

Note to the Reader

This casebook is designed to help University of Houston students, specifically members of the Business Consulting Organization, in learning and practicing case interviews for management consulting positions.

However, even if you are not a UH BCO member, we hope this casebook helps you learn about management consulting and would advise you to join BCO to learn even more and practice with other students.

There are three sections in this book,

- 1) The Introduction section explains what a case interview is, what it typically looks like, the different types and styles of interviews, what frameworks are and how to use them, etc.
- The Background section explains general business jargon and formulas to use alongside tips for quicker and more accurate mental math calculations.
- 3) Finally, the Cases are the core of the casebook; practice case interviews written to simulate real cases given by management consulting companies.

Throughout the creation process, we reached out to management consultants for review on the cases themselves. Each case has been reviewed by a consultant. Reviewers came from McKinsey, Oliver Wyman, Bain, etc. We hope this casebook helps you reach your dream management consulting position!



Author

This is the first-ever casebook made by the University of Houston Business Consulting Organization. It was written by the Fall 2023 Director of Education and Spring 2024 Vice President, Phoenix Pittman.

"I wrote this casebook because I felt that I had learned tremendous amounts from my recruiting experience, partially from pure luck. I received a lot of help from consultants who gave their time to a random state school student none of them knew or had any reason to help other than the kindness of their hearts. Because of that, I wasn't certain that every student would experience the same luck as I had and so I wanted to make sure that everything I learned was given to all students after me.

I want to thank Madhav Murgai and Andrew Huynh for being wonderful mentors throughout my recruiting process and believing in me and my ability to succeed - it really means the world! I also want to thank the HeadStart Fellowship for helping me throughout the writing process with feedback and design advice. Last but not least, want to thank Jamie Thornton for proofreading and editing the writing in this casebook.

Hope you enjoy!" - Phoenix Pittman, president@uhbco.org







Table of Contents

1 -	Title	64 -	Case #5 Renewable Diesel
2 -	Note to the Reader	73 -	Case #6 Warehouse Co.
3 -	Author	83 -	Case #7 Race Car Barbie
4 -	Table of Contents	91 -	Case #8 Texas Robotics Collective
5 -	Introduction to the Case Interview	106 -	Case #9 Olympic City Choice
20 -	Background and Math Tips	118 -	Case #10 Queen Shirley
25 -	Case #1 Finding the Right Key	129 -	Case #11 Construct a Solution
33 -	Case #2 On The Same Page	138 -	Case #12 Applying Appliances
43 -	Case #3 Vogue's Vacation	147 -	Case #13 Taylor's New Era
53 -	Case #4 Achieving Liftoff		



Introduction to the Case Interview

What is a Case Interview? - 6

Types of Case Interviews - 7

Styles of Case Interviews - 8

Case Interview Format - 9

Common Behavioral Questions - 10

Common Buckets for Case Interviews - 11

Brainstorming Mini-Frameworks - 12

Risks Triangle - 13

Example Bucket - Profitability - 14

Final Recommendation Structure - 15

Instructions for a Candidate Led Case - 16

Instructions for an Interviewer Led Case - 17

General Tips for Practice - 18

Case Interview Evaluation Sheet - 19

What is a Case Interview?

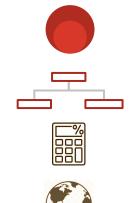
A case interview is an interview where a candidate is presented with a hypothetical problem so the interviewer can assess the candidates' problem-solving, business acumen, creativity, and communication skills. It is a major part of the recruiting process for management consulting companies. Sometimes entire interview rounds can consist of exclusively case interviews (for example, Bain and Company's first round of interviews for interns in the Summer 2024 class were two case interviews with only a few behavioral questions beforehand).

Case interviews are usually about thirty to forty five minutes long and typically cover business cases but could also include non-profit, governmental or human capital situations so it's important for candidates to have strong business acumen while also being adaptable enough to solve public sector problems. Interviewers typically look for candidates to be clear, structured and hypothesis-driven in their process to find the solution, so much so that even if a candidate stumbles upon the 'correct' answer, if their process is unstructured or unclear, the interviewer may not push them onto the next interview or extend an offer. The interviewer is looking for the right formula and right answer not just the right answer. Calculators are not allowed and candidates typically only use a few sheets of paper and a pen or pencil.



Types of Case Interviews

There are dozens of types of case interviews but there are a few common styles you will probably encounter. Here are the five most common types you'll see in no particular order. These types can and are often combined and should not be seen as exclusive categories (for example, profitability is still important to consider even in a growth strategy case).



M&A/Investment Activity - A firm is looking to acquire another, sell a previously acquired entity or is looking to invest internally.

Profitability - A firm sees declining profits and needs help to understand why and what to do about it, if anything can be done about it.

Industry Assessment - A firm wants to know about a particular industry for an investment decision, adaptation decision, new product launch, etc.

Market Sizing/Market Share - A firm wants to achieve a specific market share, learn more about a given market or identify why they may be losing market share.

Growth Strategy - A firm may have identified a capacity to enter a new market and want input on how to do so, or they want input on current operation expansions.



Styles of Case Interviews

Candidate Led:

Candidate led interviews typically feature a candidate driving the conversation by asking for information about the case usually in the order of their framework. It's the most common style by far and used by the most firms.

Firms using Candidate Led:



Deloitte.

Booz | Allen | Hamilton



Interviewer Led:

Interviewer led cases are driven by the interviewer asking the candidate questions about the case and determining direction instead of vice versa. It is the least common style and only used by a select few firms.

McKinsey & Company

Firms using Interviewer Led:



strategy&

accenture



*Some firms fluctuate styles often and this list is <u>not</u> exhaustive

Case Interview Format



Prompt and Clarification

Prompt: The prompt is the background of the case and explanation of the issue at hand.

Clarification: Right after the prompt, candidates should ask clarifying questions (how long has the problem happened, do competitors also have it, etc)

Framework

Framework: The framework is the candidates roadmap in dissecting the issue at hand. More on specific frameworks on the next few slides. They typically take the form of three "buckets" or areas of focus with sub-buckets. These buckets should be collectively exhaustive of all possibilities of the problem and mutually exclusive for the sake of process of elimination to identify and isolate the problem and solution.

Exhibits and **Analysis**

Exhibits: Graphs and charts typically make up exhibits and they are the meat of the case. One way of thinking of exhibits is the treasure that you use your map (framework) to find - they're the data that will drive the core of the case. You should look over a chart/graph when given one for a minute or two, and then explain what insights you've gained and patterns you recognize. Thinking out loud is very important here!

Qualitative **Questions**

Qualitative Questions: These questions are typically after a quantitative conclusion found from the data in the exhibits. These questions are meant to reconnect the data to the main question of the case and contextualize insights. For example, the interviewer may ask a candidate what risks are relevant for a recommendation before asking the candidate for their final recommendation.

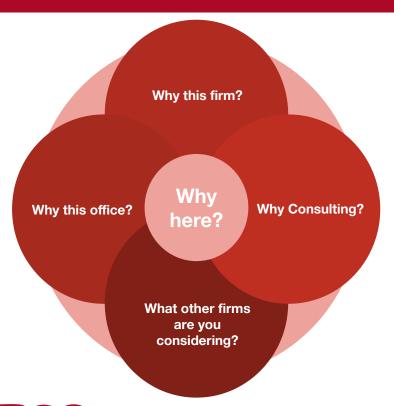
Final Rec

Final Rec: The Final Recommendation is a very important part of the case. It is meant for the candidate to quickly, concisely and clearly summarize their findings and communicate what the solution to the case is. More details will be given in the "Miscellaneous" section about how to give a Final Rec.



9

Common Behavioral Questions



Behaviorals may change per company as different companies have different preferences, but the four questions on the left are still very common as they all answer the same question of "Why here?".

Management consulting companies expect their candidates to shop around between firms as firms shop around between candidates, so they want to feel comfortable that if/when they extend an offer, it will be accepted by the candidate and not rejected in lieu of a counter offer from another firm.



Common Buckets for Frameworks









Industry

Industry trends, size of the industry, CAGR, new tech, possible regulations, etc



Competitors, Competitive
Advantage, Market Shares, Barrier
to Entry, Product Line
Comparisons, etc



Company

Capabilities, Current and Potential Products, Geography, Competitive Advantage, History, etc.



Customers

Segmentation, Expectations, Retention Rate, behaviors (B2B or B2C?), Geography, needs vs wants, etc



Profitability breakdown, potential return on investment or payback period, valuation multiples, pricing strategy, etc



What would failure look like and how would it be prevented? Would expansion effect current operations? How would customers and competition react?



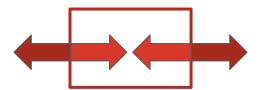
Every case is different and a one-size-fits-all approach does not exist - so you should feel very comfortable changing your framework to fit each case.

Each framework should be customized for the particular case - but these are some common buckets that can fit many cases. The general rule in choosing a framework is the "Rule of Three". meaning three buckets for one framework.



Brainstorming Mini-Frameworks

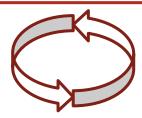
Internal vs External





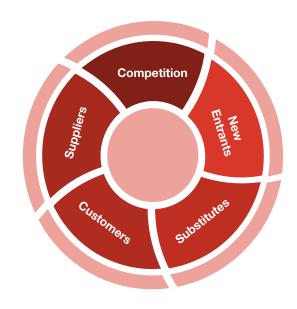
Chronological

Ins and Outs



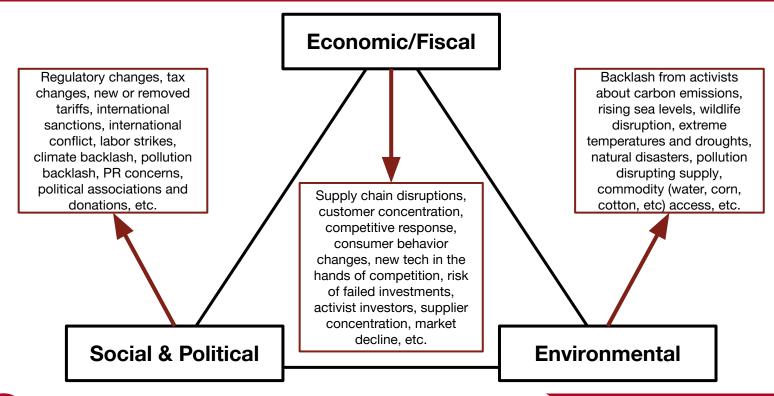
Just like general frameworks, brainstorming does not have a "right" way - these methods are just to help you find a reliable way to quickly find creative and accurate ideas. The only requirement for brainstorming is creativity and structure!

Porter's 5 Forces



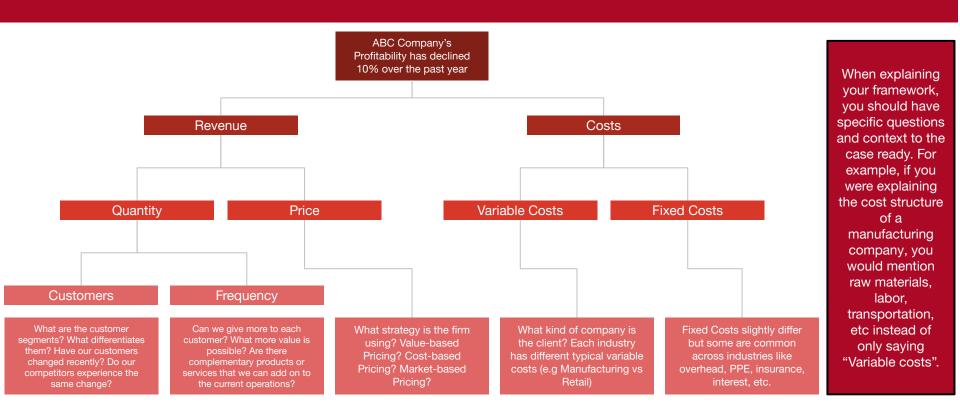


Risks Triangle





Example Bucket - Profitability





Final Recommendation Structure

The entire recommendation should be short and sweet - never more than 3 minutes but never less than one. When transitioning from one section to the next, it's recommended that you explicitly state "the risks are" or "next steps are" in the beginning of your practice and as you become more familiar with the structure you can let go of the direct labels and find your own phrases that help you know you're transitioning.

1 2 3 4 5

Question

The first sentence you should say in your final recommendation should be a short summary of what the goal of the client is. For example, "In returning ABC Company's profitability back to the previous years..."

Answer

The second sentence should be your recommendation. You should ensure that this part is slow, clear and concise as it is the target of the entire case. Be direct and to the point e.g "ABC can cut costs by changing raw materials suppliers..."

Justifications

Explain, using math if at all possible, why your answer is the correct answer with multiple justifications.

Example: "Changing suppliers would reduce raw material costs by 15%, create a positive contribution margin and prevent a sharp cost spike in the future."

Risks

Now that you've explained your recommendation to the client, what are the possible risks with implementation? Example: "We are unaware about the new suppliers' delivery schedule or quality."

Next Steps

Now that you've convinced the client on your recommendation, how should they implement it and what are the next steps from here? Example: "The next steps from here are beginning negotiations with the new supplier."



Instructions for Candidate Led Case

For a candidate-led case, the interviewer takes a back seat in letting the candidate drive the direction of the case. The interviewer is only involved in answering questions from the candidate or if the candidate is really struggling in finding where the issue is, the interviewer could nudge them in one direction by commenting something similar to "Let's try looking more into X bucket". It is also common for candidates to explain their math processes before calculating them and asking the interviewer for feedback, in which case it's common for an interviewer to comment on if the candidate could simplify the process a bit or if the candidate is on the right track.

The interview will typically take the following form. First, the interviewer will read the prompt of the case and the candidate will repeat key facts and figures, ask clarifying questions and identify the key question. Second, the candidate will draw out a framework (often times literally drawing on a sheet of paper) for the interviewer on how they plan to break down the core question. Using their framework, the candidate would make a first hypothesis and ask the interviewer for more information that enables the candidate to validate or invalidate their hypothesis (whether or not the hypothesis is true is irrelevant, what matters is the process of creating and testing a hypothesis). From here, the interviewer acts as a source of information mainly giving the candidate information they ask for or nudging the candidate if needed. Once the candidate has identified an answer, they will give a final recommendation.



Instructions for a Interviewer Led Case

An interviewer-led case is a bit different from a candidate-led case in that the interviewer will be asking the candidate questions about the case instead of the other way around. The candidate should answer the questions given and not attempt to solve the entire case at once like a candidate-led case. The questions will still follow a similar order of a candidate-led case (for example, a common first question is "What factors would you consider" or "How would you break this down" asking the candidate for their framework as they would give in a candidate-led case) but the interview just looks a bit different. The content is the same and the tested skills are the sam: the only difference is the process.

The interview will typically take the following form. First, the interviewer will read the prompt and ask the candidate "What factors would you consider?". This question is asking the candidate for their framework. Secondly, once the candidate has given a framework, they will not typically have a first hypothesis, since the interviewer will lead them into one bucket or sub-bucket of interest. Third, the interviewer will typically give the candidate an exhibit or list of data and ask the candidate to draw a conclusion from the data, for example, the interviewer could ask "Given this table, what is total revenue for the most recent year?". In this form of interview, it's less common for the interviewer to ask for a final recommendation, however, this casebook always includes a final recommendation question just in case it is asked in an interview.



General Tips for Practice

- t's important to not case without aim once you practice a case, identify areas of improvement and do drills targeting those areas in particular and then come back to do another case. For example, if math was a bit slow, you could practice math for a few days or a week before doing another case and then test if your math was quicker.
- Before the case, choose one skill you want to practice or improve on and the interviewer should be taking notes on that skill in particular to identify improvements since last time and more potential improvements.
- For the interviewer, it's important to review the case beforehand and be familiar with it so you do not accidentally misspeak or give the candidate the wrong answer. Actual interviewers would be very familiar so it not only prevents mistakes but also best mimics real interviews.
- the interview to achieve the best results. As much fun as it is to joke with a friend, you want to make sure that you are getting better to reach your desired goal. (Still have fun but not too much fun!)
- ♦ Make sure the candidate has not practiced the case before (it's useless to case with the same case twice as it doesn't represent what a real interview would look like)
- The interviewer should be doing the math alongside the candidate to both help the interviewer practice and identify potential mistakes in the candidate.
- The interviewer should be taking good notes of the candidate and following along as a real interviewer would. Likewise, they should use these notes in giving feedback to the candidate after the case (feedback should always be genuine and constructive never personal or rude).



Case Interview Valuation Sheet

Category being Graded:	Grade:	Interviewer Name:	Interviewee Name:	Date of Interview:
Prompt:	Total:/5	interviewer name:	interviewee Name:	Date of interview:
Repeated Prompt and Key Facts:	/2	Foodbash		
Clarifying Questions:	/3	Feedback:		
Framework:	Total:/30			
MECE:	/5	Feedback:		
Bucket Choice:	/10	i coubant		
Creativity in Examples:	/5			
Speed in creating Framework:	/4			
Conciseness in explaining Framework:	/4			
Explicit First Hypothesis:	/2			
Analysis and Exhibits:	Total:/25			
Brainstorming Creativity:	/4	Feedback:		
Brainstorming Structure:	/4			
Quant Speed/Accuracy:	/4			
Business Acumen:	/4			
Conciseness:	/5			
Structure:	/4			
Final Recommendation:	Total:/20			
Conciseness:	/5	Feedback:		
Explicit Recommendation:	/5			
Risks:	/5			
Next Steps:	/5			
Presence and Non-Verbal:	Total:/20			
Confidence:	/5	Feedback:		
Body Language:	/5			
Coachability:	/10			
Final Grade:	/100			



Background & Math Tips

Common Business Jargon - 21 Common Business Formulas - 22 Math Tips - 23 Calculation Tricks - 24

Common Business Jargon

1	Cannibalization	Reduction in sales of an existing product because of an introduction of a new product
2	CAGR	Compound Annual Growth Rate, usually used in reference to an industry or market.
3	Market Share	Portion of the entire industry owned by one company (if you sell one item out of every ten that are sold, you have 10% market share).
4	Market Size	How big one given market or industry is in terms of total revenue for all players
5	Contribution Margin	How much profit is gained a sale. If something costs \$10 to make, and sells for \$25, it has a \$15 C.M.

6	ROI	Return on Investment - calculated by dividing return by investment or cash inflows by cash outflows.
7	Break-even Point	Typically used to calculate the quantity of sales needed to pay back an initial investment.
8	Value Chain	The entire process an item or service goes through before being delivered to its final customer.
9	Payback Period	How long an investment takes to pay for itself in terms of time (e.g 3 years or 5 years).
10	Present Value	Accounting for inflation and time value of money, how much future cash is worth in present day

Income Statement:					
GAAP	Non-GAAP				
Revenue					
- COGS					
= Gross Profit					
- SG&A	= EBITDA				
- Depreciation					
= Operating Profit	= EBIT				
- Taxes	= NOPAT				
- Interest					
+ Gains from Sale					
- Losses from Sale					
= Net Income					



Common Business Formulas

Return on Investment

Return/Investment
OR
Cash Inflows/Cash Outflows

Typically written as a percentage, e.g 3% ROI. Return should also be

Payback Period

Investment / Annual Return

Typically written in years or fractions of years e.g 2 years payback period or ½ year/6 months payback period

Contribution Margin

Sales Price - Variable Cost

Used in investment decisions to then calculate payback period and break-even point

Market Share

Revenue/Market Size

Used to calculate Market Share after knowing Market Size

Break-even Point

Contribution Margin/ Investment

Typically used in investment decisions to verify if the client's goal is realistic

Present Value

Future Value/(1+Discount Rate)

Much rarer than the other formulas, but still might happen in boutiques or Quant-heavy firms like Bain Market Size

Revenue/Market Share

Uses the same formula as Market Share knowing Market Size calculation with reversed positions



Math Tips



Sanity Check

Remember the context of your numbers and use your intuition to make sure the numbers make sense. For example, it would not make sense to say that the market for EVs in the U.S is \$300M.



Mistakes are ok!

Your interviewer does not expect you to be a human calculator. It is okay to make mistakes! Just make sure you catch them before your interviewer does



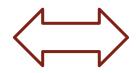
Talk it through

It may help to explain what calculations you are going to perform before performing them to your interviewer so they can check that it's both correct and the most efficient method.



Rounding

Because you can't use a calculator in a case, it's not expected that you are exactly correct. You are not only able to round but it's recommended! Round early and often!



