times \$100K/plane = \$8M
 - Total = \$1M + \$8M = \$9M
- To determine total passengers in 2 years:
 - Wide body = 300 seats \times 2,500 flights/yr \times 2 yrs = 1.5M passengers
 - Narrow body = 100 seats \times 27,500 flights/yr \times 2 yrs = 5.5M passengers
 - Total = 1.5M + 5.5M = 7M passengers in 2 yrs
- To determine % take rate needed:
 - Set up the following equation and solve for [take rate]:
 - 7M passengers \times [take rate] \times \$10/session = \$9M
 - [Take rate] = 12.9% (*A strong candidate will express a reaction to this outcome and offer implications*)

Math Information:

Wait for the candidate to ask for these data-points:

- Capex = \$250K per plane (airline will cover 40% of it)
- Margins = \$10 per session

Assumptions:

- Seat occupancy rate* = 100%
- All aircraft will be outfitted at the same time*
- Ad revenues already baked in to the margin figures
- 1 WiFi session covers entire flight

**Advanced candidates will bring these up on their own*

Interviewer Guide to Exhibit 2

	Wide body	Narrow body
Fleet Size	10	80
Seats per Aircraft	300	100
Flights per Year	2,500	27,500

Notes to Interviewer:

- Wide body = aircraft large enough to accommodate two passenger aisles
- Narrow body = a single-aisle aircraft

WiFi in the Sky: Question 3

Question #3:

Market research tells us that take rates are only between 5 and 10% today for paid connectivity, so your client is concerned about being able to hit the break-even targets. What do you think are the key drivers of IFC take rate?

Notes to Interviewer:

- This is a correlation question, not a causation question. So the case is essentially asking: what variables might be correlated with higher take rates?
- **Sample take rate drivers:**
 - *Flight characteristics: flight length, flight time (red-eye vs daytime), other entertainment systems*
 - *Product characteristics: price, speeds available, quality of service, number of connected devices*
 - *Passenger characteristics: age, gender, income, cabin class, business/leisure*
- *Push the candidate to brainstorm as many drivers as they can and to hypothesize which way the variable would have to swing to drive higher take rate*

WiFi in the Sky: Recommendation

Recommendation:

- The airline should partner with a wholesale, white-label vendor to retain control over pricing and the user experience
- Roll-out across aircraft should be gradual, with a potential pilot program to optimize pricing, user experience, etc.
- Roll-out should prioritize newer planes that cover routes with high expected take rates

Risks:

- Due to large upfront investment, contract is likely to be 10+ years long, so smart vendor selection is very critical
- Difficult to strike balance between maximizing revenue and maintaining sufficiently low take rate to ensure higher speeds
- Technology is still nascent, potential for poor user experience

Next Steps:

- Vendor selection and contract negotiation
- Aircraft prioritization
- Pilot launch

Bonus: Guide to an excellent case

- Recognize the tradeoffs around vendor selection (e.g., the vendor who agrees to your business model may have inferior WiFi technology)
- Consider user experience, technological limitations, implications of long contract renewal cycles, and operational complexity of rolling out IFC
- Incorporate knowledge of the airline industry such as load factor
- Complete the break-even exercise quickly enough to get through all 4 case questions

WiFi in the Sky: Exhibit 1

Competitive Benchmarking

	Competitor 1	Competitor 2
Airline description	Major domestic and international carrier with 65% fleet IFC coverage	Domestic discount carrier with 90% fleet IFC coverage
IFC Branding	Vendor-branded	Airline-branded
Pricing (for customers)	Determined by vendor, average \$25/session	Determined by airline, Free
Revenue model	Revenue share	Wholesale

WiFi in the Sky: Exhibit 2

Air Fleet Statistics

	Wide body	Narrow body
Fleet Size	10	80
Seats per Aircraft	300	100
Flights per Year	2,500	27,500

MJ Wineries

Author: Jwalit Patel and Michael Scolnic (Stern '17)

Difficulty: Medium

Case Style: Interviewer Led

Case Prompt:

Our client MJ Wineries produces wine in Sonoma Valley, California. MJ Wineries specializes in growing Chardonnay grapes and has won numerous awards for their famous full-bodied Chardonnay. Although MJ Wineries market share in Chardonnay remains strong, profitability has recently declined.

The CEO has hired your firm to recommend ways to immediately improve profitability.

Case Overview:

Industry: Wine

Case Type: Profitability

Concepts Tested:

- Brainstorming
- Revenue growth
- Market trends

Overview Information for Interviewer:

The case focuses mainly on brainstorming and seeing the range of ideas a candidate can come up with

There is little to no math required for the case, so if the candidate is calculating unnecessary numbers than guide them to discuss qualitative points

MJ Wineries: Case Guide

Clarifying Information:

- The year date is currently January 1st, 2018; you can assume 2017 has just concluded
- It takes at least nine months to produce a bottle of Chardonnay from the time the grapes are planted to the time the wine can be un-corked but the wines get better as they age
- MJ Wineries only produces wine in Sonoma Valley produced from grapes grown at one large 3,000 acre vineyard
- Wine production is a very-capital intensive industry but MJ Wineries owns the equipment they use to produce wines
- There are some major wine producers but tens of thousands of small producers

Interviewer Guide:

- **A Good Framework Will:**
 - Cover diverse profitability issues from both a cost and revenue perspective
 - Address product differentiation and quality
- **Necessary Information that should be given only when specifically asked for by interviewee:**
 - Customer segments
 - Liquor stores are primary distribution source
 - Restaurants
 - Bars/Nightclubs
 - Super Markets
 - US Market share (Millions of \$)
 - Chardonnay: 2,500
 - Cabernet Sauvignon: 2,000
 - Merlot: 1,050
 - Pinot Grigio: 800
 - Pinot Noir: 300
 - All other wine types are less than 300m individually
 - Average profit margin on Chardonnay is 20%

MJ Wineries: Question 1

Question #1:

What could be impacting profitability at MJ Wineries?

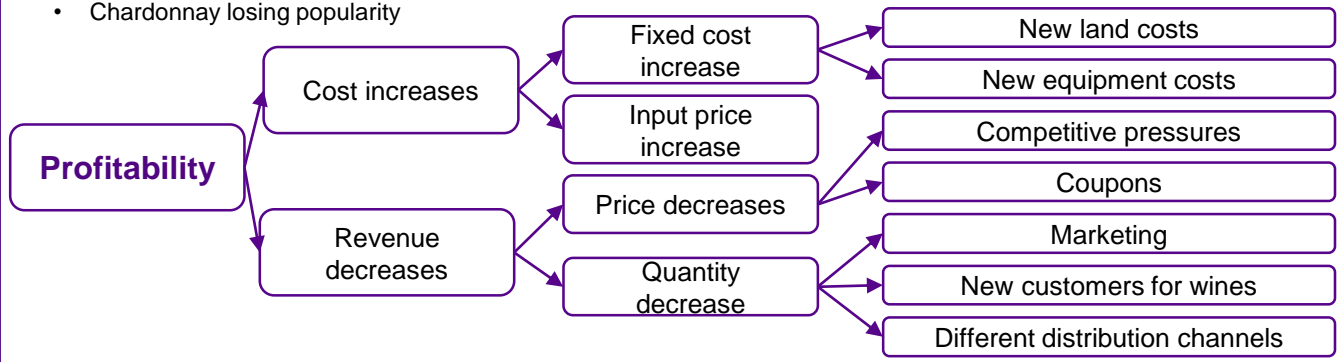
Notes to Interviewer:

Market

- New market entrants taking share from MJ
- Evolving customer tastes to different styles of Chardonnay
- Wine losing popularity to other types of spirits
- Other regions taking share from California, California losing “prestige”
- Chardonnay losing popularity

Company

- Managerial capabilities to produce wines
- Brand recognition problems/lack of recent awards
- Financing issues/cost of capital increases
- Lack of diversification



MJ Wineries: Question 2

Question #2:

After the candidate mentions other types of wine, ask:

Which grape variety should MJ wineries consider for producing its new wine?

Notes to Interviewer:

- Hand over Exhibit 1 and Exhibit 2
- Candidate should notice that customer preference is shifting from white wine to red wine. Hence MJ wineries should consider diversifying outside of white wine (Chardonnay)
- While candidates can justify other choices, **Pinoit Noir is the best choice for MJ wineries** because:
 - Red wine is a growing customer preference
 - Merlot has strong consumption growth at around 12%
 - Sonoma Valley is known for Pinot Noir production, so climate and soil type are suitable
 - Pinot Noir matches with any food type, which can be used for marketing efforts
 - Profit margins are average for Pinot Noir, but other factors like versatility should compensate for it

MJ Wineries: Question 3

Question #3:

MJ Wineries has taken your advice and decided to focus on producing Pinot Noir.

What are some pros and cons for MJ Wineries to consider when moving into the Pinot Noir market?

Notes to Interviewer:

Pros

- Pinot Noir is a very popular wine in America and has experienced fast growth
- Often sells at a higher price point than Chardonnay
- Increased number of varieties could insulate against changes in consumer preferences
- Growing multiple varieties of grapes could provide benefits in case one crop is negatively impacted by the weather
- Pinot Noir is often produced by Chardonnay producers, elevating brand image

Cons

- Pinot Noir is a red wine and is not grown or produced exactly the same way as Chardonnay
- There are increased capital costs associated with red wine production
- A new variety brings a different competitive set and it could be hard to gain market share
- It may take time to establish a track record with Pinot Noir because of the long lead time between growing grapes and selling wine

MJ Wineries: Question 4

Question #4:

After carefully considering producing Pinot Noir, MJ Wineries wants to prepare a contingency plan in case they aren't able to correct profitability issues by introducing a new wine

What are some other ways MJ Wineries could increase revenue without introducing a new type of wine?

Notes to Interviewer (possible answers include):

- Produce some other type of alcohol like beer or whiskey
- Focus on other aspects of the winery business like giving tours, expanding the tasting room, hosting weddings at the winery, etc.
- Sell off a portion of the winery's land to another winery or a developer and purchase a portion of the grapes from another vineyard
- Produce wine for small batch producers with excess production capacity
- Age the wine for longer in order to drive up the price for longer-aged vintages
- Create furniture like bars and coffee tables out of old wine barrels to sell via high-end furniture producers
- Use the land to grow an alternative crop that may produce more money like avocados or mushrooms
- Invest in new technologies to increase the yield of grapes to produce more wine or sell excess grapes
- Turn the winery into a school for aspiring wine producers to come learn how to make wine from a real working winery
- Work in partnership with popular wine magazines or critics like Robert Parker to increase the prestige of existing Chardonnays
- Offer hot air balloon rides from the winery so guests could see scenic Sonoma Valley

MJ Wineries: Recommendation

Recommendation:

- MJ Wineries should expand into producing Pinot Noir
- This will allow them to capture a greater market share of the overall wine market
-
- It will also help them diversify risk in case Chardonnay becomes less popular or the grape crop fails

Risks:

- Although growth rates look promising now wine tastes are fickle and Pinot Noir may not keep growing
- Consumer preferences may shift towards beer as the craft brewing movement grows making an investment in wine bad
- Increased operational complexity

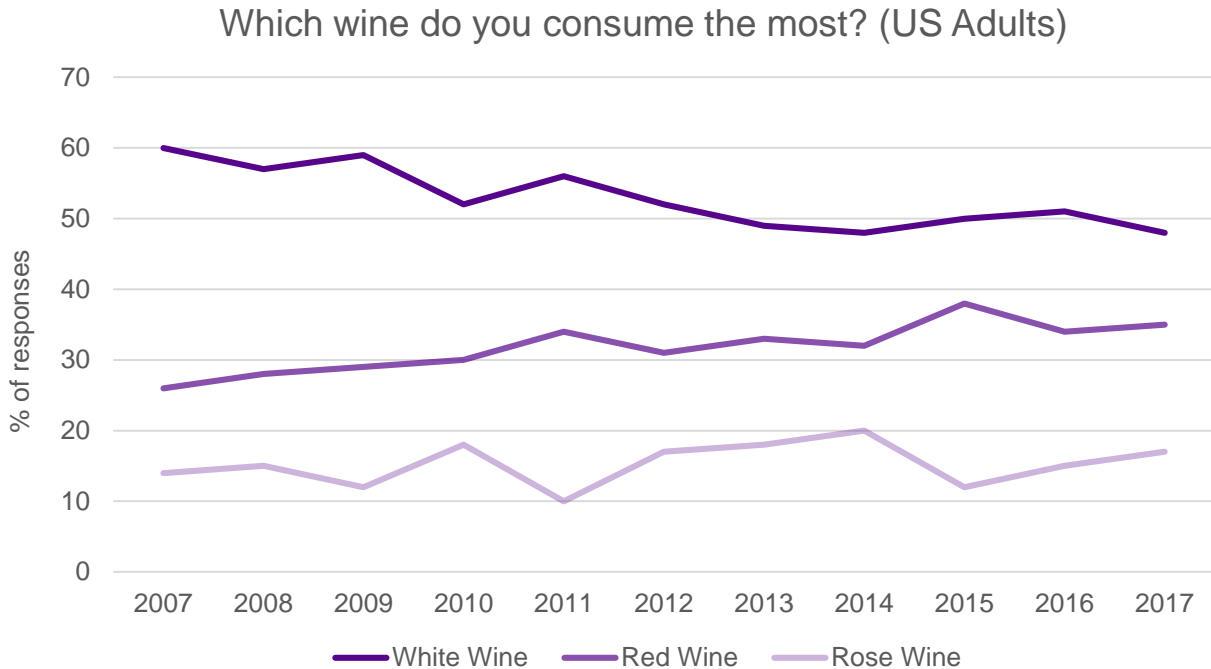
Next Steps:

- Begin developing the capabilities for producing Pinot Noir and plant new grapes
- Purchase additional needed equipment for producing Pinot Noir

Bonus: Guide to an excellent case

- Identifies additional ideas from the brainstorm as relative contingency plans such as offering weddings at the winery
- Focuses on difficulties of producing a product without well-defined attributes i.e. what is a good wine is largely a matter of preference and may change over time
- Discusses the benefits of being a small vs. large wine producer, high quality vs. high volume
- Identify that producing Chardonnay and Pinot Noir together could elevate brand image

MJ Wineries: Exhibit 1



MJ Wineries: Exhibit 2

Grape Variety	Wine Type	Key Locations	Food Pairing	Consumption Growth	Profit Margin
Chardonnay	White	France, California	Fish and Chicken	2%	20%
Riesling	White	Germany, Eastern USA	Food friendly	10%	15%
Sauvignon Blanc	White	New Zealand, France	Seafood	4%	10%
Syrah	Red	Australia, France	Red meat	2%	18%
Merlot	Red	France, California	Red meat	12%	8%
Cabernet Sauvignon	Red	France, California	Red meat	1%	10%
Pinor Noir	Red	France, California	Food friendly	12%	15%

Case Prompt:

The maker of Botox is considering expanding to the migraine market and has already begun clinical trials in this area. The product is expected to receive FDA approval in 2019. Your team has been hired to assess the viability of this product for launch.

How will you determine if the market is attractive? If the market is attractive, do you have any recommendations regarding how to launch the product? What concerns should the client take into consideration before deciding to launch?

Case Overview:

Industry: Pharma

Case Type: New Market Entry

Concepts Tested:

- Market Sizing
- Profitability

Overview Information for Interviewer:

This is a candidate led case with 3 key components (details on next page).

The candidate should create a structured approach to respond to the prompt, laying out the actions the project team would need to take.

If the candidate struggles to organize his/her thoughts and structure the problem, the interviewer should prompt with a question (e.g., How big would the market need to be to make the product viable?) The candidate should quickly get to the mechanics of market size estimation and develop a business case.

