The University of Texas at Austin

McCOMBS Texas MBA

McCombs GCG 2017-2018 Casebook

Editor's Note

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First Years:

The McCombs Graduate Consulting Group (GCG) is excited to present the 2017-2018 Casebook! This edition includes 16 different cases spanning a variety of industries and case types, featuring a mix of cases written by both your fellow Second Years and outside sources. Additionally, the casebook includes an overview of eight of the major consultancies immediately following this note. We have also created a standardized rubric to help guide feedback across six major dimensions of the case interview.

All cases are rated on a scale of 1-5 for both quantitative and qualitative difficulty. As a general rule, cases with an average difficulty of 2-4 are typically representative of first round interviews, while cases with an average difficulty of 3.5-5 are typically representative of second round interviews. We encourage you to practice a wide variety of cases with multiple peers during your preparation.

As always, feel free to reach out to any of your peers on the GCG Leadership Team or other Second Years if you have questions or concerns as your proceed through your case prep.

Happy casing!

Nick West and Laurel Fitzgerald

Overview of Firms

A.T. Kearney

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Firm Overview	• Regional Staffing; Mon – Thurs Travel; international engagements are encouraged • Generalist model; specialization not expected until after first year as a manager • Based in Chicago, IL; 3,800 employees in 62 offices globally	
Interview Format	First Round: • Case (Manager) – 45 min • Behavioral (Partner/Principal) – 45 min	Second Round: • One 90 minute case interview • 60 min prep; 30 min present (Partners) • Two behavioral interviews (Partners)
Interview Details	• Be knowledgeable of the firm (vision, different divisions, your fit) • Be willing to be coached during the case • Strong focus on asking the right questions during the case • The math must be clear and accurate; insights are typically derived from the qualitative analysis	
MBA Career Progression	1. Associate (2.5 years average) 2. Manager (3-5 years average) 3. Principal (varies) 4. Partner	

Bain & Company

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Firm Overview	• Regional Staffing; push for Tuesday-Thursday travel when client-approved • Generalist model; specialization not expected in first 5 years • Based in Boston, MA; 5,700 employees in 54 offices globally	
Interview Format	First Round: • Two 45 minute interviews • ~5 minutes behavioral questions each • 30-40 minutes for case	Second Round: • 45 minute case • 45 minute behavioral • 2 hour written case (1 hour prep, 1 hour read out)
Interview Details	• Tend to be graphics heavy • Will often provide immaterial data to force candidates to sift through information • Delivery of case matters as much as actual case analysis/conclusion	
MBA Career Progression	1. Consultant 2. Case Team Leader 3. Manager 4. Principal 5. Partner	

Boston Consulting Group

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Firm Overview	• Generalist model; specialization not expected in first 4 years • Based in Boston, MA; 6,200 consultants (12,000 total staff) in 85 offices globally	
Interview Format	First Round: • Two 45 minute interviews • ~5 minutes behavioral questions each • 30-40 minutes for case	Second Round: • Two 45 minute interviews • ~5 minutes behavioral questions each • 30-40 minutes for case
Interview Details	• Usually at least one exhibit per case; fairly intuitive/ understandable • Testing on creativity to a larger degree than most other firms	
MBA Career Progression	1. Consultant (2yrs) 2. Project Leader (2yrs) 3. Principal (3-4yrs) 4. Partner	

Deloitte Consulting (S&O)

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Firm Overview	• National Staffing; network within the firm to get staffed on projects of interest • Generalist model for first 1-2 years, then specialize in industry or service line • Headquarters in New York, NY; 30,000 consultants with offices worldwide	
Interview Format	First Round: • 30 minute behavioral • 30 minute case	Second Round: • 2 45 minute cases • 90 minute group case
Interview Details	• Cases are interviewer led • Expect specific questions from your interviewer and several charts/pieces of data	
MBA Career Progression	1. Business Analyst & Consultant (Undergrad) 2. Summer Associate (MBA Internship) 3. Senior Consultant 4. Manager 5. Senior Manager 6. Principal, Partner, Director	

McKinsey & Company

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Firm Overview	• National Staffing; push for Tuesday-Thursday travel when client-approved • Generalist model, but can also specialize earlier if desired • 11000 employees in 110 offices globally	
Interview Format	First Round: • Two 45 minute interviews • 10 -15 minutes behavioral questions each • 30 minutes for case	Second Round: • 3 Interviews • 30-40 minute case, 10-15 minute behavioral
Interview Details	• Will go very in-depth into one very specific bullet point on your resume for the behavioral portion • Interviewer-led with very distinct phases.	
MBA Career Progression	1. Associate 2. Engagement Manager 3. Associate Principal 4. Partner	

KPMG Strategy

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Firm Overview	• Generalist model; specialization not expected in first 3-5 years • 300 strategy consultants nationwide as of June 2016 • 180,000 employees firm-wide, with 37% of business from consulting • Flexible on location choice; national staffing model	
Interview Format	First Round: • Two 45 minute interviews • ~5 minutes behavioral questions each • 30-40 minutes for case	Second Round: • Three 45 minute interviews • 2 case interviews (30-40 min. cases) • 1 behavioral interview
Interview Details	• Exhibits are typically provided orally to test information organization • Strong focus on well-organized recommendations • Will often ask follow-up questions to recommendations	
MBA Career Progression	1. Summer Associate (MBA) 2. Senior Associate (2-3 years) 3. Manager (2-3 years) 4. Director (3-5 years) 5. Principal/Partner	

PricewaterhouseCoopers (PwC)

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Firm Overview	• Headquartered in London, UK; 54,000 advisory employees in 776 offices globally • National Staffing with travel Mon – Thursday • Industry/Function specialization model;	
Interview Format	First Round: • Two 45 minute interviews • 1 Behavioral; 1 Case • 30-40 minutes for case	Second Round: • Function Specific Interviews • Up to 3 Behavioral Interviews • 45 minutes
Interview Details	• Generally provide case data 24 hours in advance • An hour will be given the day of the interview to prep case notes • Will provide a list of questions to consider when analyzing the case • Often provide immaterial data to force candidates to sift through information	
MBA Career Progression	1. Associate (Pre – MBA) 2. Senior Associate (MBA) 3. Manager 4. Director 5. Partner	

Strategy&

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Firm Overview	• Regional Staffing with some national/global optionality • Specialization required, but movement within industries/functions possible • Based in New York City; ~3000 employees in 57 offices globally	
Interview Format	First Round: • Two 45 minute case interviews w/ managers • ~5 minutes behavioral questions each • 30-40 minutes for case	Final Round: • Two 45 minute case interviews w/ Partners • ~5 minutes behavioral questions each • 30-40 minutes for case
Interview Details	• First round cases are typically shorter, with some exhibits and calculations • Interviewers pay attention to communication as well as performance on the case • An interview buddy will be assigned after passing the first round • Second round cases last longer and more exhibits can be expected • Depending on the partner, the interview may be a 45 minute conversation	
MBA Career Progression	1. Senior Associate (MBA) 2. Manager 3. Director 4. Partner	

Cases

Feedback Rubric

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	1	3	5
Structure	• Lack of clear framework or completely irrelevant areas of focus.	• Generally relevant framework with 1-2 missing pieces; generic/cookie-cutter framework. • Generally follows framework for analysis.	• Detailed, framework with **no major holes and several case-specific areas of focus**. • Systematically walks through framework, constantly **referring back to it throughout** the case.
Written	• Notes are difficult to read and lack basic organization; generally non-linear flow of information.	• Topics were generally legible and appropriately segmented. Some discontinuity between areas of analysis.	• **Neatly organized notes, appearing like slides or spreadsheets where appropriate**. Related topics were addressed in a cogent sequence in the notes.
Arithmetic	• Consistent math mistakes and inability to recover from them. • lazy with rounding or unwilling to engage in all but the easiest calculations.	• A few minor math mistakes, but generally able to recover from them. Adequate speed on calculation.	• **One or zero math mistakes**, with periodic double-checking of numbers. Fast calculations, with **mental math used for easier figures**.
Communication	• Candidate fails to clearly answer questions, is consistently unable to lead through case, and is often confrontational or defensive.	• Answers are mostly direct (with one or two unclear responses) and candidate requires only some periodic nudging to move case along.	• Candidate uses an **answer-first style**, effectively leads case when appropriate, and **delivers content in a consistently client-friendly manner.**
Insights	• Simply repeats information provide without "connecting any dots." Provides only a few basic of insights.	• Discusses the major insights and works to incorporate them periodically into the conversation.	• **Addresses all major insights and provides multiple higher-order points** to deliver more detailed or creative recommendations.
Recommendation	• When a recommendation is allowed, little or no advice or analysis provided in summary. • Simply regurgitates information from case, too brief, or too long-winded.	• Provides an adequate recommendation at some point during the summary, integrating some information from the case as evidence.	• **Recommendation is presented up-front** during the summary, **synthesizing findings, risks, and next steps** where appropriate. • **Concise**, with key points written down and presented to interviewer. • Suggests additional work to sell when appropriate.

Total possible score range: 6-30

Case List

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Case #	Name	Type	Difficulty (1-5)		Page Number
			Quantitative	Qualitative	
#1	Mattel	Profitability	2	2	15
#2	Regional Electric Utility	Profitability	3	2	21
#3	Grocery Deli Company	Profitability	2	2	31
#4	Airline Food	Investment	4	2	37
#5	Chem Co.	Profitability	2	3	42
#6	LaLa Media	Profitability	3	3	48
#7	Sugar Cereal	Strategy Evaluation	2	4	56
#8	Travel IT Disruption	Industry Evaluation	1	5	65
#9	Admedi Co.	Growth Evaluation	3	4	71
#10	S.A. Shipping	Operations Evaluation	3	3	78
#11	JCL Carpets	Investment	3	4	83
#12	Bombardier CS300	Profitability	3	5	92
#13	Polyethylene Resin	Pricing	2	4	100
#14	I-35 IHOP	Valuation	5	4	107
#15	MIMO Technology	Valuation	5	5	117
#16	Fast Food Loyalty	Profitability	2	4	128

Case #1: Mattel

Type: Profitability
Difficulty: 2/2
Style: Interviewee-led

Case #1: Mattel (1)

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Case Prompt:

Mattel is experiencing a decline in profitability. They've brought you in to find out why and how to fix it.

Facts (provide only upon request):

- Decline has occurred over past 12 months
- There has been a 10% decline in revenue
- If specific numbers are requested, show Exhibit 1 (only cost info is in Exhibit 1)
- There are five divisions of revenue; read out information from Exhibit 2, but **do not show**
- Assume variable costs are steady
- Price is constant on per doll basis ($20 each)
- Price has been constant on per board game, early childhood, and educational game basis ($30/ each)

Key Framework Components:

The framework should center around profit. Once the candidate has focused on a revenue decline in the Barbie segment, they should seek to determine what is driving the decline (P vs. Q)

Case #1: Mattel (2)

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Guidance:

Upon determining that quantity is the driving factor, if candidate asks why, have him brainstorm reasons. A good candidate will segment this brainstorm into internal and external reasons. After you have asked the candidate for a number of hypothetical reasons, if he does not correctly guess, tell him that a recent documentary released in January 2015 had caused a great deal of negative press. This documentary implied that buying young girls the traditional Barbie Dolls played a role in discouraging them from pursuing traditionally less 'feminine' career paths (STEM, for example) and helped cement the idea that women need to meet certain societal criteria (beauty, body features, skin color, etc.).