Reconnect

Numbers are meaningless by themselves - if you tell your interviewer that your answer is 12 then that means nothing. You should always remember your units and reconnect back to the main goal.



Practice

Math is hard! Having quick and accurate mental math is a skill that requires practice to build. Make sure to practice, practice, practice!

Even though most math in cases are only the basic four functions, it can be hard to instantly and accurately calculate, so here are a few tips to keep in mind while casing with heavy math. Remember, consultants are not all mathematicians and it's okay to struggle with math!



Math Calculation Tricks

Fraction:	Decimal:	Percent:
1/2	0.5000	50.00%
1/3	0.3333	33.33%
1/4	0.2500	25.00%
1/5	0.2000	20.00%
1/6	0.1667	16.67%
1/7	0.1429	14.29%
1/8	0.1250	12.50%
1/9	0.1111	11.11%
1/10	0.1000	10.00%
1/11	0.0909	9.09%
1/12	0.0833	8.33%
1/13	0.0769	7.69%
1/14	0.0714	7.14%
1/15	0.0667	6.67%
1/16	0.0625	6.25%
1/17	0.0588	5.88%
1/18	0.0556	5.56%
1/19	0.0526	5.26%
1/20	0.0500	5.00%

#1) Convert to 10s

Explanation: When calculating, it's easier to calculate with multiples of 10s so it can be helpful to shift around some numbers to make them into multiples of 10s.

Example: 43 + 74 can be 36 + 80 by moving 6 from 43 into 74.

#2) Break Digits Apart

Explanation: Numbers with a lot of digits can get confusing because of their many moving parts so break them down into their digits.

Example: 92 * 18 breaks down into 92 * 8 and 92 * 10. Even 92 * 8 can be broken down into 92 * 10 and then subtract 92 * 2 if that's easier.

#3) Count Zeroes

Explanation: When dealing with large numbers, count the zeroes, remove them and then add them back later. **Example**: 50,000 * 670,000 has 8 zeros, remove them and then multiply. 5 * 67. You can even combine methods and break apart 5 * 67 into 5 * 60 and 5 * 7.

#4) Labels, Labels, Labels

Math can become very complicated with different units so make sure to either convert all units into one label or be extremely careful with your notes to keep all of the different units neat and organized.

Remember, everyone has their own personal math tricks so it may take a while for you to find out what works for you! Also, do not rush yourself - it's better to be slow and accurate than fast and inaccurate.



Case #1

Finding the Right Key

Reviewed by Consultants from: Oliver Wyman and Accenture

Prompt: Your client, Keyboard Co., is an American mechanical keyboard manufacturer who is seeing declining profitability recently and does not understand why - they hired you to help them identify why their profits may be down and to help them reverse the trend.

Clarifying information:

- Client has seen declining profitability last four years.
- Competitors are seeing mixed results some are up, some are down and some are stagnant.
- Client only sells keyboards in the U.S.
- Client mainly sells to big box retailers like Target, Best Buy, etc.
- Can ignore pandemic last four years should be assumed as normal business operations

For Interviewer: Move on to the first question after the candidate asks clarifying questions, if they don't, move on after reading the prompt.

Note to the Interviewer: This is supposed to be a very beginner-level case, so feel free to help the candidate as much as desired. Candidate should only answer the questions given.

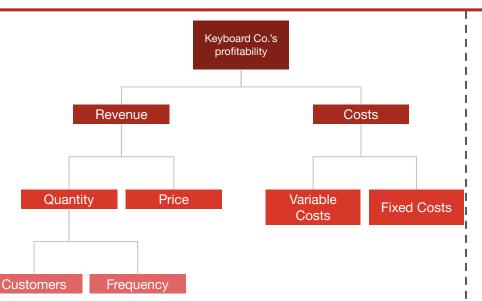
Style: Interviewer-Led Type: Profitability Difficulty:

Qual: Very Easy

Quant: Easy



Question 1: What factors would you consider in helping Keyboard Co. with their profitability?



Interviewer Guidance: The expected framework for this case is a classic profitability framework as shown on the left - the candidate may include other buckets like external factors for example. When the candidate is walking you through their framework, they should give examples of what would be included in each bucket e.g raw materials, labor, and shipping costs as examples for the variable costs sub-bucket.

Because this case is the introduction case, any framework will do - it is interviewer-led after all.

Move on to the next question once the candidate finished their framework.



Question 2: The client wants you to size the market for Keyboards in the United States. They've provided you with the following information. Six million total keyboards are sold and this number has remained stagnant every year. Keyboards are divided into three main groups, ergonomic keyboards, mechanical keyboards and membrane keyboards. Their average prices are \$100 for Membrane Keyboards, \$200 for Ergonomic Keyboards and \$150 for Mechanical keyboards.

Interviewer Guidance: Give the candidate Exhibit 1 after reading Question 2.

# of Keyboards:	6,000,000	# of Keyboards * Price	(Keyboards * Price) * Market Share			
Keyboard Type:	Price:	# Of Reyboards Price	2019	2020	2021	2022
Mechanical	\$150	\$900,000,000	\$360,000,000	\$315,000,000	\$270,000,000	\$225,000,000
Membrane	\$100	\$600,000,000	\$240,000,000	\$210,000,000	\$210,000,000	\$180,000,000
Ergonomic	\$200	\$1,200,000,000	\$240,000,000	\$360,000,000	\$420,000,000	\$540,000,000

1

Interviewer Guidance: Question 2 asks for a Market Sizing of the most recent year - which is 2022. A great candidate will realize this and only calculate totals for 2022 and then sum up the totals for each keyboard type - every other year's figures has been provided to confirm a candidate's calculations if they choose to calculate previous years.

The correct answer for Question 2 is: \$945M.

2

Interviewer Guidance: A market sizing typically begins with total customers, frequency of purchasing and price per product, however, total customers and frequency have already been provided with the number of keyboards sold figure and price has been provided per product so the candidate does not require additional information.

Once the candidate has calculated the total size of the market in 2022, ask Question 3.



Exhibit #1

Keyboard Type:	2019	2020	2021	2022
Mechanical:	40%	35%	30%	25%
Membrane:	40%	35%	35%	30%
Ergonomic:	20%	30%	35%	45%

Market Share of All Keyboard Purchases by Year



Question 3: Can you brainstorm some reasons why consumer behavior has been changing recently between keyboard types?

Interviewer Guidance: These are a few possible examples the candidate could list off. This list is not meant to be exhaustive but rather to give you, the interviewer, some idea of what to expect. The brainstorming should have some structure to it similar to a small framework. If the candidate only generates three or less ideas, ask them for more until they have five or more.

Once the candidate has explained five ideas or can't think of any more, ask them Question 4.

Changes in Customer:

- Change in **Disposable Income**
- Change in customer geography
- Change in **dependents/marital status** of customer
- Savings rate/spending rate of customer
- Change in taste/**preference** of customer
- Change in Education/**Awareness** of Customer

Changes in Product:

- Rise/Fall of product trends
- Change in **price** of the product
- Change in **raw materials** of product
- Change in **manufacturing process** of product
- Change in shipping/delivery process of product
- Change in **geography/availability** of product

Changes in Company:

- Change in **Reputation** of the company
- Change in **Advertising/Marketing** in the company
- Change in **Customer Service** of the company
- Change in Values of the company
- Change in **Management** of the company
- Lack of **Innovation** from the company

Changes in Competition:

- Change in Reputation
- Change in **Advertising/Marketing** from competition
- Change in **product** offerings from competition
- Change in Customer Service
- Change in Management
- Innovation from competition
- Change in Price
- Change in Geography/Availability



30

Question 4: Keyboard Co. wants to enter another Keyboard market - either ergonomic or membrane. They've performed research and learned if they enter the Ergonomic market they'd gain 20% market share and if they enter the Membrane market, they'd gain a 60% market share. Which one would give them more revenue if entered and which one would you recommend?

Type of Keyboard:	Market Size:	Market Share if Entered:	Revenue Gained:
Membrane:	\$180,000,000	60%	\$108,000,000
Ergonomic:	\$540,000,000	20%	\$108,000,000

Interviewer Guidance: The candidate should multiple market size as calculated in the last question with market share if entered. Both options should get the same result pushing the candidate to find qualitative reasons to prefer one over the other.

The correct answer for Question 2 is: \$108M additional revenue for both options

2

Interviewer Guidance: Move on to the last question once the candidate has calculated incremental revenue for both options. If they stop when they realize incremental revenue is the same, ask them to look at previous information to make a decision on one over the other.



Question 5: Keyboard Co.'s CEO is calling and wants to know what your recommendation is. What do you tell her?

Interviewer Guidance: The candidate may recommend entrance into either the Membrane Keyboard market or the Ergonomic Keyboard market given their equal incremental revenue - either way, the candidate should use Exhibit 1 to justify their answer.

Example Recommendation 1:

- Question: We were hired to help determine what Keyboard Co. should do to recover profitability.
- Answer: If Keyboard Co. enters the Ergonomic keyboard market, they'd gain \$108M in additional revenue. Compared to the Membrane market, they'd gain the same revenue but the Ergonomic market is growing at a much faster rate than the Membrane market creating higher potential for the long-term.
- **Risks**: The largest risk is market volatility just as Ergonomic Keyboards have risen in popularity, it's likely that they can fall just as much. The second largest risk is lack of information on profit margin our client may see negative margins when entering the Ergonomic market and we do not know since we have no information about their margins.
- Next Steps: Our client should investigate the causes of volatility in the Ergonomic keyboard market and identify margins when entering.

Example Recommendation 2:

- Question: Keyboard Co. hired us to help them determine what they should do to recover profitability.
- Answer: Our client should enter the membrane keyboard market. They would see the same incremental gain in revenue, \$108M, as if they were entering the Ergonomic market except with less volatility and a much stronger market share. Managing a vast majority of the market gives our client a wonderful moat and potentially the ability to manipulate the market into future growth.
- Risks: The membrane market has been slowly declining for the last four years so it's possible that the market continues to decline and our client declines with it.
- Next Steps: Our client should identify the causes behind the Membrane market's fall and if they could reverse the trend with a potential 60% market share.



Case #2

On the Same Page

Reviewed by Consultants from: Oliver Wyman and Bain and Company

On the Same Page

Prompt: Your client, Ostrich Books, is a major publisher of classic historical and social works like those of Shakespeare, Homer, Jane Austen, Maya Angelou, etc. After a few hits, Ostrich wants to keep the momentum going. They have reached out to you to help them understand what book is best to publish in the future.

Clarifying Info:

- They are only able to choose one book out of a list of options.
- Ostrich Books publishes books for both the U.S and Europe.
- Ostrich publishes books from every time period from a mix of authors
- Their financial target is to maximize profit.

Note to the Interviewer: This case is a beginner-friendly case that primarily tests on fundamentals.

Style: Candidate-Led
Type: Product Launch
Difficulty:

Qual: Easy Quant: Easy



On the Same Page

Interviewer Guidance: Possible frameworks are endless - so if the candidate doesn't have use these suggestions, it's alright. These are just examples. Once the candidate asks about available products give them Exhibits 1 and 2.

Profitability:

- Revenue
- Quantity
- Which books sell less than others? Is there a trend in performance in genre, geography, distributor, author, etc?
- Price
- What is our pricing strategy and why do we have it?
- Costs
- Variable Costs
- What are the components to creating a book and what causes cost changes?
- Fixed Costs
- Would we need to create a new facility for a new book type?

Products:

Current:

- Are our current products oversaturated?
- Could we refurbish current products?
- Do we have expertise in a certain genre/geography/etc?
- Does underperformance correlate with a change in current products? *Potential:*
- Do we have the potential to develop new products?
- Could we expand across current popular authors/genres with new books?
- Could we restart a discontinued product?

Competition:

- What gives our competition their competitive advantage?
- What differentiates us from our competition?
- Is our competition facing the same decline? If not, what is driving their performance and why?
- What products are the most popular amongst all of our competition and why?
- Do we have different distribution channels than our competitors?
- If our products are the same, what are they doing different to market or distribute them?

Customer:

- Have customers changed before and does it mirror current behaviors?
- Do we have feedback or surveys from customers about our client or competition?
- What are the segments of our customers and does that affect their preferences?
- Do we differ from our competitors in our target market?
- Are there macroeconomic trends that may be affecting consumer behavior?
- Is the behavior of our customers similar to the behavior of customers in another industry?



On the Same Page

Exhibit #1

Title:	Time Period:	Total Cost: (in Millions)	Audience Reach:
2084 by Jeorge Orbell	2000s	100	75%
Little Men by Louis June Alcott	1800s	125	80%
Much Ado about Everything by Stillspeare	1600s	75	50%
Regime by Playdo	400 B.C	90	25%



Exhibit #2

Time Period:	U.S Audience:	E.U Audience:	Book Price:
2000s	5.0	10.0	\$15
1800s	5.0	2.5	\$20
1600s	5.0	10.0	\$20
400 B.C	12.5	12.5	\$25

Audience in Millions



Question 1: Calculate the profitability of each given time period.

Once the candidate has calculated profitability for each book, move onto Question 2.

2000s		1600s		
Amount Sold - U.S:	75% Audience Reach * 5M U.S Audience = 3.75M Sold in U.S	Amount Sold - U.S:	50% Audience Reach * 5M U.S Audience = 2.5M Sold in U.S	
Amount Sold - E.U:	75% Audience Reach * 10M E.U Audience = 7.5M Sold in E.U	Amount Sold - E.U:	50% Audience Reach * 10M E.U Audience = 5M Sold in E.U	
Total Sold:	3.75M Sold in U.S + 7.5M Sold in E.U = 11.25M Total Sold	Total Sold:	2.5M Sold in U.S + 5M Sold in E.U = 7.5M Total Sold	
Total Revenue:	11.25M Sold * \$15/Book = \$168.75M Revenue	Total Revenue:	7.5M Sold * \$20/Book = 150M Revenue	
Total Profit:	\$168.75M Revenue - \$100M Cost = \$68.75M Profit	Total Profit:	150M Revenue - 75M Cost = 75M Profit	
1800s		B.C	- CARANTHA - SANTE SINTENIA - S	
Amount Sold - U.S:	80% Audience Reach * 5M U.S Audience = 4M Sold in U.S	Amount Sold - U.S:	25% Audience Reach * 12.5M U.S Audience = 3.125M Sold in U.S	
Amount Sold - E.U:	80% Audience Reach * 2.5M E.U Audience = 2M Sold in E.U	Amount Sold - E.U:	25% Audience Reach * 12.5M E.U Audience = 3.125M Sold in E.U	
Total Sold:	4M Sold in U.S + 2M Sold in E.U = 6M Total Sold	Total Sold:	3.125M Sold in U.S + 3.125M Sold in E.U = 6.25M	
Total Revenue:	6M Total Sold * \$20/Book = 120M Revenue	Total Revenue:	6.25M * \$25/Book = 156.25M Revenue	
Total Profit:	\$120M Revenue - \$125M Cost = \$-5M Profit	Total Profit:	156.25M Revenue - 90M Cost = 66.25M Profit	

Interviewer Guidance: To calculate profit, candidates should begin with revenue, which comes from multiplying audience reach percentage by both U.S and EU audience, adding both totals, and finally multiplying by price per book. After calculating revenue, the candidate should then subtract cost to find total profit for each book.



Question 2: What do you think could cause the difference in costs between each book? *Example 1: Value Chain Breakdown*

Written by Individual or Group

How many people wrote the book and what was the writing process like? For example, archaeological breakthroughs are more expensive than new editions of older works.

Author's Commission and/or Royalties

How popular is the author and how competitive is the bid for their work? If it's an author's first work it'll be less expensive than a famous author like Stephen King.

Choice of Raw Material Suppliers

What are the pages made out of? What are the covers made of? Who is sourcing the materials and what's the difference between suppliers?

Paperback vs Hardback

Are we creating both types of books? If so, what's the breakdown and if not, what type are we using?

Hardcover is presumably more expensive than paperback.

Variety of Manufacturing

Are we producing one identical type of book or are we using a mix of suppliers and materials? What mixes are available and what differs between them?

Logistics and Distribution

Once the product is produced, are we producing from one facility to be shipped off to all customers or are we creating local facilities for less delivery time?

Interviewer Guidance: This question is the most important segment of this cases' qualitative aspect so as the interviewer, ensure that the candidate has multiple fully fleshed out ideas that are accompanied by a MECE structure like the one above. If the candidate initially does not give a structure or gives little ideas, then push them for more answers. Two examples are given for structures and ideas on this question - with the second on the next slide.



39

Question 2: What do you think could cause the difference in costs between each book? Example 2: Framework-Esque Breakdown

Competition:

- Current
- Did competition vertically integrate and cut out others from cost-saving suppliers or resources?
- Should we renegotiate our deals with authors to lower costs?
- Potential
- Are new competitors undercutting us against suppliers or distributors and pushing us away from opportunities?
- What is the barrier for entry and what stops new competitors from becoming threats?

Product:

Out-of-House Manufacturing:

- What markup is our outsourcing company charging us vs competitors? Could we renegotiate?
- Are there changes in the quality of our product that are boosting costs?

In-House Manufacturing:

- The books could be of different materials (e.g paperback v hardback)
- Where do we source our raw materials compared to our competitors?

Substitutes:

eBooks

- Are eBooks pushing against our economies of scale in creating physical books?
- Would it be cheaper to publish eBooks or would it cannibalize our physical bookstores?
 Summaries or Translations
- For older versions like Shakespeare, are translations substituting our version and thus lowering quantity sold (lowering contribution margin from increasing average fixed cost/book sold)?

Social/Political Factors:

- Did a tax increase pass or did a country enact a tariff on a country that we source from?
- Are we seeing a PR backlash pushing suppliers away from working with us?
- Has there been a change in a macroeconomic factor like freight rates or cargo rates boosting shipping costs?
- Are there shifts in broad labor attitudes that could be increasing labor costs?

Once the candidate has listed at least five ideas, if less ask for more, move onto Question 3.



Question 3: What may be influencing change in preference of consumers and how could our client stay ahead of the competition?

Interviewer Guidance: Ensure the candidate answers both parts of the question (change in preference causes, how to preempt competition) and gives multiple answers for both parts. Examples are given below.

Once the candidate has answered both questions, move onto the last question.

Change in Customer Preferences:

- Organic Changes
- Change of demographics aging, marital status, parental status, employment status, income, education, geography, etc
- Change of beliefs attitudes, beliefs, priorities, motivations, values, lifestyle, personality, etc
- Inorganic Changes
- Change in Competition's Advertising/Marketing strategy affecting consumer behavior
- Change in Client's Advertising/Marketing strategy affecting consumer behavior
- Change in 3rd Party Advertising/Marketing strategy like Facebook or Google reshaping their algorithms

Maintain Step Ahead:

- Collecting Purchasing Data
- Our client could track consumer preferences across direct purchases or analyze purchase data from distributors.
- Buying Industry Data
- Our client could purchase consumer purchase data from other bookstores or publishers
- Buying Sentiment Data
- Our client could perform a sentiment analysis on social media to predict a strong change in consumer behavior before it happens
- Maintain Database
- Past behavior patterns can be used to predict future behavior



Question 4: Ostrich's COO is calling before they board an airplane and wants to know what you've been working on.

What do you tell him?

Interviewer Guidance: The candidate should recommend publishing the book from the 1600s, "Much Ado About Everything" by Stillspeare, because it has the highest profit. Their structure should be question, answer, risks, next steps.

Example Recommendation 1:

- **Question**: Ostrich books, a classics publisher, hired us to help them choose which time period they should publish on their next launch.
- Answer: We recommend publishing the book from the 1600s. "Much Ado About Everything" by Stillspeare brings in the most profit of all four options, bringing in \$75M profit calculated through a \$150M Total Revenue and a \$75M Total Cost.
- Risks: The first risk with the launch is demographic change in the time it takes to get to market, consumer behavior may change to better suit another product. This can be mitigated by collecting and analyzing data from Ostrich internally and by buying data from data brokers. The second risk is a spike in costs caused by a possible increase in translation costs in older literature
- Next Steps: The next steps are to negotiate a deal with a translator and to implement a manufacturing process for the book.

Example Recommendation 2:

- Question: We were hired to identify the best book that Ostrich Books, a classics publisher, should publish.
- Answer: We recommend publishing "Much Ado about Everything" by Stillspeare. Our recommendation will bring Ostrich the most profit, \$75M, as compared to the rest of the products which come up just short bringing in \$68.75M and \$66.75M profit each.
- **Risks**:Because the margins between each product are thin, it may be the case that our consumer predictions are off. A risk would be that another product brings in more profit and competitors are more poised to realize it.
- Next Steps: The next steps would be to implement a publishing manufacturing process for Much Ado About Everything and to create consumer behavior prediction models.