Botox: Case Guide (1/2)

Clarifying Information:

- **Price**
 - The drug will be priced at \$200/injection
- **Cost**
 - Remaining development and launch costs amount to approximately \$5B
 - Manufacturing marginal costs are expected to be quite small
 - Annual marketing expense can be estimated at \$1B
- **Attributes**
 - The product is a prophylactic injection given every 2 months
 - Offers similar efficacy compared to market leading option but without any side effects
 - When taken for migraines it does have some added skin care benefits

Competition

- The market leading branded prescription oral migraine treatment lost patent protection last year
- Strong over-the-counter generic market for migraine treatments

Interviewer Guide:

The case has 3 key components:

1. A high-level market sizing exercise for the migraine market, that will involve estimating the potential size of the target population
2. An assessment of the considerations for launching Botox in a new indication, targeting a new therapeutic area
3. A recommendation and report-out summarizing conclusions from the analysis

A successful candidate will go beyond the simple market and revenue sizing. He/she should discuss the pros and cons of a product launch, address additional considerations and make a solid recommendation as to how to proceed.

The interviewer should challenge the candidate to justify any assumptions or arguments made when raising considerations.

Botox: Case Guide (2/2)

Clarifying Information:

- The # of typical migraine sufferers is difficult to approximate since migraines/headaches vary greatly
- The interviewee should size the market using a structured approach while the interviewer challenges the reasonableness of assumptions. An example of a top-down approach follows.

Market Sizing Information

Population

- This drug will initially be produced in the US, so the candidate should use US population (320 M)

% of population diagnosed with migraines

- Reasonable estimate of the number of migraine sufferers (1 in 7 is approximately correct)

% treated with OTC (Over The Counter) vs. prescription medications (i.e. severe migraine sufferers)

- Assume that about 25% of chronic migraine sufferers experience severe migraines and are willing to regularly purchase prescription products

Expected share for the product:

- Due to the absence of side effects and the beneficial skin care properties assume ~30% of overall market in the 5 years following launch

Botox: Calculations

Market Sizing Calculation:

Variables	Source (given in case unless stated)	Calculations
US population		320 M
% of people who suffer from chronic headaches/migraines	Assumed	15%
% severe migraine sufferers	Assumed	25%
Total market size in # of patients	$(\text{US pop.}) \times (\% \text{ chronic sufferers}) \times (\% \text{ severe})$	12 M
\$Price/ injection		\$200
# injections/year	$(1 \text{ injection}/(2 \text{ months})) \times (12 \text{ month}/\text{year})$	6
Annual revenue per patient	$(\$ \text{ price}/\text{injection}) \times (\# \text{ injections}/\text{year})$	\$1200
Total annual market size in \$	$(\# \text{ patients}) \times (\text{annual revenue per patient})$	\$14.4 B
% Botox market share	Assumed	30%
Potential annual Botox market size in \$	$(\text{total market size } \$) \times (\% \text{ of market share})$	4.32 B

Botox: Question 1 (1/2)

Question #1 (from prompt):

What concerns should the client take into consideration before deciding to launch?

Notes to Interviewer:

Branding

- The Botox brand carries a specific and somewhat controversial image which may impact patients' willingness to use the drug for a non-cosmetic indication
- By leaving both products under the same brand name, the client opens itself to more risk exposure should a new side-effect be discovered for one of the products. Since the migraine market will likely be much larger than the existing cosmetic market, it bears a higher risk of adverse events which may then impact the existing market

Erosion/Cannibalization

- If physicians and consumers identify that they two products are essentially the same, it will be very challenging for the client to preserve the two separate markets. The client should investigate regulatory and other mechanisms for keeping the markets separate
- Launching this product at a much lower price-point than the cosmetic indication might cause substantial off-label usage, price erosion and cannibalization of the cosmetic segment

Botox: Question 1 (2/2)

Question #1 (from prompt):

What concerns should the client take into consideration before deciding to launch?

Notes to Interviewer:

Competition

- Given only comparable efficacy versus generic brands, insurance companies may not be willing to put the Botox treatment on formulary, and many migraine sufferers may be unable to afford the treatment out-of-pocket

Other Considerations

- From a regulatory perspective it can be challenging to launch a new indication of an existing product to treat a different condition. The FDA may require the products to be labeled differently and limited to certain specialties, requiring separate marketing
- In general, patients tend to be averse to injectable therapies, particularly when comparable oral treatments are available
- The client could submit the product for approval in other countries in order to increase the potential market size
- If the product can be shown to have better efficacy for a particular patient population, it may be preferable to target the indication and marketing

Botox: Recommendation

Recommendation:

- Given the projected \$ size of the prescription migraine market, this looks like a promising market to enter for the Botox maker and would seem to offer very large revenue potential, and more importantly, profit potential.
- However, the product will face significant challenges if launched according to the company's proposed strategy and may cannibalize the highly profitable Botox cosmetic product.
- Launching under another brand name might allow the client to more effectively differentiate between the two uses when advertising the product to customers and physicians. It would also make it easier to price the products differently.

Risks:

- **Regulatory:** The product has not been approved by FDA yet and its success is contingent on getting regulatory approvals
- **Branding:** Both branding with same name and different names have risks attached to them – reputational issues and lack of market traction respectively
- **Cannibalization:** Launching the new product at a lower price point may result in significant cannibalization of cosmetics segment

Next Steps:

- Continue clinical trials and set-up regulation/ brand/ marketing-based barriers between the different markets
- Set up contracts with insurance companies to ensure that they will pay for the Botox migraine product after launch

Bonus: Guide to an excellent case

- A strong candidate will recognize the challenges (e.g., cannibalization and branding) of re-launching the brand for a new segment.

FlashPro

Author: Rodrigo Vargas (Stern '17)

Case Style: Interviewer Led

Difficulty: Medium

Case Prompt:

Your client is FlashPro Inc., a San Francisco based technology company that develops and sells wearable and mountable action cameras. FlashPro's CEO believes that the company's growth has stagnated and has hired your firm to remedy that issue.

Case Overview:

Industry: Technology

Case Type: Growth

Concepts Tested:

- Math
- New Market Assessment

Overview Information for Interviewer:

- This case test the interviewee's ability to deal with large sets of data and focus on the key components of profitability.
- It also tests the interviewee's creativity in figuring out ways to grow revenues and profit.

FlashPro: Case Guide

Clarifying Information:

- The company is public. It sells its products in the US and internationally.
- Their main product is CamPro; a mounted camera mainly used when playing action sports. It has also recently started being used in other recreational activities.
- FlashPro does not manufacture its products, it contracts with manufacturers in China.
- FlashPro sells its products through 3 channels: Distributors, Retail, and FlashPro's Website
- The industry is highly competitive and customers are very loyal to each brand

Interviewer Guide:

- **A Good Framework will include:**
 - Market Analysis: Competitors, Customers, Substitutes, Suppliers, etc.
 - Profitability tree indicating components of revenue and costs.
 - Costs should include COGS, R&D, G&A and Sales & Marketing.
- **Necessary Information that should be given only when specifically asked for by interviewee:**
 - The Camera Price is \$250
 - Gross margin has remained steady at 50%
- Over the last 5 years, 60% of camera sales have come from the U.S. The split is expected to be similar in 2018.

FlashPro: Question 1

Question #1:

[Hand out Exhibits 1-3]

What is FlashPro's expected Gross Profit for 2018?

Math Solution:

Revenues:

U.S. Camera Sales = $16,000 * 85% * 30% * \$250 = \$1,020,000$

Addressable Market * Penetration * FlashPro Market Share * Price

International Camera Sales = $1,020,000 * (0.40 / 0.60) = 680,000$

U.S. Sales * (% International Sales / % U.S. Sales)

Total Revenue = $(1,020,000 + 680,000) = \$1,700,000$

COGS

$\$1,700,000 * 50% = \$850,000$

Total Sales * COGS % of Sales = COGS

Gross Profit

$\$1,700,000 - \$850,000 = \$850,000$ (in thousands = \$850m)

Total Sales – COGS = Gross Profit

Math Information:

Camera Price = \$250

Camera Sales Distribution:

U.S. = 60%

International = 40%

COGS = 50% of Sales

These trends are expected to continue in 2018.

All amounts are in thousands.

FlashPro: Question 2

Question #2:

FlashPro wants to understand what are their revenue growth prospects at this moment (keeping everything constant) and analyze other alternatives that could help boost their top line.

Notes to Interviewer:

- The purpose of this question is to test the candidate's creativity and ability to come up with different ways to grow top line.
- A good candidate should mention important insights from Exhibits 1, 2 and 3; limited market growth in the US and fierce competition that hinders gain of market share.
- The candidate will start listing different ways FlashPro can increase sales. An excellent candidate will provide a organized framework that includes the following:
 - Marketing Mix (4Ps): Product Attributes, Sales Channels, Price, Advertising, etc.
 - New Markets (Product Line Expansion, New Geographies, etc.)
 - Organic (Developed in house)
 - Inorganic (M&A)
- If necessary, point candidate into considering new geographies and hand out Exhibit 4.

FlashPro: Question 3

Question #3:

[Hand out Exhibit 4]

From an economic perspective what is the most attractive country to enter and what things should FlashPro consider before entering?

Notes to Interviewer:

A good candidate would calculate the expected revenue on Year 3 and determine which of the alternatives is the best option.

An excellent candidate will consider the sales channel distribution and would assume margins are higher on FlashPro's website since there is no intermediary, and lower on the distributor and retail channels.

The best alternative is Argentina because it provides the highest revenue at the third year and the sales channels seem to provide higher margins:

Year 3 Revenue: Argentina \$1,165, Japan \$1,013, Australia \$932, and Sweden \$951

Things to consider before entering:

The candidate should provide a few structured examples of considerations before entering: customer habits, local competition, regulation, country's economic and geo-politic situation, logistics, etc.

FlashPro: Recommendation

Recommendation:

- Given the competitive landscape, FlashPro should pursue a geographic expansion strategy to achieve growth
- Argentina is the most attractive option with a higher expected market share, higher overall revenue, and a larger share of the higher margin website channel

Risks:

- Did not consider costs related to entry into markets or competitive responses
- The Year 1 market share assumptions may be a bit aggressive, FlashPro may have trouble getting achieving those assumptions

Next Steps:

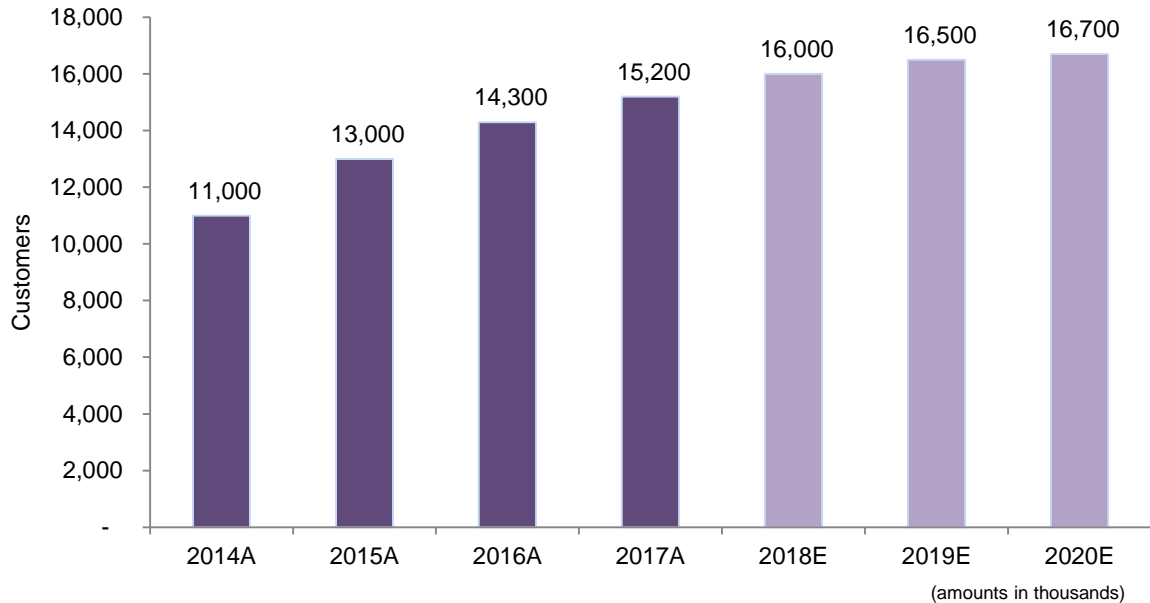
- Continue doing research into expansion into the Argentinian market
- Assess necessary internal capabilities needed to implement expansion strategy
- Plan a marketing campaign that includes advertising, sales channels, promotion and pricing

Bonus: Guide to an excellent case

- A good candidate will have a complete brainstorm and consider multiple expansion options.
- An excellent candidate will recognize that the analysis is incomplete and that there are other costs to be factored in.

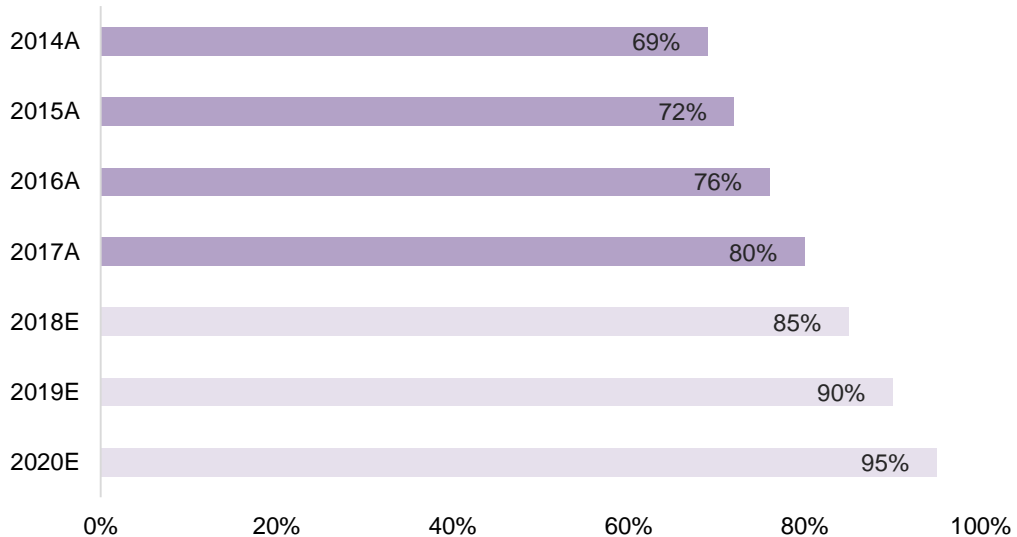
FlashPro: Exhibit #1

Action Camera Potential Market in the US



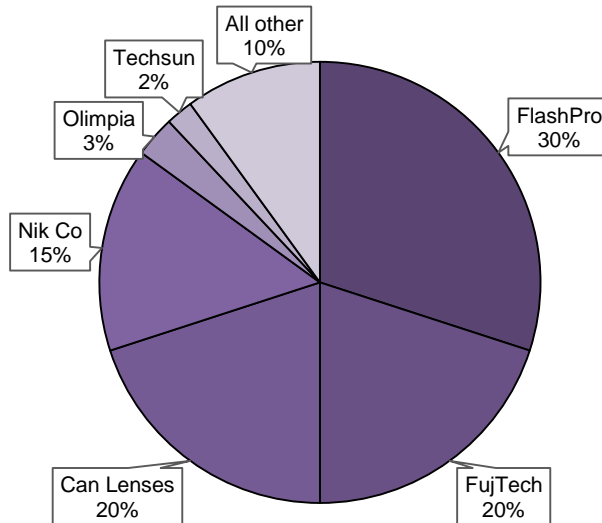
FlashPro: Exhibit #2

Action Camera Market Penetration in the U.S.



FlashPro: Exhibit #3

2016 Action Camera Market Share Distribution



Market Share distribution is the same in the US and worldwide and has remained steady for the last 5 years.
FlashPro is the only company offering wearables

FlashPro: Exhibit #4

	Argentina	Japan	Australia	Sweden
Current Camera Market Size (Total Revenues)	\$ 2,500	\$ 3,500	\$ 3,500	\$ 2,500
Flash Pro's Expected Market Share at Year 1	35%	25%	20%	25%
Expected Annual Growth Over the next 3 years	10%	5%	10%	15%
Sale Channel Distribution:				
Distributors	20%	40%	20%	40%
Retail	30%	50%	30%	50%
FlashPro's Website	50%	10%	50%	10%

After Year 3, the expected market annual growth for all countries is 5%

(dollar amounts in thousands)

Bike Helmets

Case Style: Interviewee Led

Difficulty: Medium

Case Prompt:

Your client is a private equity firm considering purchasing a firm that makes bicycle helmets. You have been hired to help advise whether or not to make the acquisition.