Brainstorm:

At this point, ask the interviewee to brainstorm additional ways to recover lost sales

Case #1: Mattel (3)

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Recommendation:

A good candidate will suggest:

- New product lines ('Engineer Barbie', 'Scientist Barbie', etc.)
- New Marketing Campaign to change brand image
- Public contributions to causes that promote women in the workplace (scholarships, non-profits, etc.)

Feedback

- A strong candidate should be able to quickly read Exhibit 1 and clearly articulate what the cause is
- Effective organization when writing down Exhibit 2 will make solving the case easier
- A candidate may address concerns with SG&A, but should recognize that revenue is the primary driver of profit decline

Case #1: Mattel (4)

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Exhibit 1:		
	2014	2015
Revenue	6,000,000	5,400,000
COGS	3,000,000	2,850,000
SG&A	2,400,000	2,450,000
Operating Income	600,000	100,000

Case #1: Mattel (5)

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Exhibit 2 – Revenue by Division (DO NOT SHOW):						
	Board Games	Early Childhood	Educational	Barbie Dolls	Other	**Total**
2014 Revenue	1,200,000	1,500,000	900,000	1,800,000	600,000	**6,000,000**
2015 Revenue	1,150,000	1,450,000	900,000	1,300,000	600,000	**5,400,000**

Case #2: Regional Electric Utility

Type: Profitability
Difficulty: 3/2
Style: Interviewee-led

Case #2: Regional Electric Utility (1)

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Case Prompt:

Our client is a large regional electric utility company that has seen negative earnings trend in the last 12 months. They think that part of this relates to the write down of a significant amount of bad debt in the past year. They operate in a state similar to Texas where utilities market is open and competitive. There are approximately 30 players in the market, and consumers can choose the provider that they want. Contracts are generally 6-12 months, after the end of the contract customers can change providers with little or no costs.

1) The client wants to identify the root cause of their loss of profitability
2) What actions should they take to improve profitability.

The company does not produce the electricity; they purchase it on the open market and sell it to customers

Key Framework Components:

Profit should be a central part of the framework. Other areas to consider include customers (segments), market data, and regulations.

Case #2: Regional Electric Utility (2)

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Facts (to be given upon request):

- Revenue has been consistent over the past 12 months. The company has very little ability to increase prices as it is a very competitive market and customers make choices on price. There are a lot of rules in place as far as incentives you can offer and differentiation the company can make.
- They have 1M customers, which is largely unchanged in number from prior years, and the kilowatt usage by these customers is largely unchanged.
- Although the # of customers is consistent, there are large amounts of turnover in customers each year as their contracts expire. Some customers leave for other providers, and other customers are obtained.
- Deposits are required to start service: The largest deposit currently in the market is $400. The deposit we require from all customers is $100.

Case #2: Regional Electric Utility (3)

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Costs (to be given upon request):

The largest expense is Cost of Goods Sold. This consists of electricity bought by our traders. This division has been profitable in the last year.
Other costs:

- Cost to serve (billing, etc.)
- Variable (Service Calls)
- Cost to cut-off service
- **Debt Collection**

Analysis:

Debt collection is the primary focus of the case. If the candidate tries to pursue a different topic in further detail, make it clear to her that there is no further detail available for the first three items. Once debt collection is the focus of the discussion, provide her with the information on the next page.

Case #2: Regional Electric Utility (4)

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Debt Collection:

This is the life cycle of a "bad debt" customer:

1. Customer sign-up – they pay the $100 deposit
2. There is a customer acquisition cost (marketing etc.)
3. The customer pays per kilowatt hour, and they receive a monthly bill

If a customer does not pay his bill, by law their electricity cannot be cut off until it is 60 days past due. That means the company has to provide electricity for 60 days. Cutting off electricity costs the company $75.

The company will try to collect on the bill. It costs $50 to collect, and they are able to recover 50% of accounts on average.

Average period of service is 24 months; assume "low" stops paying after 22 months

Analysis:

If the candidate asks, the only thing the company can look at by law is the customer's credit profile; no customer may be turned down for service. At this point, show the candidate Exhibit 1.

Case #2: Regional Electric Utility (5)

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Analysis:

Tell the candidate to focus on analyzing the “Low” segment, with the goal of arriving at a customer lifetime value. Inform her that the acquisition cost is $50 on average, with a cost to serve of $7 per month. Other facts to provide:

- Average electricity usage: 1,000 KW/month
- $0.10 per KW/ hour is the price to them; $0.09 per KW/ hour is our cost
- Cost to cut off service: $75
- Collection costs: $50 dollars per account, with a 50% success rate

CLV Calculation:

Once the candidate has calculated the CLV for Low, show her Exhibit 2

Case #2: Regional Electric Utility (6)

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Profitability Improvement and Final Recommendation:

Ask the candidate to brainstorm ways to increase profitability as well as the risks of each. Possible ideas include:

- Require higher deposits for lower credit ratings
- Focus marketing toward higher credit rating customers
- Make bills easier to pay through online tools
- Automate billing process

Lastly, ask the candidate to wrap up with a final recommendation.

Feedback

A strong candidate should be able to determine the CLV with little or no assistance. She also will be effective at brainstorming profitability improvements while considering the risks and limitations of each.

Case #2: Regional Electric Utility (7)

Exhibit 1 (Customer Segmentation):	
Credit rating	**% of total**
Strong	30%
Medium	20%
Low	20%
Very Low	30%

Case #2: Regional Electric Utility (8)

Exhibit 2 (Customer Segmentation and CLV):		
Credit rating	**% of total**	**CLV**
Strong	30%	$300
Medium	20%	$125
Low	20%	-$103
Very Low	30%	-$350

Case #2: Regional Electric Utility (9)

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Exhibit 2 Math (DO NOT SHOW):

"Low" revenues: 22 months * $100 = $2,200
"Low" energy costs: 24 months * $90 = $2,160
Total service costs: 24* $7 = $168
$50 acquisition cost
$75 termination cost

Collections calculation: (2*$100* 50% success) - $50 = $50
$100 gain from deposit

Total "Low" value: $2200 - 2160 -168 – 50 – 75 + 50 + 100 = -$103

Case #3: Grocery Deli Company

Type: Profitability
Difficulty: 2/2
Style: Interviewee-led

Case #3: Grocery Deli Company (1)

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Case Prompt:

A large supermarket chain has seen declining profits as competition has increased from low cost grocery chains (Wal-Mart etc.). This competition has driven down profits in their grocery department. They want to find ways to improve profitability in their deli department which has seen flat profits for the last several years.

Facts:

- The deli department consists of two divisions: Deli Meats and Prepared Meals
- If the interviewee asks for revenue information on either, provide her with Exhibit 1
- Once the candidate asks about the increase in revenue, tell her that two new products were introduced two years ago into the prepared meals division: chicken wings and prepared sandwiches
- Competition: they are facing significant competition in their groceries division from Walmart, hurting overall profitability. Thus, they hope to use the deli division to improve profits

Case #3: Grocery Deli Company (2)

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Chicken Wings and Sandwiches:

Further information to provide the candidate regarding chicken wings and sandwiches:

- Chicken wings did not require significant changes in equipment or man power
- Sandwiches are made to order (similarly to Subway); they are made for 2 hours at lunch and 2 hours at dinner
- If asked about costs, tell the candidate the prices, costs, average number of units sold in Exhibit 2 **(do not show them the table)**

Analysis:

Given the information in Exhibit 2, the candidate should be able to calculate the following:

- BBQ: $80 revenue per day, $40 COGS per day, and $40 contribution per day
- Sandwiches: $80 revenue per day, $120 COGS per day, and -$40 contribution per day

The more effective the candidate is at organizing information from Exhibit 2, the easier these calculations will be

Case #3: Grocery Deli Company (3)

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Recommendation:

Possible suggestions for a recommendation could include:

- Stop producing sandwiches
- Work to understand sandwich price elasticity and increase prices if inelastic demand
- Limit the time sandwiches are offered
- Batch prepare sandwiches, rather than prep to order

Feedback

Segmenting revenue is the key to solving the case. Once the interview has the basic information, it is a straight forward calculation to uncover that the sandwiches are losing money. Other reasonable areas for a candidate to explore are company, customer segments, competitor information

Case #3: Grocery Deli Company (4)

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Exhibit 1:				
		2012	**2013**	**2014**
Deli meats	**Revenue**	$260M	$255M	$260M
	COGS	160	155	160
Prepared foods	**Revenue**	360	400	440
	COGS	190	230	270
Total	**Revenue**	620	655	700
	COGS	350	385	430
	Gross Profit	270	270	270

Case #3: Grocery Deli Company (5)

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Contribution Calculation (DO NOT SHOW):

BBQ Wings		
Price	$5	For 20 pieces
Average sales/store	320	Pieces per day
Total cost	$0.10	Per piece
Prep time	15	Minutes per batch of 200
Employee Cost	$20	Per hour (fully loaded)
Revenue		Per store/day
Total COGS		Per 20 pieces
Contribution		Per 20 pieces

Sandwiches		
Price	$4	Per sandwich
Average sales/store	20	Sandwiches per day
Total material cost	$2	Per sandwich
Employee cost	$20	Per hour (fully loaded)
Dedicated hours	4	Hours per day
Revenue		Per store per day
Total COGS		Per store per day
Contribution		Per store per day

Case #4: Airline Food

Type: Investment
Difficulty: 4/2
Style: Interviewee-led

Case #4: Airline Food (1)

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Case Prompt:

Our client provides catering services to major airlines at Houston Intercontinental Airport. They are considering investing in new refrigerating equipment that will lead to an overall reduction of 10% of their variable costs. We have been hired to determine if they should invest in the new equipment.

Facts (provide upon request):

- New equipment will cost $10M
- They currently charge $10 per meal to the airline, with average COGS of $5 per meal (including spoilage, labor, and manufacturing equipment)
- The company requires a three year, undiscounted payback

Key Framework Components:

The framework should center around a cost-benefit analysis to assess if the investment creates value. Relevant considerations would include investment, revenue, costs, competition, product and market

Case #4: Airline Food (2)

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Additional Guidance:

- Market/competition: our client currently has a 40% market share at HIA, with the remainder split between three other major players.
- Customers sign 5 year contracts, making new customer acquisition limited
- Air traffic through Houston has been steady for the past 5 years
- Product: airline food is generally seen as a commodity, however we may be able to capture slightly more market share by providing a fresher product through improved refrigeration
- Market size: instruct the candidate to the market through his own estimation
- The investment would reduce COGS by 10%

Market Size:

Example (do not provide exact numbers to candidate, but suggest figures that make investment decision relatively close):

1.Total # of runways x departures per hour per runway x hours of operation per day x average number of passengers

2 Segment on international, domestic long-haul, and domestic short-haul

3. Multiply by number of days (tell candidate to assume 360 days of full operation)

4. Multiply by market share, then revenue and COGS to find profit

Case #4: Airline Food (3)

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Example Calculation				
Market Size:				
Departure runways	Average departures per hour	Daily hours of operation	Average # of passengers per plane	**Total Passengers**
6	10	18	150	**162,000**
Profitability:				
	International long-haul	Domestic long-haul	Short-haul	
Passenger distribution	25%	50%	25%	
% of passengers consuming meals	100%	10%	0%	
Meals per day	40,500	8,100	0	48,600
Annual total	Market share (40%)	Annual Revenue	COGS	**COGS Reduction**
~17,500,000	7,000,000	$70,000,000	$35,000,000	**$3,500,000**

Case #4: Airline Food (4)

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Recommendation:

Whether or not they recommend proceeding with the investment, given the 3 year undiscounted payback requirement, will depend on their market sizing. The candidate should highlight the various sources of error in the estimation (# of passengers per plane, # of runways, mix of international fights, etc.). He also should consider that the client's customer base may be above or below average in the mix of international flights.