Case #3

Vogue's Vacation

Reviewed by Consultants from Boston Consulting Group and Alvarez and Marsal

Prompt: Your client is a magazine publishing company who predominantly targets men between the ages of 20 and 35, similar to Sports Illustrated. They also write magazines geared toward a finance audience, similar to Yahoo Finance or the Wall Street Journal. They want to launch a new line of magazines that aims to target women in the age range of 20-35 since they've seen the dominance and growth of Vogue. They want your help in determining if they should or should not launch the product and if they should, how so?

Clarifying Info:

- Maximize profit is the goal without a specific quantitative goal
- Magazine will be only in the U.S
- No data is available on timelines or past history.
- Competitors are mostly giant players like Vogue (think entering the soda market, your main competition would be Coca Cola)

Note to the Interviewer: This case is built to test candidates heavily on brainstorming and structured thinking. It has little to no data and relies almost entirely on the candidate.

Style: Interviewer-Led
Type: Product Launch/
Market Sizing
Difficulty:

Qual: Easy
Quant: Medium



Framework Guidance: The candidate should break the question like any other product launch problem - once the candidate asks about the industry or the market as a whole give them the first question.

Customers: Segmentation - How does the client

break down the customers? What makes each segment unique? Concentration - How much of our revenue is made up of our top customers? Is this a risk for us? Should we increase the top customers' orders or the bottom customers?

Acquisition - How much does it cost to acquire new customers?

Geographic Dispersion - Where are our customers? How does geography affect purchasing patterns or costs? **Demographics** - Income, Age, Race, Gender, Sex, Marital Status, Parental Status, etc

Competition:

Market Share - How big is the competition? How big is our client in comparison? How much does size matter in this market?

Barrier for Entry - How high is the barrier for new entrants? What would cause that barrier to change or for new entrants to arrive?

Competitive Response Time - If we changed something about the business model, how quick will competition react? What causes competition to react?

Competitive Advantages - What makes each competitor different in the industry?

Profitability:

Revenue:

Quantity Sold

How much do we expect this market to purchase? Do we have the capacity to sell this much? Does this cover our fixed costs?

Price

What is our pricing strategy? Cost-based? Value-based? Market-based? Or something else? Costs:

Variable Costs

What is our contribution margin? What makes up our variable costs? Fixed Costs

What initial investments do we need to make for this product? Do we need new offices, new support staff, new equipment, etc?

Market/Industry:

Submarkets: In our client's target market, are there submarkets like magazines targeting the same demographic but with a different content style? Are submarkets growing differently?

Growth: How much is the market expected to grow? Is our client expected to grow quicker or slower than the market average? What is the cause for that difference? What is historical growth and how/why is that different from current norms? What is competition growing by?

Innovation: Are there major developments in the market like A.I or digital magazines? How fast does competition innovate?



Question 1: Size the market for their potential magazine.

Only after the candidate has sized the market by using assumptions, tell them the threshold for entrance is \$400M

Frequency

Population	
Total U.S Population:	320M
Life Expectancy:	80 Years
# Pop. per Age:	4M/Year
Age Range:	20 - 35
# Pop. in Range:	15 * 4M/Year = 60M
% of Women in Range:	60M * 50% = 30M
% Who Read:	90%
# Pop Who Reads:	30M * 90% = 27M
% Who Read Magazines:	40%
# Pop Reading Magazines:	27M * 40% = 10.8M
% Who Read Physical Magazines:	80%

10.8M * 80% = 8.64M

Type:	Frequency:	% of Pop:
Casual Readers:	4 Magazines/Year	15%
Average Readers:	1 Magazine/Month	70%
Major Fans:	1 Magazine/Week	15%
Type:	# of Pop.	Total Magazines:
Casual Population:	8.64M * 15% = 1.3M	1.3M * 4 = 5.2M Magazines
Average Population:	8.64M * 70% = ~6M	6M * 12 = 72M Magazines
Major Fans Population:	8.64M * 15% = 1.3M	1.3M * 50 = 65M Magazines
Total Magazines: 142.2M Magazines		

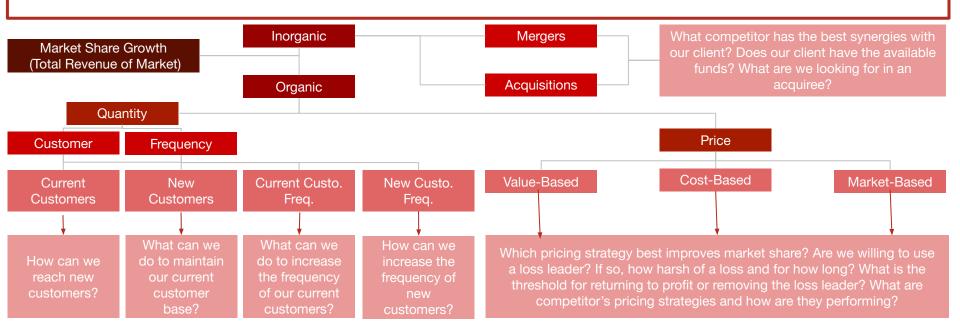
	Price		
Type:	% of Magazines:		
Retail:	75%		
Subscription:	25 %		
# of Magazines:	Price:		
142.2M * 75% = ~106M	\$4/Magazine		
142.2M * 25% = ~36M	\$3/Magazine		
Total Revenue:			
106M Magazines * \$4/Magazine = 424M			
36M Magazines * \$3/Magazine = 109M			
Total Revenue = \$533M Revenue			

Interviewer Guidance: This is a sample market sizing with assumptions - all data here has either been assumed or calculated from assumptions. The candidate should assume all data and justify each assumption (even if brief). Push them to be as granular as possible like the above. Once they've calculated their total, move on to Question 2.



Total Population:

Question 2: What should they do to gain market share against giant players like Vogue?





Question 3: Using the numbers from your market sizing, how much profit should the client expect if they estimate to have 10% market share and a 30% profit margin?

Interviewer Guidance:

The candidate should use their assumed numbers from the market sizing question to make these calculations. For example, to calculate revenue the candidate should multiply market share by the total market they calculated. Please encourage rounding when the candidate is calculating.

Example calculation using the earlier example market sizing is on the next slide.





Question 3: How much profit should they expect if they estimate to have 10% market share and a 30% profit margin in their first year. Use your market sizing calculations to calculate here.

Interviewer **Guidance:**

Here is a sample calculation using the same market sizing data from Question 1. Notice how the calculations are rounded and not specific again, the point of this question is not that the candidate will have perfect calculations or be exactly right but that they have the ability to find investment from the available data.

Once calculated, move onto Question 4.





49

Question 4: What do you think of these expectations? Do you think it's reasonable to expect a 30% profit margin and a 10% market share in their first year?

The candidate should justify why or why not, once they have, move onto Question 5.

Yes, the predictions are reasonable.

Example: Given our client's already strong market share in a similar market, it seems reasonable that customers would flock to our new product, both for its brand recognition and its novelty. This should give our client confidence that they can match market rates, reach 30% profit margin and gain 10% market share.

No, the predictions are unreasonable.

Example: Given the new audience, customers may not be as familiar with our client's brand as other segments so it's unlikely that they'd be willing to purchase the magazine immediately - so the market share may not reach 10%. Our client may need to use a market penetration strategy such as a loss leader to gain loyalty in a market unfamiliar with their brand.



Question 5: Now that we know the broad market, let's get a bit more granular. What would you want to know about our customers before moving forward?

The candidate should answer five or more ideas, if less, ask for more, once answered, move onto Question 6.

Customer Breakdown Current **Potential Acquire New Customers and Maintain Loyalty Maintain Current Customers and Increase Purchasing Frequency** Segmentation: Segmentation: Who is not buying our magazine and how could we pull them in? Who are our customers? Concentration: Awareness: Do we have a concentration of revenue in a few customers? Are non-customers unaware of us and that's why they're not buying? Satisfaction: Consideration: What drives satisfaction for our current customers? How do motivations change between demographics? Decision: Geography: Do we do better in one area above others? How can we nudge those on the fence about our product?



Question 6: The COO is walking in the room and wants to know what you've been working on.

Interviewer Guidance: Because this case relies on a market sizing, the final recommendation can go either way. Here is an example of a recommendation justifying either choice.

Recommendation against entrance:

- **Question**: We were hired to determine if our client should enter the magazine market targeting women in the age range of 20-35.
- Answer: We do not think they should enter the market because of a lack
 of information. For example, we do not have data on the market size,
 customer base or capacity to invest. Our best estimate for market size
 indicates a strong, healthy market of \$533M but it relies entirely on
 assumptions that are unlikely true.
- Risks: The biggest risk is the opportunity cost for our client in choosing
 not to enter the market if they do have the capital and it does not pose a
 significant risk then they risk potential return on investment.
- Next Steps: Our recommended next steps are that our client should break down all entrance costs in entering the market to determine if it would grant them a positive present value or return on investment.

Recommendation for entrance:

- Question: Our client requested assistance determining if entering the magazine market for women in the age range of 20-35 would be a positive decision for them or not.
- Answer: We recommend entering the market because they would gain significant market share of 10% within their first year of operations and a 30% contribution margin concluding in a \$16.8M profit.
- Risks: Because our calculations are substantially dependent on assumptions, it's a very strong possibility that they are inaccurate - that's our biggest risk. Because we do not know our margin of error, it's a possibility that entering the market brings a net negative return to our client.
- Next Steps: We look forward to working with our client on the next steps of allocating their initial investment to ensure they hit their desired return.



Case #4

Achieving Liftoff

Reviewed by Consultants from Alvarez and Marsal and EY-Parthenon

Prompt: Metropolis Airlines is an ultra-low cost airline in Canada. They compete with Spirit Airlines, JetBlue, etc in the low-cost airline markets. They've seen a decline in their profit margins recently so they've brought us in to help them.

Clarifying info:

- All competitors are seeing declining margins.
- Margins have fallen only in the past year.
- Margins have fallen from a profit of \$500M to an estimated negative \$41M this year.
- The overall Canadian economy fell 5% in the last year and this has affected the airline market much more than other industries.

Note to the Interviewer:

This is meant to be an intermediate case that builds on profitability concepts from earlier beginner cases.

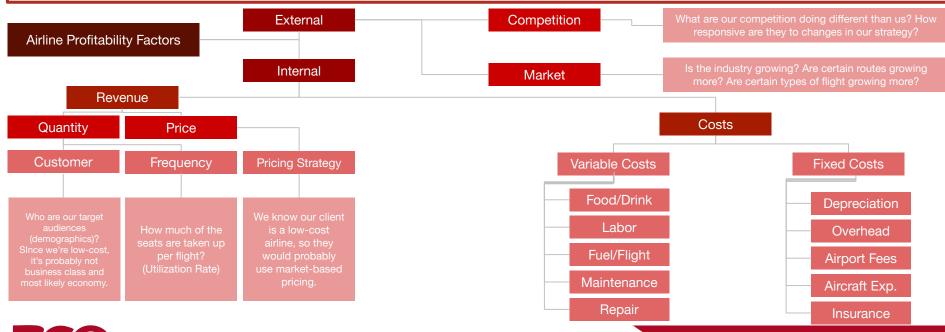
Style: Interviewer-Led
Type: Profitability
Difficulty:

Qual: Medium Quant: Medium



Question 1: What would you consider in breaking down our client's declining margins?

Once the candidate has presented a full framework, ask them Question 2.





Question 2: Let's focus on revenue first, what new revenue streams could our client build?

Once the candidate has given five or more streams, if any less then ask for more, ask them Question 3

Pre-Flight

- Credit Cards Customers could purchase their flight with a credit card created by our client
- 2) **Prepayments** Customers could pre-pay for on-flight amenities
- 3) **Carry-ons** Customers could pay for extra carry-on bags
- 4) **Frequency** Customers could get discounts for higher volume orders
- 5) Private Lounge/Rooms Our client could create a lounge in the airport for customers before their flight
 - 6) **In-Airport Restaurants** In the airport, our client could create restaurants only for their customers

Flight

- Wifi customers could pay for wifi or pay for higher quality wifi. They could also pay for certain services like exclusively streaming or exclusively social media.
- Food/Drink customers could pay for more food/drink after being given the standard.
- 3) Seating customers could pay more for higher demand seating like aisle or window seats

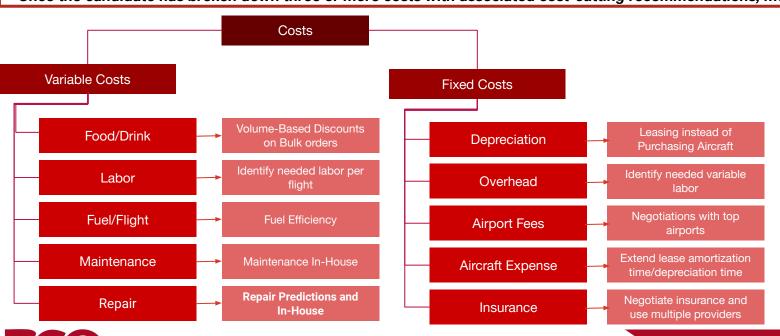
Post-Flight

- 1) **Loyalty** Customers could be given future discounts for previous purchases (e.g 40% off wifi in the future if bought wifi before)
- 2) **Frequent Flyer** Customers could be given future discounts in the form of miles for previous flights
- 3) Baggage Retrieval Customers could pay extra for someone from our client to retrieve their bag for them after a flight instead of picking it up themselves



Question 3: Now that we have a few ideas on the revenue side, what are the highest costs for a low-cost airline and how could our client lower them?

Once the candidate has broken down three or more costs with associated cost-cutting recommendations, move onto Question 4.



Interviewer Guidance:

When responding to a question that asks you to expand on a previous answer, you can save time by using your previous answer as a "proto-framework" and respond depending on each example you gave before.



Question 4: Now that we understand the business more, the client is facing three scenarios at once and needs assistance to prioritize them. In what order should the client solve these scenarios?

Scenario 1

Canada enacts new fuel regulations forcing airlines to use synthetic fuel - boosting next year's fuel costs by \$12M

Scenario 2

Union Atlantic invests in a Canadian high-speed rail system - lowering next year's revenue by \$4M

Scenario 3

The economy hits a slump and the Utilization Rate falls 10% overall

Interviewer Guidance: Candidate may ask for more information - push them to rank the scenarios without any additional information. Once ranked, move onto Question 5.



Question 5: We asked the client for more information on these scenarios and they sent us back some data. Using this data, calculate last year's profitability and then return to the three scenarios to give them updated rankings.

Do not show the candidate this data, tell them verbally.

Data Provided by Client:

1) There are 350 seats per plane

4) Our average price per ticket is \$100

2) We have 100 planes in our fleet

5) Our typical flights per year are 1500

3) Our current Utilization Rate is 95%

6) Our total costs are \$4.5B per year

Interviewer Guidance: Utilization Rate means the percent of seats filled per plane (for example, 95% Utilization Rate means 95% of the seats on each plane are filled). Calculations are on the next slide.



Seats Per Plane:

of Planes:

100

350

1) Total Seats:

100 Airplanes * 350 Seats/Plane = 35,000 Seats

* Utilization Rate

2021 Utilization Rate = 95%

2) Total Tickets Sold Per Flight:

95% Utilization Rate * 35,000 Seats = 33,250 Tickets

* Average Price/Ticket

\$100

3) Total Revenue Per Flight:

\$100/Ticker * 33,250 Tickets = \$3,325,000 Revenue/Flight

* Number of Flights

1500 Flights

4) Total Revenue:

1500 Flights * \$3,325,000/Flight = ~5B Total Revenue

- Total Costs

\$4.5B Total Costs

5) Profitability:

\$5B Total Revenue - \$4.5B Total Costs = \$500M Profit

Interviewer Guidance: The candidate does not need to make these exact calculations - this is merely an example - as long as they reach the same result, any process is fine. Once they calculate current profit, if they're not already, tell them to revisit the three scenarios and re-rank them with new context. Scenario ranking calculations are on the next slide as well.

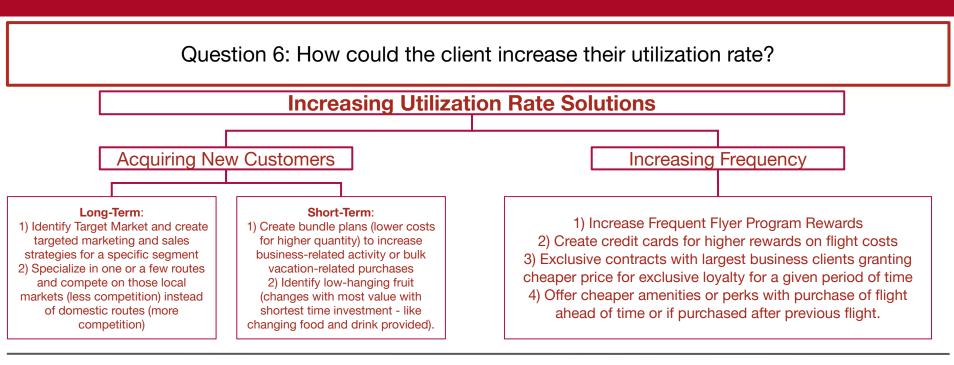


Scenario 1:	\$500M Profit - \$12M New Fuel Costs = \$488M Profit		
Scenario 2: \$500M Profit - \$4M Lost Revenue = \$496M Profit			
Scenario 3:	Equation: \$500M Profit - X (Lost Revenue) = New Profit		
	1) Lost Revenue = -10% Utilization Rate (10% of 35,000 Seats)		
	2) 35,000 Seats * 10% = 3,500 Seats of Lost Revenue		
	3) 3,500 Seats * \$100 Ticket Price = \$350,000 Lost Per Flight		
	4) \$350,000/Flight * 1500 Flights = \$525M Lost Revenue		
	5) \$500M Profit - \$525M Lost Revenue = \$25M Loss		

Interviewer Guidance: The candidate should easily see that Scenario 3 is <u>much</u> more important than either of the others since it causes a loss. The others lower profit marginally. Because of this, the new priority rankings should be as follows:

<u>Most Important: Scenario 3, Less Important: Scenario 2, Least Important: Scenario 1</u>





Interviewer Guidance: This question can be extra difficult - as long as the candidate generates more than two ideas, move onto the last question.



Question 7: The CEO is calling and wants you to catch them up on the project so far - what do you tell them?

Interviewer Guidance: The candidate should identify the falling utilization rate as the major driving force behind decreasing profitability and identify one solution along with solution-specific risk and solution-specific next steps (as shown).

Recommendation Example 1:

- **Question**: We were hired to reverse declining profitability for our client, a low-cost airline.
- Answer: We discovered that their profitability pitfall came from three scenarios, with one, their falling utilization rate, causing the most severe downfall a loss of \$525M of revenue. We think our client should look to build stronger loyalty with their current customers to maintain their utilization rate because new customers are more likely to be price conscious in a recession.
- Risks: The biggest risk we see is downward price pressure from concentrated clients during an economic downturn.
- Next Steps: Our client should look to negotiate a long-term, exclusive contract with their most concentrated clients.

Recommendation Example 2:

- **Question**: We were hired to help our client, a low-cost airline, with falling profitability.
- Answer: We learned a falling utilization rate is causing their problems. Their utilization rate fell 10% from last year, below their break-even point of 85.5%, causing them to lose \$25M. Because they're a low-cost airline, we think their customers are less loyal than others and choose tickets based off pricing so they should focus on obtaining new customers through competitive pricing.
- Risks: Our client may lower current prices yet still have low utilization rates, driving profit down even more.
- Next Steps: To test different prices, our client could focus on competitive pricing in only a few locations to gather data before launching the strategy on all flights.



Case #5

Renewable Diesel

Reviewed by Consultants from McKinsey and Company and EY-Parthenon

Prompt: Seashell, one of the world's biggest oil and gas companies, has reached out to you to ask for help with an investment decision. They want to decide if they should create a new product line of Renewable Diesel for trucks to tap into the growth of the Low-Carbon Energy Transition market. Their questions for you are: 1) They want you to size the American market for Renewable Diesel in trucks in 2030 2) Analyze their customer base since they think Diesel customers may not be as susceptible to Renewables as other customer bases and 3) What should their growth strategy look like?

Clarifying Information:

- Seashell will decide to enter the market if the market is valued more than \$10B.
- 2030 is the year to size because that's how long it will take them to create the infrastructure possible to enter the market.