Case Overview:

Industry: Manufacturing

Case Type: Investment Decision

Concepts Tested:

- Market Sizing
- Valuation

Overview Information for Interviewer:

This case is designed to see how the candidate thinks. The candidate needs to make assumptions and justify them throughout.

There is no “correct” answer for this case. A good candidate will identify and weigh factors that are both for and against the investment and decide which decision makes more sense.

Bike Helmets: Case Guide

Clarifying Info:

TARGET COMPANY

- The company only sells its products in the U.S.
- The company currently has an estimated market share of 60% of helmets sold in the U.S.
- The company has had a string of ineffective CEOs
- The company's helmets have an average price of \$30
- Helmet prices are not expected to change in the future.
- If candidate asks about acquisition price, tell them they will get that information later

MARKET

- The market is mature with few new entrants
- U.S. regulations require all riders under the age of 18 to wear a helmet

PE FIRM

- Holds companies for an average of 7 years
- Has an return target of 10%/year
- Also owns a bicycle manufacturer (possible synergies unknown)

Interviewer Guide:

A good framework will consider:

- **Value of Target Company**
 - Valuation Method (DCF, comparables)
 - Revenue/Cost/Profit
 - Growth
- **Market Size**
 - Top-down (starting with population) will be more common, but there may be bottom-up approaches too
- **Acquisition Structure**
 - Consider the timeline of value creation
 - Traditional PE cash flow investment structure
- **Ownership Synergies**
 - Consider possible synergies with other companies in the PE firm's portfolio

Bike Helmets: Market Sizing

Sample Market Size:

This is only an example. As long as candidate can back up their assumptions, let them continue with their own numbers.

Variables	Source	Calculations
U.S. population	Assumed	320M
% of population that rides bikes	Assumed	50%
% of riders that wear helmets	Assumed	50%
# years to replace helmet	Assumed	2
Total market size in # helmets	$(\text{US pop.}) \times (\% \text{ bike riders}) / (\text{years to replacement})$	40M / yr
Average helmet price	Given	\$30
Total market size in \$	# market size x price	\$1.2B / yr

Once candidate has gotten the market size, guide candidate into valuing the company using comparable recent sales. When candidate asks for data, give them Exhibit #1.

Interviewer Guide to Exhibit 1

	Company X	Company Y	Company Z
Year	2011	2014	2017
Revenue @ Sale Year	\$700	\$1,500	\$1,200
Price	\$350	\$1,000	\$1,800
<i>Price/Rev. Ratio</i>	1:2	2:3	3:2

(amounts in millions)

Notes to Interviewer:

- Candidate should automatically calculate price/revenue ratio. Then the candidate can choose how many/which comparable companies to use. Challenge candidate on their choices – as long as they can justify their selection, the answer is “correct”.
- Candidate should notice that the Price/Revenue ratio has been increasing over time.
- The candidate then should have an estimate as to what price the target company can be acquired at
 - $\text{Price} = \text{Market Size} * \text{Market Share} * \text{Revenue Multiple}$
- They should then look to calculate the cash flows post-acquisition without needing a prompt

Bike Helmets: Divesting the Company

Notes to Interviewer:

As the candidate begins to attempt to determine the returns from the acquisition, ensure that they are accounting for both cash flows during the holding period and the final sale price. Push the candidate to address a few factors that effect both cash flows. A strong candidate may recognize potential for synergies with other portfolio companies.

When the candidate attempts to find a way to calculate the sale price, tell them that they've already done some previous research and have determined that the company will be able to be sold in 9 years with an annualized return of 9%.

The candidate should remember that our client is a PE firm that holds investments for an average of 7 years with typical returns of 10%. After some discussion, ask for an overall recommendation.

Bike Helmets: Recommendation

Support for Buy:

- Safe and stable industry
- With prior mismanagement, there may be potential to increase return
- Synergies possible with bicycle company in portfolio
- Ability to invest a lot of money

Support for No Buy:

- Return is lower than average
- Hold period is longer than average
- Not much potential for growth in mature industry

Next Steps:

If buy:

- Do further due diligence

If no buy:

- Look for alternative investments
- Negotiate lower selling price

Bonus: Guide to an excellent case

- A great candidate will acknowledge the ambiguity in this case and reach a conclusion while making reasonable assumptions and considering the issues that may arise.
- A great candidate will clearly state why one side has more support than the other and maintain consistency throughout their structured analysis.

Bike Helmets: Exhibit 1

Recent Sales of Similar Manufacturing Companies

	Company X	Company Y	Company Z
Year	2008	2013	2015
Revenue @ Sale Year	\$1,200	\$1,500	\$700
Price	\$1,800	\$1,000	\$350

(amounts in millions)

Author: Jeremy Wimmer and Alan Voyles (Stern '15)

Difficulty: Medium

Case Style: Interviewer Led

Case Prompt:

A U.S. energy conglomerate is considering the acquisition of a publicly traded wind turbine manufacturer, EnerForce, with manufacturing locations in China and Vietnam. Should the conglomerate acquire EnerForce?

Case Overview:

Industry: Energy

Case Type: Valuation

Concepts Tested:

- Market evaluation
- Valuation
- Profit calculations

Overview Information for Interviewer:

This case is an interviewer led profitability, valuation and strategy case. The interviewer should take charge with the questions that follow after the candidate has relayed his/her framework.

The first two questions are qualitative, while the last two are quantitative. For the quantitative questions the candidate should walk through the necessary calculations in a structured manner.

EnerForce: Case Guide

Clarifying Information:

1 GW = 1,000,000 KW

Interviewer Guide:

A Good Framework Will:

- Consider a method to calculate the value of the company:
 - DCF
 - Comparables/multiples
- Take into account market factors:
 - Market size and structure
 - Regulations
 - Growth/decline of market
 - Recent energy trends
- Look at financials
 - Revenue/costs

In this case, most of the background information is provided through the exhibits.

Exhibits 1, 2, and 3 are provided along with Question #2.

EnerForce: Question 1

Question #1:

When advising on the potential acquisition, which pieces of information would you look to acquire and review? Where would you find these pieces of information?

Notes to Interviewer:

Response can include the following and interviewer should probe the candidate to relay as comprehensive a list as possible. Strong candidates will structure their brainstorming in mutually exclusive and collectively exhaustive categories:

Company Information

Financials

- Past profitability (from financial statements)
- Financial health of the target (from financial statements)
- Revenue and cost breakdown by product (may not be available but could ask market experts)

Operations

- Current product range (from customers and/or target website)
- Target's customer list (from target testimonials or may be public information for utility customers)
- Location of target's plants (most likely public information)
- If target is sought by competitors (may not be available but prior bids may have been made public)
- Supply chain (may not be available but client may share some suppliers)

Market Information

- Market conditions (from market experts)
- Tariffs on exports (from government websites)
- Technological specifications (from market experts)
- Customer preferences (from market experts)
- Competitors and their market shares (from market experts or industry reports)

EnerForce: Question 2

Question #2:

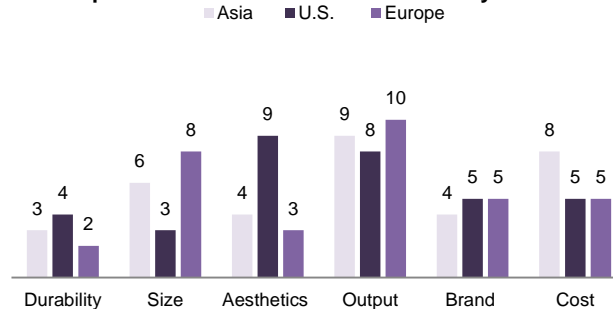
Can you walk me through the following three charts? Which market is the most attractive for EnerForce's upcoming product, the EnerForce 100 KW Turbine, in the next year? [Show candidate Exhibits 1,2 and 3 at the same time]

Notes to Interviewer:

See following pages for interviewer guides to exhibits.

Interviewer Guide to Exhibit #1

Importance of Product Characteristic by Market



Notes to Interviewer:

Key Takeaways

- Output and costs are important to Asia
- Aesthetics and output are important to the U.S.
- Size and output are important to Europe
- Durability isn't really important in any market

Interviewer Guide to Exhibit #2

Market	# of Total Competitors	Industry Rank – 100 KW EnerForce Turbine					
		Durability	Size	Aesthetics	Output	Brand	Cost
Asia	9	#2	#6	#7	#4	#7	#7
US	4	#2	#3	#2	#1	#4	#4
Europe	6	#3	#1	#6	#2	#3	#3

Notes to Interviewer:

- Based on what we know about preferences (Chart 1) and ranking on key attributes against competitors (Chart 2), EnerForce's turbine aligns with the U.S. and Europe markets
- It is not comparable to competitors in the Asian market, especially on cost
- This could mean that there are competitors in Asia which are not yet in Europe. These competitors could threaten EnerForce if they enter

Interviewer Guide to Exhibit #3

Market	Yearly Demand (GW)	Projected Annual Growth Rate
Asia	4.5	2%
U.S.	5	9%
Europe	6	-13%

Notes to Interviewer:

- U.S. and Europe are the biggest markets currently
- U.S. market becomes biggest next year due to growth rates

EnerForce: Question 3

Question #3:

How many units would you predict EnerForce could sell in each of the three markets? Please clearly state your assumptions.

Notes to Interviewer:

To calculate Enerforce's sales, the candidate will multiply the number of turbines needed in each market next year by the projected market share in each market. The candidate should be able to deduce market share estimates from Exhibits 1 and 2. Interviewer should challenge any assumptions that are unreasonable.

Market	Demand (GW)	GW / KW	KW / Turbine	# of turbines in market this year	Market growth rate	# of turbines in market next year	Assumed market share	Expected EnerForce turbine sales next year
Asia	4.5	1,000,000	100	45,000	2%	45,900	10%	4,590
U.S.	5	1,000,000	100	50,000	9%	54,500	50%	27,250
Europe	6	1,000,000	100	60,000	-13%	52,200	40%	20,880

EnerForce: Question 4

Question #4:

Assume plant capacity in China of 2,000 turbines/year and in Vietnam of 3,000 turbines/year. Turbines are sold at a price \$100K at a 15% profit margin. Assume a 10% discount rate. Should EnerForce be acquired for a price of \$700M?

Notes to Interviewer:

Assuming the capacity of both plants is maximized, production would be 5,000 turbines/year. Given calculated market shares, assume EnerForce is able to sell all 5,000 turbines/year.

Candidate should recognize this as a simple DCF valuation with a perpetuity. Quantity should be multiplied by \$100K to derive sales revenue. Sales revenue multiplied by the 15% profit margin would give us profit/year. Profit/year divided by the discount rate would give us the projected valuation of EnerForce (assuming this is their only product).

Calculations:

- 5,000 turbines/year * \$100k turbine = \$500M/year
- \$500M/year * 15% profit margin = \$75M/year
- \$75M/10% discount rate = **\$750M valuation**
- Acquisition go/no go should be determined via whether the asking price for EnerForce is higher or lower than the derived valuation

EnerForce: Recommendation

Recommendation:

Acquire EnerForce given a valuation of \$750M and a price of \$700M although an understanding of EnerForce's other products (if any) and assets is most likely necessary prior to acquisition.

Risks:

- **Competitive response:** already saw that competitors in Asian market entering other markets could be a serious threat
- **Country specific costs:** to reach 5,000/turbines a year would need access to US or Europe; there could be tariffs or there could be quotas in these countries
- **Customers:** there might not be support in U.S. and Europe for renewables due to debt, politics, or preferences for domestic production
- **Technology:** competitors could develop technology to make EnerForce products obsolete rendering the acquisition overvalued due to the assumption of perpetuity

Next Steps:

- Due diligence to prepare for the acquisition of EnerForce
- Further understand EnerForce's other products and assets
- Investigate competitive landscape in more detail, with a focus on the competitors in Asia

Bonus: Guide to an excellent case

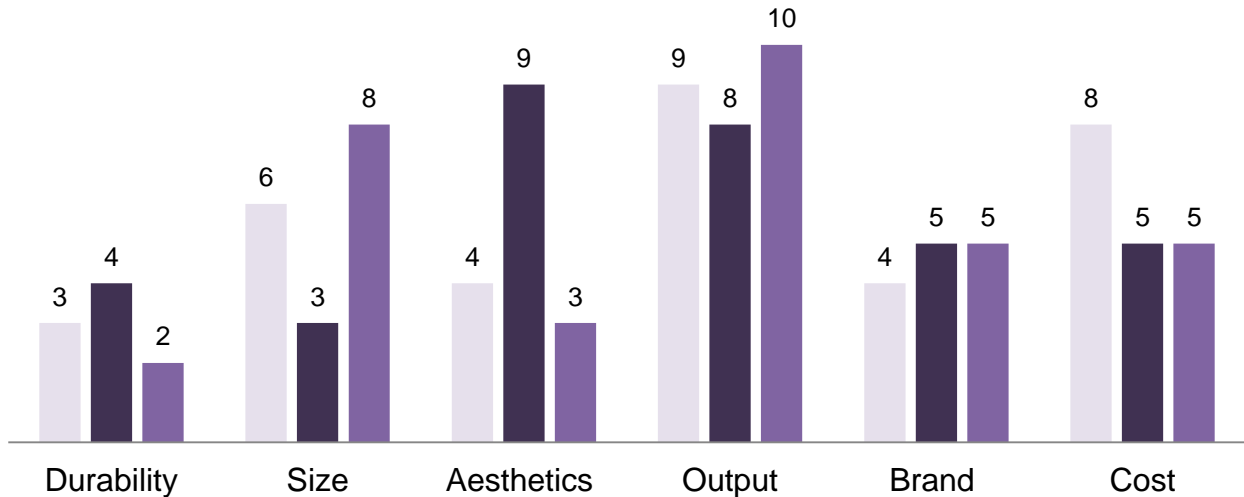
- Strong candidates will identify that there are competitors in Asia which may not currently be in the U.S. and European markets and that these competitors represent a significant long-term threat
- Other threats associated with the acquisition should also be mentioned by a superior candidate at the end of the case

EnerForce: Exhibit #1

Customer Survey

Importance of Product Characteristic by Market

■ Asia ■ U.S. ■ Europe



EnerForce: Exhibit #2

Competitive Landscape

Market	# of Total Competitors	Industry Rank – 100 KW EnerForce Turbine					
		Durability	Size	Aesthetics	Output	Brand	Cost
Asia	9	#2	#6	#7	#4	#7	#7
US	4	#2	#3	#2	#1	#4	#4
Europe	6	#3	#1	#6	#2	#3	#3

EnerForce: Exhibit #3

Market Size and Growth

Market	Yearly Demand (GW)	Projected Annual Growth Rate
Asia	4.5	2%
U.S.	5	9%
Europe	6	-13%

Sunshine Power

Author: Andrew Gouge (Stern '15)

Difficulty: Medium

Case Style: Interviewee Led

Case Prompt:

You are a consultant who has been engaged by Sunshine Power, owner of a coal power station on the Sunshine Coast of Australia. Six year's ago Sunshine Power commenced a pilot project with SunSteam, a solar tech company. SunSteam technology allows your client to reduce the quantity of coal it consumes by using sunlight as an additional heat source.

The \$3.5M AUD pilot, involving one SunSteam array, experienced many technical difficulties at first but has just broken even. Recently, SunSteam proposed to expand the pilot by constructing four additional SunSteam arrays. Your client has very specific project investment criteria and is not sure if they should accept the SunSteam proposal.