Feedback

There are multiple ways to generate a market sizing, but it is important the interviewee is structured and linear in his approach to this section. Moderate rounding is appropriate given the size of the numbers and the relatively large amount of math. A strong recommendation will include other ways to capitalize on the investment (e.g., consider new markets), acquiring a competitor, etc.

Case #5: Chem Co.

Type: Profitability
Difficulty: 2/3
Style: Interviewer-led

Case #5: Chem Co. (1)

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Case Prompt:

Our client, Chem Co., is a manufacturer of basic commodity chemicals, with a single-digit market share. It possesses no other competencies or capabilities other than as a chemicals manufacturer. It recently emerged from bankruptcy and has limited access to capital. The client has asked for our help to evaluate the sustainability of their business model and recommend some strategic alternatives to it.

Facts:

- Prices are cyclical and run in seven year cycles; the client is currently at the top of a pricing cycle
- Chemical X is the primary product, with 100K tons produced each year; Chemical Y is a by-product of X, at a ratio of 1.5 Y : 1.0 X
- Prices: X is $150/ton, will fall 33% within 3 years; Y is $175/ton, will fall to $100/ton in 3 years
- Variable costs: $50 for every combined ton of X and Y; this will rise to $95/ton next year
- Fixed costs are $20M per year

Case #5: Chem Co. (2)

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Question 1:

Keeping in mind that the client will not be able to endure any net losses, can the client survive the bottom of the pricing cycle in 3 years?

Analysis:

The candidate should be able to determine that the company will not survive the bottom of the pricing structure. Below is the math:

Chemical X revenue: 100K * $100 = $10M
Chemical Y revenue: 150K * $100 = $15M
Total Revenue = $25M
Variable costs: 100K * $95 = $9.5M
Fixed costs: $20M
Total costs: $29.5M
Net income: -$4.5M

Case #5: Chem Co. (3)

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Question 2:

What could have been the underlying reasons for the client's inability to survive the trough of the pricing curve a few years ago?

Analysis:

This question is designed to assess a candidate's understanding of profitability; she should break down the components of profitability and identify the underlying factors affecting the client.

Revenue factors:

- The trough of the pricing cycle is deeper (lower) than ever before
- Production volume is lower than before, thus spreading fixed costs over fewer units.

Cost Factors:

- Variable costs have increased to a greater percentage of revenue than before
- Fixed costs increased, perhaps due to outside issues (e.g., environmental issues), requiring more expensive equipment to produce the same volumes

Case #5: Chem Co. (4)

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Question 3:

Discuss the opportunity and risks associated with the two following options:

1. Acquire/move into a counter-cyclical chemicals business
2. Provide additional products/ services relevant to a key customer

Analysis:

Option 1:

- Opportunity: balance existing cyclical nature to allow for more even average pricing
- Risks and limitations: finding a purely countercyclical business is unlikely. Entering a business fast enough to avoid bankruptcy in 3 years would require an acquisition in addition to organic efforts, straining managerial resources. Lastly, an acquisition would acquire capital, which would be difficult to obtain in the current financial situation.

Option 2:

- Opportunity: leverages existing relationships to enter related areas to augment core business
- Risks and limitations: the organization has no existing skills in these areas. It would be difficult to evolve from a volume focus to a relationship/service focus. And lastly, the need to move quickly would require an acquisition, with similar financial challenges as in the other option.

Case #5: Chem Co. (5)

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Question 4:

If neither course of action is viable, what strategic options would you recommend to the client?

Analysis:

This question is designed to test a candidate's ability to develop strategic options with limited information. Strong potential answers would consider the following:

- Sell the company
- Liquidate plants and other fixed assets—essentially, perform a managed bankruptcy.
- Perform some type of profitability analysis and identify plants/assets that could be shut down to reduce fixed costs sufficiently to avoid losses in 3 years.

Case #6: LaLa Media

Type: Profitability
Difficulty: 3/3
Style: Interviewer-led

Case #6: LaLa Media (1)

The University of Texas at Austin
McCOMBS Texas MBA

Case Prompt:

Our client is a leading film and television studio. They have an in-house postproduction division which performs several services in support of their production of movies and television programs. This division has been consistently unprofitable for several quarters. The CFO has hired us to determine their strategic options for the division.

Facts:

- Postproduction is a part of the industry which is often outsourced, and our client is one of the few studios that has retained this function in-house
- The postproduction division performs three main services: dailies ("daily tasks"), mastering, and restoration. See Exhibit 1 for more detail.

Case #6: LaLa Media (2)

The University of Texas at Austin
McCOMBS Texas MBA

Question 1:

What information and data must be considered in evaluating the studio's options?

[after answer, show exhibit 1 and ask candidate her thoughts]

Analysis:

A strong answer would include the following:

- Consider if a function could cost-effectively displace outsourcers
- Whether excess capacity can be used to drive new revenue sources
- Consider evaluating performance, profitability, and volume by segment

Case #6: LaLa Media (3)

The University of Texas at Austin
McCOMBS Texas MBA

Question 2:

Given the information provided in Exhibit 2, what can you determine regarding the relative profitability of each service? [provide Exhibit 2]

Analysis:

A strong answer would include the following:

- The decrease in revenue is primarily due to a drop-off in HEM – the largest but least profitable segment of the business
- Restoration, while small, is much more profitable than other services
- The services vary in the revenue generated by each job and their profitability
- Revenue, profit, and margin can be calculated for each segment
- Restoration: $400K revenue/job, $220K profit/job, 55% margin
- HEM: $125K revenue/job, $12.5K profit/job, 10% margin
- New Theatrical Mastering: $300K revenue/job, $70K profit/job, 23% margin
- Dailies: $200K revenue/job, $80K profit/job, 40% margin

Case #6: LaLa Media (4)

The University of Texas at Austin
McCOMBS Texas MBA

Question 3:

What approach would you take to evaluate the post-production services?

Analysis:

Simply providing a list of options is insufficient; the candidate should evaluate the alternatives and have a recommended path forward. A strong response would:

- Identify the profitable growth areas for the division and then assess the opportunities and challenges of shifting the focus of the business
- The division's reputation for quality work may allow for differentiation in the Restoration segment. However, growing this segment will require new costs that most be considered
- Another option would be to divest the business, but the client would need a method for valuing the division and identifying and vetting potential buyers.

Case #6: LaLa Media (5)

The University of Texas at Austin
McCOMBS Texas MBA

Question 4:

What additional factors should be considered in a turnaround decision? A divest decision?

Analysis:

This question tests a candidate's ability to consider a broad set of implications and think about how each option may affect the client's business as a whole and the broader market. A strong answer may address:

Turnaround and grow the postproduction business:

1. Identify causes of drop-off in HEM (e.g., DVD market may be flat, or there may internal factors)
2. Pursue new customers outside the studio: compete with 3rd party vendors for other studios' work; focus on growing the Restoration business (the group could return to profitability with only two additional Restoration jobs); develop a television business (currently only focused on movies)
3. Cut costs: examine both fixed and variable costs to restore profitability

Divest the business:

1. Business could be valued through either a DCF or a multiples-approach (e.g., EBITDA), based on sale of similar businesses
2. The client would also need to consider what constitutes an appropriate buyer. Would selling to another film studio give a strategic advantage to a competitor? What impact would a divestiture have on the operations of the studio? Would exclusive use of outside vendors negatively affect quality or speed or postproduction activities?

Case #6: LaLa Media (6)

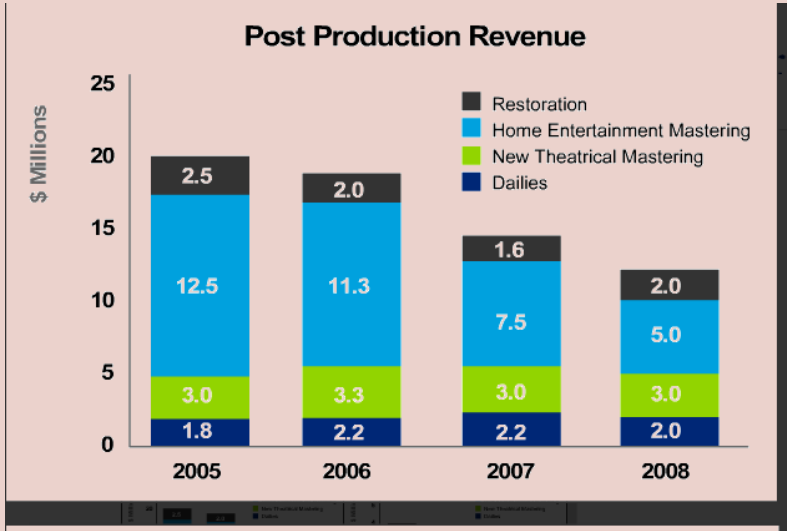
The University of Texas at Austin
McCOMBS Texas MBA

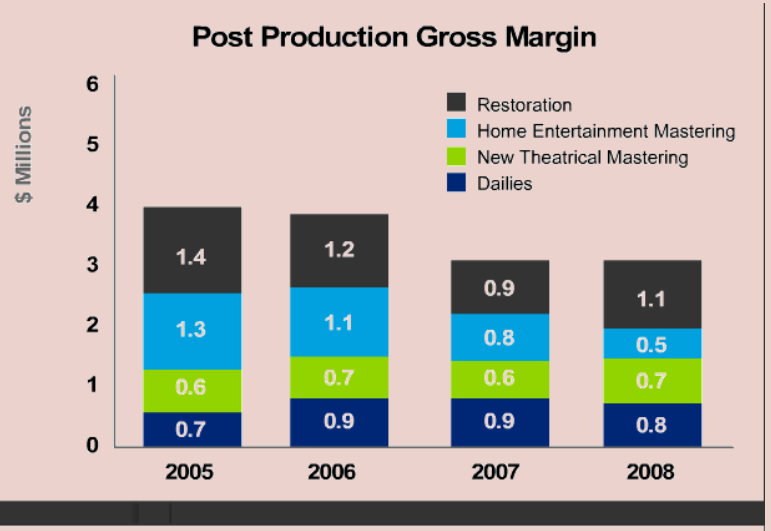
Exhibit 1:				
Service	**Description**	**Customer**	**Critical Issues for Customers**	**Current Trend**
Dailies	The facility matches the audio and video daily, roughly cuts the scenes together, and provides either DVD or online copies to producers	Active Movie Productions	Speed	Stable
Mastering	After the completion of a movie, the facility cleans up the images, corrects the color, and formats the movie for multiple media	New Production and Home Entertainment Department	Quality and Price	Decreasing
Restoration	Films are reconstructed from their original negative for released on DVD and other Media	Home Entertainment	Quality	Stable

Case #6: LaLa Media (7)

The University of Texas at Austin
McCOMBS Texas MBA

Exhibit 2:





Studio Post-Production Income Statement (000's)

	2005	2006	2007	2008
Revenue	19,700	18,750	14,300	12,000
COGS	15,690	14,885	11,110	8,900
Gross Margin	4,010	3,865	3,190	3,100
SG&A	2,500	2,500	2,500	2,500
Depreciation	1,000	1,000	1,000	1,000
Net Profit	510	365	(310)	(400)

2008 Orders

	# of Jobs
Restoration	5
Home Entertainment Mastering	40
News Theatrical Mastering	10
Total Mastering	50
Dailies	10
Net Profit	65

Case #7: Sugar Cereal

Type: Strategy Evaluation
Difficulty: 2/4
Style: Interviewee-led

Case #7: Sugar Cereal (1)

The University of Texas at Austin
McCOMBS Texas MBA

Case Prompt:

Our client, Foods Inc., sells a variety of sugar cereals traditionally distributed through grocery stores. Sales to Big M Mart, a discount chain, have been growing at 15% a year, and the chain has recently become the largest distributor of our client's products. The client has asked us to evaluate their distribution strategy given Big M Mart's growth.