Once you read the prompt and the candidate has finished asking clarifying questions, move on to Question 1.

Note to the Interviewer: This case is a medium level case that is based off a first round Bain and Company interview for their Associate Consultant Interns.

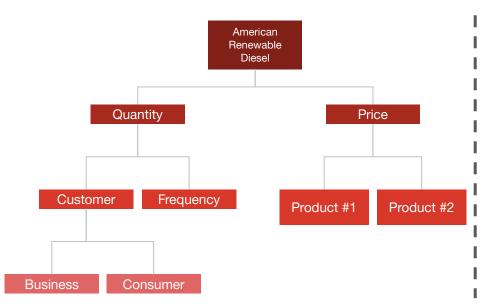
Style: Interviewer-Led Type: Market Sizing Difficulty Level:

Quant: Medium

Qual: Medium



Question 1: What process would you use in sizing the American Market for Renewable Diesel? To clarify, I am not asking you to size the market, I am asking you to explain what process you would use if you were to do so.



Interviewer Guidance: This question is built to build
 the habit of explaining quant-heavy processes before
 performing them in the candidate - because with their explanation, the interviewer can preempt mistakes before they happen and offer more efficient processes that may be possible. Sample breakdown is on the left.

Once they've explained what process they will take, move on to Question 2.



Question 2: How large is the American Market for Renewable Diesel? We know that there are 45M fill-ups with Renewable Diesel.

After asking Question 2, give the candidate the below information verbally.

Type of Truck:	% of Total Fill-ups:	Types of Fill-ups:	Average Price per Gallon:
25 Gallon Truck	75% of Renewable Fill-ups	Renewable Regular	\$5.00
125 Gallon Truck	20% of Renewable Fill-ups	Renewable Regular	\$5.00
250 Gallon Truck	5% of Renewable Fill-ups	Renewable Supreme	\$6.00

Interviewer Guidance: Rounding is recommended. The next slide is very exact to accommodate for all possible candidates who will inevitably be differing on their levels of precision. It is not recommended to be as exact as the next slide - it is recommended to round for speed and accuracy. The candidate should make the calculations on the next slide.



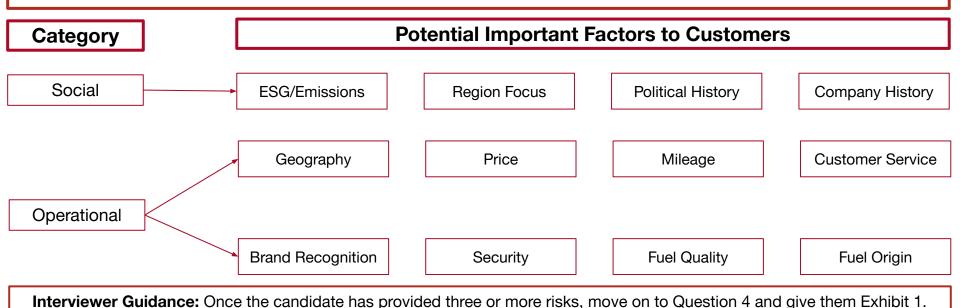
Question 2: How large is the American Market for Renewable Diesel? We know that there are 45M fill-ups with Renewable Diesel.

Fill-ups per Category:	Total Gallons (in Millions):	Total Market per Category:
75% * 45M = 33.75M Fill-ups	25 Gallons * 33.75M Fill-Ups = 843.75M Gallons	843.75M Gallons * \$5/Gallon = \$4218.75M
20% * 45M = 9M Fill-ups	125 Gallons * 9M Fill-Ups = 1125M Gallons	1,125M Gallons * \$5/Gallon = \$5625M
5% of 45M = 2.25M Fill-ups	250 Gallons * 2.25M Fill-Ups = 562.5M Gallons	562.5M Gallons * \$6/Gallon = \$3375M
Total Market Size:	\$4,218.75M + \$5,625M + \$3,375M = \$13,218.75M or \$13.2B	

Interviewer Guidance: These calculations follow the quantity of units sold * price breakdown. Fill-ups per category * gallons is quantity of units sold and total market per category multiplies units sold by price per unit. As long as the candidate is organized, easy-to-follow, reasonably quick on their breakdown and their answer is within \$12B-\$14B consider it correct. Once calculated, move onto Question 3.



Question 3: Now that we understand the size of the market, let's understand the customers within the market. What do you think is most important to the customers who buy Renewable Diesel?





Question 4: The client purchased some industry research from a research firm about their customers and was granted permission to show you. What does this tell you about the customers and what could it tell you about their entry strategy?

Push the candidate to make either an observation about every factor or at least three observations about the highest ranking factors.

Potential Insights

Observations

All firms seem similar in price to customers.

Seashell is ahead of all competitors except for Hexxon on Brand Recognition.

Square K and Sitgo lead in Security with Hexxon and Seashell far behind.

Seashell is second to Hexxon in proximity with all others significantly behind. Sitgo leads slightly in Fuel Quality with other competitors ranking slightly below.

Importance to Customers

Strategy

Impact

Seashell could undercut

competitors within a

certain range by a

certain price threshold.

Seashell is threatened by smaller competitors with less market share but higher recognition. Seashell is threatened by Square K or Sitgo on Security but Seashell is

higher than Hexxon.

3

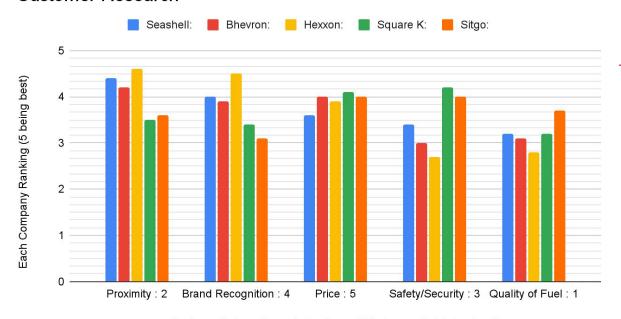
Seashell is again threatened by Hexxon, who has a much smaller market share but higher ranking. Seashell beats all competitors in quality except for Sitgo, who has a very small market share.

Interviewer Guidance: Once the candidate has answered, Ask Question 5.



Customer Research

Exhibit #1



Estimated	l Mar	ket S	hare
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Hexxon: 15%

Seashell: 12.50%

Bhevron: 6.50%

Square K: 4%

Sitgo: 3%

Other: 64%

Factors with Importance to Customer (5 being most, 1 being least)



Question 5: Seashell's COO is calling and wants to know what you've been working on so far. What do you say to him?

Interviewer Guidance: The candidate should recommend market entrance given that the market is above the \$10B threshold Seashell is looking for. They should also use previous brainstorming answers in their recommendation while remaining concise.

Recommendation Example 1:

- Question: We were engaged to size the market for American Renewable Diesel in 2030, analyze their customers and connect customer research to a growth strategy.
- Answer: We recommend Seashell enter the Renewable Diesel market because the market size of \$13.2B exceeds the threshold of \$10B.
 Seashell should undercut competitors within range of their stations by a certain price to gain an edge in customer's most important factor.
- Risks: There's a risk in customer hesitation from those most invested in ESG/Renewables given Seashell's current strong presence in Oil and Gas.
- Next Steps: For the next steps, Seashell should identify which price range they can undercut close-proximity competitors by and which range they consider to be close.

Recommendation Example 2:

- Question: Seashell asked us to size the market for American Renewable Diesel, analyze their customer research and write a growth strategy.
- Answer: We recommend an entrance into the market since our estimate of \$13.2B is higher than their needed threshold of \$10B.
 Seashell should focus on maintaining its advantage in Brand Recognition this is the second most important factor to customers behind price, which does not have an industry leader.
- Risks: There's a significant risk from smaller competitors who are gaining on Brand Recognition with a much smaller market share - if they grow to comparable market share, they could have a strong lead against Seashell in Recognition.
- **Next Steps**: Seashell's next steps are to identify the cause behind their competitors ability to gain recognition with lesser market share.



Case #6

Warehouse Co.

Reviewed by Consultants from Boston Consulting Group and EY-Parthenon

Prompt: Your client is Warehouse Co., a company that sells warehousing services to other companies for shipping or inventory purposes. The COO loves new technology and regularly attends startup conferences. At the last conference, a start-up supported by Y Combinator with multiple Venture Capital backers stood out to the COO. The startup was founded by a long-time entrepreneur with a very successful past. It's already been awarded multiple industry awards and the CEO of the startup is even hinting at an IPO. The technology is a crane powered by Al developed with the help of Microsoft consultants that automatically detects and moves shipping containers. It's taken about a decade to develop and has only been publicly sold for a few years now. The COO wants your help in determining if they should implement the crane or not.

Clarifying Info:

- Warehouse Co. does not have a specific payback period in mind
- The technology has been used by some competitors with varying degrees of success
- Costs to automate are 1) \$6M Initial Investment 2) \$1M/Year Maintenance

Note to the Interviewer: This case tests candidates' ability to sift through information, so most of the information in the prompt is uselessit's up to the candidate to figure out which is and isn't useful. Feel free to make up and add on more useless information (as long as it doesn't effect the case)

Style: Candidate-Led Type: Cost-Savings Difficulty:

> Qual: Easy Quant: Medium



Framework Guidance:

Frameworks in this case can vary - regardless, it should seek to focus on the change from automation. The candidate should understand that most of the information from the prompt is useless and they should only focus on the new process vs the old process.

Once the candidate asks about costs, ask them Question 1.

Automation Process:

Pre-Automation:

What does the process look like now? Why is the process the way it is? How much does the process cost now? What is the segmentation of the process?

What risks are we exposed to now?

Post-Automation:

What parts of the process are changed once the product is implemented? How do costs change as a result of the process?

What maintenance costs are there? What new risks are we exposed to? What old risks are we no longer exposed too?

Competition:

Competitive Response Time - How long would it take for our competitors to respond and implement the same equipment? Should we be worried about our competition using the same equipment? What moat do we have over any potential benefits?

Competitive Advantages - How does this innovation affect our competitive advantage?

Barrier for Entry - How high is the barrier for new entrants? What would cause that barrier to change or for new entrants to arrive?

Costs Savings:

Variable Costs

What is our contribution margin pre and post change?

What is the breakdown of our variable costs pre and post change?

Fixed Costs

What initial investments do we need to make for this product?
How does the investment compare to our current fixed costs structure?
What is the payback period between the (hopeful) reduction in contribution margin and the (probable) increase in fixed costs?

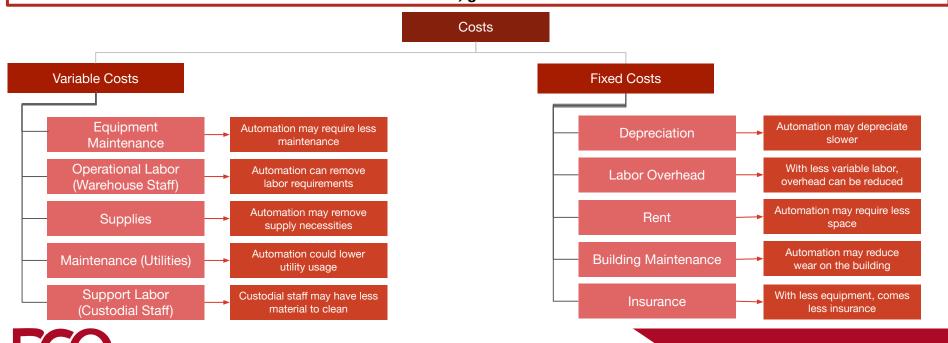
How do maintenance costs compare?



Question 1: What do you think are some common costs in a Warehousing company that we could expect our client to have?

(After previous is answered) How could automation affect these costs?

Once both are answered, give the candidate Exhibit 1.



Current Costs without Automation:

Equipment Maintenance: \$850,000 See Below: Operational Labor: Receiving Labor Hours 4.000 Hours * \$23/Hour Holding Labor Hours 8.000 Hours * \$25/Hour 3.000 Hours * \$22/Hour Shipping Labor Hours Supplies: \$175,000 Maintenance (Utilities): \$85,000

Actual Costs with Automation:

Equipment Maintenance: \$800,000 Operational Labor: See Below: Receiving Labor Hours 2.320 Hours \$23/Hour 8,000 Hours * \$25/Hour **Holding Labor Hours** 2.200 Hours * \$22/Hour Shipping Labor Hours \$170,000 Supplies: Maintenance (Utilities): \$90.000 Support Staff (Custodial): \$165,000

Exhibit #1

Interviewer Guidance:

Exhibit #1 tests the candidates' ability to find useful information vs not useful information. Goal Costs, for example, is not useful. The candidate should notice that all costs differ very slightly except labor costs. Because of that, they should focus exclusively on labor costs. If they choose to calculate other costs direct them to calculate labor costs first. This should lead them to find out that labor's change is much higher than the rest. If that observation doesn't cause them to only focus on labor, then direct them as such.

Goal Costs with Automation:

\$160,000

Equipment Maintenance: \$700,000 Operational Labor: See Below: Receiving Labor Hours 2,000 Hours * \$23/Hour Holding Labor Hours 8,000 Hours * \$25/Hour 2,000 Hours * \$22/Hour Shipping Labor Hours \$160,000 Supplies: Maintenance (Utilities): \$70,000 Support Staff (Custodial): \$150,000



Support Staff (Custodial):

Give the **next** slide

to the candidate -

this contains

interviewer guidance

they should not

see.

Current Costs without Automation:

Equipment Maintenance: \$850,000

Operational Labor: See Below:

Receiving Labor Hours 4,000 Hours * \$23/Hour

Holding Labor Hours 8,000 Hours * \$25/Hour

Shipping Labor Hours 3,000 Hours * \$22/Hour

Supplies: \$175,000

Maintenance (Utilities): \$850,000

Actual Costs with Automation:

Equipment Maintenance: \$800,000 Operational Labor: See Below: Receiving Labor Hours 2.320 Hours \$23/Hour **Holding Labor Hours** 8,000 Hours * \$25/Hour Shipping Labor Hours 2.200 Hours * \$22/Hour \$170,000 Supplies: Maintenance (Utilities): \$90.000 Support Staff (Custodial): \$165,000

Exhibit #1

Number of hours is on a per week basis.

Support Staff (Custodial):

Goal Costs with Automation:

\$160,000

Equipment Maintenance: \$700,000 Operational Labor: See Below: Receiving Labor Hours 2,000 Hours * \$23/Hour Holding Labor Hours 8,000 Hours * \$25/Hour Shipping Labor Hours 2,000 Hours * \$22/Hour \$160,000 Supplies: Maintenance (Utilities): \$70,000 Support Staff (Custodial): \$150,000



Question 2: Let's dive into the numbers, can you calculate how much this new crane would save our client?

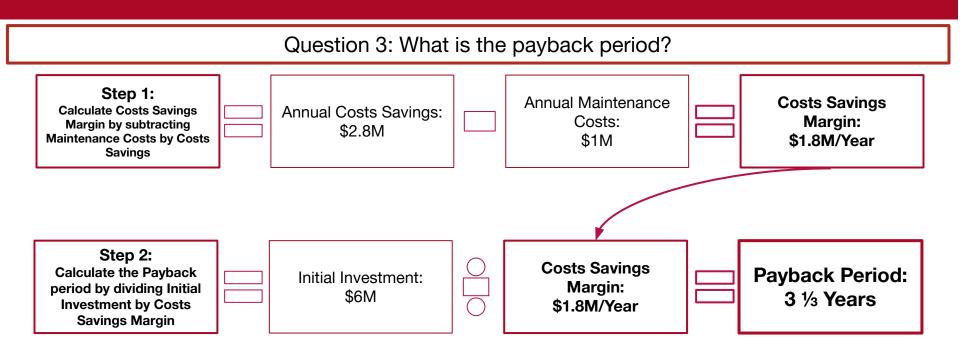
Interviewer Guidance: Unless the candidate asks you to confirm a calculation, do not confirm. The candidate could include the difference in non-Labor costs if desired, but it's only a \$5,000 difference so it wouldn't make a difference.

Once they calculate total savings, Ask them Question 3.

Type of Labor:	Labor Cost Per Hour:	Total Hours/Week Before Crane:	Total Hours/Week After Crane:
Receiving	\$23	4,000	2,320
Holding	\$25	8,000	8,000
Shipping	\$22	3,000	2,200

Type of Labor:	Hour Savings:	Hour Savings * Cost/Hour	Conversion to Annual Savings:
Receiving	4,000 - 2,320 = 1,680 Hours Saved	1,680 Hours * \$23/Hour = \$38,640/Week	38,640/Week * 50 Weeks = ~\$1.9M/Year
Holding	No Change	No Change	No Change
Shipping	3,000 - 2,200 = 800 Hours Saved	d 800 Hours * \$22/Hour Saved = \$17,600/Week 17,600/Week * 50 Week	
	Total Savings: 1.9M/Year + 880k/Year = ~2.8M/Year		





Interviewer Guidance: Once the candidate has calculated the payback period, ask them what they think about it.

After they give their opinion, move on to Question 4.



Question 4: What are some potential risks with the investment? What about non-economic risks?

This is the only qualitative question in this case so really push the candidate - they should have at least five risks, if any less, ask for more until they have at least five. Once the candidate has answered, move on to Question 5.

Social Risks:

- 1) **Backlash from layoffs** former workers may push back against layoffs from automation.
- 2) **Morale Decline** current workers may fear that their jobs are next to be automated, thus lowering morale.
- 3) **Potential Labor Strike** both former and current employees may dislike automation so much that they go on strike to deter current and future installation.
- 4) Regulatory Pushback Politicians may worry about the economic impact from quick automation potentially causing regulation.
- 5) **Reputational Risk** Would creating a partnership with this startup risk our reputation? Does the startup have connections or partnerships that may cause backlash?

Economic Risks:

- 1) **Heightened Insurance Costs** because the equipment is so new, insurance companies may worry that defects are not detected yet and thus charge higher premiums.
- 2) **Unexpected Repairs** because the machinery has only been sold to a few companies, maintenance costs may be higher in the future years as the machine builds wear. It is not known how long the machine can last because it is so new.
- 3) Potential Raise in Post-Automation Labor Costs employees who stay post automation may argue that, because they weren't automated out, their jobs are critical and thus push for a raise.
- 4) **Competitive Response** while the crane does deliver a strong payback period, competitors push for more and better innovation with the implementation.

Environmental Risks:

- 1) Increased Carbon Emissions -We do not have data on what emissions the new crane uses so the crane could increase overall company emissions.
- 2) **Mechanical Waste** If the machine breaks in any way, it may be difficult if not impossible to replace a small part because the machine is both new and only sold from one company. This may cause mechanical waste from either delayed repairs or imperfect repairs.
- 3) **Noise Pollution** The machine will most likely be much louder than manual labor causing noise pollution.



Question 5: The COO is calling and wants to know what you think about the potential crane, what are you recommending?

Interviewer Guidance: Because the client lacks a threshold for a payback period, theoretically this case could go either way. There is not a "correct" answer. Because of this, the candidate could or could not recommend the crane.

Recommendation Example 1:

- Question: Our client wants to install an automatic crane and has asked for our help in determining if it's a good idea or not.
- Answer: We recommend that they should install the automatic crane because it pays for itself in three and a third years through a reduction in labor costs. The crane results in a cost savings of \$1.8M/Year compared to current costs.
- Risks: We foresee a few risks with the automation first, potential backlash and pushback from layoffs that result from the installation and second, unanticipated technological shortcomings in regard to the crane itself because the crane is so new that unknown how it handles multiple years of use.
- Next Steps: Next steps would be to stress-test the crane to learn more about potential shortcomings as well as prepare for installation on warehousing sites.

Recommendation Example 2:

- Question: Our client asked us to determine if they should install an automatic crane or not.
- Answer: We recommend that they should not install the automatic crane. While the crane does pay for itself through labor cost savings in just over three years, it is too early for such a large investment. We recommend waiting a few years to reduce some risks associated with first movers which may also reduce the payback period as improvements are made.
- Risks: Our recommendation avoids the risk of unknowns from the manufacturer. The equipment is very new and we are unsure if it could even last long enough to recover the initial investment.
- Next Steps: Next steps for our client is to maintain their relationship with the manufacturer and watch for potential improvements that could minimize first-mover risk.