Case Overview:

Industry: Utilities

Case Type: Profitability

Concepts Tested:

- Profitability calculations
- Breakeven analysis

Overview Information for Interviewer:

This case is a cost efficiency problem - an upfront fixed investment results in lower operating cost.

1. Provide ONLY Exhibits 1 and 2 up front and read case prompt to interviewee.
2. Candidate may only view the Exhibits, no other case material.
3. Answer clarifying questions with information provided. All other information is "Unknown"
4. Provide Exhibit 3 only when asked about the cost or price of coal.

Encourage the candidate to do additional brainstorming on risks & benefits of the project.

Sunshine Power: Case Guide

Clarifying Information:

Cost of expansion?

- Unknown – make assumption based on case prompt (\$3.5M per array)

Output of One SunSteam Array?

- Steam produced by array equated to 0.2% saving in annual coal quantity consumed on average

Annual Consumption of Thermal Coal?

- Plant operates 24hours a day at 100% output capacity. Prior to pilot plant consumed 4 million metric tons of Thermal Coal per Annum

Array Operating costs?

- SunSteam is easy to maintain, and is maintained by existing on-site staff (assume Op Cost = \$0)

Client Investment Criteria?

- Payback must be less than 5 years, based on internal cost savings only

Interviewer Guide:

Exhibit 1 – SunShine Power Station Plan

- Simple sketch of SunShine Power Station site showing proposed plans for expansion of SunSteam array

Exhibit 2 – SunSteam Technology

- Illustrates SunSteam technology, note inputs and outputs
- SunSteam technology is actually very simple, using mirrors to focus sunlight to boil water and create steam. Usually coal is burnt in a boiler to create steam

Exhibit 3 – Price of Thermal Coal Last 5 years

- Spot Price of Thermal Coal over last 5 years

Sunshine Power: Qualitative Assessment

Question #1:

After the interviewee presents their framework, push them to assess the potential risks and benefits of the SunSteam expansion from a qualitative point of view.

Notes to Interviewer:

- The interviewee should brainstorm about potential risks and benefits associated with the expansion. This should be conversational with the interviewer challenging the interviewee on assumptions and strategic reasoning
- The interviewee should drive this conversation while maintaining a structured approach
- Some potential answers include:
 - Financial
 - Coal price volatility exposure
 - Capital budgeting and alternative investment projects
 - Financing costs
 - Strategic
 - Exclusivity with SunSteam vs alternative technologies
 - CSR benefits
 - Regulatory
 - Carbon credits
 - Pre-empt "cleaner coal" regulations
 - Implementation
 - Increased technical difficulties
 - Increased organizational capabilities
- After the interviewee has sufficiently brainstormed and mentioned coal price volatility risk, give them Exhibit 3 and ask them to calculate the breakeven price of coal for the expansion project.

Sunshine Power: Quantitative Assessment

Fixed Investment Costs:

- Construction cost of one array = \$3.5M AUD (assumed)
- Construction cost of four arrays = \$14M AUD
- Total Fixed Cost to be repaid over 5 years = \$14M AUD

Volume of Coal Saved:

- One Array = 0.2% Coal Saving
- Four Arrays = 0.8% Coal Saving
- Annual Consumption of Coal = 4,000,000 Metric Tons.
- Quantity Saving = $4,000,000 \times 0.008 = 32,000$ Tons per year

Breakeven Price of Coal:

- Total for 5 years: fixed cost divided by coal quantity saved in total.
- $14,000,000 / (32,000 \times 5) = \87.50
- OR: Per Year saving requirement divided by quantity saved.
- $2,800,000 / 32,000 = \$87.50$

Notes to Interviewer:

- Calculating fixed investment per year for the 5 years is also possible:
- $\$14M / 5yr = \$2.8M$ per year
- Therefore Cost Saving must be greater than \$2.8M per year.

Notes to Interviewer:

- The interviewee should not consider the cost savings from the pilot array in assessing the breakeven for the expansion project
- Math Shortcut: candidate can calculate 0.1% then double 3 times.

Notes to Interviewer:

- Note: that \$87.50 is the break even price.
- Alternately candidate can pick a price of coal e.g. \$90 and demonstrate positive return.
- If candidate asks for discount rate, assume no discount rate

Sunshine Power: Recommendation

Recommendation:

- Based on current price of coal (Approx. \$83) achieving payback will not be possible.
- Payback time criteria is satisfied based on a calculated break even price of coal of \$87.50.
- If coal prices are expected to rise above \$87.50 over 5 years on average, as seen over 4 of the 5 past years, then payback criteria will be achieved.

Risks:

- Price volatility of coal is the fundamental risk in achieving payback criteria. The higher the price of coal the faster the payback on the project.
- Technical difficulties with new array could delay payback time as they did with the pilot.

Next Steps:

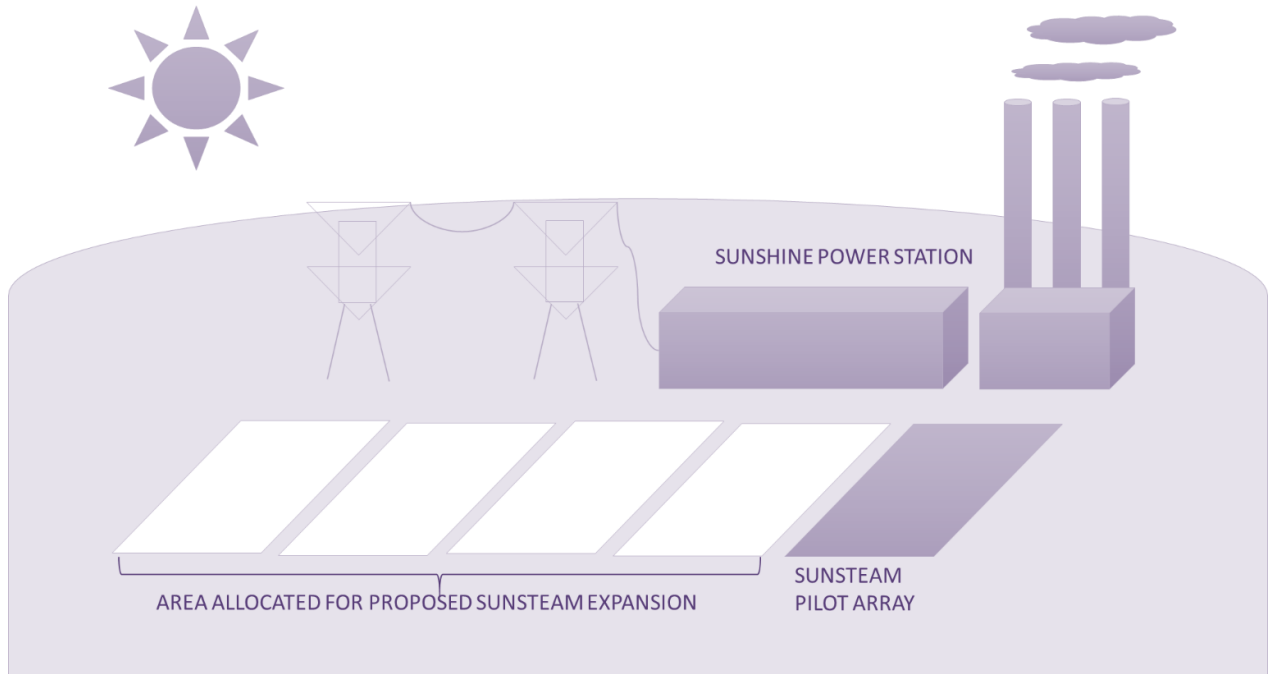
- Mitigate coal price risk by hedging or locking in option contract.
- Negotiate down construction cost of expansion. Case assumed a \$3.5M AUD cost per array. If fixed cost of construction was to drop to \$3.3M AUD per array then the project would meet payback criteria based on the current coal price.

Bonus: Guide to an excellent case

- Identifies that sunlight is free, but also identifies the limits of the potential growth (e.g., coal consumption can only be cut to a maximum of 50% due to 24 hour nature of power plant operation).
- Notices declining trend in coal price and the pilot project payback of 6 years to deduce that significant “technical difficulties” must account for 6 year payback when coal was at higher prices
- Identifies possible external gains from the project such as, carbon credit or tax exemptions, and corporate responsibility bonuses for the client.

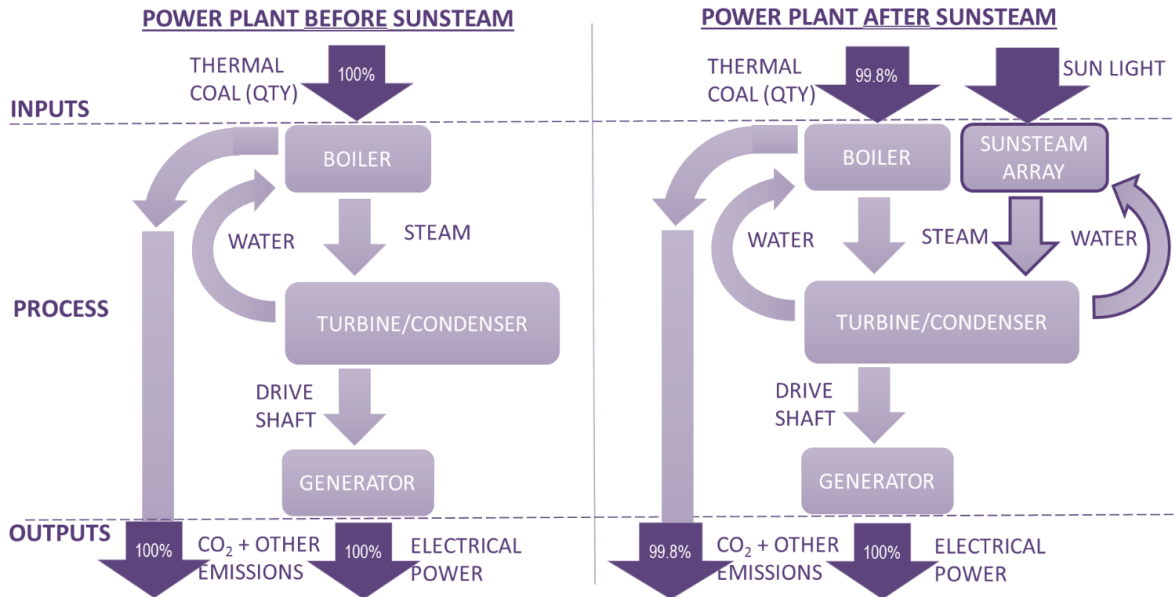
Sunshine Power: Exhibit 1

Sunshine Power Station Site Plan



Sunshine Power: Exhibit 2

SunSteam Technology Flow Chart



Sunshine Power: Exhibit 3

Spot Price of Thermal Coal (Last 5 Years)



Grad-U-Date

Author: Wayne Atwell (Stern '15)

Difficulty: Medium

Case Style: Interviewer Led

Case Prompt:

Our client is an online dating startup named Grad-U-Date, which specializes in matching graduate students with other graduate students. Grad-U-Date has finished building their app and are now looking for your assistance in deciding on a monetization strategy.

What is Grad-U-Date's best method of monetization? How profitable will the company be?

Case Overview:

Industry: Online Dating

Case Type: Pricing

Concepts Tested:

- Brainstorming
- Critical thinking
- Math

Overview Information for Interviewer:

The interviewer should facilitate a conversation by prompting the candidate. Complete brainstorming exercises before starting profit calculations.

Share Exhibit #2 with candidate. After profit calculations are complete, share Exhibit #3.

Candidate should identify the following major tasks:

- Market size
- Competitive landscape / market share
- Profitability for each monetization model

Grad-U-Date: Case Guide

Clarifying Information:

- Gender ratio of users will be 50/50
- MBA, law and medical students are considered professional students
- The app has already been built, and is considered a sunk cost
- Grad-U-Date will only operate within the United States
- There are 4 major competitors and hundreds of small competitors
- There has been a significant increase in the number of free dating apps starting in late 2012
- There are currently no other online dating services that focus only on graduate students
- Only one revenue model can be used

Interviewer Guide:

Brainstorming and Market Size:

Questions 1-2 are qualitative and should be conversational. Candidate should remain structured while creatively brainstorming.

Question 3 is a simple market size using Exhibit 1.

Revenue Model Question:

Provide the candidate Exhibit #2.

Calculate the profit of each revenue model. Fixed costs are \$10,000,000 a year and variable operating cost is \$1 per member per year. Which revenue model would you recommend?

Additional Questions (Ask as many as time permits)

After candidate finishes calculations, provide Exhibit #3.

- Does this information change your recommendation for which revenue model?
- Why do you think that the percentage of users paying monthly fees dropped so quickly starting in 2013?
- Given your recommended revenue model, what other strategies can Grad-U-Date use to increase profit?

Grad-U-Date: Questions 1-3

Monetization:

- What types of monetization models could Grad-U-Date use?
- What are the advantages and disadvantages of each model?

Target Market:

- Grad-U-Date is considering limiting the site to only MBA students what issues might there be with an MBA only dating website?

Market Sizing:

- What is the potential market size for Grad-U-Date?
- [Share Exhibit #1 with candidate]

Notes to Interviewer:

- Monthly Fee
- Advertising
- Pay for Premium Account
- Profile Consulting Services
- Micro-Transactions
 - Pay per Message
 - Pay for bump in profile traffic
- Push candidate for at least 3 monetization models
- Candidate should remain structured with advantages and disadvantages

Notes to Interviewer:

- There are more men than women at most MBA programs, there will be a significant gender skew
- It would unnecessarily limit the size of the market and the app platform
- Most MBA students tend to be older than other students, so many are already married or in a committed relationship

Notes to Interviewer:

- Medical = $450 \times 4 = 1,800$
- MBA = $300 \times 2 = 600$
- Law = $200 \times 3 = 600$
- Non-Professional = $1,000 \times 3 = 3,000$
- Grad Students per University = $1,800 + 600 + 600 + 3,000 = 6,000$
- Market Size = $6,000 \times 1,000 = \mathbf{6,000,000 \text{ students}}$

Grad-U-Date: Question 4

Question #4:

Calculate the profit of each revenue model. Fixed costs are \$10,000,000 a year and variable operating cost is \$1 per member per year. Which revenue model would you recommend?

[Provide Exhibit 2]

Math Solution:

Monthly Fee:

Customers: $6,000,000 \times 5\% = 300,000$ users
Revenue: $300,000 \times \$10 \times 12 = \$36,000,000$
Profit: $\$36,000,000 - \$10,000,000 - 300,000 \times \$1 = \mathbf{\$25,700,000}$

Premium Account:

Customers: $6,000,000 \times 30\% = 1,800,000$ total users (only some will purchase premium account)
Revenue: $1,800,000 \times (50\% \times 40\% + 50\% \times 20\%) \times \$5 \times 12 = \$32,400,000$
Profit: $\$32,400,000 - \$10,000,000 - 1,800,000 \times \$1 = \mathbf{\$20,600,000}$

Advertising:

Customers: $6,000,000 \times 40\% = 2,400,000$ users
Revenue: $2,400,000 \times (50\% \times \$0.75 + 50\% \times \$1.25) \times 12 = \$28,800,000$ (assumes 50/50 split of professional and non-professional students observed in market sizing)
Profit: $\$28,800,000 - \$10,000,000 - 2,400,000 \times \$1 = \mathbf{\$16,400,000}$

Grad-U-Date: Questions 5-7

Question #5:

- Does this information change your recommendation for which revenue model?
- [Provide Exhibit 3]

Question #6:

- Why do you think that the percentage of users paying monthly fees dropped so quickly starting in 2013?

Question #7:

- Given your recommended revenue model, what other strategies can Grad-U-Date use to increase profit?