Facts:

- Grocery stores generally specialize in food, selling some household goods and OTC pharmaceuticals. Conversely, discount stores, offer food alongside a wide variety of merchandise, including clothing, home electronics, and housewares.
- Discount stores focus on advertising lower prices relative to grocery stores

Key Framework Considerations

- Profitability analysis: Big M Mart vs. other channels; Competitor analysis (at Big M Mart);
- Customer
- Supply chain

Case #7: Sugar Cereal (2)

The University of Texas at Austin
McCOMBS Texas MBA

Guidance:

Push the candidate to start on revenue; once she has done so, show her Exhibit 1 and Exhibit 2.

The candidate should note that:

- top distributors have grown more important
- Big M Mart has grown faster than all others, particularly in terms of volume
- While other customers have seen both volume and sale rise, Big M Mart's sales moved in lock step with volume, indicating that sales to Big M Mart are lower margin than other stores

Additional Guidance:

Once the candidate understands how the client is doing with Big M Mart, she should look to learn about the competition's performance with Big M Mart. Once she understands to focus on market share within Big M Mart, provide her with Exhibit 3.

Upon seeing the Exhibit, she should ascertain that our client is losing share to Cereal Co. and Private Label.

Case #7: Sugar Cereal (3)

The University of Texas at Austin
McCOMBS Texas MBA

Discussion:

At this point, ask the candidate why she thinks the client may be losing business. Possible answers include lower price, product placement, promotional differences, and branding.

Once shelf space is mentioned, inform the candidate that Cereal Co. brands tend to be placed lower on the shelf than our client's.

This should lead her to realize that children are more likely to notice the lower products.

Once promotions are mentioned, tell her that some Cereal Co. brands have promo tags and advertised specials for Big M Mart customer cardholders. She should then realize this allows Cereal Co. to strategically discount prices despite maintaining retail prices.

If she asks why Cereal Co. seems to receive preferential treatment, tell the candidate that they have 50 sales representatives dedicated to the Big M Mart account, while our client has seven.

Case #7: Sugar Cereal (4)

The University of Texas at Austin
McCOMBS Texas MBA

Understanding the Customer:

Ask the candidate to brainstorm the various aspects that drive cereal purchase. Possible answers include box design, toys inside the cereals, taste, and cereal aesthetic. Push the candidate to come up with additional items after the first round of suggestions.

Tell the candidate that buyers can be segmented into two man categories. Approximately 60% of buyers are “brand loyal,” going for one main cereal, while the other 40% are “impulse” shoppers that consider nearly all cereals before them.

- If the candidate asks about price sensitivity, tell her that brand loyalists are not price sensitive at all when their favorite brand is available. However, when their desired brand is not available, they will try discounted cereals 35% of the time.
- 25% of the time during a stock out, brand loyalists will leave without a purchase
- The other 40% of the time they behave like impulse shoppers (i.e., random)

At this point, the candidate should determine that product availability is a major driver of volume at Big M Mart for cereals.

Case #7: Sugar Cereal (5)

The University of Texas at Austin
McCOMBS Texas MBA

Supply Chain Discussion:

If the candidate asks, provide her with the following information regarding the distribution to Big M Mart:

- Cereals are distributed from the factory to the distribution warehouse twice a month; the retailer then stocks shelves itself
- Our client has no direct access to in-store inventory information
- Big M Mart stores average 15% of sugar cereal brands out of stock, across all brands

The candidate should recognize that stock outs are harmful to our client since they represent lost sales, and that they also hurt Big M Mart, who loses sales 25% of the time when a brand-loyal customer walks away without buying anything.

Recommendation

Ask the candidate to provide a final recommendation. A strong ending will state the recommendation first; a possible answer might be to work more closely with Big M Mart. A first priority should be to increase resources dedicated to the store to ensure better product placement. The case should be made that stock outs for our product hurt their overall sales by roughly .75% (15% stock out * 60% brand loyal products * 25% willingness to forego purchase = 2.25%; ~1/3rd sales for our customer = .75%)

Case #7: Sugar Cereal (7)

The University of Texas at Austin
McCOMBS Texas MBA

Exhibit 1: Top 5 Distributors of Foods Inc. (Volume)				
Volume (million boxes)	**1997**	**1999**	**2001**	**5-year CAGR**
Big M Mart	65	74	113	14.7%
R.J.'s	72	81	85	4.2%
Bozo Mart	65	77	80	5.2%
Ace Grocery	46	47	64	8.8%
Shoppers Mart	26	27	28	2.0%
Total Top 5	**274**	**306**	**370**	**7.8%**
Total All	**450**	**468**	**487**	**2.0%**

Case #7: Sugar Cereal (8)

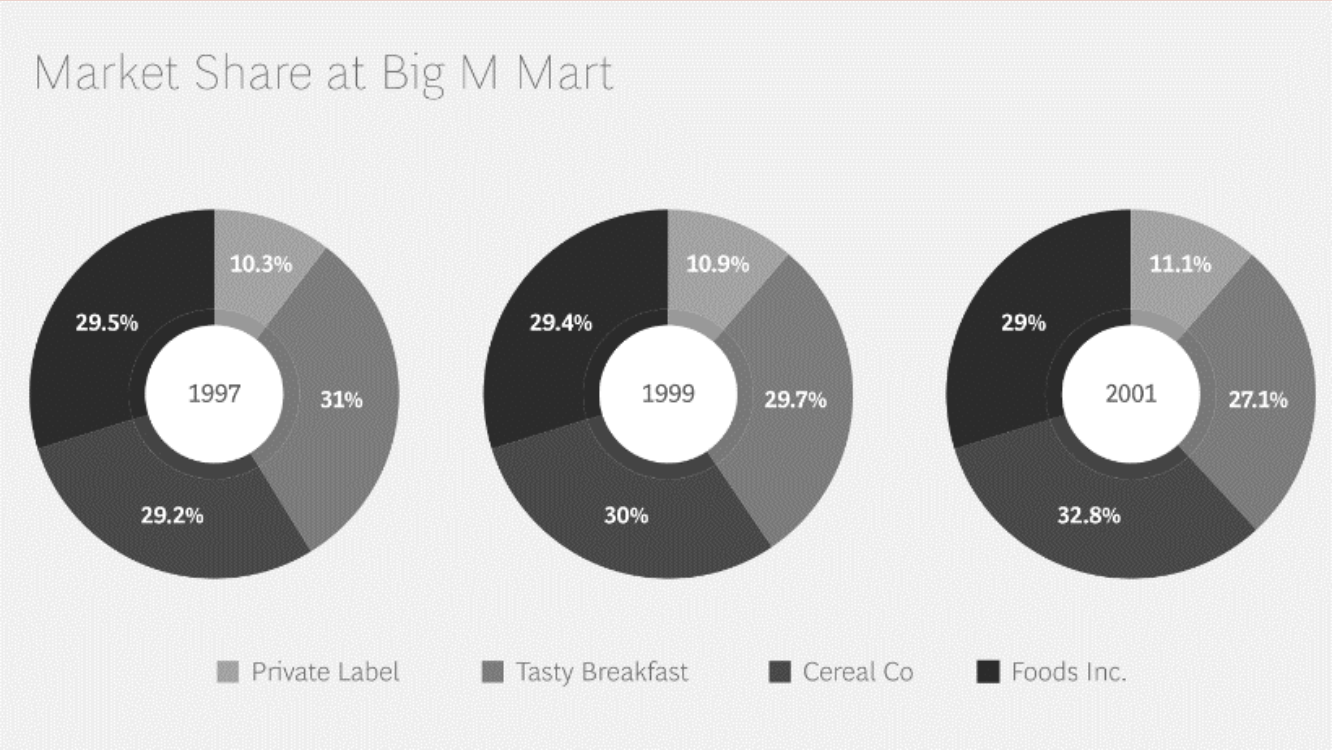
The University of Texas at Austin
McCOMBS Texas MBA

Exhibit 1: Top 5 Distributors of Foods Inc. (Sales)				
Volume ($M)	**1997**	**1999**	**2001**	**5-year CAGR**
Big M Mart	142	162	246	14.7%
R.J.'s	157	185	200	6.2%
Bozo Mart	143	175	189	7.3%
Ace Grocery	101	109	153	11%
Shoppers Mart	57	62	67	4.0%
Total Top 5	**600**	**693**	**855**	**9.3%**
Total All	**1,000**	**1,079**	**1,150**	**3.6%**

Case #7: Sugar Cereal (9)

The University of Texas at Austin
McCOMBS Texas MBA

Exhibit 3: Mega Mart Market Share



Case #8: Travel IT Disruption

Type: Industry Evaluation
Difficulty: 1/4
Style: Interviewee-led

Case #8: Travel IT Disruption (1)

The University of Texas at Austin
McCOMBS Texas MBA

Case Prompt:

You have recently been retained by an American private equity firm to assess the attractiveness of the travel IT space. Specifically, they want to know whether or not it would make sense to enter. What factors would you consider when evaluating this industry?

Initial Facts:

Provide upon request:

- The industry standard is a "global distribution system" that contains massive amounts of information regarding inventory across millions of flights and hotel rooms throughout the world; a GDS is the generic name for each company's IT architecture.
- Outside of China, 80% of the industry is controlled by two players, Amadeus and Sabre, with the rest highly fragmented. Inside China, 80% is controlled by TravelSky, with the rest highly fragmented.
- The PE firm has no payback period but would like EBITDA margins of at least 30%.

Key Framework Components:

This question is highly structure driven, as there are virtually zero quantitative components to consider. A strong framework will consider competitors, customers, regulations, technology, and inventory owners (airlines and hoteliers).

Case #8: Travel IT Disruption (2)

The University of Texas at Austin
McCOMBS Texas MBA

Additional facts (general industry):

- There are over 800 passenger airlines and 10,000 hotel chains globally; nearly all major airlines and hoteliers circulate inventory on GDS
- There are approximately 4 billion passengers boarded and more than 10 billion hotel night occupancies each year globally
- **Business model**: inventory owners will pay a fee to the global distribution networks for each piece of inventory sold. The networks will then provide a commission to travel agents (in person or online entities, such as Expedia) for selling a unit of inventory. [We do not know the exact fee amounts]
- There are over a dozen major online vendors in each market (North America, Latin America, Europe, Middle East & Africa, and Asia-Pacific) and tens of thousands of travel agents globally
- While in person travel agents have declined in usage in NAM and EU, they are still widely used in ME&A and LATAM
- The North American and European markets are stagnant in growth, while Asia-Pacific is growing in high single digits consistently. APAC is expected to pass NAM for largest market by booking volume by year's end. LATAM and ME&A are growing at low double digit rates but are 10-20% NAM market size currently.

Case #8: Travel IT Disruption (3)

The University of Texas at Austin
McCOMBS Texas MBA

Information on Airlines and Hoteliers:

- Airlines and Hoteliers strongly dislike giving a % of sales to GDS and prefer sales through their own sites which are more profitable
- In the mid-2000s, American Airlines removed itself from all external GDS. Sales fell more than 15%. Several years later, they quietly rejoined.
- In 2016, Lufthansa airlines began charging higher rates for fares sold through external agents (and thus GDS) vs. their direct site. Lufthansa's sales declined several percent.

End Users:

- Primarily leisure and small business travel in developed markets, as many corporate customers negotiate deals directly with airlines and hoteliers (more mixed in less developed markets)
- Relatively price sensitive; customers will typically use 1-2 virtual or in-person agents to gather information and then make a purchase. Only 20% visit dedicated airline sites regularly.