Case #7

Race Car Barbie

Reviewed by Consultants from Oliver Wyman and EY-Parthenon

Prompt: Your client is an American production company who is looking for unconventional ways to market their new movie, Barbie, as much as possible. For context, Barbie is a live-action movie with an A-list cast that uses a very feminine style and is predominately about the experience of being a woman. The producers have come to you with the idea of sponsoring a Formula One car by wrapping it with all-pink Barbie ads and want you to test if it's a worthy investment for them or not.

Clarifying Info:

- Barbie is primarily targeting American audiences but is also selling in European theatres.
- Their financial goal is to maximize ROI
- They will only sponsor the car for one race, are able to choose their driver and can only choose one car and one race.
- The race will not be a championship race, it'll be a typical mid-season race.

Note to the Interviewer: This case is very math-heavy so it's recommended that you follow along with the candidate with your notes to ensure both their math is correct and that they are on the right track.

Style: Candidate-Led Type: Marketing Difficulty:

Qual: Medium
Quant: Hard



Framework Guidance: Frameworks in this case can vary - some may choose to do the Four Ps, some may choose to do an investment-style framework, some may choose profitability, etc. Here is a sample framework that is unique to this case.

When the candidate mentions the audience of Formula One or the Total Market available, move onto Question 1.

Company - Formula One: Formula One:

Quantitative:

- How big is the audience of formula one and what are the demographics? How much of Formula One's audience would be apart of the market for the Barbie Movie?

Qualitative:

- Would we face any PR risks from a collaboration with Formula One? How do our values differ if at all?

Non-Formula One Competitors:

- Are there other competitors where we may see a better deal - a lower investment for access to a bigger market? What differs between the two?

Financials:

Investment:

- How much are we paying for the advertisement? Are there contingencies (e.g paying more if X tickets sold, Y revenue reached, paying less if the car crashes or if the car doesn't place at a certain ranking)? Would this investment change if we sponsor a different race or at a different time?

Return:

- How do we measure return? Profit? Revenue? Return on Ad Spend?
- How would we match up Revenue to this individual advertisement? When do we stop measuring return? What is our threshold for "success"?

Promotion:

Earned Media: Do we think we will earn any additional advertising? Will press be at the same event as the car and would the advertisement be enough to garner unique media attention?

Paid Media: Is the pink car the best way to advertise at Formula One? Maybe there are other Paid Media opportunities that would provide a greater return?

Shared Media: Could we measure the probable shared media? What could we do to change the possible shared media and how could we maximize it?



Question 1: Estimate how many unique views (individuals) each race would have.

Interviewer Guidance: Once estimated, ask the candidate what could change audience reach per race. If they mention choice of driver or car, give them the next exhibit. If they do not mention it, ask them "What else?" unless you've asked them "What else?" more than two times, then move on to the next exhibit anyway.

Population		Frequency
	·	

Total U.S Population:	320M
Life Expectancy:	80 Years
# of People Per Year of Age:	4M
Age Range of 10 Years Old to 70 Years Old:	4M * 60 Years = 240M People
% with Access to Sports Entertainment:	80% * 240M = ~190M
% Interested in Sports Entertainment:	70% * 190M = ~130M
% with Access to Racing:	80% * 130M = ~100M
% Interested in Racing:	40% * 100M = 40M
% with Access to Formula One:	90% * 40M = 36M
% Interested in Formula One:	50% * 36M = 18M
Total Population:	18M People

				rioquonoy
Frequency Category:	% Breakdown:	Population * %:	Races Per Category:	Population * Races:
Not very Interested - 0 Races/Season	40%	7.2M	0	0
Slightly Interested - 1 Race/Season	20%	3.6M	1	4M
Moderately Interested - 4 Races/Season	15%	2.7M	4	11M
Highly Interested - 10 Races/Season	15%	2.7M	10	27M
Very Interested - 20 Races/Year	10%	1.8M	20	36M

Interviewer Guidance: This question is market sizing in disguise - it's asking the candidate to find the unique views per race instead of the total market for a given product. The process is the same except without a price breakdown.

Total Unique Views/Year (Sum of Population * Races):

Unique Views/Race:

~80M Total Unique Views

80M Total Unique Views/~20 Races = 4M Unique Views/Race



Exhibit #1

Driver:	Total Cost:	Audience Reach:	Conversion Rate:	Additional Social Media Views:	Social Media Conversion Rate:
Lando Norris	\$1,500,000	60%	4%	40% of the Race's Unique Views	4%
Max Verstappen	\$1,850,000	75%	2%	25% of the Race's Unique Views	4.5%
Lewis Hamilton	\$2,000,000	80%	3%	30% of the Race's Unique Views	5%
Charles Leclerc	\$1,250,000	60%	2%	30% of the Race's Unique Views	3.5%
Fernando Alonso	\$1,250,000	65%	2.50%	15% of the Race's Unique Views	3%

⁻ Audience Reach is the % of the unique views per race that is reached by that driver.



⁻ Conversion Rate is the amount of unique views that are converted into sales

⁻ Assume one Barbie ticket is \$15

Question 2: Using Exhibit 1, calculate which driver would deliver maximal revenue and return on investment to our client.

Because this question uses calculations from the market sizing, which will be different for every candidate, every candidate will have a different answer to this question. Because of that, there is not a "right" answer but a "right" process. That process is as follows:

Process:

Step 1: Multiply Audience Reach Per Driver by Total Unique Views/Race as calculated in the Market Sizing:

Step 2: Multiply Unique Views per Driver by their Conversion Rate to get how many Tickets they would sell from the Race:

Step 3: Calculate Additional Social Media Views by multiplying the % by Views/Race and then multiplying that product by the Social Media Conversion Rate.

Step 4: Add the social media conversions and race conversions to find total conversions per driver. Multiply total conversions by \$15 to get total return per driver.

Example:

Lando Norris has a Audience Reach of 60%, we calculated 4M Unique

Views/Race in the Market Sizing. 60% of 4M is 2.4M. Sponsoring Lando Norris's car will reach 2.4M Unique Views from the race.

Lando Norris has a Race Conversion Rate of 4%. 4% * 2.4M is 96,000. Lando Norris will sell 96,000 tickets from the Race.

Lando Norris has 35% additional social media views. 35% of 4M is 1.4M. His social media conversion rate is 3%. 3% of 1.4M is 42,000.

Lando Norris causes 42,000 social media conversions and 96,000 race conversions. That is a total of 138,000 conversions. Multiplied by \$15/Conversion, that is over \$2M in revenue.

Interviewer Guidance: Great candidates will notice quickly that Lando Norris and Lewis Hamilton are the top two choices and only calculate their numbers. Once they've selected a driver, move onto Question 3.



Question 3: Other than each Driver's audience reach, what else should they consider?

Race

Driver

Personal History:

Any past controversies?
Do they have a political history that may conflict with the message in Barbie?
What differentiates their influence against the influence of other drivers?

Competitive History:

- What place are they likely to finish in and will that have an impact on ticket sales? Could our client offer a performance incentive on certain placements?

Safety of Race:

- What's the likelihood of the pink car crashing or causing a bodily injury?
- Which race has the highest or lowest safety rating?
- Which driver is least or most likely to crash?

Geography of Race:

- Does geography of the race change the audience demographics?

 Does the geography affect

 which media will be there for more
- advertising?Does broadcasting change?

Social Risks

Backlash from Formula One Audience:

- Will we see
backlash from a
predominantly
masculine audience
against a very
feminine
advertisement?
- Will other
advertisers have a

problem with our

client?

Backlash from Barbie Audience:

- Will Barbie's audience have an issue with sponsoring a race that has high carbon emissions?
- Will Barbie's audience dislike our driver choice or race choice?
- Does F1 align with our audience?

Interviewer Guidance: Once the candidate has listed three or more other factors that Barbie should consider, move onto Question



Question 4: Our client is calling and has a tight deadline to choose a driver or not, what are you telling her?

Interviewer Guidance: Because this case heavily relies on a subjective market sizing, there is not a "correct" answer. Because of that, here are two sample recommendations - one entirely relying on calculations and one relying on qualitative aspects.

Recommendation Example 1:

- Question: You hired us to give a recommendation on a potential all-pink car for a formula one race with a list of potential drivers.
- **Answer**: We recommend an investment into sponsoring the car of Max Verstappen, the investment of \$1,850,000 delivers a return of X% since it would create Y conversions and Z total revenue.
- Risks: There are a few risks. First, that Max could crash during the race or otherwise injure himself which would harm the image of Barbie. Second, Max is very young which may mean he hasn't developed as strong of a reputation as other drivers.
- Next Steps: We see your next steps as designing the logos and details on the car for Verstappen and calculating indirect costs such as design labor, raw materials for the design application, etc.

Recommendation Example 2:

- Question: We were hired to verify if an investment into a Formula One sponsorship would deliver a positive return and if so, which driver to sponsor.
- Answer: We recommend sponsoring Lewis Hamilton. While Hamilton does not deliver the most return we think Hamilton's past aligns perfectly with the message of the Barbie movie while still delivering a very strong return of Y%.
- Risks: We foresee a few risks. First with Hamilton being as outspoken as
 he is maybe there is a message or two that Barbie does not want to be
 connected with. Second, there is the opportunity cost of a higher return
 from X driver.
- Next Steps: The next steps are a deep dive into Hamilton's past to ensure that he does, in fact, line up with the message of Barbie.



Case #8

Texas Robotics Collective

Reviewed by a Senior Manager from Bain and Company

Prompt: Your client is the Texas Robotics Collective, a non-profit organization that targets high school kids who compete in large robotics competitions. The Collective's main operations are a two-week long summer program where high school students live in-person, typically on a college campus, and participate in daily activities helping them grow in Robotics. The Collective operates on a two student model - one student's tuition is the cost of two students attending. Half of their students pay tuition and the other half typically come from low-income or underrepresented backgrounds, attending on a full scholarship. The staff, who are typically college students who attended as students, are all volunteers who are paid a small stipend - just enough to cover their costs. They only focus on one kind of robotics - wheeled robotics. They don't offer services for aerial, underwater or humanoid robotics. The Collective has reached out to us for help on long-term growth strategies since they have seen their growth stagnate or fall within the last five years.

Clarifying Information:

- They have been in operation for 15 years total and saw significant growth the first ten years but after the 10th year, growth stalled.
- All administration are volunteers even Directors and Managers.
- Growth is measured by amount of students taught each year
- Their goal is to grow positively for multiple years in a row.

Note to the Interviewer: This case is heavily qualitative, it's ok for the candidate to be unfamiliar with non-profits. The point of this case is to introduce the candidate to non-profit based cases.

Style: Candidate-Led
Type: Non-Profit
Growth
Difficulty:

Qual: Hard Quant: Medium



Framework Guidance: Non-profit frameworks vary much more than for-profit frameworks so as long the candidate is targeting growth opportunities or attempting to identify the barrier to growth, then their framework is fine.

When the candidate asks about TRC's capabilities or supply constraints, give them Exhibit 1 and ask Question 1.

Supply:

Staff Supply:

- Could our client recruit more instructors?
- Could our client recruit more administration?
- If we have access to more personnel, what would it cost and would it risk quality of instruction?

Infrastructure Supply:

- Does our client have access to more classrooms?
- Does our client have access to more housing and meals?
- If we have access to more classrooms/housing/meals what would it cost and are we getting more value with higher cost/how much could we afford?

Demand:

Student Demand:

- Could our client recruit more students if they had more personnel?
- Where has our client recruited students from and how are different sources performing?
- Are students transferring to similar services (e.g are our students leaving for other forms of robotics?)

School/Institution/Social Demand:

- How are the biggest robotics teams doing?
- Are more students going into Robotics but not going to Summer Intensive sessions?
- How have our target market segments (in-need students) done?
 Are less in-need students doing robotics?

Client Opportunities: Expanding Current Offerings:

- How could our client build upon the Summer Intensive?
- Are there any aspect of wheeled robotics they may encounter in their competitions that we are not already covering? Could we go deeper into the aspects we are currently covering?

Piloting New Offerings:

- In the summer, could we expand the Intensive beyond two weeks or offer a second one at a different location?
- Outside of the summer, could we create services for other times?
- Could we venture into asynchronous materials for our students?
- Could we venture into other forms of robotics - Aerial or underwater for example?

Overall Market:

Overall Market:

- How much did the wheeled robotics market grow? How much did other forms of robotics grow? What is causing the growth or decline?
- What are the overall student segments in wheeled robotics and how are they changing? How are others changing?

Players in the Market:

- Who is our clients' direct competition and are they gaining/losing market share?
- What is our client's competitive advantage against others?
- Are we being substituted by other offerings/resources?
- Are other markets more appealing to our students?



Exhibit #1

University Choices:	University A:	University B:	University C:	University D:	University E:
Available Classrooms:	10	12	11	6	14
Available Bedrooms:	60	140	80	100	120
Available Meals:	7,000	6,200	5,100	5,700	6,000
Cost of One Classroom Per Day:	\$60.00	\$75.00	\$55.00	\$65.00	\$60.00
Cost of One Bedroom Per Day:	\$40.00	\$50.00	\$45.00	\$55.00	\$65.00
Cost of One Meal:	\$5.00	\$4.00	\$2.50	\$3.00	\$4.00



Question 1: TRC's contract with their last university has expired and now they're looking for a new contract with another. They've reached out to five universities and have received the following information. What is the total cost of each contract they could accept?

Read the data on the left to the candidate. When the candidate calculated University B and E's total cost, ask them Question 2.

Interviewer Guidance: Read this information to the candidate:

- 1) The universities would not charge TRC for infrastructure not used.
- 2) TRC hosted 40 staff and 80 students last year they want their new host university to be able to host a 10% growth from last year.

 3) Each person requires 3 meals a
 - day for all 14 days.
 4) 1 staff requires 1 bedroom.
- 5) 2 students require 1 bedroom.

Step 1:

Step 2:

Step 3:

Calculate Required Infrastructure: The candidate should multiply total staff and students by 110% to reach the total staff and students post 10% growth. They should then calculate required classrooms, bedrooms and meals. Calculations are on the next slide.

Compare Universities to Required Infrastructure: Once the candidate knows what TRC's requirements are, they should then go through each of the five universities and test if they have the required infrastructure.

They should conclude that only B and E do.

Calculate Total Cost of Possible Universities: Once they've isolated B and E, they should then multiply required infrastructure by the variable costs given in Exhibit 1 to find total cost per university.



Question #1 Step #1 Calculations

Required Infrastructure Calculations:	Explanations:	Final Result:
Desired Students:	Last Year's Staff (40) * 110%	44 Students
Desired Staff:	Last Year's Students (80) * 110%	88 Staff
Classrooms (Total Students/10)	Desired Students (88)/ 10 Students Per Classroom	9 Classrooms
Bedrooms (Total Staff + (Students/2)):	Desired Staff + (Desired Students/2)	110 Bedrooms
Meals (Staff + Students) * 3 * 14:	(Desired Staff + Desired Students) * 3 Meals a Day * 14 Days	5544 Meals



Question #1 Step #2 Breakdown

University Choices:	University A:	University B:	University C:	University D:	University E:
Available Classrooms:	10	12	11	6	14
Available Bedrooms:	60	140	80	100	120
Available Meals:	7,000	6,200	5,100	5,700	6,000

TRC requires 9 classrooms, 110 bedrooms, and 5544 meals.

University A does not have enough bedrooms, University C does not have either enough bedrooms or meals and University D does not have either enough classrooms or bedrooms.

Only University B and E have the required infrastructure.



Question #1 Step #3 Calculations

Cost Calculations:	University B:	University E:	Explanation:
Classroom Cost:	\$9,450.00	\$7,560.00	Cost of Classroom Per Day * Required Classrooms * 14 Days
Bedroom Cost:	\$77,000.00	\$100,100.00	Cost of One Bedroom Per Day * Required Bedrooms * 14 Days
Meal Cost:	\$22,176.00	\$22,176.00	Cost of One Meal * Required Meals * 14 Days
Total Cost:	\$108,626.00	\$129,836.00	



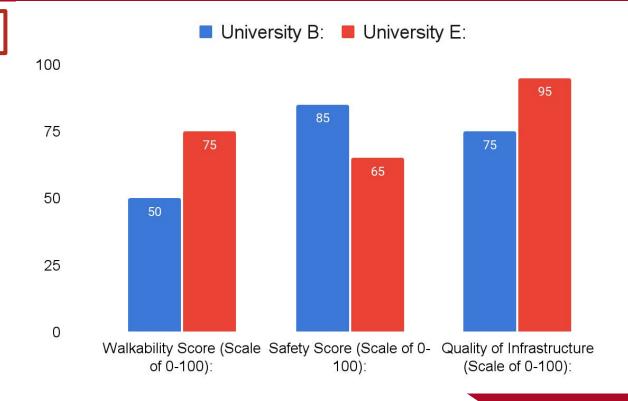
Question 2: Other than cost, what else should TRC be concerned with when choosing a host university?



Interviewer Guidance: Once the candidate has mentioned any of the bolded factors, give them Exhibit 2 and ask them Question 3.









Question 3: Your team has conducted some research on each university and concluded in these results. Using this information, which university do you think is preferable for TRC?

Once the candidate has chosen a university and justified it, give them Exhibit 3, 4 and move onto Question 4.

University B is preferable.

Example: University B is more than \$20,000 cheaper than University E and is much more safe - even though it's less walkable and has slightly lower quality infrastructure, the safety of students and staff should be the first priority of the collective since it poses the highest risk. Parents would feel more comfortable knowing that their students are safer, even if they're being taught in lower quality classrooms.

University E is preferable.

Example: University E is 50% more walkable than University B and about 25% higher quality infrastructure for less than 20% costs premium. E offers a better value purchase since, while it does cost more, it provides more incremental benefit than the incremental costs compared to University B.



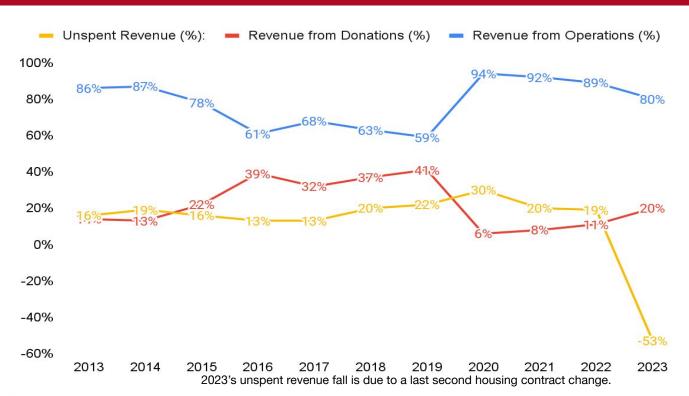
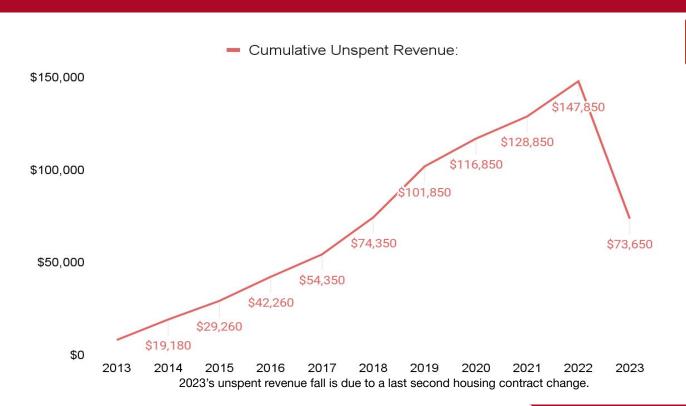


Exhibit #3









Question 4: TRC received your decision and are worried about costs - they've provided financial information for you and want to know what insights you gather and if it affects your choice of university.

Potential Insights

Exhibit 3

Revenue from Donations tanked during 2020, presumably because of the pandemic, and have been slowly rising since.

Exhibit 4

TRC does not regularly draw from the unspent revenue account - it has historically increased year over year.

TRC keeps about a 15-20% margin on revenue per year very consistently.

2023's housing contract change cut unspent revenue by half and was the only year the account fell.

The vast majority of all revenue from TRC comes from operations and not donations.

2023's unspent revenue fall cut all pandemic-era savings and pulled the account down to where it was in 2018.

Revenue from donations may be able to come back to pre-pandemic levels since it nearly doubled the last year.

Exhibit 3

TRC would either barely be able to or not be able to withstand a second last minute housing change.

Exhibit 4

Interviewer Guidance: Once the candidate has given insights from the exhibits and answered if it affects their decision, Ask Question 5.



Question 5: Texas Robotics Collective is calling your phone and wants to know your recommendation.

Interviewer Guidance: This case could go either way - as long as the candidate recommends either University B or University E, it is the 'correct' answer.