Notes to Interviewer:

- Candidate should switch recommendation from monthly fee to premium account
- The portion of customers willing to pay a fee and the average fee paid have been rapidly decreasing since 2008
- It is unlikely that current profitability will be maintained in the future

Notes to Interviewer:

- Increased competition in online dating market
- Quality free dating apps released that are more convenient
- Tinder app launched in late 2012

Notes to Interviewer:

Reduce Costs:

- Outsource servers
- Only provide email support and no phone number

Increase Revenue:

- Create app to attract more customers
- Profile consulting services
- Profile photo editing
- Offer deals with popular date locations
- Expand to recent graduate school alumni
- Add micro-transactions

Grad-U-Date: Recommendation

Recommendation:

- Grad-U-Date should adopt the premium account revenue model
- Monthly fee revenue model should not be selected because this segment is rapidly disappearing and it limits the users on the platform
- The premium account model is expected to bring in \$20,600,000 in annual profit

Risks:

- Premium account could be seeing a similar decrease in share as fee
- Smaller % of users will purchase a premium account than predicted
- Ad supported model could be growing faster than premium account
- Graduate students may not be able to afford to buy premium accounts
- Number of people going to graduate school could decrease
- Grad students may not want to limit their dating pool to grad students

Next Steps:

- Look into market trends for ad and premium account revenue models
- Expand into new markets such as undergraduates or other countries
- Offer additional services: profile consulting services and date deals
- Add micro-transactions such as increasing the traffic to your profile
- Incorporate social media
- Can premium account and ads work together?

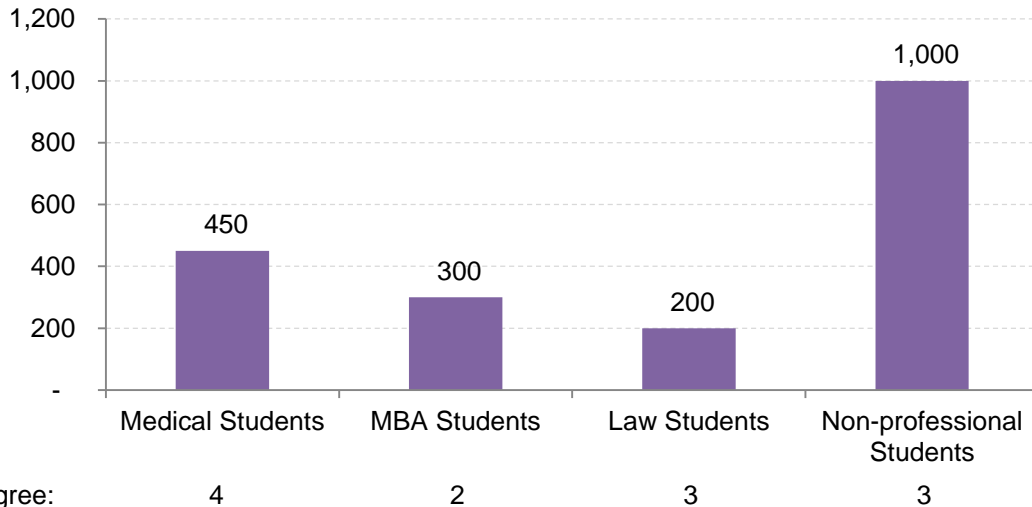
Bonus: Guide to an excellent case

- A strong candidate will brainstorm 5+ monetization models and identify several reasons not to limit the app to MBAs
- Better candidates will finish the math fast enough to do 2 or 3 of the additional questions
- When brainstorming, excellent candidates will structure their answers into buckets, such as strategies to reduce costs vs increase revenue when coming up with ways to improve profitability

Grad-U-Date: Exhibit 1

Student Enrolment Information

New Graduate Students (per University per Year)

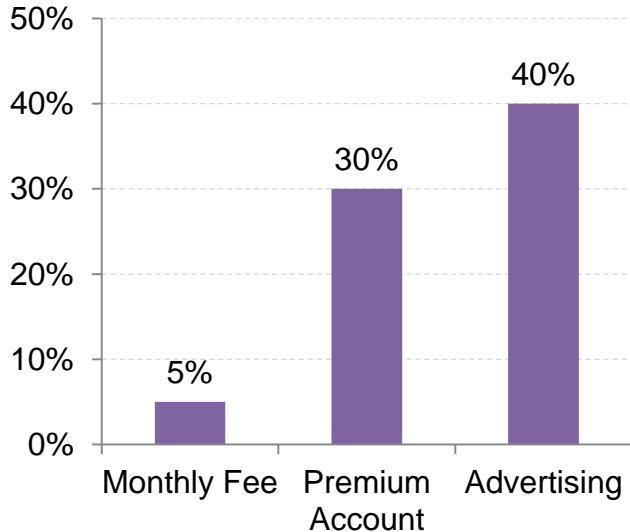


Note: There are currently 1,000 Universities in the United States.

Grad-U-Date: Exhibit 2

Product Usage

Forecasted % of Graduate Students using Grad-U-Date



Monthly Fee Model

Monthly membership fee would be \$10

Premium Account Model

Premium accounts costs \$5 per month; 40% of men and 20% of women purchase premium accounts

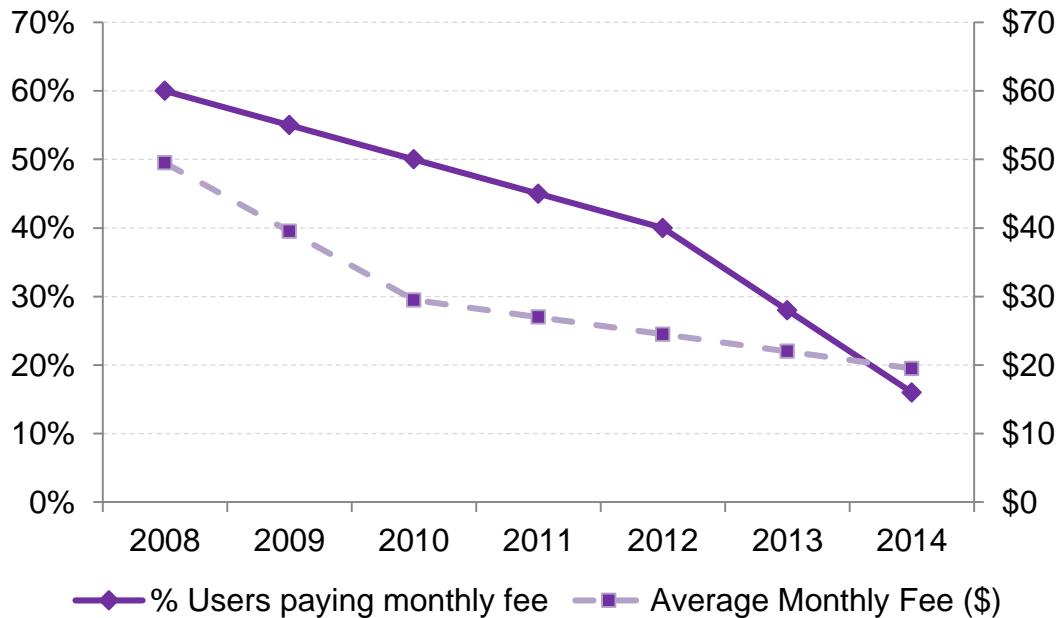
Advertising Model

Non-professional students bring in \$0.75 per month and professional students bring in \$1.25 per month in ad revenue

Grad-U-Date: Exhibit 3

Online Dating Market Info

Online Dating Market Trends



A Sticky Paper Situation

Case Style: Interviewee Led

Difficulty: Hard

Case Prompt:

Your client is PaperCo, a manufacturer of specialty papers which are sold to commercial printers in the US. PaperCo produces self-adhesive sheeted papers that are ultimately used in a variety of labeling applications – often, eventually, to service CPG firms and for billboards. PaperCo's operations are profitable, but the business has failed to grow over the past few years.

The client would like to invest in the business to restore growth and you have been asked to identify opportunities.

Case Overview:

Industry: Paper and Pulp

Case Type: Strategy/ Re-investment

Concepts Tested:

- Profitability

Overview Information for Interviewer:

For most candidates, this case will be primarily focused on reaching and working through the math, leaving little time for high-level strategy.

The difficulty of this case lies in feeling comfortable with the relatively obscure product/industry and in obtaining the right information to make the necessary profitability and ROI calculations. The clarifying information should be given when asked for by the interviewee in conversation following his/her framework.

There are some key pieces of information which the candidate will need to obtain in order to head in the right direction. If they struggle to ask the right questions to get that information then you can guide them to the right place.

A Sticky Paper Situation: Case Guide (1/3)

Clarifying Information:

Products and Pricing

- Raw materials for the products include rolls of paper, adhesives, and a non-stick coating. They are then layered. Finally, they are cut to specification for the customers – this process is called “sheeting”
- The client has a range of products that is broadly the same for all customers and that it does not wish to change
- Margins are acceptable, but management is averse to price-cutting because of a fear of initiating a war with competitors that would leave everyone worse off
- Unit price differs according to customer segment (given in next section)

Market/Customers

- PaperCo sells to 24,000 commercial printers in the US (20,000 are small, 3,000 medium and 1,000 large)
- The company has 30% market share in the small printer segment and 10% in the medium and large printer segments
- Your team-mates recently completed a study that showed that if PaperCo expanded production it could increase sales to the medium-sized or large-sized printer segments by 20% (*Note to interviewer: The candidate should be clear about the difference between increasing sales by 20% and increasing market share by 20 percentage points. The former is correct. The latter would constitute a 200% increase in sales*)
- Printers (the customers) prefer to receive the product in different forms according to the size of the customer:
 - Small prefer boxes
 - Medium prefer cartons
 - Large prefer pallets

A Sticky Paper Situation: Case Guide (2/3)

Clarifying Information:

Market/Customers (cont.)

- Client's current sales volumes to each customer segment are below:

Variables	Small	Medium	Large
Number of customers	20,000	3,000	1,000
Annual unit usage per customer	100	500	3,000

- The company has the capability to expand production
- Any additional production would require an increase in the client's fixed costs (e.g. new packaging equipment, expanded facilities, increase in permanent labor force). The amount of the increase differs according to distribution method:
 - An expansion in *carton* distribution capacity would constitute a one-off cost of \$675K (for medium printer segment)
 - An expansion in *pallet* distribution capacity would constitute a one-off cost of \$1.3M (for large printer segment)
- Variable costs consist of materials, sheeting, coating and packaging.

A Sticky Paper Situation: Case Guide (3/3)

Clarifying Information:

Market/Customers (cont.)

- Unit costs differ according to customer segment (given below):

Variables	Small	Medium	Large
Unit price	\$20	\$18	\$15
Materials cost	\$5.5	\$5.5	\$5.5
Coating cost	\$1	\$1	\$1
Sheeting cost	\$0.5	\$0.5	\$0.5
Packaging cost	\$3	\$2	\$1

Industry

- This is a mature industry, with low growth across the board
- There are no significant competitive or regulatory trends in the industry to be aware of

A Sticky Paper Situation: Calculations

Profitability Calculations:

- The case requires the candidate to choose the best investment. To do this they need to compare the cost of the investment to the potential return. In order to calculate the return (i.e. the additional profit generated by the investment) they need to know current profitability, which they can deduce using the information below
- If the candidate has already identified that the growth opportunities lie in the medium and large printer segments they should not waste time determining the profitability of the small printer segment

Variables	Source (given in case unless stated)	Small	Medium	Large
Unit price		\$20	\$18	\$15
Materials cost		\$5.5	\$5.5	\$5.5
Coating cost		\$1	\$1	\$1
Sheeting cost		\$0.5	\$0.5	\$0.5
Packaging cost		\$3	\$2	\$1
Profit per unit	(unit price) – (all costs)	\$10	\$9	\$7
Number of customers		20,000	3,000	1,000
Annual unit usage per customer		100	500	3,000
Total annual profit	(unit profit) x (# of customers) x (annual usage)	\$20M	\$13.5M	\$21M

A Sticky Paper Situation: Calculations

One Year ROI Calculations:

ROI for medium and large segments:

- Get the total available profit in the market (previous slide) and consider the additional profit from the production expansion
- Finally, account for the cost of getting the extra capacity to supply the additional customers

Variables	Source (given in case unless stated)	Medium	Large
Total annual profit	Calculated on the previous page	\$13.5M	\$21M
Additional annual sales with expansion		20%	20%
Additional annual profit	(total profit) x (additional sales %)	\$2.7M	\$4.2M
Cost of capacity expansion (one-off)		\$675K	\$1.3M
Additional profit net of expansion (year 1)	(additional profit) – (cost of capacity expansion)	\$2.025M	\$2.9M
Return on investment (1-year horizon)	(net additional profit) / (cost of investment)	3	2.23

Key Takeaway: 1-year ROI is greater for the medium sized printer segment

A Sticky Paper Situation: Recommendation

Recommendation:

- The client should expand production in the medium size printer segment, as this generates the largest ROI over the client's preferred time horizon (1-year)
- Additionally, the smaller cost of expansion in the medium printer segment means a reduced financing need and a resulting diminished risk from the investment
- The client can also consider expansion into the large size printer segment at a later date (depending on capacity)

Risks:

- These recommendations are based on no growth in the markets; expansion in one or the other could tip the balance
- There is no information regarding competitive response, but given the aggressive assumptions regarding increased sales it is reasonable to assume there would be one given the maturity of the industry

Next Steps:

- Client should start looking into how the production will be expanded and the timeframe required to do so
- Investigate the impact of potential competitive response as a result of production expansion
- Deep-dive into industry trends for different segments

Bonus: Guide to an excellent case

- Stronger candidates will note that over a longer time horizon the large printer segment generates a bigger ROI.
- Candidates may even choose to calculate the exact time period over which the large segment starts to have a greater ROI, although this is definitely not required
- Strong candidates may also note:
 - This segment of the specialty paper market seems to be fairly stable and mature, thus the assumption of no growth, hence it would probably be wise to look for opportunities outside its core products
 - Producing products downstream in the paper industry could reveal attractive opportunities as well

Author: Wayne Atwell (Stern '15)

Difficulty: Hard

Case Style: Interviewer Led

Case Prompt:

Our client is BankCoCard, a US credit card subsidiary of the major international bank BankCo. They have a rapidly growing \$16 billion dollar credit card portfolio. BankCoCard is interested in lowering their cost of funds for their credit card program by starting an online bank.

BankCoCard would like to know if they should start an online bank and if so, should they launch a savings or a checking account for their new online bank.

Case Overview:

Industry: Financial Services

Case Type: Profitability

Concepts Tested:

- Math
- Strategy

Overview Information for Interviewer:

- This is a interviewer led case. It is important to do the case in the proper order.
- State the information above and allow the candidate to design a framework.
- Next ask the candidate brainstorming questions.
- Finally, the candidate should calculate the account level profitability and market size.

BankCo: Case Guide

Clarifying Information:

- BankCoCard wants to launch both a savings and checking account, but their budget only allows for the IT team to build one product this year
- Whichever product is not selected will be launched the following year
- The savings and checking accounts are expected to take the same time to build and will cost the same amount to build: \$10 million
- The current cost of funds is 4% for the credit card portfolio
- Interest rates are not expected to change for the next several years
- Assume all deposits can be lent, no reserves are required
- The online bank will only operate within the US

Interviewer Guide:

Brainstorming

- Ask Questions 1-3 in order.
- These questions are a brainstorming exercise covering product launch, revenues & costs, and account acquisition
- This can be conversational but the interviewee should structure his or her approach

Math Question 1:

- The online bank will lend the deposits to the credit card portfolio at a 3% interest rate.
- What is the lifetime profit of a single checking account verses a savings account?
- Provide the candidate Exhibit #1.

Math Question 2:

- Calculate the total lifetime profit of accounts opened in the first year.
- Provide the candidate Exhibit #2.
- After total profit is calculated, ask the candidate if they are suspicious of any of the assumptions/data.

BankCo: Brainstorming Questions

Question #1:

- What upfront costs will there be to launch an online banking product?

Question #2:

- What are the ongoing revenues and costs of a savings account?
- Additional revenues and costs of a checking account not mentioned in the savings list?