Case #8: Travel IT Disruption (4)

The University of Texas at Austin
McCOMBS Texas MBA

Market:

- Sabre and Amadeus EBIDTA margins average 30-35%; Net Income margins average approximately 15%; they receive similar reimbursement rates from inventory owners and provide similar compensation rates to agents.
- Smaller competitors typically offer lower priced products relative to the market leaders
- Sabre dominates in North America while Amadeus dominates in EU
- TravelSky exists only in China and is indirectly state-owned
- Revenue is modestly impacted by macro economic factors but generally stable YoY

Technology:

- Sabre and Amadeus regularly spend $300M-400M on CAPEX each year and have spent over $3B each over the past decade in building out their infrastructure
- Each has higher coverage in certain regions, and each holds a mix of patents, trade secrets, and code copyrights
- Support for over 30 languages in 180 countries is provided by each company
- There is a relatively steep learning curve for travel agents to use a GDS, but experienced users are extremely efficient and entirely resistant to any interface change
- 5 years ago, Sabre tried to relaunch with a less cryptic interface and received immense pushback; they changed course within 6 months

Case #8: Travel IT Disruption (5)

The University of Texas at Austin
McCOMBS Texas MBA

Other Information:

- The Chinese government heavily regulates the GDS market
- Several years ago, Google purchased ITA Matrix, essentially a fares search engine with no sales component, and has not entered either the GDS market or the inventory selling market
- Sabre and Amadeus combine for approximately $800M a year in net income; the various travel sites in the US, EU, and ME earn approximately $1B a year. Google earns roughly $2B a year in advertising from the travel industry in the U.S. alone.
- The PE firm has previously assessed the travel site market and determined it is not attractive

Recommendation

Ask the candidate for a final recommendation. He should recognize this is an industry that is not compatible with PE investment for several reasons, such as entrenched market leaders, material government interference in the one major growth market, a highly complex technology with massive network effects, and the requirement of very large initial investments. He may also note the malcontent inventory owners as a negative (though they are currently unable to escape the system).

Case #9: Admedi Co.

Type: Growth Evaluation
Difficulty: 3/3
Style: Interviewee-led

Case #9: Admedi Co. (1)

The University of Texas at Austin
McCOMBS Texas MBA

Case Prompt:

Our client has recently acquired a healthcare software company, Admedico, which sells only administrative systems to large hospitals. Our client produces medical devices and services. They would like us to find new opportunities to increase revenue.

Facts:

- There are three main markets in this space: administration systems, patient administration, and physician support systems
- Patient administration includes systems like admissions and tracking. Physician support systems are more specialized, usually for individual procedures

Key Framework Components:

This candidate should recognize to omit costs from her line of questioning; if she fails to do so, push her to focus only on revenue. A strong framework will consider market size and growth, competition, customers, company capabilities, and opportunities for cross-selling revenue with the parent business

Case #9: Admedi Co. (2)

The University of Texas at Austin
McCOMBS Texas MBA

Additional Information:

If the candidate requests information regarding market size and growth, show her Exhibit 1. From this information, she should recognize physician support systems are an attractive market.

Additional information to provide upon request:

- Hospitals make up the vast majority of the total medical software market
- There has been consolidation in the industry, with three large hospital networks dominating 45% of the market
- Cost controls have been instituted as larger networks acquire smaller hospitals (e.g., centralization of functions)
- Many hospitals seek to consolidate their vendor base
- Many hospitals are currently upgrading their older systems
- Larger hospitals generally try to consolidate purchasing both within and across hospitals
- Software decisions are usually made by the hospital IT group, while instrument purchases are made by the medical staff

Case #9: Admedi Co. (3)

The University of Texas at Austin
McCOMBS Texas MBA

Additional Information:

If the candidate requests information regarding competition, show her Exhibit 2. A strong candidate would note that the concentration varies strongly by market (concentrated in administration systems and patient administration but fragmented in the physician support market)

Additional information to provide upon request:

- Analysts reports have margins of 25-30% for administrative systems and patient administration; margins are higher in the physician support segment, typically 45-50%
- HTI and HCS Software Systems recently expanded from their core markets (i.e., the ones where they are much larger) into adjacent ones. Ask the candidate why they might have done so. She should recognize they may be a threat to Admedi Co.'s core business
- Several companies that recently switched to HTI said they did so because they were offered better pricing and service for software spanning all three segments
- One company reached out to Admedi Co., but was unable to get a representative to describe its options
- Admedi Co.'s marketing department is organized regionally [*note: a strong candidate will recognize this is a poor fit with hospital's desire to centralize purchasing]*
- There are currently no sales teams dedicated to the four or five largest networks, though HTI employs such an approach
- Admedi Co.'s administration product is seen as the best in the market; it is modular in design, allowing for easier upgrades; the software development team believes certain modules could provide the foundation for other administrative software programs.
- Admedi Co. has also consistently received excellent reviews for its customer support

Case #9: Admedi Co. (4)

The University of Texas at Austin
McCOMBS Texas MBA

Recommendation:

The candidate should recognize that the higher gross margins make physician support a potentially attractive market, but the entry barriers may be high given an increased level of complexity and specialization. She should note that the patient administration segment is a more adjacent jump. Additionally, she should recognize that the sales/marketing functions are in need of improvement. She may also point out that HTI and HCS are likely to be their main sources of competition.

A strong recommendation will mention the choice between organic and inorganic growth. In particular, she may note that the modular nature of the current product may be more conducive to entering the patient administration segment organically, while the physician support market is likely to acquire an acquisition, given Admedi Co.'s current lack of relevant technical capabilities.

Case #9: Admedi Co. (5)

The University of Texas at Austin
McCOMBS Texas MBA

Exhibit 1: Medical Software System Market Sizes and Growth Rates

	Administration Systems	Patient Administration	Physician Support
Market size ($M)	1,500	1,000	1,200
Growth Rate (%)	5	5	12

Case #9: Admedi Co. (6)

The University of Texas at Austin
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Exhibit 2: Top Five Competitors Across Three Main Segments

Patient Administration

Patient Administration	Sales ($M)	Growth (%)
HTI Software	300	5
Registration Software Solutions	240	4
SignUp Software	60	3
HCS Software Systems	30	16
Patient Software	20	-1

Physician Support Software

Patient Administration	Sales ($M)	Growth (%)
HCS Software Systems	150	16
Physician Support Solutions	100	11
Medical Technology Inc.	25	18
HTI Software	20	32
MedSys	5	15

Administrative System Software

Patient Administration	Sales ($M)	Growth50 15(%)
Admedi Co	700	4
HCS Software Systems	100	7
Morningside Software	100	3
Admin System Solutions	80	2
HTI Software	70	15

Case #10: S. A. Shipping

Type: Operations Evaluation
Difficulty: 3/3
Style: Interviewer-led

Case #10: S.A. Shipping (1)

The University of Texas at Austin
McCOMBS Texas MBA

Case Prompt #1:

UPS has recently acquired a small start up in Cape Town, South Africa that receives packages every day by mid afternoon, sorts them until the evening, loads them onto a truck for overnight storage, and then delivers them the next day 8AM-7PM, with a 60 minute lunch break. This start up is rather small and currently has an insufficient amount of trucks to complete the increased load. UPS has asked our help in determining how many new trucks they should lease, as well as the specific model type. They will scrap all existing trucks.

Facts (given upon request):

- 10,000 packages delivered a day
- Dimension of packages are 1 cubic foot on average
- Operates 350 days a year
- one packaged delivered every 10 minutes, on average
- Drivers, fuel, etc. cost $100/day per truck, on average
- Truck 1: leasing costs are $200/day, with cargo dimensions of 4 x4 x5
- Truck 2: costs $80/day, with dimensions of 8 x 2 x 2
- Truck 3: costs are $400/day, with double the dimensions of Truck 1.
- Little seasonality of shipments in South Africa
- Assume trucks make one run per day

Case #10: S.A. Shipping (2)

The University of Texas at Austin
McCOMBS Texas MBA

Calculations:

Make sure the candidate calculates the number of drivers needed regardless of truck type:

Demand load:10K/ day → 10K cubic feet a day; 60/10 = 6 packages/hour, * 10 = 60 packages a day per driver. Thus, a minimum of 167 drivers and trucks (candidate should note this as a bottleneck)

Dimensions: 80 cu. Ft. for A, 32 cu. Ft. for B, and 320 cu. Ft. for C (note it was double the dimensions, not volume, of A). Thus, the minimum number of trucks required are 125, 313, and 33. Total minimum costs for each option are 167*$300 = $50,100/day for A, 313*$180 = $56,340/day for B, and 167*$500 = $83,500/day for C.

The candidate should realize Truck A is optimal once all costs are considered.

A strong candidate will note the impact variability of package size and demand may have on the required fleet size.

Prompt #2:

What are some potential risks to investigate for this operation?

Case #10: S.A. Shipping (3)

The University of Texas at Austin
McCOMBS Texas MBA

Risk Considerations:

- Extra drivers needed due to illness, vacation, 40 hour work week, etc.
- Need for extra trucks due to repairs, accidents, etc.
- Rental rates could change, as could labor costs
- Variability in package size, seasonality could require extra capacity
- May be difficult to procure so many rentals in a developing country
- Package delivery could be dangerous in certain parts (e.g., townships)

Prompt #3:

A year has gone by since your initial recommendation and the company is looking to increase profitability. What are some potential sources of profit growth for the company? Assume they are unable to add new truck leases.

Case #10: S.A. Shipping (4)

The University of Texas at Austin
McCOMBS Texas MBA

Possible sources of incremental profit:

- Extend working hours: since trucks are paid for daily, increasing volume per truck per day could increase profit. Additional volume could come from UPS or other carriers (sell excess capacity)
- Optimize routes: deliver different places based on traffic, change routes to all right turns, etc.
- Add a second person to increase delivery rate per truck, reducing trucks required
- Offer package insurance
- Offer priority package delivery for a premium
- Other, non-related truck costs to reduce: warehousing, sorting technology/costs, etc.

Case #11: JCL Carpets

Type: Investment Evaluation
Difficulty: 3/4
Style: Interviewer-led

Case #11: JCL Carpets (1)

The University of Texas at Austin
McCOMBS Texas MBA

Case Prompt:

Our client JCL Carpets is a family owned carpet manufacturer and seller. They serve residential and commercial clients, which they serve through various distribution channels, mainly wholesalers, though they do a small amount of direct sales to large accounts. They operate a single factory, 5 days a week with 10 hours in a day. They are considering the purchase of a new piece of equipment, a yarn printer that will enable them to print colors directly onto the carpet.

They have hired you to explore this potential purchase.

Key Framework Components:

The framework should focus on determining the incremental cash flows provided by the investment decision.

Case #11: JCL Carpets (2)

The University of Texas at Austin
McCOMBS Texas MBA

Prompt 1

What should the client consider in order to decide whether to make this purchase?

Analysis:

The interviewee should first brainstorm some creative answers like revenue increases, cost savings, but eventually should try to understand the full carpet manufacturing process and where this new technology fits in.

Case #11: JCL Carpets (3)

The University of Texas at Austin
McCOMBS Texas MBA

Prompt 2:

The current manufacturing process:

1) Purchase colored yarn and load into spools
2) Load spools onto the weaver then cut, roll and store the weaved carpet until shipment

New Process

1) Purchase uncolored yarn and load onto spools
2) Load spools into the weaver
3) New machine will ink, dye, and then dry the weaved carpet
4) Cut, roll and, store the carpet

The machine costs $23 Million

What do you think you need to do to understand if it's worth it?