Recommendation Example 1:

- Question: TRC hired us to help them grow after years of stagnation we identified that their housing is their biggest constraint.
- Answer: We recommend TRC enter a contract with University B because it is one of the only two universities, the other one being University E, out of the five options who have the required infrastructure. Compared to University E, University B is much safer and over \$20,000 cheaper. Safety is the top priority for TRC as an institute who oversees minors and after a harsh 2023, losing half of unspent revenue, the extra \$20,000 will make recovery much easier.
- Risks: University B does have lower quality infrastructure so there is a substantial risk - however, with proper planning and risk management, TRC will be able to mitigate these risks.
- Next Steps: Next steps are to identify weak points of infrastructure and preempt possible failures with insurance and planning.

Recommendation Example 2:

- Question: TRC hired us to help them find ways to grow and we determined their housing was holding them back.
- Answer: We recommend TRC enter a contract with University E. University E provides the best value with a walkability score much higher than University B, 50% higher, and superior infrastructure at 25% higher quality. At only a 20% cost premium, TRC is seeing much more value with E than B.
- Risks: Because University E is the higher-end choice, any last-minute changes to the contract would severely impact TRC's financials much like the change in 2023.
- Next Steps: TRC needs to create change deadlines to the contract with University E that either prevents last-minute changes or charges a substantial fee to changes so that they're financially covered in case of a 2023-esque scenario.



Case #9 Olympic City Choice

Reviewed by Consultants from Oliver Wyman and CapGemini

Olympic City Choice

Prompt: Your client is the Mayor of Houston who has reached out to you to help them determine if they should bid on the 2028 Summer Olympics and how they should think about the process. What factors should they consider in determining if they should bid or not? If you do decide they should bid, how much should they bid for?

Clarifying Info

- Houston doesn't have a specific goal, they said they hired you to help them determine what they should be looking for in bidding for the Olympics.
- Dozens of other cities are also bidding from Los Angeles, Buenos Aires, Paris, Cairo, Beijing, to Tokyo. The process is very competitive and every country wants in.
- Houston would have full control of the games with guidelines from the Olympics. Essentially, the Olympics would give Houston instructions on what to do and Houston would implement the Olympics' instructions.
- Houston does not have a cap on maximum to bid.

Note to the Interviewer: This case is created to push the candidate beyond the typical profit/market size maximization understanding into a governmental understanding push the candidate beyond economics in this case

Style: Interviewer-Led Type: Governmental Difficulty:

> Qual: Hard Quant: Medium



Olympic City Choice

Question 1: What factors should the Mayor consider when determining how much to bid?

Once the candidate has given a framework, move onto Question 2.

Bidding Strategy:

Return-Based Bidding:

- What return is Houston looking for in the bidding process in relation to their returns?
- What do they understand as "Return" and not a "Return"? Do they only include direct revenue from the games or do they include an increase in economic activity in the city? How do they measure costs? How do intangibles come into play in these calculations?

Competitor-Based Bidding:

- Do they want to win the games under any cost? How much higher than competition do they want to bid?
- What are the motives of competition and what strategies are they using?

Risks:

Economic Risks -

- What are the risks in achieving our economic return? What barriers exist in preventing us from realizing value from hosting?

Social Risks -

- Could we face certain backlash or political tensions? Could hosting countries with high tensions cause conflict? How should we manage players and political protest or potential PR issues? Do we have the infrastructure to host?

Environmental Risks -

- How will we reduce carbon emissions and pollution from the event?

Return and Revenue:

Tangible Revenue:

Direct:

- Ticket Sales, Merchandise Sales, Broadcasting Rights Sales, Advertising Sales (On-Site and Broadcasting), and Sponsorships (General and Sport-Dependent). Indirect:
- Increase in tourism, increase in hotel/restaurant/etc usage during the games, etc.

Intangible Revenue:

- Change in brand image for the city, change in reputation for mayor of city, change in infrastructure, relationship building, etc.



Question 2: Let's focus on Revenue and Return for now, what are all possible returns the city can gain from hosting the Olympics?

Interviewer Guidance:

The candidate should have a structure to break-down revenue - it does not have to be this one, this is an example. Any structure will do and they should list both tangible and intangible return - if not, ask them for the one they are lacking (either tangible or intangible).

Pre-Games Post-Games

- Domestic Investment Growth in economic activity through domestic investment in infrastructure
- Relationship building -Connection with Olympic Games for future games and future events
- 3) Foreign Investment Growth in economic activity through foreign attention driving foreign investment

 Output

 Description:

- 1) **Tickets** Ticket size and price per ticket
- Broadcasting selling rights to T.V. channels or livestreaming companies
- 3) **Advertising** both in-person physical advertisements and digital sponsorships
- 4) Concessions selling food/drink on-site and merchandise through eCommerce and on-site

- PR Change in the city and it's leadership's image domestically and internationally
- Non-Custom Infrastructure new non-custom infrastructure like additional lanes on roads, new roads, improvements in public transport, will stay after the games.
- 3) **Tourism** Increase in tourism for the city in the future after the games



Question 3: Can you size the possible revenue that Houston may generate directly from the games? There are 15 nights over the Olympics and only one event happens at a time.

Interviewer Guidance:

This should be treated like a market sizing question where the candidate will have to generate each number based off their assumptions. They should first list all possible direct sources of revenue and then begin their sizing of each one. If one of the candidate's ideas seem unusual, ask them about it. Once they found a total, ask them what they think about it. After they find the totals, they should go back to their framework and ask about something else. Try to direct them toward risks - once they ask about risks, ask them Question 4.

Here are example estimated totals for three revenue categories (Calculations are on the next three slides):

Total Concession Revenue:	Total Broadcast Revenue:	Total Ticket Revenue:
\$21,375,000	\$16,100,000,000	\$315,000,000

Total Revenue: \$16,436,375,000



Question 3: Can you size the possible revenue that Houston may generate directly from the games? There are 15 nights over the Olympics and only one event happens at a time.

Ticket Sales Sizing Breakdown:

Ticket Sales:	Utilization Rate:	Total Seats:	Average Ticket Price:	Nights:
Popular:	90%	50,000	\$1,000	5
Moderate:	75%	30,000	\$500	7
Niche:	60%	25,000	\$250	3
Ticket Sales:	Total Tickets Sold Per Night:	Total Tickets Sold:	Total Revenue Per Category:	Total Ticket Revenue:
Popular:	45,000	225,000	\$225,000,000	
Moderate:	22,500	157,500	\$78,750,000	\$315,000,000
Niche:	15,000	45,000	\$11,250,000	
	=Utilization Rate * Total Seats	=Total Ticket Sold Per Night * Nights	=Total Tickets Sold * Average Ticket Price	



Question 3: Can you size the possible revenue that Houston may generate directly from the games? There are 15 nights over the Olympics and only one event happens at a time.

Concessions Sales Sizing Breakdown:

Concessions:	Audience Per Night:	Nights:	Total Audience Per Category:
Popular:	45,000	5	\$225,000
Moderate:	22,500	7	\$157,500
Niche:	15,000	3	\$45,000
	Total Tickets Sold Per Night	Nights	=Audience Per Night * Nights
	Total Audience:	Average Spend Per Person:	Total Concession Revenue:
	427,500	\$50/Person	\$21,375,000



Question 3: Can you size the possible revenue that Houston may generate directly from the games? There are 15 nights over the Olympics and only one event happens at a time.

Broadcast Sales Sizing Breakdown:

Broadcast:	Price for Broadcast Right:	Total Channels:	Total Revenue:
Popular:	\$300,000,000	25	\$7,500,000,000
Moderate:	\$250,000,000	20	\$5,000,000,000
Niche:	\$200,000,000	18	\$3,600,000,000
		Total:	\$16,100,000,000



Question 4: Now that we have a bit more insight into possible returns, what are some risks that would come into play in realizing these returns?

Interviewer Guidance: Candidates may want to dig deep into operational risks (e.g broadcast failure, concession food shortage, etc) that do not affect the entire games. Push them to think of risks that affect the Games as a whole - this question should be difficult since most candidates are accustomed to thinking of economic risks in connection to profitability, not intangible risks associated with the public sector.

Once they've given three or more risks, move onto Question 5.

Economic/Operational Risks:

- Athletic Safety Risk- what is being put in place to ensure athlete safety and what would happen if a major athlete were injured?
- Public Health Risk with such a strong concentration of people, what if something like the Zika virus in Brazil happens again? How could we ensure the health of both watchers and participants?
- Tangible Infrastructure Risk Does our city have enough available hotel rooms, sufficient transportation, access to proper nutrition for the athletes. etc.
- Intangible Infrastructure Risk The olympics have access to very personal and private information, and access to millions in the broadcast audience that could fall prey to cyber crime.

Social Risks:

National Tension Risk - It's inevitable that a nation will have high tensions with another while at the Games, potentially causing conflict between the athletes or those supporting them. This tension could also spillover to the on-site audience supporting either nation.

Terror Risk - international athletes may be targeted by terrorism because of their representative country.

Inclusion Risk - The choice of which nations to include and which to not may spark backlash - e.g do the Games recognize Taiwan as a participant at risk of angering China?

Treatment Risk - The Games would have to ensure that all participants feel they are being treated equally regardless of country of origin. Otherwise, one country may spark controversy through feeling mistreated.

Environmental Risks:

Trash Pollution Risk - Because the Olympics are held over multiple weeks, the stadium needs to be cleaned well and frequently to prevent a build up of trash that would harm all participants' experience.

Carbon Emission Risk - With a high amount of international transportation, carbon emissions may be a cause of concern from flights if the Olympics has a net zero goal or prioritizes a net zero future.

Water Risk - Because of the Olympics' high demand for water through the filling and maintenance of olympic pools, provision of water for athletes, etc this may cause strain on local infrastructure. It would be important for the Games to ensure that local communities' water supply are not harmed by the hosting of the games.



Question 5: We understand possible return and we understand risks with that return, now we want to ensure we can realize the return. In 2008, Beijing's Olympic Games saw a much lower performance than the U.K's 2012 Olympic Games. What could've been the cause and what could we learn from them to make sure we realize as much value as possible for the Houston Games?

Once the candidate has given three or more reasons, move onto Question 6.

Difference in Time:

State of the Economy - A major recession happened in 2008 which may have affected the amount of available disposable income for consumers. Because of this, there may have been a difference in performance because consumers are unable to spend what they would like to. Post-Recession growth may have sparked higher performance in 2012 compared to 2008.

Difference in Place:

- Britain vs China - In 2012, China was still a rising power and wanted to gain more influence in the international sphere while Britain seems less interested. Because of this, China may have overinvested and then saw a worse return from over-investment. Britain may have invested just the right amount to see a higher performance.

Difference in Culture:

- Western Sports vs Eastern Sports: Britain and China have very different sport cultures with Britain having more popular sports and China having less popular sports in comparison. Because of this, British audiences may be more inclined to spend more, buy more tickets, watch streams, etc. It's likely that Britain has a higher average spend, higher utilization rate of stadiums, etc.

Takeaways for Houston Games: Houston should be aware that the economic state of the city, the state and the country could affect the Games' performance. The city should also be weary of over-investment in the games that could negatively affect performance. In terms of the local area, Houston should research most popular games and ensure those games reach their maximum potential.



Question 6: What bidding strategy should Houston use in the bidding process? Should they base their bid off perceived return, competition, or something else? How would their bid change depending on their bidding strategy?

Once the candidate has chosen a strategy, move onto the last question.

Return-Based:

- **Goal:** Bid lower than expected return to gain profit for the city
- **Justification:** The city should use a return-based strategy to ensure positive benefits from hosting the games. Any other strategy could result in a negative return for the city.
- Example 1: If our expected tangible, immediate return is \$16B then any bid lower than \$16B will leave room for profit to the city.
- **Example 2:** Because we know the city will see intangible benefits, the city should bid around the expected tangible return to ensure a high chance of a successful bid and a positive return from intangible benefits.

Competition-Based:

- Goal: Bid higher than competing cities at all costs
- **Justification:** No matter what returns we could gain from the games, we will not be able to host them without a successful bid. A successful bid is the most important in the process to ensure that we are even able to host at all.
- **Example 1:** Houston should dissect previous strategies from earlier games to predict what other cities will be likely to predict and then bid higher.
- **Example 2:** Houston should find the highest possible bid within reason and bid up until that point to ensure that both they don't end up in a meaningless bidding war and that they are still able to host the games.



Question 7: The Mayor is calling and wants to know what you think - he has to make a decision in less than 4 hours. What do you tell him?

Interviewer Guidance: The candidate should use previously mentioned risks or risks unique to their recommendation. Their recommendation should be connected to the previous bidding strategies from Question 6.

Recommendation Example 1:

- Question: Our client, Houston, wants to bid on hosting the Olympics in 2028 and asked us to advise them on how much to bid.
- Answer: We recommend bidding around the expected tangible revenue of \$16B so that Houston could then realize a positive return from intangible, long-term benefits like an improvement in city reputation, improvement in mayor's reputation and relationships created with the Games.
- Risks: We foresee a few risks. First, infrastructure hurdles. Houston has a
 reputation for not having strong infrastructure and being over reliant on
 interstates which could cause delays in the events or operational issues.
 Secondly, there may be an environmental effect with hosting a long, large
 event in a car-centric city. The public may be upset from car-based carbon
 emissions.
- Next Steps: Next steps would be identifying carbon emission reduction initiatives for hosting the Olympics to prevent backlash from the public.

Recommendation Example 2:

- Question: Our client wants to bid on the Olympic Games and asked for our assistance on their recommendation.
- Answer: We recommend bidding below the expected immediate tangible revenue of \$16B to ensure a positive return. All other strategies allow for the possibility of a negative return for Houston - not hosting at all would be preferable to a negative return so Houston should understand bidding as positive return or not hosting.
- Risks: We foresee a few risks with this strategy first is the opportunity
 cost of not hosting. Because other cities may have the capacity to host at a
 net loss, they may overbid Houston. Second, our calculations do not
 include the expansion in infrastructure that may be necessary for the
 Games.
- Next Steps: Next steps would be calculating necessary infrastructure
 Houston would need when they host the games and the costs of that
 expansion.



Case #10

Queen Shirley

Reviewed by Consultants from Alvarez and Marsal and EY-Parthenon

Prompt: Your client is Burger Queen, a fast food restaurant that competes directly with similar restaurants such as McDonalds, Taco Bell, KFC, Wendy's, etc. It's the fifth largest fast food chain globally if measured by numbers of stores. BQ serves meals during breakfast, lunch and dinner. It operates under a franchisee model with 90% of its stores being owned by the franchisee (individuals own the store but pay franchisee fee to BQ and BQ makes major business decisions). BQ wants to grow rapidly and have learned that inorganic growth through an acquisition is best for them. One of their acquisition targets is Shirley's Donuts, a regional donut chain that operates predominantly in the United States. Shirley's operates differently than BQ since instead of giving each franchisee one store, each franchisee operates a designated area. BQ's CEO has hired you to advise him on whether they should acquire Shirley's or not.

For the interviewer, once you've read the prompt and the candidate confirmed understanding, ask the candidate Question 1.

Note to the Interviewer: This is an interviewer-led case heavily based off a case from McKinsey. It is very quant-heavy and focuses on very classic Acquisition-related problems.

Style: Interviewer-Led
Type: Acquisition
Difficulty:

Qual: Medium
Quant: Hard



Question 1: What factors should Burger Queen consider in the possible acquisition? Once the candidate has explained their framework, give them Exhibit 1 and ask Question 2.

Market Attractiveness:

- Broad Market
- How large is the market for donuts in the U.S? How has the donut market trended over the last 5 years? How volatile is the market and does it change depending on the season or years?
- Market Participants
- How is market share distributed across all market participants? How has market share changed over the last five years. Is it common for competitors to gain or lose market share quickly?
- What competitive advantages exist between competitors and how do they interact in the market?

Company Attractiveness:

- How large is Shirley's and how is it positioned - both in the market against competitors and toward consumers? Does Shirley's have Economies of Scale? What is Shirley's market share?
- What is Shirley's competitive advantage and how is it maintained? How easily could it be replicated by competitors?
- Who are the customers of Shirley's and how loyal are they to Shirley's? How do they compare to customers of competitors?
- Does Shirley's have synergies with any other current portfolio companies or assets?

Growth Opportunity:

- What is the growth rate of Shirley's and what are the biggest factors influencing Shirley's growth?
- How is revenue split between Shirley's customers? How do customers purchase and are they individuals for themselves, individuals for groups or are they representatives of large events requesting catering?
- What products are on Shirley's menu and how do they compare to each other? Is it possible to break revenue down per product?
- Could we expand Shirley's geographically?

Financial/Exit Opportunities:

- How much is Shirley's valued? How is it valued? What are competitors valued? Do we think our client is under or over valuing Shirley's? What are the capabilities of Shirley's?
- What exit opportunities exist if we are looking to exit? If we are not looking to exit, what is our payback period for the investment and what is our goal payback period?
- How do we measure return on investment and what is our goal return?
- What would our incremental addition be? How would the acquisition affect current operations and sales?



Exhibit 1: For the Candidate

Stores:	BQ:	Shirley's:
Total:	5,000	1,200
Southern U.S	2,250	1,000
Northern U.S	1,750	200
Europe	500	0
Asia	400	0
Other	100	0
CAGR:	8%	12%

Income Statement:	BQ:	Shirley's:
Total Sales:	5200M	850M
COGS:	2704M	408M
% of Sales:	52%	48%
Gross Profit:	2496M	442M
GP Margin:	48%	52%
Operating Costs:	832M	205M
% of Sales:	16%	24%
G&A:	520M	93.5M
% of Sales:	10%	11%
EBITDA:	1144M	143.5M
Operating Margin:	22%	17%
D&A:	260M	42.5M
% of Sales:	5%	5%
EBIT:	884M	101M
EBIT Margin:	17%	12%



Exhibit 1: For the Interviewer

Areas of Importance are Highlighted

Stores:	BQ:	Shirley's:
Total:	5,000	1,200
Southern U.S	2,250	1,000
Northern U.S	1,750	200
Europe	500	0
Asia	400	0
Other	100	0
CAGR:	8%	12%

Interviewer Guidance:

Left:

- "CAGR" means Compound Annual Growth Rate.

Right:

- "COGS" means Cost of Goods Sold
- "GP Margin" means Gross Profit Margin
- "G&A" means General and Administrative
- "EBITDA" means Earnings Before Interest Tax Depreciation and Amortization. Synonymous with Operating Income
- "D&A" means Depreciation and Amortization
- "EBIT" means Earnings Before Income Tax

Income Statement:	BQ:	Shirley's:	
Total Sales:	5200M	850M	
COGS:	2704M	408M	
% of Sales:	52%	48%	
Gross Profit:	2496M	442 M	
GP Margin:	48%	52%	
Operating Costs:	832M	205M	
% of Sales:	16%	24%	
G&A:	520M	93.5M	
% of Sales:	10%	11%	
EBITDA:	1144 M	143.5M	
Operating Margin:	22%	17%	
D&A:	260M	42.5M	
% of Sales:	5%	5%	
EBIT:	884M	101M	
EBIT Margin:	17%	12%	



Question 2a: Burger Queen wants to understand possible synergies between them and Shirley's. They've provided you with some basic figures about the two parties and their respective income statements. What synergies can you think of?

Costs Savings:

- Consolidation of Management Locations savings on lease payments, utilities, etc from former locations
- Consolidation of Management Functions savings on labor expenses from less employees in less functions (The company would only need one department for HR, Accounting, IT, etc)
- **Economies of Scale** The two companies could purchase materials in greater bulk and access higher discounts from suppliers
- **OpEx Margin** BQ has lower OpEx as a % of Sales so they could modify Shirley's operating model to match theirs and lower Shirley's operating expenses as a result
- **COGS Margin** BQ has a lower Gross Profit Margin than Shirley's so Shirley's could help lower Burger Queen's COGS.

Revenue Growth:

- Consolidation of Product Sales BQ may be able to sell both companies products in both types of restaurants and drive up average spend per customer
- **Greater Sales/Store** BQ has greater Sales/Store so they may have better skills at geographical placement or advertising and marketing either of which could be taught and implemented at Shirley's.
- Quicker Growth Shirley's has a 12% CAGR vs BQ's of 8% and BQ is much bigger giving it access to more investment capital. Both of these factors could accelerate growth for both parties Shirley's can pull BQ up with it and BQ could push Shirley's even higher with more investment capital. BQ could also begin to sell Shirley's products in stores in areas like Europe or Asia where Shirley's doesn't have a presence already.