Question #3:

- What are possible ways of acquiring new accounts for online banking products? (Keep asking for more until candidate has gotten 4)

Notes to Interviewer:

Some examples:

- Infrastructure
 - Website
 - Servers
 - Call center
- Hiring and training of development team
- Marketing and market research
- Product design

Notes to Interviewer:

Savings

Revenues: Interest from credit card portfolio

Costs: Interest paid to customer, call center, fraud, marketing, statement mailing

Checking

Revenues: Overdraft fee, account fees, interchange, ATM fee

Costs: Debit card transaction processing, ACH transaction processing, ATM reimbursement

Notes to Interviewer:

- Online advertisements
- Search engine optimization
- Partnerships
- Affiliate marketing
- Cross-sell current credit card customers
- Billboards
- Sponsor events
- Tabling at major events

BankCo: Question 4

Question #4:

The online bank will lend the deposits to the credit card portfolio at a 3% annual interest rate. What is the lifetime profit of a single checking account versus a savings account?
[Provide the candidate Exhibit #1]

Notes to Interviewer:

A strong candidate will try to discount the future cash flows and ask for a discount rate. Tell them that it is not necessary. Again, assume away any reserve requirements.

Savings:

Revenue = $\$5,000 * 3\% * 5 \text{ years} = \750

Costs = $(\$5,000 * 2\% + \$1.50 * 12) * 5 \text{ years} + \$50 = \$640$

Savings Account Expected Lifetime Profit = $\$750 - \$640 = \mathbf{\$110}$

Checking:

Revenue = $(\$2,000 * 3\% + \$20 * 10\%) * 10 \text{ years} = \620

Costs = $\$2,000 * 0\% + \$2.00 * 12 * 10 \text{ years} + \$100 = \$340$

Checking Account Expected Lifetime Profit = $\$620 - \$340 = \mathbf{\$280}$

BankCo: Question 5

Question #5:

Calculate the total lifetime profit of all accounts opened in the first year for both the savings and checking products. BankCo expects to capture 10% of the market for online accounts of whichever product they launch. [Provide the candidate Exhibit #2]

After total profit is calculated, ask the candidate if they are suspicious of any of the assumptions/data from the case.

Notes to Interviewer:

Savings:

Accounts in First Year = $20,000,000 * 10\% = 2,000,000$

Total Savings Account Lifetime Profit: $2,000,000 * \$110 = \mathbf{\$220,000,000}$

Checking:

Accounts in First Year = $15,000,000 * 10\% = 1,500,000$

Total Checking Account Lifetime Profit: $1,500,000 * \$280 = \mathbf{\$420,000,000}$

Suspicious Assumptions: Anything that sounds reasonable and is supported by the candidate is acceptable including, capturing 10% of market in the first year, the average deposits, life of the account, account acquisition cost, etc.

BankCo: Recommendation

Recommendation:

- BankCoCard should start an online bank, launching the checking account in the first year and savings account in the following year
- Launch the checking product because it will generate almost twice as much lifetime profit
- The market for online checking accounts is growing faster than the market for online savings accounts

Risks:

- BankCoCard could capture less than 10% of the market
- Reputation risk
- Acquisition cost could be higher than expected
- Product is not differentiated from competitors
- Regulatory risk associated with online banking

Next Steps:

- Meet with regulators
- Survey potential customers to aid product development
- Collect industry reports to confirm assumptions
- Interview industry experts
- Host focus groups
- Hire IT staff
- Design website
- Request additional budget for both products
- Build call center

Bonus: Guide to an excellent case

- A strong candidate will mention competitive response and time value of money / discount rate.
- A strong candidate will not only note that the checking market is growing faster, but will also attempt to calculate the CAGR. Checking CAGR is 20%, Savings CAGR is 10%.
- An especially talented candidate will recall that the objective of BankCoCard is to lower cost of funds for the credit card portfolio. They will calculate that the savings account will generate \$10 billion in deposits, while the checking account will only generate \$3 billion. Using that as supporting evidence, they would recommend the savings product over the checking product.

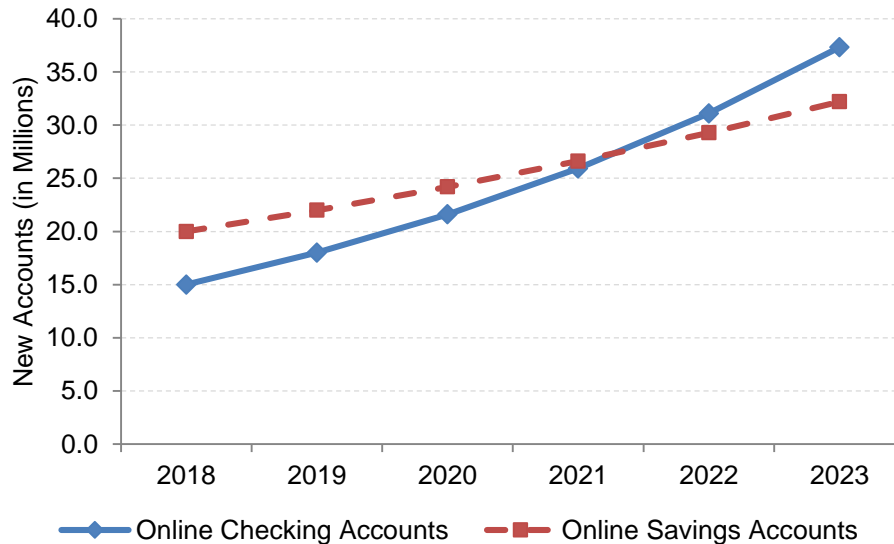
BankCo: Exhibit 1

Account Information

	Checking Account	Savings Account
Average Deposits	\$2,000	\$5,000
Interest Received from Credit Card Portfolio	3%	3%
Interest Paid to Customers	0%	2%
Monthly Operating Expense	\$2.00	\$1.50
Portion of customers with Overdrafts per Year	10%	N/A
Overdraft Fee	\$20	N/A
Account Acquisition Cost	\$100	\$50
Average Life of Account	10 years	5 years

Market Information

New Online Accounts Per Year



Authors: Jenna Charles, David Sedgwick, Jonathan (Yoni) Farber (Stern '18)

Difficulty: Hard

Case Style: Interviewee Led

Case Prompt:

Our client, GGC Health, operates eight Ambulatory Surgical Centers (ASC) on the east coast. GGC Health has consistently been a profitable organization, but over the past two years, their ASCs' cumulative revenues have been flat at \$400 million/year. The CEO of GGC Health is concerned about this and has hired your firm to increase revenues by 15%.

Case Overview:

Industry: Healthcare

Case Type: Revenue growth

Concepts Tested:

- Brainstorming
- Revenue computation
- Growth strategy

Overview Information for Interviewer:

- Dismiss any questions about cost, keep the focus on revenue growth
- Pricing increases are not possible
- Candidate should drive towards increasing the number of patients through same site volume increases or opening new ASCs

GGC Health: Case Guide

Clarifying Information:

- ASCs are modern health care facilities focused on providing same-day surgical care, including diagnostic and preventive procedures.
- ASCs are seen as a more convenient alternative to hospital-based outpatient procedures.
- Physicians can perform surgeries at hospitals or ASCs.
- Physicians generally dictate where the surgery is performed.
- Timeline: ASAP
- Candidate should recognize that target revenue is \$60M ($15\% * 400M$)
- Business Model: ASC revenue is equal to the number of procedures performed in the facility by the expected reimbursement per procedure.

Interviewer Framework Guide:

Increase revenue of existing ASCs (see *brainstorm* for detailed tree)

- Number of patients per doctor
- Number of doctors per facility
- Increase procedures per facility, either in volume or in type of surgery
- Types of patients (high reimbursement vs. low reimbursement patients)

Increase revenue by developing new ASCs

- Analyze the market
 - Opportunities for partnership with existing physician groups/hospitals
 - Patient demographics for common ASC surgeries (ortho, dermatological etc.)
- Analyze competitors
 - Existence of competing ASCs
 - Strength and reputation of hospitals/ groups
- Regulatory/Technological
 - Reimbursement criteria of health plans (fee for service vs. value based care)
 - Technology/service expectations of ASC

GGC Health: Question 1

Question #1 (when candidate asks about expansion):

- I'm glad you brought up external expansion. We have done research and targeted three cities GGC Health could enter: Charlotte, Indianapolis, and Nashville. The Charlotte ASC location would have 30 doctors, Indianapolis would have 25, and Nashville would have 16.
- Assuming GGC Health has management capacity to open only one new ASC immediately, can you provide a recommendation of which city to enter?

Solution:

- Multiply # of Doctors in each city by breakdown of specialty in each city

City	# of Doctors	% of Dr./ specialty	Ortho	Neuro	Gastro
		Charlotte	30	Charlotte	80%
Indianapolis	25	Indy	40%	40%	20%
Nashville	16	Nashville	50%	25%	25%

# of Dr's per specialty per city	Ortho	Neuro	Gastro
Charlotte	$30 \cdot .8 = 24$	$30 \cdot .1 = 3$	$30 \cdot .1 = 3$
Indianapolis	$25 \cdot .4 = 10$	$25 \cdot .4 = 10$	$25 \cdot .20 = 5$
Nashville	$16 \cdot .5 = 8$	$25 \cdot .25 = 4$	$16 \cdot .25 = 4$

Information:

- Give the candidate Exhibit #1
- The candidate should create their own 3x3 chart and calculate the number of doctors per specialty per city
- An excellent candidate will recognize that Nashville can be immediately eliminated (Indianapolis has more doctors of every practice)

GGC Health: Question 2

Question #2 (when candidate asks # of patients):

- Say the following: orthopedic brings in 15 patients per doctor per month, neurology is 10, gastroenterology is 12
- Candidate needs to ask about reimbursement rates, when they do give them Exhibit 2

Solution:

	# of Patients/yr.	Rate/patient	Revenue/Dr./Yr:
Ortho	$15 * 12 = 180$	5K	900K
Neuro	$10 * 12 = 120$	25K	3M
Gastro	$12 * 12 = 144$	15K	2.16M

	Ortho	Neuro	Gastro	Total
Charlotte	$24 * 900K = \$21.6 \text{ M}$	$3 * 3M = 9M$	$3 * 2.16M = 6.48M$	37.08M
Indianapolis	$10 * 900K = \$9M$	$10 * 3M = \$30M$	$5 * 2.16M = 10.8 \text{ M}$	49.8M
Nashville	$8 * 900K = \$7.2M$	$4 * 3 \text{ M} = \$12M$	$4 * 2.16 \text{ M} = 8.64M$	27.84M

Information:

- Calculate # of patients/year, then * by rate to calculate revenue/Dr./year.
- Then calculate revenue per city per specialty and then sum for total revenue.
- Candidate should identify that Indianapolis is the most attractive option, but alone, revenue falls short of the 15% target (\$40M)

GGC Health: Question 3

Question #3:

- Probe the candidate until they identify that Indianapolis does not achieve the desired revenue growth. Once they realize this, ask them to brainstorm how GGC Health could increase revenues at their current 8 ASC locations?

Notes to Interviewer:

- This is a brainstorm opportunity for the candidate to see how to get the additional \$10M needed.
- Candidates should be structured and organized during this brainstorm exercise. Topics should include:
 - Increase the number of patients visiting the ASC
 - Increase the number of patients brought in per doctor
 - Make ASC preferred place for doctors, by offering more control over the environment, better scheduling, enhanced efficiency, and better patient outcomes
 - Prioritize high volume doctors
 - Provide doctors with a higher share of profits for hitting certain targets
 - Increase the number of doctors per ASC
 - New procedures (and new physicians doing those procedures)
 - Improved physician outreach (sales/marketing efforts)
 - Product mix
 - Prioritize high reimbursement surgeries (that bring in more money per patient)
 - Add new high reimbursement surgeries
 - Type of patient: Medicaid/Medicare accepted? Increase patients who get higher reimbursements

GGC Health: Question 4

Question #4:

- Our team thinks there is an opportunity to increase the number of doctors per ASC. GGC Health's ASC sites do not currently offer urology, but we believe they can add 2 urology doctors to all current ASC sites. Can you calculate the additional revenue from this?
- Candidate will need to ask for the number of patients. Tell them that each doctor will bring in 8 patients per doctor per month.

Solution:

- Total number of urologists: $8 \text{ sites} * 2 \text{ urologist/site} = 16 \text{ urologists}$
- Total number of patients per year: $16 \text{ urologists} * (8 \text{ patients/doctor/month} * 12 \text{ months/year}) = 1,536 \text{ patients}$
 - After calculation tell candidate to round to 1,500
- Total revenue: $1,500 \text{ patients} * \$8,000/\text{surgery} = \mathbf{\$12M}$

Information:

- Candidates should still have Exhibit 2 and realize they have the reimbursement rate.
- Additional revenue is only applied to the current 8 ASC sites.
- Incremental same site revenue plus new Indianapolis ASC meets \$60M revenue target.

GGC Health: Recommendation

Recommendation:

- The candidate should articulate that to meet the revenue target our client should (1) open a new ASC in Indianapolis for \$49.8M and (2) increase revenue in current ASC facilities through adding urology surgeries for \$12M. Candidate can reference other existing site revenue growth opportunities identified during case.

Risks:

- No costs were considered in adding a new facility or procedure
- Indianapolis market entry is not on the east coast and unfamiliar to management
- ASC capacity to accommodate new surgeries
- Not being able to steal expected market share
- Physicians not bringing in expected number of patients

Next Steps:

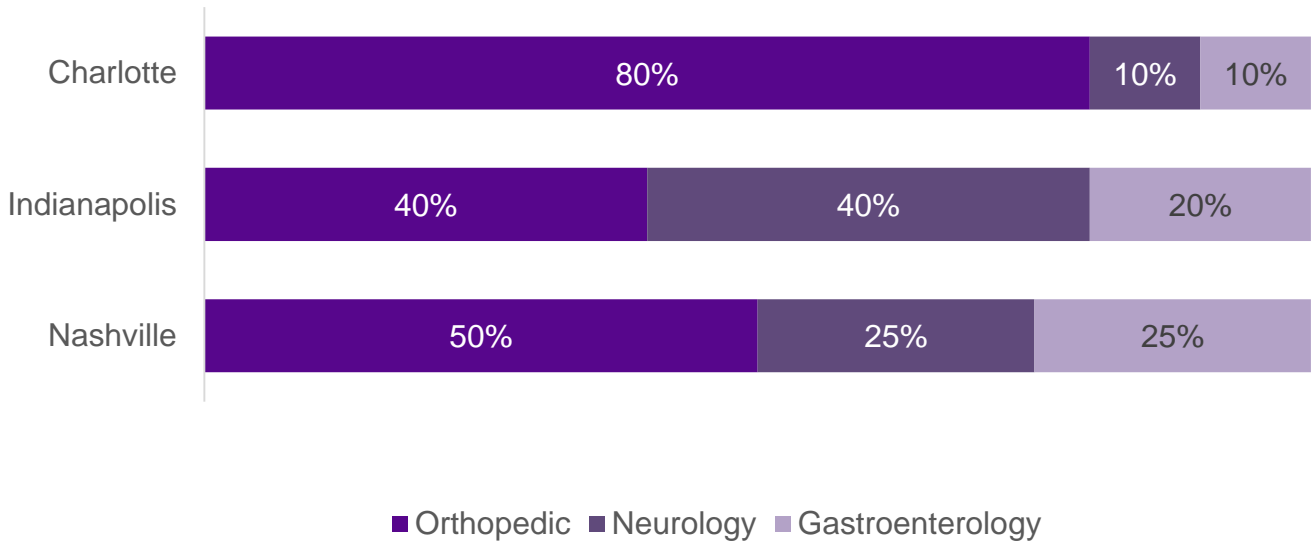
- Cost/Benefit analysis for the Indianapolis location
- If still proves lucrative, begin construction on new ASC center in Midwest
- Add urology surgeries to current ASC's ASAP
- Consider other types of surgeries to add
- Consider expanding into more than one location in the future

Bonus: Guide to an excellent case

- Always keep in mind the goal of the case – to increase revenue by 15% (\$60M)
- Eliminate Nashville as an expansion opportunity quickly
- Recognize that opening up one location by itself will not meet the CEO's revenue targets and independently return to framework for alternative revenue ideas
- Brainstorm extensive solutions to increase revenue in current ASC's to demonstrate healthcare knowledge

GGC Health: Exhibit 1

Physician Group Membership by City



GGC Health: Exhibit 2

Average Reimbursement Rates Per Patient by Specialty

Physician Specialty	Reimbursement Rate per Patient
Dermatology	\$4,000
Gastroenterology	\$15,000
Neurology	\$25,000
Orthopedic	\$5,000
Pain Management	\$6,000
Urology	\$8,000

Cosmetics Company (Capgemini)

Case Style: Interviewer Led

Difficulty: Medium

Case Prompt:

The client is the North American CEO of a global personal and home care products company. He has hired Capgemini Consulting to turn around the North American business from loss to profitability within two years. We've scheduled the final presentation with the board this afternoon, but the project team is stranded at an airport unable to make the presentation. You are asked to step in and make the presentation instead.