Analysis:

The candidate should fully understand the process and see the difference, and try to brainstorm where there could be cost savings in the new process (the uncolored yarn vs. colored yarn). She should also see the benefit of operational flexibility in being able to color the carpet closer to the requirements of the end user

Case #11: JCL Carpets (4)

The University of Texas at Austin
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Additional Information for the Math (Give if they ask for it)

Currently produce and sell 10 M yards of carpet per year.

Currently our costs are $10/ yard

The changes to our costs with the new process will be:

Undyed yarn : (-)50cents/yard
Inventory savings: (-)50cents/yard
Labor savings (-)25cents/yard
Operations shift costs $1/yard (i.e., that this is positive; it will cost money to shift our process and train)

Total savings 25cents/ yard

Machine lasts 10 years.

Case #11: JCL Carpets (5)

The University of Texas at Austin McCOMBS Texas MBA

Math

At a savings of 25cents/yarn, and sales of 10M of carpet per year:

Cost savings – 2.5M per year. Non discounted savings over 10 years = 25 M.

Prompt 3

Based on the information you have so far, what should the client do?

Analysis:

The interviewee should get the numbers correctly, and also understand that the client is barely profitably without taking into account opportunity costs and discounted cash flows; thus, it is not worthwhile.

Case #11: JCL Carpets (6)

The University of Texas at Austin
McCOMBS Texas MBA

Prompt 4

What potential ways do we think we can make this machine worthwhile for the client?

Analysis:

The interviewee should first brainstorm some basic answers like revenue increases, other cost savings; another possible suggestion is to start to charge their customers based on how late they have to decide the color (guide them toward this answer as needed). Eventually, she should start to consider segmenting their customers based on how flexible they need to be on their order requirements. Lastly, she could suggested pursuing a newer high–end market.

Case #11: JCL Carpets (7)

The University of Texas at Austin
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Additional Information for the Math (Provide Only upon Request)

Current customers pay $16/ yard
New potential customers will pay 25% more. ($20/yard)

Market:

As given above, current customer base: 10M

Can assume that 30% of current customers will opt for the flexibility to decide closer to production date.

High End Market – 70 Million yards/ year

Tell candidate to assume we can quickly capture 5%

Case #11: JCL Carpets (8)

The University of Texas at Austin
McCOMBS Texas MBA

Math and Recommendation:

70 M yards/ year with 5% market share at $20/yard = $70 M
10 M yards/year with 30% @ $20/yard = $60M
10 M/ year with 70% @ $16/yard = $112M

New Revenue = $242M
Old Revenue = $16/yard * 10M yards/yr = $160M
Incremental Revenue = $82M

New Annual Costs = $9.75*13.5M yards = $131.625M
Former Costs = $100M
Increase in Profit from machine = $51M/ year

The interviewee should recognize that this represents a much more attractive investment opportunity that provides a positive NPV at most reasonable discount rates.

Ask the candidate to take a moment to gather her thoughts and provide a final recommendation.

Case #12: Bombardier CS300

Type: Operations Evaluation
Difficulty: 3/5
Style: Interviewee-led

Case #12: Bombardier CS300 (1)

The University of Texas at Austin
McCOMBS Texas MBA

Case Prompt:

Bombardier is a French aerospace company that produces small/midsize commercial aircraft and private business jets. It currently sits as the third largest commercial aircraft company in the world behind Boeing and Airbus, although Brazil's Embraer is a close competitor. The airline industry has become increasingly more competitive in recent years effecting Bombardier's sales and compressing its margins. The company's latest design, the CS300, is expected to be very competitive in the market, however the CFO is still concerned about the projected margin the company will receive from the sale of each plane. She has hired you to help identify potential ways of increasing the new product's margin.

Facts:

Projected Margin: 5%
Avg. Industry Margin: 10% - 15%
CS300: 135-seat commercial airliner; will compete with the 737 and the A-320

Case #12: Bombardier CS300 (2)

The University of Texas at Austin
McCOMBS Texas MBA

Key Framework Components:

Profit Tree: (V*P) – (VC+FC)

Note: This case is very open-ended in terms of framework. A good candidate will ask about current margin vs. industry average and will consider some sort of comparison in their framework

Guidance:

Revenue: This is a dead end. Tell the candidate that a market research survey has already been conducted and that the revenue-maximizing price (and therefore volume) have already been identified. The CFO is not willing to change these.

Cost: Test the candidate on their creativity here (don't let them get into the weeds on anything; keep it high-level and get as many ideas from them as possible). "What are all the ways you can think of that Bombardier can cut costs on the CS300?" If after suggesting 5-8 options, the candidate still hasn't identified **outsourcing,** ask questions to help guide them to it: *"What do you think some of the most expensive parts of the airplane to produce are?"*

Case #12: Bombardier CS300 (3)

The University of Texas at Austin
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Guidance (cont.):

<u>If Asked:</u> The Fuselage (main body), Wings, and Engines are the most costly parts of the aircraft to produce.
Current Fuselage Costs: Labor: $9m, Raw Materials: $9m, Fixed Costs: $2m
Total CS300 costs: $78m

Outsourcing: Explain to the candidate that the company has considered outsourcing production of the CS300's fuselage (main body). Currently they are considering manufactures in Japan, China, and India as potential partners.

Ask: *"What should the CFO's main considerations should be when deciding 1) whether to outsource at all, and 2) which manufacturer to work with?"*

<u>Outsourcing Considerations:</u> Labor Rates, Quality Control, Shipping Cost, Tariffs, Raw Material Costs, Regulations, Technology Compatibility, Infrastructure Limitations (undependable utilities, resource controls, etc.), FX rates, and potential IP Theft.

Case #12: Bombardier CS300 (4)

The University of Texas at Austin
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Analysis (Do not show the candidate):			
	Japan	China	India
Labor (proportion of current)	17/20	13/20	11/20
%	85%	65%	55%
Raw Material (proportion of current)	23/20	9/10	17/20
%	115%	90%	85%
Shipping	$650,000	$500,000	$500,000
Sub Total	**$18,650,000**	**$14,450,000**	**$13,100,000**
Tariff	5%	0%	0%
Tariff Cost	$932,500	-	
Total with Tariff	**$19,582,500**	**$14,450,000**	**$13,100,000**
Quality (odds of defect)	1%	10%	20%
Cost of Defect	$195,825	$1,445,000	$2,620,000
Total Expected Cost	$19,778,325	$15,895,000	$15,720,000
Fixed Costs	$2,000,000	$2,000,000	$2,000,000
Total Cost	**$21,778,325**	**$17,895,000**	**$17,720,000**

Case #12: Bombardier CS300 (5)

The University of Texas at Austin
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Guidance (cont.):

Once the candidate has completed the calculations, ask them how outsourcing to China or India will impact the overall margin for the CS300.

Calculate Sale Price: 78M / 0.95 = 82.1M (OK to round to 82M)

Cost with Outsourcing: 78M – **2.25M** = 75.75M

New Margin: (82M – 75.75M) / 82M = 7.6%

Fuselage Cost Savings:
20m – 17.75m = 2.25m

Case #12: Bombardier CS300 (6)

The University of Texas at Austin
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Recommendation:

The difference between the expected cost per fuselage in China vs. India is negligible. This should invite a qualitative discussion on the pros and cons of each country. A good candidate will recognize that there are risks of potential Intellectual Property theft (particularly in China) and unexpected changes to government regulations in both countries. Further risks include changes in raw material prices, infrastructure issues, changes in foreign relations (with France), and the potential of a PR backlash (ie. French citizen's protesting domestic job losses).

Feedback

A strong candidate will recognize early that outsourcing to Japan will be more costly and save time by not completing those calculations. In addition, they will also consider most (if not all) of the outsourcing factors with little to no prompting. Lastly, they should be able to quickly convert the fractions on Exhibit 1 to percentages.

Case #12: Bombardier CS300 (7)

Exhibit 1			
	Japan	**China**	**India**
Labor Rate (proportion of current)	17/20	13/20	11/20
Raw Materials (proportion of current)	23/20	9/10	17/20
Shipping	650,000	500,000	500,000
Trade Policy	5% Tariff	Trade Pact	Trade Pact
Quality (odds of defect)	1%	10%	20%
Note: A defect would only be discovered upon delivery and is therefore the risk of Bombardier			

Case #13: Polyethylene Resin

Type: Pricing
Difficulty: 2/4
Style: Interviewee-led

Case #13: Polyethylene Resin (1)

The University of Texas at Austin
McCOMBS Texas MBA

Case Prompt:

Our client is a large chemical manufacturer. Recently our client has developed a proprietary polyethylene resin to be used in the manufacturing of flexible irrigation pipes, which in turn are typically used by large commercial farming companies to irrigate their fields. Our client is trying to decide how to price this resin and has requested our assistance. How would you recommend they price this product?

Key Facts:

- Our client does not make the pipes. They plan to sell the resin to pipe extruders who will use it in their manufacturing process.
- Benefits of irrigation pipes made with client's resin versus competitive alternative:
  1. Lower cost of pipe replacement
  2. Saving of replacement labor
  3. Lower damage to crops

Case #13: Polyethylene Resin (2)

The University of Texas at Austin
McCOMBS Texas MBA

Key Framework Components:

This is a pricing case, not a profitability case. Strong frameworks will focus on:

- Understanding the value chain. Who is the customer? Who is the end-user?
- What problem does this product solve? What is the value created?
- What are the substitute products? How are they priced?

Guidance (if needed):

Our firm typically recommends a value-based pricing methods, rather than cost-plus. This means we examine the value the product creates for the customer, rather than just applying an expected margin to COGS. A value-based pricing method can be thought of as the sum of:

1. Reference Value – what the next best substitute costs
2. Differentiation Value – what incremental value our product adds above the substitute

Case #13: Polyethylene Resin (3)

The University of Texas at Austin
McCOMBS Texas MBA

Analysis:

Value for Farmers:
$0.40 + $2.00 + $1.20 = $3.60 per 100ft <<< what incremental price Extruders can charge with client's resin

To Convert to Price for Extruders:
20lbs of resin required to make 100ft of pipe
$3.60 value per 100ft / 20lbs of resin required = $0.18 incremental value per pound

Therefore, client can charge up to $0.18 above cost of substitute resin, or up to $0.46

Case #13: Polyethylene Resin (4)

The University of Texas at Austin
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Recommendation:

Our client can charge up to $0.46 per pound for this resin. When approaching the pipe extruders with this new product, our client must frame the discussion around the incremental value this resin creates for the extruders ($0.18 per pound). One approach would be to split this incremental value 50/50, resulting in a price to the extruders of $0.37.

Feedback

This is a strongly qualitative case that requires candidates to apply the concept of value-based pricing across a distribution channel.

Average candidates will realize our client can charge up to, but not equal to the value our resin creates for the pipe distributors. Strong candidates will include a price recommendation as well as other elements of the marketing mix (promotion, place) appropriate for a premium product.

Case #13: Polyethylene Resin (5)

Exhibit 1: Resin Value Chain

Resin Manufacturer → **Pipe Extruder** → **Farming Companies**

Direct Sales of Resin

- Priced per lb.
- Price of substitute = $0.28

Direct Sales of Pipes

- Priced per 100 ft.
- Price of substitute = $6.50

Case #13: Polyethylene Resin (6)

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Exhibit 2: Value of Client's Resin versus Substitute for Farmers

Type of Value	Total Value	Value Per 100ft*
Replacement savings	Pipes made with our resin fail less often than pipes made with the substitute resin	$0.40
Labor savings	Labor cost of replacing a failed pipe	$2.00
Crop savings	Savings on seedlings when field is not ruined due to failed pipe	$1.20

* 20lbs of resin required to make 100ft of pipe

Case #14: I-35 IHOP

Type: Valuation
Difficulty: 5/4
Style: Interviewee-led

Case #14: I-35 IHOP (1)

The University of Texas at Austin
McCOMBS Texas MBA

Case Prompt:

There is an IHOP at the corner of I-35 and Cesar Chavez. The client, its owner, would like our help determining its value.