Interviewer Guidance: The candidate's response, of course, does not have to follow this format. You are looking for some replicable structure followed by multiple, in-depth synergy possibilities. Feel free to ask the candidate "Any more?" after all of their responses or "Can you elaborate a bit more on that?" on any one idea that you think is a bit short. Once the candidate has answered to your liking, ask them Question 2b



Question 2b: In dollar amounts, by how much would Shirley's EBIT improve if it could match Burger Queen's Operating Costs as a % of Sales? (Assuming all other costs are the same). In a percent, what is Shirley's new EBIT margin?

Calculating EBIT Gain with new Margin:

Stop 1: Idoptity the Difference in Old ve New Open	otina Maraine:
Step 1: Identify the Difference in Old vs New Oper	alling ivial gills.

Income Statement (Shortened):	BQ:	Shirley's:
Operating Costs:	832M	205M
% of Sales:	<mark>16%</mark>	24%
EBIT:	884M	101M
EBIT Margin:	17%	12%

Step 2: Multiply % Improvement by Sales:

Improvement:	* Sales	= EBIT Growth:
8%	850M	\$68M

Calculating New EBIT Margin:

Step 1: Find Difference from previous calculation
8% Gain
Step 2: Add Difference to previous EBIT Margin:
8% Gain + 12% Previous Margin

New EBIT Margin = 20%

Interviewer Guidance: Once the candidate calculated both dollar value EBIT growth and percentage EBIT growth, move onto Question 3.



Question 3: What risks do you predict from the acquisition?

Ask the candidate Question 4 after they have given three or more potential risks.

Quantitative

Falling Revenue

- Cannibalization of Sales -Customers may choose one product over the other (for example a former Burger Queen customer could choose to then only purchase cheaper Shirley's products)
- Alienation of Customers -Current customers of Shirley's may prefer the company operating smaller, have a distaste for Burger Queen or may not like changes that BQ leadership would make.

Increasing Costs

- Inaccurate Forecasts Investment banking fees, M&A
Advisory fees, consulting fees,
etc can all stack up very quickly.
- Overpayment - It could be that
Shirley's is being way overvalued
- Legal Issues - It's common for
acquisitions to be blocked or
fought like Microsoft's deal with
Activision Blizzard creating
mounting legal fees. Legal battles
could also force divestment from
certain assets.

Misalignment of Management

Qualitative

- Alienation of Current Shirley's
Staff - Shirley's staff may feel
insecure about the stability of
their position going into a major
acquisition and/or they may feel
neglected through improper
communication so Burger Queen
risks losing top talent and
valuable skills unique to Shirley's.
- Disagreements between
Management could ripple
through the company and cause
fractures between Shirley's and
BQ Staff

Misalignment of Cultures

- Regional Company vs Global
Company - with BQ's change in
broader systems, management
styles, performance tracking
strategies, etc, Shirley's
employees may feel ignored or
agitated that their regional
preferences aren't being
included. Traditional workplace
behaviors or events at Shirley's
may be replaced by BQ
behaviors and events pushing
away old Shirley's employees.



Question 4: BQ wants to double Shirley's American market share in the next five years with an investment in more stores, multiplying amount of stores by 2.5x. What Sales per Store would be required to reach this market share goal?

Variable:	Source:	Value:		
Per Capita Consumption:	Given	\$10/Year of Donuts		
Population:	Assumption	300M		
Current Market Size:	Consumption * Population	\$3B		
Shirley's Sales	Exhibit 1	\$850M		
Current Market Share:	Current Sales/Current Market Size	28%		
Interviewer Guidance: Round up to 30% Current Market Share				
Per Capita Consumption in 5 Years	Given	\$20/Year of Donuts		
Population:	Given	300M		
Future Market Size:	Consumption * Population	\$6B		
Future Market Share:	2 * Current Market Share	60%		
Sales in 5 Years:	Future Market Share * Future Market Size	\$3.6B		
Future Stores:	2.5 * Current Stores	3,000 Stores		
Sales/Store:	Sales in 5 Years/Future Stores	\$1.2M/Store		

Available Data:

- Per Capita Consumption: \$10/Year of Donuts
- Per Capita Consumption in 5 Years: \$20/Year
 - Current U.S Population: 300M
 - Assume the Population will only change minimally in five years.

Interviewer Guidance:

The data above is only available upon request. Do not give the data to the candidate after you repeat the question - only if they ask you for it. If they ask for something previously given, such as current number of stores or current sales, refer them to Exhibit 1. Once calculated, ask them if the growth seems reasonable and then move onto Question 5.



Question 5: Burger Queen wants to sell Shirley's donuts in their stores - what incremental income would they make if they did?

Sales and Profitability Information:		
Shirley's Units to be Sold per BQ Store:	200,000	
Average Price per Shirley's Unit:	\$3	
EBIT Margin (Rounded)	20%	
Cannibalization Rate of BQ Units per Store:	10%	

Interviewer Guidance: Verbally tell the candidate the above Sales and Profitability information. If asked to repeat, only repeat up to three times. All other necessary information (BQ Sales/Store) is available via Exhibit 1. Ensure the candidate is calculating on a per store basis and not on an overall basis per store is much easier. Once they've calculated, ask them for a final recommendation.

Gain from Cross-Store Selling Alone:			
200,000			
\$3.00			
20%			
\$120,000			
Loss from Cannibalization			
10%			
1.2M/Store			
\$120,000/Store			
20%			
\$24,000			
\$96,000			



Question 6: Burger Queen's CEO is calling and wants to know your recommendation. What would you tell them?

Interviewer Guidance: The candidate theoretically could recommend either way - given we did not cover valuation of Shirley's, required rate of return, risks, etc. There is a lot of uncertainties with this investment despite earlier investigation.

Recommendation Example 1:

- **Question**: Burger Queen hired our team to help them determine if they should acquire Shirley's, a donut shop chain.
- Answer: We do not think we can recommend an acquisition with all of the information available. If Shirley's is able to match BQ's EBIT Margin, they will be able to deliver a \$68M/Year return without harming previous EBIT. With cross-store selling, we were able to calculate that Shirley's products being sold at BQ stores would deliver an incremental gain of \$96,000 EBIT per store resulting in an additional \$480M overall. With both combined, Shirley's would deliver \$548M EBIT return every year. However, we do not know the value of Shirley's or how much we expect to pay which means our return could fall under our required rate of return.
- Risks: With rejecting a possible acquisition, we are accepting a major opportunity cost. However, overpayment risk is too high.
- Next Steps: We recommend assessing the acquiree's value first to determine if it's a possible investment before diving into the return.

Recommendation Example 2:

- **Question**: We were hired to help Burger Queen assess whether or not they should acquire Shirley's, a donut chain.
- Answer: We recommend BQ acquire Shirley's. Shirley's delivers a positive return regardless of the initial investment. The acquisition grants BQ \$68M EBIT/Year through matching Shirley's margins with the parent company. An additional \$480M EBIT can be earned through selling Shirley's products in BQ Stores causing each store to gain \$96,000 EBIT. Overall, this would grow BQ's income by over half.
- Risks: Theoretically, overpayment is a major risk. However, we've
 measured a positive return regardless of investment. Because Shirley's will
 deliver net positive EBIT, it's just a matter of time before the initial
 investment is paid off.
- Next Steps: The next steps would be to figure out how to minimize the cannibalization rate in BQ stores and how to identify ways to lower Shirley's margins to match BQs.



Case #11

Construct a Solution

Reviewed by Consultants from EY-Parthenon and Accenture

Prompt: Your client is Rebar Company, who manufacturers rebar and concrete for commercial construction. Their profits have fallen from a positive \$20M profit last year to a loss of \$10M this year and have hired us to help them with their falling profitability.

Clarifying information (Give only if asked for):

- Their timeline is within the next year and their goal is to break-even or more.
- The overall market has been stagnant for the last four years either remaining constant or only growing at a 1-2% rate. Assume the pandemic did not happen. In 2020, the market declined 1%. In 2021, it grew 1%. In 2022, it stagnated again and in the 2023 the market stagnated again.
- Nationally, our client controls about 5% market share. Their main competition are four competitors with 23% market share each the remaining 3% market share is split amongst over a hundred much smaller, local competitors.
- Product is virtually identical across the market rebar is heavily regulated because of the risk of building collapse.

Note to the Interviewer: This cases' purpose is to really test a candidate's ability to lead a case - because of that, it does not have questions and entirely relies on the candidate to drive the case.

Style: Candidate-Led Type: Profitability Difficulty:

> Qual: Very Hard Quant: Medium



Framework Guidance: This case is entirely reliant on the candidate - your job as the interviewer in this case is merely to give the candidate information when they ask for it rather than ask questions to the candidate. An index of information is provided on the bottom of the slide. You will be providing information until the very end, where you will ask the candidate a question and then ask them for their final recommendation.

Company:

Current Customers:

- What are the different customer segments from this year and how has that changed from the last few years? Do we have more or less customer concentration?

Competition's Customers:

- How have our competition's customers' segmentation changed? Have major clients moved and if so, why?

Out-Of-The-Market Customers:

- What brings customers into the market and what are they missing?

Profit:

Revenue:

Quantity:

How many steel rods are sold this year? How many were sold last year and what caused the difference?

Prices:

How much are we selling each rod for and are there different prices per bundles or suppliers?

Costs:

What are our fixed and variable costs? What were they before? Have we changed anything regarding costs recently?

Competition:

Market:

 Is our client's industry growing? If so, how is the growth divided amongst competitors? Why are some growing/declining more?

Competitors:

- Who are our biggest competitors and what are their market share compared to ours? Have there been new entrants to the market? If so, have they grown and why? If not, what is the barrier for entry?

Slide 128 is a breakdown of the Client's profitability. Slide 129 is insights from the profitability breakdown. Slide 130 is a breakdown of competitive profitability. Slide 131 is qualitative information about the company, competitive and customer. Slide 132 is a breakdown of change requests.



Interviewer Guidance: This information tells the candidate that costs are consistently rising but prices seem very volatile - should lead them to question the cause behind price volatility - more information is on the next slide about the motivations behind changes.

	Rebar Inc.'s Profitability Breakdown:					
Year:	Price:	# Sold:	Labor Costs (VC)	Raw Material Costs (VC)	Fixed Costs:	
2020:	\$110/Rod	1M Rods	\$20/Rod	\$65/Rod	\$10M	
2021:	\$110/Rod	1M Rods	\$25/Rod	\$70/Rod	\$10M	
2022:	\$120/Rod	1M Rods	\$30/Rod	\$70/Rod	\$10M	
2023:	\$100/Rod	1M Rods	\$30/Rod	\$80/Rod	\$10M	
•	Candidate's Calculations:					
Year:	Variable Costs:	Total Revenue:	Total Costs:	Total Profit:		
rear:	Labor + Materials	Price * Rods Sold	Variable + Fixed Costs	Total Revenue - Total	Costs	
2020:	\$85/Rod	\$110M	\$95M	\$15M		
2021:	\$95/Rod	\$110M	\$105M	\$5M		
2022:	\$100/Rod	\$120M	\$110M	\$10M		
2023:	\$110/Rod	\$100M	\$120M	-\$20M		



Interviewer Guidance: If the candidate asks about why these numbers are the way they are, here is additional information. The purpose of this information is for the candidate to notice the heavy reliance on competitive information. Our client is matching competition's prices and is having a very difficult time distinguishing themselves from the competition.

This should lead the candidate to question more about competition.

		R	ebar Inc.'s Profitability Breakdown	:	
Year:	Price:	# Sold:	Labor Costs (VC)	Raw Material Costs (VC)	Fixed Costs:
2020:	\$110/Rod	1M Rods	\$20/Rod	\$65/Rod	\$10M
2021:	\$110/Rod	1M Rods	\$25/Rod	\$70/Rod	\$10M
2022:	\$120/Rod	1M Rods	\$30/Rod	\$70/Rod	\$10M
2023:	\$100/Rod	1M Rods	\$30/Rod	\$80/Rod	\$10M



Our client's prices are typically matched to meet their largest competitors.



Our client has struggled to gain market share because of the fierce competition in the market.



Labor costs in manufacturing have slightly risen from unionization efforts but efforts have calmed after a rise in pay.



Raw Materials
have been steadily
increasing over the
last few years. We
do not have
information as to
why.



Fixed Costs are unchanging, our client has maintained the same facilities, overhead, etc over the last four years.



Interviewer Guidance: For every bit of data about the client the candidate receives, a great candidate will then ask for the same information but from competition for comparison sake. Using this data, the candidate should notice that raw materials is driving larger competition's competitive advantage. This is due to competition's size - they can buy larger orders at a discount because of economies of scale. Insight should be that competitors can afford lower prices because of lower raw materials expense - our client cannot.

Competition's Profitability Breakdown:					
Year:	Price:	# Sold:	Labor Costs (VC)	Raw Material Costs (VC)	Fixed Costs:
2020:	\$110/Rod	1M Rods	\$20/Rod	\$55/Rod	\$10M
2021:	\$110/Rod	1M Rods	\$25/Rod	\$60/Rod	\$10M
2022:	\$120/Rod	1M Rods	\$30/Rod	\$60/Rod	\$10M
2023:	\$100/Rod	1M Rods	\$30/Rod	\$70/Rod	\$10M
			Calculations:		
Year:	Variable Costs: Total Revenue: Total Costs: Total Profit:				
rear.	Labor + Materials	Price * Rods Sold	Variable + Fixed Costs	Total Revenue - Tota	l Costs
2020:	\$80/Rod	\$110M	\$90M	\$20M	
2021:	\$90/Rod	\$110M	\$100M	\$10M	
2022:	\$95/Rod	\$120M	\$105M	\$15M	
2023:	\$100/Rod	\$100M	\$100M	0	



Interviewer Guidance: After some quantitative background, the candidate should notice that the client is suffering from matching competitors exactly when they don't have the size or cost-cutting ability that competitors have. This information will enable the candidate to understand that change requests are where our client can distinguish themselves against competition.

Company

- Our client is a regional player in the southern United States serving clients in predominantly Texas, Oklahoma and Kansas.
- Our client has attempted to replicate the model of the four players as much as possible - their manufacturing and prices are the same.
- However, our client differs in change requests - they're able to fill a

changed request in 3 days.

Competition

- Competition is broken up into four major players, our client, and over a hundred local players. The four major players control 23% market share each, our client controls 5% and the other 3% is evenly distributed amongst local players.
- The four players each target a region of the U.S and only serve U.S clients. One serves the West Coast region, one serves the East Coast region, one serves the South and the other serves the Midwest.
- The four players each have similar manufacturing processes they create a very large batch of steel rods every 90 days and send one or a few batches to a client. Their process is dependent on giant warehouses in a line with each serving a different step in the process.
- Because the four players only do large orders, when a customer requests a change last minute, they have to wait for a new batch before filling the change request. Because of this, change requests typically take another 90 days to fill. Customers typically have to pay for an entire new order and lose all of the capital spent on the original order.

Customer

- Our client targets customers in the Mid-South U.S region.
- These customers are construction companies who would usually buy from Rebar Inc's larger competition.
- Sometimes, customers need a change of rebar order quickly due to weather in the middle of the project. While waiting on a change request, construction cannot be performed. Construction projects lose thousands for every day of delay.



Interviewer Guidance: Once the candidate has understood that they should be identifying change requests as the method to distinguish the client from competition, give them the information in the TOP chart, the BOTTOM chart is the calculations they should make after being given the information in the TOP chart.

Once calculated, ask the candidate if there are any other ways our client could make themselves stand out, examples on the bottom left.

Once both are answered, move onto the final recommendation.

Brainstorming:

- Weather Insurance: Clients could purchase insurance from Rebar Inc. where, for a certain fee, they would be guaranteed replacements if a weather event happened or a heavily discounted replacement if a weather event happened.
- Value-Add Replacement: Rebar Inc. could offer quicker replacement than competition in return for a higher price per rod.
- Competitive Partnerships: Rebar Inc. could partner with larger competitors to fill their change requests and in return giving them a portion of the profit from the \$30/Rod Premium.

% Requested Change from Total Rods Sold:		
High Activity:	30%	
Moderate Activity:	20%	
Low Activity:	10%	
Price Increase for Faster Delivery:	+\$30/Rod	
Total Rods Sold:	1M	

Activity Levels:	Rods Sold in Change Requests:	Additional Profit:
High Activity:	300K	\$9M
Moderate Activity:	200K	\$6M
Low Activity:	100K	\$3M
Total Additional Profit: +21M	% Frequency of Change Requests * Total Rods Sold	\$30/Rod * Rods Sold



Interviewer Guidance: Once the candidate has calculated the incremental profit from faster delivery change request fulfillment, tell them that the COO of Rebar Inc. is calling and wants to know what our team has decided for Rebar Inc. The candidate should recommend the change request targeting program and explain its financial benefits.

Recommendation Example 1:

- Question: Rebar Inc. hired our team to help them recover from a loss to break-even or better.
- Answer: We recommend Rebar Inc. target high tornado activity zones since they're more likely to require a last-minute change to their rebar. Because Rebar Inc, is much smaller than its competition, it can provide a change request in only 3 days compared to its competitors who take 90 days. With such an advantage, we recommend that Rebar charge a 30% premium for filling these orders which would change their bottom line from a \$20M loss to a \$1M profit.
- Risks: There are two main risks with this recommendation. First, there
 may not be available facilities to fill a change order since they are sporadic
 and last-minute, resulting in loss of business. Second, because the orders
 are rushed they may be of lower quality than others.
- Next Steps: Rebar Inc. should ensure that they have an available production facility for change requests at all times and they should re-evaluate their production process to ensure that orders will be of the same quality even if they are rushed in 3 days.

Recommendation Example 2:

- Question: We were hired to bring Rebar Inc. to break-even profitability or a
 positive gain.
- Answer: We recommend Rebar Inc. develop a new program that targets change requests in highly active tornado zones which typically see higher frequencies of change requests. Rebar Inc. can deliver smaller batches much quicker than competition and so it would be able to charge a premium for filling last-minute orders quickly. This premium, of \$30/Rod, would add \$21M to Rebar's bottom line and return them to profit.
- Risks: There are two immediate risks with this change. First, if our facilities are nearby the construction sites that are needing a change we may be affected by the weather events. Secondly, these weather conditions may persist and disrupt our ability to deliver the product even if we can safely manufacture in the first place.
- Next Steps: Rebar Inc. should be strategic about its facilities' geographical
 placement to ensure that the facilities are less likely to be affected by harsh
 weather conditions and identify potential weaknesses in the transportation
 process to ensure that rebar can be delivered properly even in persisting
 conditions.



Case #12

Applying Appliances

Reviewed by Consultants from Boston Consulting Group and Bain and Company

Prompt: Your client is the appliance division of a major U.S-based consumer goods company. They manufacture mainly kitchen appliances - specifically microwaves, air fryers, stovetops, and dishwashers. Their revenue was \$500M in 2024. In the Q4 earnings call, the CEO of the appliance division wants to announce very ambitious goals but out of precaution he has hired you to verify the feasibility of these goals. He wants to announce the goals of first doubling the companies size in four years, by 2028, and second reaching an overall profit margin of 10%. Are these goals feasible? And If so, what should he do to realize them?

Clarifying information:

- The firm produces everything in-house and in the U.S. They have factories where they transform raw materials into their products.
- The firm has historically produced major household appliances like dishwashers but has recently started divisions for smaller appliances like the airfryer line to adapt to a changing market.

Note to the Interviewer: This cases' purpose is to test the candidate's notes' organization and quant skills. If the candidate lacks either, they will struggle throughout this case. It's recommended that the interviewer draw out the math to follow along.

Style: Candidate-Led Type: Growth Difficulty:

Qual: Easy-Medium Quant: Very Hard



Framework Guidance: The candidate could tackle this case in many ways - however, it should always somehow tie back to the market as a whole and the client's profitability given that those are the two goals from the prompt (double by 2028 with a profit margin of 10%).

If the candidate asks about market sizes, market share breakdown, market growth, or revenue breakdown by product, give them Exhibit 1 (next slide).

Profitability:

Revenue:

Quantity

 Investigate largest clients for potential upselling to increase the quantity they're purchasing

Pricing

- Compare pricing to goal of pricing strategy (which pricing strategy is being used and why?)

Costs:

Variable Costs

- What is being used to create each product and why? Could we cut costs in any segment of the value chain?

 Fixed Costs
- Are all fixed costs being utilized? Do we have a factory not being fully used or

wasted overhead?