Case Overview:

Industry: Cosmetics

Case Type: Turnaround

Concepts Tested:

- Information Processing

Cosmetics Company: Case Guide

Clarifying Information:

Internal Analysis

- **Revenue Streams:** Existing & new products
- **Cost Drivers:** R&D, manufacturing, operations
- **Other considerations:** Supply chain, channel strategy, financial situation, org structure, core competencies

Industry Analysis

- **Competitors:** Who are the main competitors? To what customer segments do they cater?
- **Industry Rivalry:** How intense is the rivalry in the cosmetics industry? Is any segment of the industry more competitive than other? Are there any specific trends in industry rivalry (consolidation, price wars, etc.)?
- **Retailers:** Through what retail channels are the products sold? What is their relative power position?

Customer Analysis

- **Consumers:** What are the different consumer segments and what are their relative sizes? Who are the client's main consumers? How saturated is that segment?
- **Trends:** Are consumer tastes changing towards or away from the client's products?

Cosmetics Company: Question 1 (1/3)

Question #1:

You have come up with a good structure to approach the problem. I'm going to give you 3 charts and ask you to take a few minutes to assess and digest the information, then ask you for your observations and analysis.

Show candidate Exhibits #1-3.

Notes to Interviewer:

Exhibit #1

- Women represent the lion's share of consumption in personal care products across all three regions
- Male consumption will remain small although the 55+ age group will exhibit stronger growth than other male age groups
- Female Baby Boomers (born between 1945 to 1965) represent the major source of growth, generating 8.63%, 5.31% and 5.98% in growth for Mexico, USA and Canada respectively
- Baby Boomers drive growth by virtue of their sheer numbers and also by their high spending powers through wealth accumulation and inheritance
- Generation Xers (those born between 1965-1985) are underrepresented in terms of spending due to their relatively small numbers, with the exception being Mexico, which has a larger population growth between 1965-85 compared with Canada and the US
- Echo Boomers (those born between 1985-1995) will play a greater role beyond 2010 but in the short term they should be watched carefully as a consumption group

Cosmetics Company: Question 1 (2/3)

Question #1:

You have come up with a good structure to approach the problem. I'm going to give you 3 charts and ask you to take a few minutes to assess and digest the information, then ask you for your observations and analysis.

Show candidate Exhibits #1-3.

Notes to Interviewer:

Exhibit #2

- A direct co-relationship exists between share of wallet and consumer perception of need
- Generally speaking, the more a spending category is perceived as a necessity, the larger the spending category represents in terms of share of wallet
- According to the latest census data in Canada, Household Products and Personal Care represent 4.5% and 1.7% of share of wallet respectively
- Taxes, housing and food consume the largest share of wallet
- From a marketing perspective, the ability to move a product category up the necessity axis is essential to capture larger shares of wallet

Cosmetics Company: Question 1 (3/3)

Question #1:

You have come up with a good structure to approach the problem. I'm going to give you 3 charts and ask you to take a few minutes to assess and digest the information, then ask you for your observations and analysis.

Show candidate Exhibits #1-3.

Notes to Interviewer:

Exhibit #3

- Companies that have dedicated channel strategies tend to focus primarily on Direct Selling. Often this is a result of the desire for maximum consumer interaction when a company must choose a primary distribution channel
- There is a trend for companies to diversify, both in terms of product categories and channel strategies. This diversification is the result of different products requiring distinct channels and placements
- Competitors who use a diverse channel strategy employ a wide variety of distribution channels. For example: Estee Lauder sells their products in prestigious retail store, company-run salons and brand websites
- Competitors who have a dedicated channel strategy use a primary channel to convey their products to consumers. For example: The Body Shop's main customer-facing channel is their network of over 2,000 stores worldwide, however they also have a web channel in North America and a direct selling force

Cosmetics Company: Question 2

Question #2:

OK, you have those 3 pieces of data that you can take to the CEO, but what other considerations should you inform the CEO need further analysis? Make a list of these considerations.

Notes to Interviewer:

In-house manufacturing or Outsource:

- Pros and cons
- Key constraints and criteria to consider
- Competitor's actions regarding the same

Customer:

- Impact of country of origin on customer perception relating to marketing and brand strategy

Location:

- Does our distribution network design support future growth considering all costs?
- What distance span will optimize service and costs

Decision Making Process:

- What is the current state decision making process with regards to Make/Buy considerations?
- What should be the decision making process?
- Who is responsible and accountable for Make/Buy decisions?

Scalability:

- How will distribution centers scale up based on growth projections?
- How many distribution centers will be required?
- What is the optimal range per distribution center?

Cosmetics Company: Recommendation

Recommendation:

- The client should focus on women who comprise lion's share of consumption but should not ignore growth in the 55+ male group. Particularly among women, there are geographic differences within the North America region that must be taken into consideration.
- The client should develop deep knowledge of customer needs, perception and spending patterns in order to capture an increased share of the wallet. Capturing an increased share of the wallet is critical for driving long-term, sustainable growth.
- Client is misplaced in terms of its channel strategy. Given its large number of product categories, it should have a more diverse distribution channel

Risks:

- The market may not continue growing at the same rate as predicted or may enter a period of decline
- Threat of substitute products and changing customer trends can make the client's products less 'necessary'

Next Steps:

- Mentioned in the recommendations – key focus here will be to outline the steps that may be required for following the recommendations (e.g. investment into customer research, marketing spend for changing segment focus, deep dive into diversifying the distribution channel)

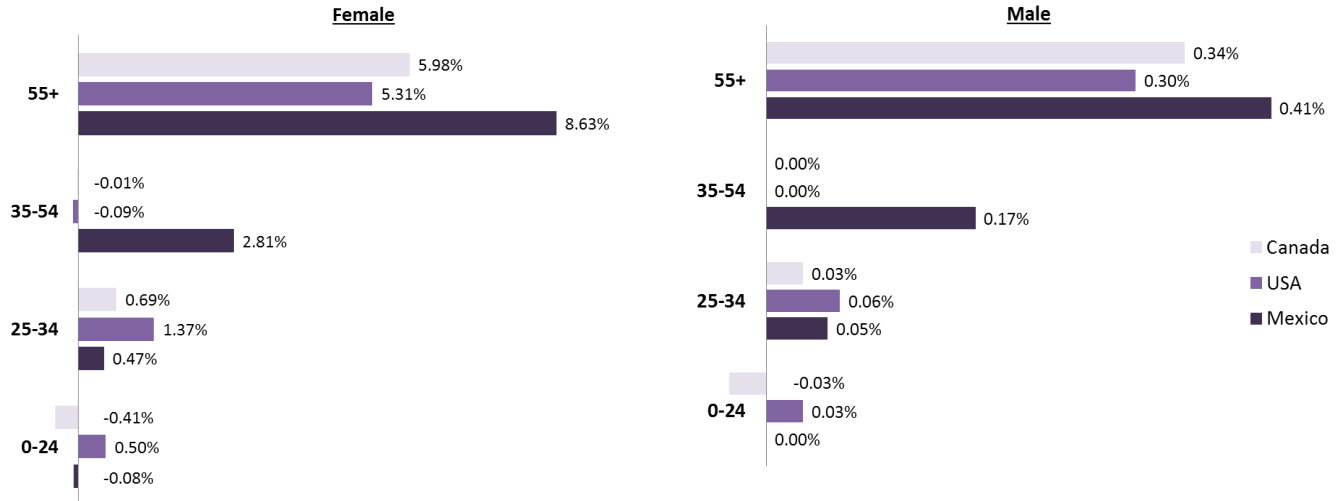
Bonus: Guide to an excellent case

Strong candidates may also mention:

- Ensure product strategy is geared towards appropriate customer segments
- Research customer needs to capture larger shares of wallet
- Investigate options for diversifying distribution channels in an efficient manner with thorough cost-benefit analysis

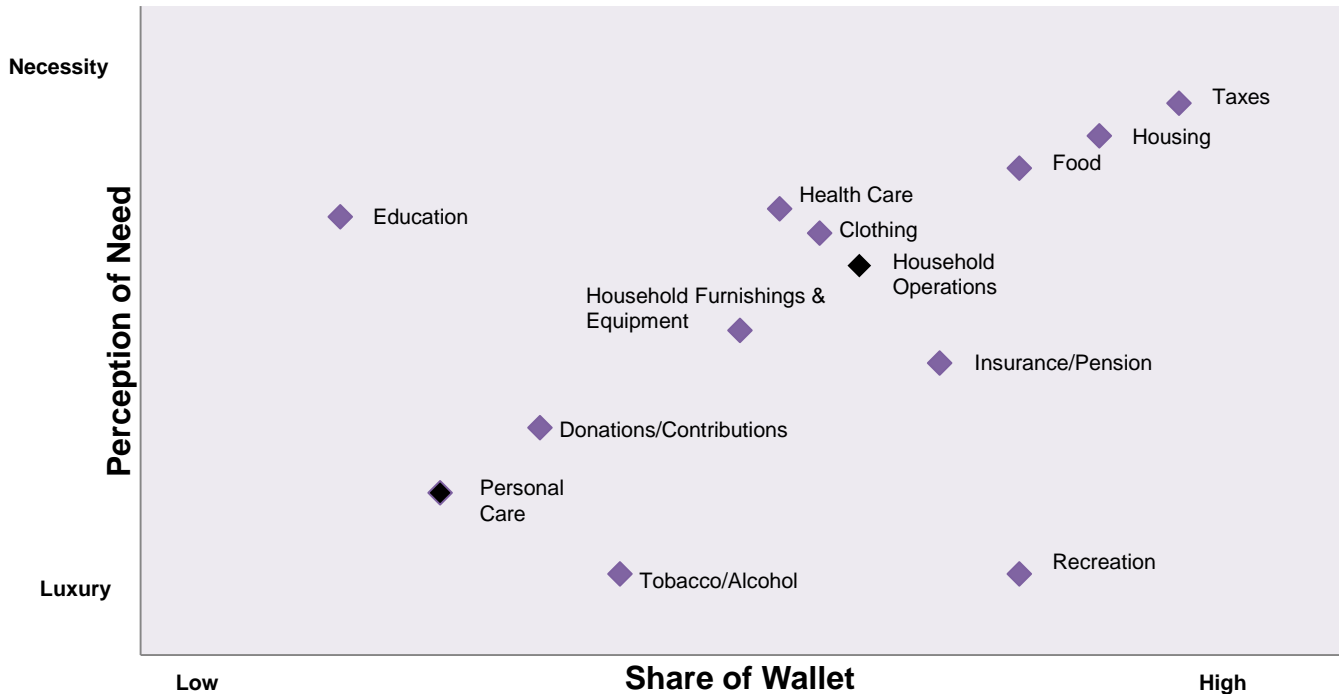
Cosmetics Company: Exhibit 1

2012-2017 Growth in Personal Care Consumption by Age Group



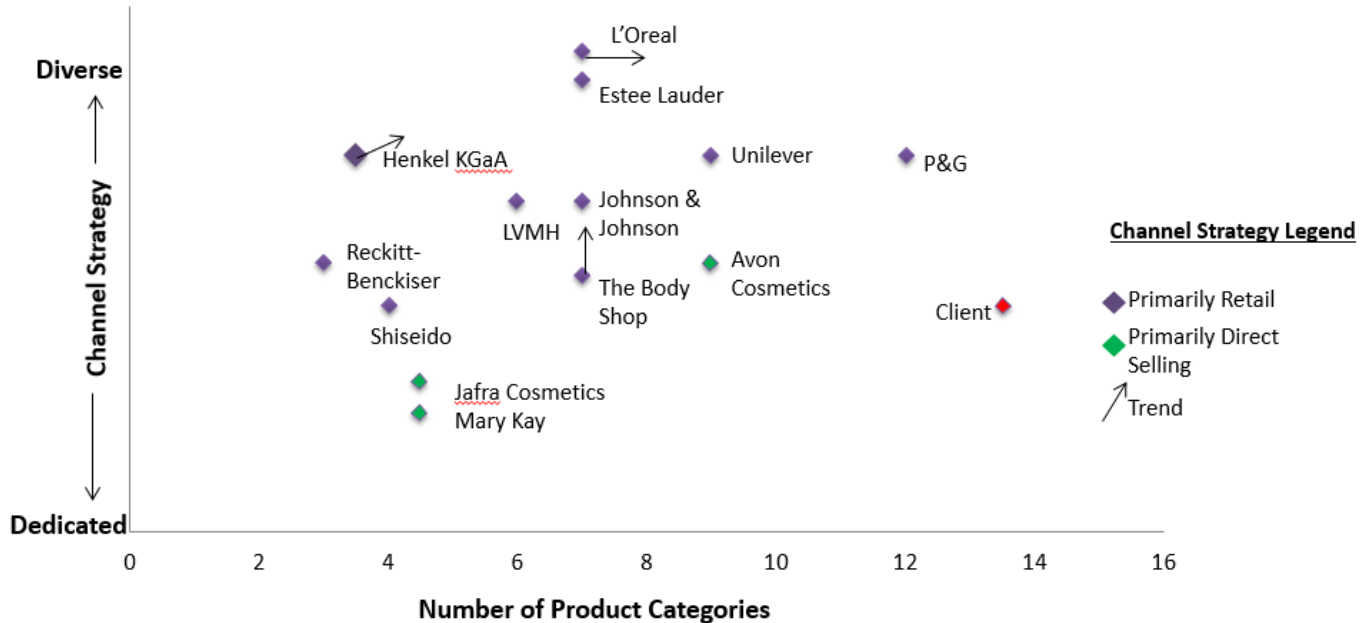
Cosmetics Company: Exhibit 2

Ranking Major Household Spending Categories by Share of Wallet and Perception of Need



Cosmetics Company: Exhibit 3

Product-Channel Strategy Map



Skin Care Market (Deloitte)

Case Style: Interviewer Led

Difficulty: Medium

Case Prompt:

Our client is a \$5 Billion private European manufacturer of medicinal products. The client licenses new medicines from research companies and sells their products through both traditional European wholesale distributors as well as direct contracts with European hospitals that allow them to cross-sell their products and expand their product footprint.

The client's existing manufacturing footprint is in urban locations close to their customers resulting in higher overhead costs compared to the competition. However, they are able to command a price premium in this market due to high quality products, excellent service, and speed to market. They currently own 10% of the European market, a highly fragmented, but growing industry.

They have an aggressive growth target of doubling their top line within the next 5 years and are thinking about entering a new market, consumer skin care, due to the following attractive characteristics:

- Wide array of products treating acne, hair loss, wrinkles, infections, fungus, psoriasis, and oily skin.
- Highly fragmented, \$30B global market with Lotions, Ointments, and Creams making up 80% of the products.
- Two major channels i) Physician prescriptions (sold through pharmacies) and ii) Over-the-Counter (sold through retail outlets)
- Significant convergence with more products being sold over-the-counter placing pricing pressure on prescription products in an already low-margin business.

Your team has been called in and asked to lead our client through the analysis and decision processes of how best to proceed with this decision.

Case Overview:

Industry: Cosmetics

Case Type: New Market Entry

Concepts Tested:

- Market Sizing, Marketing Strategy

Skin Care Market: Question 1

Question #1:

What factors should they consider in deciding whether to enter the European Consumer Skin Care market?