Facts:

- 30 tables; 10 2-person, 20 4-person (capacity of 100 people)
- 180 by 200 ft total lot size, including parking lot
- No regulation or rules against sale of property or rezoning, but could take time
- Open 24 hours a day, 360 days a year

Key Framework Components:

The candidate's framework should focus primarily on determining the profitability of the IHOP. He should thus ask for information regarding revenue and cost. Provide him with specific items on the next page only as they are requested.

Case #14: I-35 IHOP (2)

The University of Texas at Austin
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Revenue:

Prices:	Quantity:
• $10 an entrée • $4 a side • $1.5 a drink ($0 for water)	• Average of 1 entrée per customer • Average of .25 sides per customer • Average of 1 revenue drink and 1 glass of water per customer

Customer Volume:

If the candidate asks the number of customers, tell him to estimate. A candidate should *not* use a top-down method. Once the candidate has sufficiently demonstrated how he might go about estimating customers using a bottom-up method (e.g., estimate an average utilization on an hourly basis given the total number of seats both for off vs. on peak, busy season vs. slow season, etc.), provide him with the information below:

The restaurant has both busy and off hours. See Exhibit 1 for hours (you may either show him the exhibit or simply tell him the information; there are 18 hours of off-peak, 20 people an hour, and 6 hours of peak time, at 70 people per hour). A strong candidate may ask about demand variability or losing customers to waiting; tell him there is never more than a 10 minute wait and no demand is lost to this waiting.

Case #14: I-35 IHOP (3)

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Revenue Calculation:

(18 * 20 = 320) + (80 * 6 = 480) = 800 customers a day
Average bill per customer: 10 * 1 + 4 * .25 + 2 * 1 + 0 * 1 = $12.5/customer
Total daily revenue: $10,000

Costs:

Ask the candidate to brainstorm sources of cost (both fixed and variable). Once you are satisfied with his list, provide him Exhibit 2 (alternatively, to make the case more difficult, read out the information).

Exhibit 2 Calculation		(do not share)			
Labor	peak labor hours	off peak labor hours	total hours	Fully Burdened Hourly rate	Daily cost
Wait staff	78	72	150	$4	$600
Hosts	12	18	30	$10	$300
Bus boys	36	36	72	$10	$720
Cooks	48	36	84	$20	$1,680
					$3,300

Case #14: I-35 IHOP (4)

The University of Texas at Austin
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Further Calculations:

Ingredient/supplies costs: $2600 a day
Labor costs: $3300 a day
Royalty fees: $500 a day
Total variable costs per day: $6,400 per day

The candidate should sum fixed costs to $33,000 a month; tell him to assume 30 day months.
Fixed costs: $1,100 a day
Total costs: $7,500 a day
Daily profit: $2,500 a day

Valuation:

Tell the candidate to assume 360 days of operation a year. This will yield an annual profit of $900,000. If the candidate asks for a tax rate, tell him to assume 40%, yielding a net profit of $540,000 a year.
Once the candidate realizes to use a (growing) perpetuity, provide him with the discount rate of 12%; do not initially give him the growth rate of 2% unless he asks.
This will yield a present value of $5.4M.

Case #14: I-35 IHOP (5)

The University of Texas at Austin
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Alternate Sources of Value:

Ask the candidate to brainstorm alternate uses of the property. Press him to come up with multiple uses (e.g., parking lot, hotel, apartment, a higher end restaurant, etc.). Once you are satisfied, tell him the owner was actually recently approached by a real estate development company who said they were interested in purchasing the land for apartments. He'd like to get a sense of what the land would be worth to these developers.

Once the candidate asks, tell him the lot could support a building of no more than approximately 120 by 140 feet. He may assume standard apartment dimensions of 30 x 40 feet, with no apartment in the middle (he should thus calculate that each floor may support 12 apartments per floor). Tell the candidate to assume a ground floor, 6 stories of parking, 15 stories of apartments, a floor for the gym, and a rooftop pool (A strong candidate may mention rezoning risks and requirements during this discussion).

Case #14: I-35 IHOP (6)

The University of Texas at Austin
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Apartment Revenue:

Given the convenient location, we estimate that the apartments can be rented at $2.5 per square foot per month, including all fees, amenities, and parking.

At this point, the candidate should calculate out the value of each apartment per month ($3000/month), with 180 apartments in the building for a total potential monthly revenue of $540,000. Once the candidate has reached this figure, tell him to assume an occupancy rate of 85% (have him round from $459,000 to $460,000). This will yield an annual revenue of $5.52M.

When asked for this information, tell him the total initial investment will cost $35 million dollars. Then tell the candidate that ongoing costs for the building are estimated at $520,000 a year.
When asked for the discount and growth rate, tell the candidate to use the same cost of capital and growth rate as before. He should use a growing perpetuity formula to find the value of the cash flows: $5M / .1 = $50M.

(Since the building costs will be amortized over the life of the building, he can treat only the net income, $15M, as taxable). Instruct the candidate to use a tax rate of 40%, resulting in a present value of $9M.

Case #14: I-35 IHOP (7)

The University of Texas at Austin
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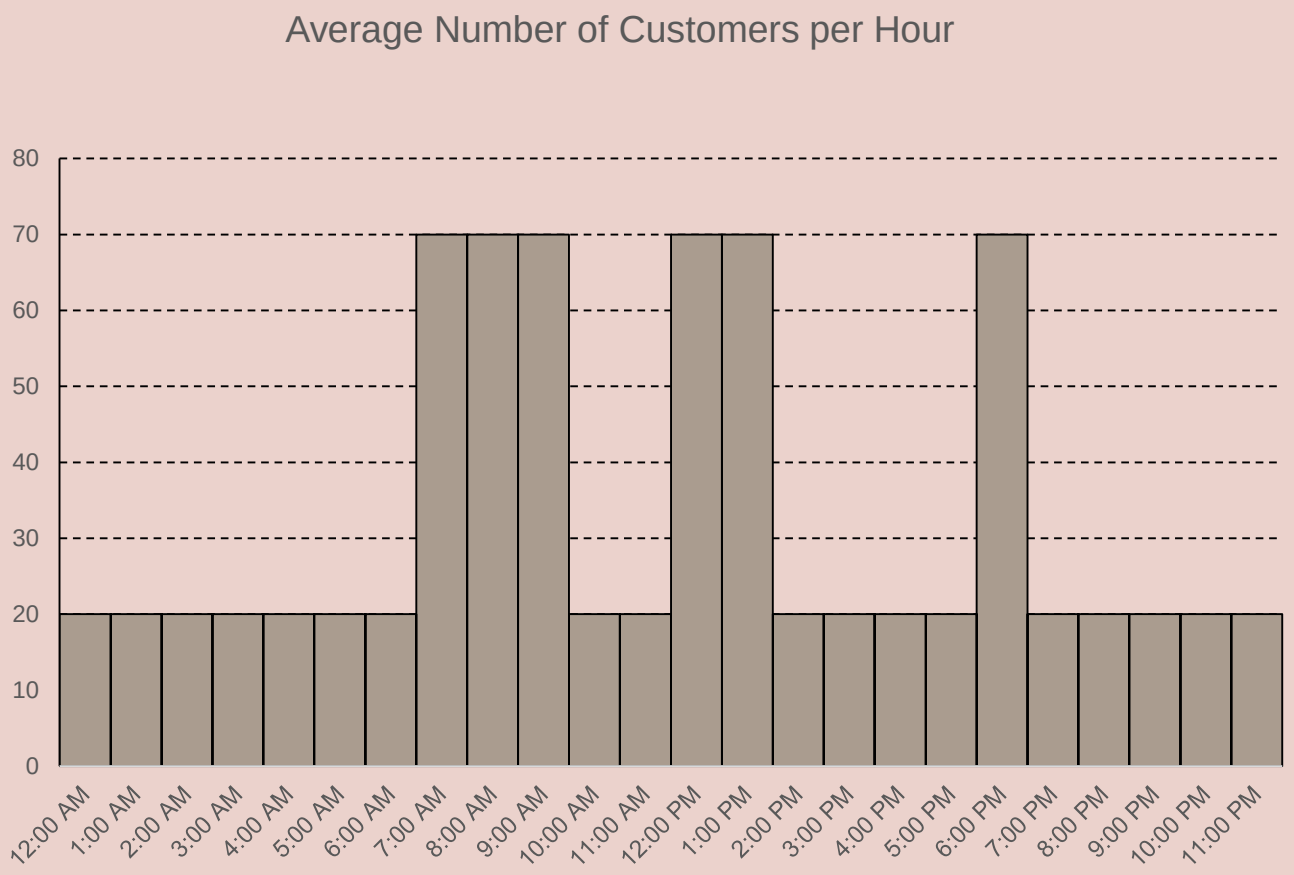
Recommendation:

Ask the candidate to take a moment to collect his thoughts and present his findings and recommendations.

Ideally, the candidate will have correctly completed all math and recognize that selling the land could potentially prove more profitable for the owner, depending on what price he is able to extract; he should not accept less than his expected NPV of cash flows from the business. A strong candidate will address the various risks with this approach as well as the impact of numerous assumptions on the valuation estimates (e.g., number of customers per hour, discount rate, the number of stories in the building, price per square foot, etc.).

Case #14: I-35 IHOP (8)

Exhibit 1:



Case #14: I-35 IHOP (9)

The University of Texas at Austin
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Exhibit 2:

Variable Costs				
Labor	Number of Staff during Peak Hours	Number of Staff during off-Peak Hours		Fully burdened hourly rate
Wait staff	13	4		$4
Hosts	2	1		$10
Bus boys	6	2		$10
Cooks	8	2		$20
Ingredients/supplies	25% of revenue			
Franchise Royalty Fee	5% of revenue			
Fixed Costs	Monthly rate			
Salaried employees	$10,000			
Insurance	$4,000			
Taxes	$2,000			
Mortgage	$2,000			
Maintenance and Repairs	$6,000			
Other	$9,000			

Case #15: MIMO Technology

Type: Valuation
Difficulty: 5/5
Style: Interviewee-led

Case #15: MIMO Technology (1)

The University of Texas at Austin
McCOMBS Texas MBA

Case Prompt:

Our client is a very well-funded start-up that has invented a prototype for a new technology that they think could provide value to wireless carriers. However, the remaining R&D will be expensive. They want our help to determine the value of this invention and whether or not to proceed with further research and development.

Additional Info to be Given upon Request:

At present, wireless technology only allows for 4x4 ("four by four") MIMO, which stands for Multiple-Input, Multiple-Output communication. This technology uses orthogonal frequency-division multiplexing (OFDM) to send four different pieces of data over the same frequency at one time. Our client has invented a new software algorithm that would allow for 8x8 MIMO. It would thus make additional CAPEX twice as cost effective in certain situations once it's implemented.

Key Framework Components:

Some potential areas to consider:
Customers
Profit (revenues, costs, etc.)
Valuation
Market Size
Market/Competition/Macro factors
Risks

A potential starting hypothesis: the client should develop this technology if the present value of the profits are greater than the additional investment, as the R&D to date is a sunk cost. To determine this, I would like to learn more about the customers, potential profits, the size of the market, and any potential competition or alternatives the carriers may have to ensure these components are favorable.