Market:

Overall Market:

- How volatile is the market and why? What causes movements in the market? Does our market's movement correlate with any other market's movement (like residential construction)?
- Is the market growing? Is it growing equally with every type of product? Are some products growing quicker or slower than others?

Market Participants:

- How is market share divided between competition and why? What are the barriers for entry? How intense is competition? Is it cutthroat or barely noticeable and why?

Competition:

Our Client:

- What is our client's current market share and what has their historical market share been? What has caused changes in their market share?
- What is our client's competitive advantage and has it changed at all? How easy is it for competition to replicate their advantage?

Competitors to Our Client:

- Who are our client's competition and what are their advantages? Has their market share changed and why?
- What are competitors doing to adapt to changes in the market and is it replicable?



Exhibit #1

Product:	Market Share 2024	Estimated Market Share 2028	2024-2028 Market CAGR ¹ :
Microwaves	12.5%	12.5%	7.0%
Dishwashers	2.5%	10.0%	5.0%
Stovetops	5.0%	7.5%	-2.0%
Air Fryers	1.0%	10.0%	10.0%

¹⁻ CAGR = Compound Annual Growth Rate



Question 1: What will be our client's 2028 revenue by product?

The candidate requires 2024 revenue breakdown by product for this calculation, only give this information if they ask for it. The candidate should walk you through every calculation and should not be silent for long periods of time without explanation (longer than thirty seconds). Once the candidate reaches 2028 revenue, they should begin to ask about profit margin. A great candidate will notice that revenue will double by 2028, reaching the CEO's goal.

Give the candidate Exhibit 2 when they ask for the profit margins of each product.

Step 1: Identify Current Revenue by Product This is where the 2024 revenue breakdown is required. Once that data is given, the candidate should multiply each percentage by the total revenue (\$500M) given in the prompt. The candidate should arrive to \$100M for Microwaves, \$125M for Dishwashers, \$225M for Stovetops and \$50M for Air Fryers.

Required Information:

Product:	% of 2024 Revenue:
Microwaves	20.0%
Dishwashers	25.0%
Stovetops	45.0%
Air Fryers	10.0%

Step 2: Identify Current Market Size by Product The candidate should divide the 2024 Revenue Per Product by 2024 market share. For example, Microwaves has a 2024 Revenue of \$100M, this will be divided by Microwave's Market Share of 12.5%. The candidate should reach the following: \$800M for Microwaves, \$5B for Dishwashers, \$4.5B for Stovetops, \$5B for Air Fryers.

Step 3: Identify 2028 Market Size by Product

Step 4: Identify 2028 Revenue by Product This is the hardest part of the case. The candidate should multiply 2024 Market Sizes per product by 1 + the respective CAGR for each product. For example, Microwaves' 2024 Market Share is \$800M. This will be multiplied by 1.07⁴. The candidate should reach: ~\$1B for Microwaves, ~\$6B for Dishwashers, ~\$4B for Stovetops, ~\$7B for Air Fryers.

For the last step, the candidate should multiply 2028 Market Sizes by Estimated Market Share in 2028. For example, Microwaves would be ~\$1B multiplied by 12.5%. The candidate should reach the 2028 revenue on the right of this textbox under "Final Answer".

Final Answer:

Product:	2028 Revenue:
Microwaves	~\$125M
Dishwashers	~\$600M
Stovetops	~\$300M
Air Fryers	~\$700M



Exhibit #2

Product:	% of 2024 Revenue:	2024 Gross Profit Margin ¹ :
Microwaves	\$100,000,000	10.0%
Dishwashers	\$125,000,000	-5.0%
Stovetops	\$225,000,000	0.0%
Air Fryers	\$50,000,000	12.5%

¹⁻ Gross Profit Margins are expected to stay the same for 2028



Question 2: Given Exhibit 2, What will our client's gross margin be for 2028?

The candidate must notice the footnote on Exhibit 2 telling them that Gross Margins are identical for 2024 and 2028. Without that, they cannot perform these calculations because they do not have gross margins for 2028. Once calculated, give the candidate Question 3.

Step 1: Multiply Revenue by Gross Margin

Step 2: Find Total

Gross Profit

The candidate should multiply each respective product's 2028 revenue by its margin. For example, Microwaves 2028 revenue is ~\$125M and its gross profit margin is 10%. The candidate should reach the following: \$12.5M for Microwaves, -\$30M for Dishwashers, \$0 for Stovetops, \$87.5M for Air Fryers.

The candidate should total each products respective 2028 gross profit to reach a total gross profit of \sim \$70M.

Required Information:

Product:	2028 Revenue	2028 Gross Profit:
Microwaves	~\$125M	10.0%
Dishwashers	~\$600M	-5.0%
Stovetops	~\$300M	0.0%
Air Fryers	~\$700M	12.5%

Step 3: Find Total Revenue

The candidate should total each product's 2028 revenue and reach ~\$1.725B total.

Step 4: Divide Total Gross Profit by Total Revenue

To find overall gross profit margin, the candidate should divide the total gross profit of ~\$70M by the total revenue of \$1.725B to reach a gross profit margin of about 4%. The candidate should immediately notice, maybe before calculating, that this does not reach the CEO's desired margin goals.

Final Answer:

Total Gross Profit: ~\$70,000,000

Total Revenue: ~\$1,725,000,000

Gross Profit Margin: ~4%



Applying Appliances

Question 3: Given all that we've calculated so far, the CEO's goal of 10% profit margin and doubling revenue by 2028, which combination of products would be best? Should the company still deliver all four products or eliminate one or two products?

Once the candidate has chosen one of the three possibilities, move onto the final recommendation.

Scenario Comparison:	All 4 Products:	Removal of Dishwashers:	Removal of Dishwashers and Stovetops:
Total Gross Profit:	\$70,000,000	\$100,000,000	\$100,000,000
Total Revenue:	\$1,725,000,000	\$1,425,000,000	\$825,000,000
Gross Profit Margin:	4%	7%	12%



The candidate should <u>not</u> recommend the maintenance of all four products, while it does reach the CEO's doubling goal it is the farthest from the profit margin goal.



The candidate could recommend the removal of only dishwashers since it reaches the CEO's goal of doubling by 2028 by a long shot while also getting closer to the 10% profit margin goal.



The candidate could recommend the removal of both dishwashers and stovetops since it reaches the profit margin goal of 10%, even if it doesn't reach the revenue goal.



Applying Appliances

Interviewer Guidance: This case is built to cause either recommendation: a recommendation of the removal of dishwashers or the removal of dishwashers and stove tops. Either recommendation is perfectly acceptable as long as the candidate can justify it.

Recommendation Example 1:

- Question: We were hired to test the feasibility of our client's division doubling in four years and reaching 10% overall gross profit margin.
- Answer: We recommend the removal of the dishwasher line of products. Using expected market share and the CAGR for each product line, we were able to estimate that with the removal of the dishwasher line, you can reach \$1.4B revenue and a 7% profit margin giving you a very strong control on the market while being just shy of your profit margin goal.
- Risks: Given we are only calculating gross profit, the biggest risk is the maintenance of stovetops and exclusion of other operational costs. Stovetops breaks even in gross profit but could turn red after other operational costs. Our 7% calculation will also be pulled down by other costs on the income statement since it's only gross profit.
- Next Steps: We recommend the next steps of investigating the costs of stovetops to ensure profitability as well as comparing our estimates using all costs instead of just gross margins to ensure complete profitability.

Recommendation Example 2:

- Question: Our client hired us to test the feasibility of their goal of doubling by 2028 and reaching a 10% overall profit margin.
- Answer: We recommend the removal of the dishwasher and stove top line of products. Using the market CAGRs for each product and estimated market share, we calculated that, after removing dishwashers and stove tops, you will be able to reach \$825M revenue and \$100M gross profit accomplishing your goal of a 10% overall profit margin.
- Risks: The main risk we foresee is a loss of market control cutting off these two products will sever almost half of total foreseen revenue which could greenlight competition to fil the gap in the market. With the removal of two large product lines, we foresee mass layoffs which could also harm your public image.
- Next Steps: Next steps are to investigate how competition would respond
 to cutting off half of our product lines and to research cross-training our
 employees to prevent mass layoffs.



Case #13

Taylor's New Era

Reviewed by Two Consultants from Alvarez and Marsal

Prompt: Your client is Taylor Swift, the most popular singer/songwriter globally. She has reached out to you for help regarding her Eras Tour. She has just finished a 50 week long domestic Eras Tour covering almost every major city in the United States and wants to know what her next move should be. She has decided that she wants to continue the tour but does not know where to go next so her question to you is, should she add an extension to her domestic tour or should she reach out and begin an international tour?

Clarifying information:

- For sake of this case, we are only measuring profit from ticket sales and merch sales at the concerts. The increase in streaming of her music is immaterial to this case.
- Taylor's goal for this case is to maximize profit while delivering the best quality performance to her fans as possible.
- If the candidate asks about number of shows, length of either tour, total weeks, etc that is all on the slide after the next.

Note to the Interviewer: This case is a classic profitability case in disguise with a few extra steps. It is built to test candidate's ability to measure profit in a non-traditional industry.

Style: Candidate-Led Type: Growth Strategy Difficulty:

> Qual: Medium Quant: Hard



Framework Guidance: Hopefully the candidate asked what the goal for these tours are after the prompt and learned that Swift is looking to maximize profit. Knowing this, the candidate should proceed like any other profitability case with either only a profitability breakdown or a profitability breakdown and another bucket or two about external factors. **Move onto the next slide after the candidate asks about potential revenue**.

Profitability:

Both Domestic and International

Revenue:

Quantity

- What additional items could we sell? Could we offer tiered tickets or more merch options or non-concert perks like a backstage pass?

Pricing

- What is our pricing strategy for all offerings and why?

Costs:

Variable Costs

- Labor costs, commission costs, COGS for merch, SG&A for merch.

Fixed Costs

- Equipment, Transportation, Rent, Venue Fees, Overhead Labor

Taylor Swift (Company):

Overall Market:

- Is the performing arts industry growing or shrinking to their pre-pandemic industry size? What is driving industry change?
- What are industry norms like set time, opening length, set list length, volume, production, etc?

Market Participants:

- Are we planning concerts that conflict with other artists? How could we minimize conflict of fanbases to maximize utilization rate of each stadium?
- What changes about competition and the customers between domestic and international stages?

Customers:

Domestic Fans:

 If possible, could we use the previous domestic concerts' data to make predictions about the extension?

International Fans:

- What spending behaviors are different for international fans? Do they buy more or less merch and if so how could we adjust to maximize profit?
- How do international audiences purchase tickets and could we remove middlemen?
- Do we need to adjust pricing strategies to fit different audiences?



Question 1: Calculate the profitability of tickets for both international and domestic tours in both ticket sales and merch sales. We have some data from Swift's team and they may have more upon request: They expect the average stadium size in the Domestic tour to seat 60,000 people and for the international tour, they expect the average stadium size to seat 50,000 people. Swift will perform 3 shows per week and will perform for 40 weeks for the Domestic Extension and 70 for the International tour. Lastly, 60% of Domestic fans and 40% of international fans buy merch. Hint: Calculate Tickets Profitability first before Merch profitability

All Available Data	Domestic:	International
Average Stadium Size:	60,000	50,000
Stadium Utilization Rate:	90.0%	95.0%
Shows Per Week:	3	3
Total Weeks of Tour:	40	70
Average Ticket Price:	\$225.00	\$325.00
Average Merch Spend:	\$125	\$100
% of Fans who Buy Merch:	60.0%	40.0%
Ticket Profit Margin:	85%	80.0%
Merch Profit Margin:	40.0%	25.0%

Interviewer Guidance: All data necessary to calculate profitability is available. <u>Do not give the candidate any data (other than in the question) unless</u> they explicitly ask for it - this part of the case is a test on if they will know what data to ask for. The candidate does not need to guesstimate any statistic since it's all available. <u>Ticket Profitability Calculation is available on the next slide and Merch Profitability Calculation is available on the slide after.</u>



Question 1: Calculate the profitability of tickets for both international and domestic tours in both ticket sales and merch sales. We have some data from Swift's team and they may have more upon request: They expect the average stadium size in the Domestic tour to seat 60,000 people and for the international tour, they expect the average stadium size to seat 50,000 people. Swift will perform 3 shows per week and will perform for 40 weeks for the Domestic Extension and 70 for the International tour. Lastly, 60% of Domestic fans and 40% of international fans buy merch. Hint: Calculate Tickets Profitability first before Merch profitability

Tickets Profitability Calculation:	Domestic:	International	Explanation:
Shows Per Week:	3	3	Given
Total Weeks of Tour:	40	50	Given
Total Shows:	120	150	Shows Per Week * Total Weeks
Average Stadium Size:	60,000	50,000	Given
Utilization Rate:	90.0%	95.0%	Given
Total Tickets Available for Sale:	7,200,000	7,500,000	Average Stadium Size * Total Shows
Total Tickets Sold:	6,480,000	7,125,000	Total Tickets Available * Utilization Rate
Average Ticket Price:	\$225.00	\$325.00	Given
Ticket Revenue:	\$1,620,000,000	\$2,437,500,000	Total Tickets Sold * Average Ticket Price
Ticket Profit Margin:	85%	80.0%	Given
Ticket Profit:	\$1,377,000,000	\$1,950,000,000	Ticket Revenue * Ticket Profit Margin



Question 1: Calculate the profitability of tickets for both international and domestic tours in both ticket sales and merch sales. We have some data from Swift's team and they may have more upon request: They expect the average stadium size in the Domestic tour to seat 60,000 people and for the international tour, they expect the average stadium size to seat 50,000 people. Swift will perform 3 shows per week and will perform for 40 weeks for the Domestic Extension and 70 for the International tour. Lastly, 60% of Domestic fans and 40% of international fans buy merch. Hint: Calculate Tickets Profitability first before Merch profitability

Merch Sales Calculation:	Domestic:	International:	Explanation:
# of Tickets Sold:	7,200,000	7,500,000	From Tickets Calculation
% of Fans that buy Merch:	60.0%	40.0%	Given
# of Fans that buy Merch:	4,320,000	3,000,000	% of Fans that buy Merch * Tickets Sold
Avg Merch Spend:	\$125	\$100	Given
Total Merch Revenue:	\$540,000,000	\$300,000,000	# of Fans that buy Merch * Avg Merch Spend
Avg Merch Profit Margin:	40.0%	25.0%	Given
Merch Profit:	\$216,000,000	\$75,000,000	Total Merch Revenue * Avg Merch Profit Margin

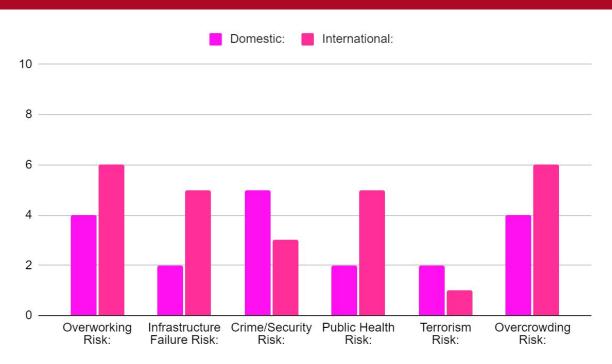
Interviewer Guidance: Total Profit for Domestic should equal ~\$1.6B and for International, ~\$2B. Once the candidate has calculated total profit for both domestic and international in ticket and merch, ask them to summarize their calculations so far and ask where they want to go from here.

When they ask about risks or potential problems with the tour, ask them Question #2 and give them Exhibit #1.



Exhibit #1

- Overworking Risk The risk of Swift's potential failure to perform at peak ability because of fatigue and exhaustion
- Infrastructure Failure Risk -The risk of stage collapsing, lights failing, microphone failing, etc.
- Crime/Security Risk The risk of theft, bodily harm to fans, bodily harm to Swift herself, etc.
- Public Health Risk Risk of spreading or being infected by a current local outbreak.
- Terrorism Risk Risk of a major terrorist event happening at the event
- Overcrowding Risk Risk of crowd crushes or crowd rushes harming either Swift or her fans.



Risks (Higher Rating = Higher Likelihood):



Question 2: How does the risk assessment in Exhibit 1 affect your decision calculus in determining if you should recommend a domestic extension or an international tour and what do you think could be driving the difference in risks? Once the candidate answers Question 2, ask them Question 3.

Domestic

Lower Risk:

- A domestic tour is generally lower risk compared to the International tour other than Crime/Security and Terrorism risk most likely due to Swift's familiarity with domestic infrastructure, people, and facilities. It seems that a Domestic extension is a lower risk, lower reward option.
- Crime/Security Risk and Terrorism risk is much higher in the Domestic tour than the international tour potentially due to the U.S's higher amount of gun violence per capita and higher amount of mass shootings as compared to other countries.

International

Higher Risk:

- An international tour is generally higher risk compared to the Domestic extension other than Crime/Security and Terrorism Risk. It could be argued that these risks are heightened due to the extended length of the international tour and Swift's less familiarity with international business partners, facilities or infrastructure. It seems that the International tour is a higher risk, higher reward option.
- While the International tour does beat out the Domestic tour on Crime/Security and Terror risks, the margin for Terror risks isn't high and the risk of overcrowding could cause equal if not worse bodily harm.

Interviewer Guidance: Great candidates would note how risks affect more than just the risk itself e.g how signs of being overworked could affect Swift's brand image or how failing infrastructure could affect profitability.



Question 3: How could Taylor Swift mitigate each risk?

Overworking Risk

Potential Risk Mitigations can be organized pre, during and post show: a pre-show mitigant could be a physical maintenance routine where Swift is taken care of by a personal trainer and physician. During-Show could be ensuring proper AC flow to Swift on stage, creation of intermissions and using openers at concerts. Post-Show could be exhaustion-removal methods like ice baths and a stretching routine by a personal trainer.

Infrastructure Risk

Swift could either have her own supplier company giving her full control of infrastructure or she could rely on a company she does not own. If she relies on an external supplier, she could create an inspection and stress test condition list for the supplier and their infrastructure. To ensure these conditions are met, she could also hire an inspection team that arrives before her to the stage and conducts an independent assessment of the infrastructure.

Interviewer Guidance: The two above answers are only examples of what a candidate could answer with - they should give similar answers to each of the five risks, Overworking Risk, Infrastructure Risk, Crime/Security Risk, Public Health Risk, Terrorism Risk, and Overcrowding Risk. This question should take more time than a typical brainstorming question since it's the candidate's opportunity to show off their creativity. Once they've given mitigants for each of the five risks. Move onto the final recommendation.



Question 4: 13 Management, Taylor Swift's management company, is calling and wants to hear what your decision is - what are you telling them?

Interviewer Guidance: While the Domestic tour does have significantly less profit than the international tour, it could still be justified because of its lower risks. Because of that, <u>either option is acceptable</u> as long as it's justified appropriately.

Recommendation Example 1:

- Question: Taylor Swift hired us to help her decide between a Domestic extension of her Fras Tour or a new International Tour.
- Answer: We recommend an Extension to the Domestic Tour. The Domestic Tour will bring in ~\$1.6B of profit, while \$400M less than predicted for the International tour, it comes with much less risks such as half of the terrorism risk, two thirds the risk of overworking Swift, less than half the risk of infrastructure failure, and two thirds the risk of an uncontrolled crowd. All of which serve to protect Swift and the fanbase while still allowing for very meaningful profit.
- Risks: The major risk that comes with a Domestic tour is the opportunity cost of not performing an international tour and potential backlash from international fans who may not get to experience a concert.
- Next Steps: We recommend looking into enhanced security measures at her concerts to combat the higher risk of Crime and Terrorism at domestic concerts.

Recommendation Example 2:

- Question: We were hired to determine to help choose between a Domestic Eras Tour extension or an International tour.
- Answer: We recommend the International Tour. The international tour is predicted to bring in ~\$2B of profit as compared to the Domestic tour which is only a ~\$1.6B profit. Majority of this profit comes from ticket sales with International tickets selling at much higher prices per ticket and with each stadium performed in having a higher utilization rate.
- Risks: The international tour does face higher risks than the domestic extension. Out of 6 categories, it sees higher risks in 4 of them only beating out Domestic in Crime/Security and Terrorism protection. However, these risks are easily surmountable and we'd be happy to work with you on ways to minimize them.
- Next Steps: We recommend looking into ensuring that Swift is not overworked by potentially minimizing shows per week or shortening each show. Additionally, we'd recommend more inspections of facilities before performances to prevent failure and ensure crowd control.