Notes to Interviewer:

- **A good answer will** demonstrate the candidate's understanding of market attractiveness. This would include things such as fragmentation of competition, size and growth of the market, customer options (e.g. substitutes and product differentiation) and purchasing power, and regulatory considerations (e.g. prescription coverage, etc.).
- **A great answer** will also examine how this market fits with the company's capabilities and strategy. Is the market large enough to get them closer to their goal of doubling top line growth in the next 5 years (\$5 -> \$10B)? Are the products similar enough to be considered a core competency or is this completely new? Is there existing manufacturing capacity or will they need to build? Have they considered alternative growth options that could be more in-line with their existing strategy.
- They should also consider the implications of entering a low-margin business when their existing product portfolio commands price premiums. Are they willing to trade-off top-line growth for lower profit margins?

Skin Care Market: Question 2

Question #2:

[Hand Exhibit #1 to candidate]

Based on the client background and Data Sheet provided, how would you advise the client in developing a European channel strategy (Prescription, OTC, or Both?) and product strategy (Branded or Generic) ?

Notes to Interviewer:

- **A good answer would** take into account the characteristics of each channel (size, growth rates, basis of competition) as well as the client's strengths (strong physician relationships, brand quality, speed to market) to determine the pros and cons of each option. For example, it is expensive to build brands (advertising, marketing, etc.) and with the convergence of OTC and Prescription putting pricing pressures on Prescription, they should consider whether branded products will continue to command a premium.
- **A great answer would** also use information from the Data Sheet to make a hypothesis. For example, the client's high manufacturing costs (as mentioned in the case) would make it difficult for them to compete in the generic/Private Label market even though this is a growing area. If growth was strong enough, it may be worth exploring moving manufacturing facilities to lower cost areas. However, this could impact their physician relationships.
- They should also consider the goal of doubling revenue in the next 5 years and which channels will help to achieve that goal. While the branded prescription market may fit their existing capabilities, it is the smallest and slowest growing market. OTC on the other hand, may better support their top line goals

Skin Care Market: Question 3

Question #3:

Given the client's current capabilities and aggressive growth target, if they decide to enter this market, what factors should drive their decision to explore other Geographic markets versus staying in Europe?

Notes to Interviewer:

- **A good answer** would point out that Europe is a small portion of the Global Market (20%) with stagnated growth (5%) while the US makes up 40% of the market with a 10% growth rate. They may also consider the fact that the larger size, higher growth markets (US and Emerging) also have the lowest margins which may not play into their higher cost model. Other considerations are barriers to entry, competition in each country, and the increased cost and complexity of distributing product overseas.
- **A great answer** will also point out that Europe is only 20% of the \$30B industry (\$6B), broken into four channels. Even if they owned the entire Generic OTC market (which is the largest channel), assuming the geographical proportions hold across channels, they would have 20% of a \$10B market (\$2B) which doesn't even get them to half of their growth target. This would tell you that you would need to be a significant global player to come even close to your goals or at least pursue additional opportunities simultaneously.

Skin Care Market: Question 4

Question #4:

With the limited information and data available about the client and the consumer skin care industry, do you think expansion into this market is a good idea?

Notes to Interviewer:

- **A good answer** would defend a single position one way or the other. They might take into consideration that this is a highly fragmented market with relatively strong growth (7% CAGR) and which will provide them with the opportunity to break into larger markets in other geographic regions once they get a foothold in Europe. The products seem to align with the manufacturing capabilities (lotions, ointments, and creams) and sales channels (Physicians). On the other hand, they might indicate that this is not an attractive market because their current capabilities are best at Branded Prescriptions, which is the smallest and slowest growing part of the industry. As a result, it will not help them achieve their revenue targets in any significant way. Or they may point out that this is a lower margin business which will lower overall profit margins.
- **A great answer** would weigh both the pros and the cons before taking a position. They may also ask what the alternative investment options are. They currently enjoy good margins as a large player in a fragmented industry. Should they explore more options there?

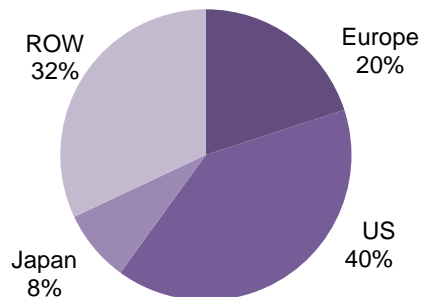
Skin Care Market: Exhibit 1

Data Sheet

Global Skin Care Market = \$30B
(7% CAGR)

	Branded	Generic	
OTC	\$10B (8% CAGR)	\$10B (12% CAGR)	\$20B (10% CAGR)
Prescription	\$5B (3% CAGR)	\$5B (5% CAGR)	
	\$15B (5% CAGR)	\$15B (8% CAGR)	\$10B (4% CAGR)

Global Skin Care Market Share (\$30B)



Basis of Competition

	Branded	Generic
OTC	<ul style="list-style-type: none"> Efficacy Brand Recognition Marketing 	<ul style="list-style-type: none"> Price Product line breadth Services/ unique packaging
Prescription	<ul style="list-style-type: none"> Efficacy Physician Relationships Speed to Market 	<ul style="list-style-type: none"> Price Reliability Specialization (unique attributes)

Global Skin Care Market Characteristics

	Growth Rate	Characteristics
Europe	5%	<ul style="list-style-type: none"> OTC competing with prescriptions Highest margins
US	10%	<ul style="list-style-type: none"> OTC competing with prescriptions Industry consolidation; declining margins
Japan	(2%)	<ul style="list-style-type: none"> Low population growth High barriers to entry
Emerging	30%	<ul style="list-style-type: none"> Highly Price Sensitive Low Margins

Great Burger (McKinsey)

Case Style: Interviewer Led

Difficulty: Hard

Case Prompt:

Let's assume our client is Great Burger (GB) a fast food chain that competes head-to-head with McDonald's, Wendy's, Burger King, KFC, etc. GB is the fourth largest fast food chain worldwide, measured by the number of stores in operation. As most of its competitors do, GB offers food and "combos" for the three largest meal occasions: breakfast, lunch and dinner. Even though GB owns some of its stores, it operates under the franchising business model with 85% of its stores owned by franchisees (individuals own & manage stores and pay a franchise fee to GB, but major business decisions e.g. menu, look of store, are controlled by GB).

As part of its growth strategy GB has analyzed some potential acquisition targets including Heavenly Donuts (HD), a growing doughnut producer with both a US and international store presence. HD operates under the franchising business model too, though a little bit differently than GB. While GB franchises restaurants, HD franchises areas or regions in which the franchisee is required to open a certain number of stores.

GB's CEO has hired McKinsey to advise him on whether they should acquire HD or not.

Case Overview:

Industry: Fast Food

Case Type: M&A

Concepts Tested:

- Profitability

Great Burger: Question 1 (1/2)

Question #1:

What areas would you want to explore to determine whether GB should acquire HD?

Notes to Interviewer:

Stand Alone Value of HD

- Growth in market for doughnuts
- HD's past and projected future sales growth (break down into growth in number of stores, and growth in same store sales)
- Competition – are there any other major national chains that are doing better than HD in terms of growth/profit. What does this imply for future growth?
- Profitability/profit margin
- Capital required to fund growth (capital investment to open new stores, working capital)

Management Team/Cultural Fit

- Capabilities/skills of top, middle management
- Cultural fit, if very different, what % of key management would likely be able to adjust

Great Burger: Question 1 (2/2)

Question #1:

What areas would you want to explore to determine whether GB should acquire HD?

Notes to Interviewer:

Synergies/Strategic Fit

- Brand quality similar? Would they enhance or detract from each other if marketed side by side?
- How much overlap of customer base? (very little overlap might cause concern that brands are not compatible, too much might imply little room to expand sales by cross-marketing)
- Synergies (*Note to interviewer: do not let candidate dive deep on this, as it will be covered later*)
- GB experience with mergers in past/experience in integrating companies
- Franchise structure differences. Detail "dive" into franchising structures. Would these different structures affect the deal? Can we manage two different franchising structures at the same time?

Great Burger: Question 2

Question #2:

The team started thinking about potential synergies that could be achieved by acquiring HD. Here are some key facts on GB and HD. (*Note to interviewer: show candidate Exhibit #1*)

What potential synergies can you think of between GB and HD?

Notes to Interviewer:

Lower Costs

- Biggest opportunity likely in corporate SG&A by integrating corporate management
- May be some opportunity to lower food costs with larger purchasing volume on similar food items (e.g., beverages, deep frying oil), however overlaps may be low as ingredients are very different
- GB appears to have an advantage in property and equipment costs which might be leverage-able to HD (e.g., superior skills in lease negotiation)

Increase Revenues

- Sell doughnuts in GB stores, or some selected GB products in HD stores
- GB has much greater international presence thus likely has knowledge/skills to enable HD to expand outside of North America
- GB may have superior skills in identifying attractive locations for stores as its sales/store are higher than industry average, where as HD's is lower than industry average – might be able to leverage this when opening new HD stores to increase HD average sales/store
- Expand HD faster than it could do on own – GB as a larger company with lower debt may have better access to capital

Great Burger: Question 3

Question #3:

The team thinks that with synergies, it should be possible to double HD's US market share in the next 5 years, and that GB's access to capital will allow it to expand number HD of stores by 2.5 times. What sales/store will HD require in 5 years in order for GB to achieve these goals? You should assume:

- Doughnut consumption/capita in the US is \$10/year today, and is projected to grow to \$20/year in 5 years
- For ease of calculation, assume US population is 300 M
- Use any data from Exhibit #1 you need

Notes to Interviewer:

Variable	Source (given in case unless stated)	Value
HD sales	Exhibit 1	\$700M
US market	(Consumption per capita) x (population)	\$3B
HD market share	(HD sales) / (US market)	23%
Note to interviewer: At this stage, tell the candidate to round to 25% for the sake of simplicity		
US market in 5 years	(Projected consumption per capita) x (population)	\$6B
HD sales in 5 years if double market share	(Current share, calculated as 25%) x (double) x (US market in 5 years)	\$3B
# of stores in 5 years	(Current # stores from Exhibit 1) x (2.5)	2,500
Sales/store in 5 years	(HD sales in 5 years) / (new number of stores)	\$1.2M

Note to interviewer - an optional probing question is to ask:

- Does this seem reasonable?

A good response would be:

- Yes, given it implies less than double same store sales growth and per capita consumption is predicted to double

Great Burger: Question 4 (1/2)

Question #4:

One of the synergies that the team thinks might have a big potential is the idea of increasing the businesses' overall profitability by selling doughnuts in GB stores. How would you assess the profitability impact of this synergy?

Notes to Interviewer:

Basic Profitability Analysis

- Calculate incremental revenues by selling doughnuts in GB stores (calculate how many doughnuts per store, time s price per doughnut, times number of GB stores)
- Calculate incremental costs by selling doughnuts in GB stores (costs of production, incremental number of employees, employee training, software changes, incremental marketing and advertising, incremental cost of distribution if we can not produce doughnuts in house, etc.)
- Calculate incremental investments. Do we need more space in each store if we think we are going to attract new customers? Do we need to invest in store layout to have in house doughnut production?
- Other reasonable answers are acceptable

Great Burger: Question 4 (2/2)

Question #4:

One of the synergies that the team thinks might have a big potential is the idea of increasing the businesses' overall profitability by selling doughnuts in GB stores. How would you assess the profitability impact of this synergy?

Notes to Interviewer:

Cannibalization

- If the candidate dives deep in the incremental revenue piece by taking into account cannibalization, what would be the rate of cannibalization with GB offerings? Doughnut cannibalization will be higher with breakfast products than lunch and dinner products, etc.
- One way to calculate this cannibalization is to look at historic cannibalization rates with new product/offering launchings within GB stores
- Might also cannibalize other HD stores if they are nearby GB stores – could estimate this impact by seeing historical change in HD's sales when competitor doughnut store opens near by
- Other reasonable approaches to calculating cannibalization are acceptable

Great Burger: Question 5

Question #5:

What would be the incremental profit per store if we think we are going to sell 50 thousand doughnuts per store at a price of \$2 per doughnut at a 60% margin with a cannibalization rate of 10% of GB's sales?

Show candidate Exhibit #2. Also, if necessary, explain the "Cannibalization Rate" to the candidate.

Notes to Interviewer:

- Only do this question if you feel you did not get a good read with the first quantitative question, or if you have ample time left for the case. If you skip this question, tell the candidate the following: The team has calculated that the incremental profit per GB store from selling HD doughnuts would be \$15K.
- Incremental Profit =
 - = contribution from HD sales less contribution lost due to cannibalized GB sales
 - = 50K units x \$2/unit x 60% margin – 300K units x 10% cannibalization x \$3/unit x 50% margin
 - = \$60K – 45K
 - = 5K incremental profit/store

Great Burger: Question 6

Question #6 (synthesis):

You run into the CEO of GB in the hall. He asks you to summarize McKinsey's perspective so far on whether GB should acquire HD. Pretend I am the CEO - What would you say?

Notes to Interviewer:

This is an example response. Good answers may vary, depending on answers candidate gave in questions 1-4, and whether or not they completed all previous questions.

Early findings lead us to believe acquiring HD would create significant value for GB, and that GB should acquire HD

- We believe it is possible to add \$15k in profit/GB store by selling HD in GB stores. This could mean \$50 million in incremental profit for North American stores (where immediate synergies are most likely given HD has little brand presence in rest of world.
- We also believe there are other potential revenue and cost synergies that the team still needs to quantify

Once the team has quantified the incremental revenues, cost savings, and investments, we will make a recommendation on the price you should be willing to pay

We will also give you recommendations on what it will take to integrate the two companies in order to capture the potential revenue and cost savings, and also to manage the different franchise structures and potentially different cultures of GB and HD

Great Burger: Exhibit 1

Stores	GB	HD
Total	5,000	1,020
- North America	3,500	1,000
- Europe	1,000	20
- Asia	400	0
- Other	100	0
Annual Growth in Stores	10%	15%

Financials	GB	HD
Total store sales	\$5,500M	\$700M
Parent company revenues	\$1,900M	\$200M
Key expenses (% sales)		
– Cost of sales *	51%	40%
– Restaurant operating costs	24%	26%
– Restaurant property & equipment costs	4.6%	8.5%
– Corporate general & administrative costs	8%	15%
Profit as % of sales	6.3%	4.9%
Sales/store	\$1.1M	\$0.7M
Industry average	\$0.9M	\$0.8M

* Variable costs, mostly food costs

Great Burger: Exhibit 2

Sales and Profitability per store	
Units of GB sold per store	300,000
Sales price per unit	\$3
Margin	50%
Units of HD sold in GB stores	50,000
Sales price per unit	\$2
Margin	60%
Cannibalization Rate of HD products to GB products	10%

Additional Casing Resources

Resource	Uses	Cost
<i>Management Consulted</i>	<ul style="list-style-type: none"> • Additional case access • Firm overviews, skill practice • 1-on-1 casing (\$) 	<ul style="list-style-type: none"> • Most resources free through MCA subscription
<i>FastMath</i>	<ul style="list-style-type: none"> • Mental math tutorials and practice through 	<ul style="list-style-type: none"> • \$49 (signup with Stern email address)
<i>S&P Industry Reports</i>	<ul style="list-style-type: none"> • Industry insights including margins, growth and drivers 	<ul style="list-style-type: none"> • Free through Stern Dashboard
<i>Rocket Blocks</i>	<ul style="list-style-type: none"> • Framework drills • Charts and data analysis skill work • Mental math practice 	<ul style="list-style-type: none"> • \$35 per month or • \$155 per year
<i>Case Interview Secrets</i>	<ul style="list-style-type: none"> • Various resources including fast math and framework practice to resume and cover letter coaching • Look Over My Shoulder program is a collection of audio files of example live-cases, both good and bad 	<ul style="list-style-type: none"> • Resources range from Free - \$X00

Other resources: <https://nyustern.campusgroups.com/mca/links/>



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