Case #15: MIMO Technology (2)

The University of Texas at Austin
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Additional Information to be Given upon Request:

- At present, the product is only 40% completed. To date, the company has spent $40M on R&D. The project would take exactly one year to complete and would cost exactly $60M in additional research. There is a 50% probability the company will patent the technology before a competitor will.
- The project has zero value if it is not patented or completed.
- If the candidate asks if technology impacts OPEX, tell him to assume no.
- There is no difference in performance from the consumer's perspective.
- At present, there are no competitors with 8x8 solutions (but we know others are likely working on it). Assume there is only one (patentable) way to create the algorithm. Patent lasts for 20 years, but assume it will last for perpetuity for simplicity.

Upon its completion, the algorithm can be deployed immediately.

Pricing structure: because the product is an algorithm, carriers would pay a one-time fee for the right to use algorithm.

[*ask candidate to brainstorm potential costs before giving answer]*

- **Costs**: there are no fixed costs, but there is one major variable cost: labor. Because the algorithm is extremely complex, the carriers would want our client to bear the cost of calibrating it, which would need to be done on a near-daily basis. Variable costs are estimated at $400K/day, with 350 working days in a year (costs are for serving the entire US). ***[If candidate asks about scalability, tell him this is not a concern for this case, but bonus points for considering capacity of service provision]***
- **Customers**: the major four U.S. carriers are AT&T, Sprint, T-Mobile, and Verizon. They comprise 100% of the client's potential customer base in North America. *[If the candidate asks—bonus points for doing so—tell them that the rest of the carriers in the world currently lack the infrastructure and/or need to deploy such a technology. They are not expected to have the need/capability to deploy it for another 3-5 years].*
- **Market share**: AT&T has 30% of all customers, VZ has 30%, T-MO has 20%, and Sprint has 20% [***provide this after the market sizing exercise if it is not asked for earlier****]*
- Savings can only be realized for 20% of CAPEX, as the technology is not deployable in all situations *[the interviewer may prod the candidate to consider this point later on in the valuation portion if he fails to ask in the initial phase of the case]*.
- **Revenue**: the client at present has zero revenue [*Ask candidate how he would estimate potential revenue. This segues into a market sizing discussion].*

Case #15: MIMO Technology (3)

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Market Sizing (additional information):

If the candidate is still struggling to determine how to estimate revenue, suggest to him to use the potential CAPEX cost savings of the carriers as the total addressable market for our client.

If he asks outright for the CAPEX figures for each carrier, ask him what he thinks drives a carrier's CAPEX. The correct answer should be something about data and/or end-user demand.

Tell the candidate that we presently do not have exact numbers regarding the CAPEX of each carrier, but that we know it is a function of their total revenue.

AT&T, Verizon, and T-Mobile spend 10% of their revenue on CAPEX, while Sprint spends 5%.

Case #15: MIMO Technology (3)

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Market Sizing (example):

Start with US population > discount those too old or too young to use cell phones > discount out those that can't afford cell phones > discount those that don't want cell phones > account for those with two or more cell phones.
for example: 320M population; assume even age distribution 0-80; assume everyone below 10 (40M) and above 75 (20M) don't have cell phones, but 10-75 age bracket does; discount bottom income decile not having phone (10% of remaining population, or 26M; reason: approximately in line with poverty line); discount another 10% (WAG) that don't want cell phones; assume 30% (WAG) of cell users have 2 phones, Add in another 10% (WAG) of other connected devices. This yields an estimate of approximately 297M users at present (round to 300M). Assuming an average revenue of $50/month, the total market size is approximately $180B in revenue.

This is just an example; there is more than one reasonable way to estimate the total. Be sure to ask the candidate why he picked a given 'haircut.'

A strong candidate will discuss the potential weaknesses of his estimate, and better yet, where one might find such data, without prompting.

Case #15: MIMO Technology (4)

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Additional Information:

Following the candidate's overall market sizing, show him Exhibit 1. Ask candidate what information he can determine from the exhibit [tell candidate to assume this figure includes all other connected devices; bonus points for them considering things like tablets].

Ask the candidate what more information he would like to know to determine the size of the opportunity. He should ask for individual revenue/ARPU since overall revenue is not available. Show him Exhibit 2 [to make things more difficult, instead read the information back; this will force the candidate to organize the information himself].

At this point, the candidate should have sufficient information to calculate the CAPEX for each carrier (a strong candidate will ask if the technology provides savings across all CAPEX, if he did not do so earlier; as noted above, the technology can be used in only 20% of CAPEX). See math on the next page (rounding is encouraged).

Case #15: MIMO Technology (5)

The University of Texas at Austin
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CAPEX Calculation (do not show candidate):

	User base	Annual ARPU	Total industry revenue	CAPEX allocation	CAPEX spend	CAPEX reduction rate %	% of CAPEX that can use algorithm	Potential annual CAPEX reduction
ATT	100 million	720	$72B	10%	$7.2B	50%	20%	$720M
TMO	65 million	480	$31.2B	10%	$3.12B	50%	20%	$312M
Sprint	65 million	480	$31.2B	5%	$1.56B	50%	20%	$156M
VZ	100 million	720	$72B	10%	$7.2B	50%	20%	$720M
total	330 million		$206.4B		$19.08B		potential annual savings	$1.908B
							rounded	$1.9B
							50% collectable revenue	$950M

Case #15: MIMO Technology (6)

The University of Texas at Austin
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Valuation Calculation:

Instruct the candidate to use a discount rate of 20% in perpetuity.
Potential Revenue: $950M/year
Potential costs (labor): $70M/year
Potential Gross Profit: $880M/year
*Expected Gross Profit: Potential GP *.5 + 0*.5 = $880M * .5 = $440M*

DCF = $\frac{\$440M}{.2}$ *=$2.2B*

***Maximum NPV of decision to continue research**: $2.2B - $60M = $2.14B*
Top candidates will A) consider investment costs in their final NPV calculation and B) distinguish between incremental investment costs ($60M) and the sunk investment costs ($40M).

(note that this is the maximum value of the decision, since carriers will want a portion of the value generated for themselves. To add another level of calculation, instruct the candidate to price the product at 20% of the algorithm's economic value)

Case #15: MIMO Technology (7)

The University of Texas at Austin
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Recommendation:

At this point, ask the candidate to provide a conclusion. The conclusion should begin with the recommendation, follow with several supporting points, and then conclude with a discussion of the risk of the approach used as well as any additional considerations or next steps.

The conclusion should NOT be a chronological recap of all items discussed. Weaker candidates will not state the recommendation up front.

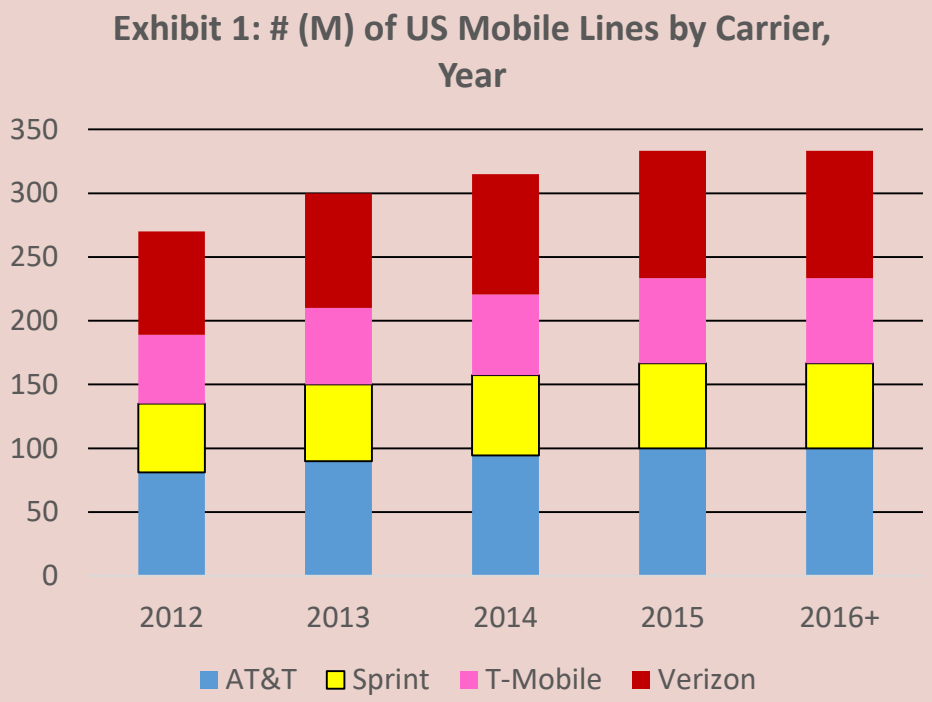
A potential recommendation: "The client should develop the technology and sell it, with an estimated total economic value of $2.14B. While there is a 50% probability of profitability, the expected return is sufficiently high for the investment to be worthwhile, as the technology could save the US telecom market over $1.9B in CAPEX each year. The estimate of my valuation is susceptible to changes in the discount rate, the US mobile market size, and annual CAPEX estimates. Some next steps would be to vet the estimates further and improve them by looking at market research reports and corporate filings. Despite the uncertainty, the expected return is high enough to proceed with further R&D."

Additionally, a candidate may provide information regarding specific next steps (i.e., additional work a firm could sell to its client for 'phase 2' of the engagement).

Strong candidates will provide a hypothesis within the first 5-10 minutes and top candidates will iterate on that hypothesis (and potentially their structure) as the case proceeds. A candidate may also mention that the technology could have additional value from deployment in other countries in several years, as well as other applications outside of mobile networks (e.g., they may suggest in door networks at stadiums, Wi-Fi, the military, etc.).

Case #15: MIMO Technology (8)

Exhibit 1:



Case #15: MIMO Technology (9)

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Exhibit 2:

Assume revenue will hold steady for foreseeable future:

Exhibit 2: ARPU	
Carrier	Monthly ARPU
AT&T	$60.00
T-Mobile	$40.00
Sprint	$40.00
Verizon	$60.00

Case #16: Fast Food Loyalty

Type: Profitability
Difficulty: 2/4
Style: Interviewee-led

Case #16: Fast Food Loyalty (1)

The University of Texas at Austin
McCOMBS Texas MBA

Case Prompt:

Your client is a national fast food chain that is considering instituting a frequent diner program to increase revenues per store. Through the program, customers would receive 1 point for every dollar spent. After accumulating 20 points, they would receive a free movie ticket. The CEO asks you to evaluate whether they should proceed with this strategy.

Key Framework Components:

Revenues	Costs	Customer Segments	Branding
• How often do customers visit? • How much do they spend per visit? • How many customers will participate? • How many additional visits will they make because of the program?	• Margin per store • Program setup costs • Cost of movie ticket • Ticket redemption rate	• Do all customers visit with the same frequency? Spend the same amount? • Will all customers respond the program the same way?	• How will this program impact the client's brand?

Case #16: Fast Food Loyalty (2)

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Additional Info to be Given upon Request:

- Each store has 50% profit margin
- 30,000 customers divided between two customer segments – frequent and occasional visitors
- Client has 500 stores
- Will cost $10,000 to set up the program
- Each movie ticket will cost the client $1 upon redemption
- Program members across both segments will redeem 50% of their tickets

Customer Segment Data:

Customer Segment	# of Customers	Average # of Visits/Year	Average Spend/Visit	Join Program	Additional Visits/Year
Frequent	10,000	30	$4.00	20%	5
Occasional	20,000	10	$4.00	5%	2

Case #16: Fast Food Loyalty (3)

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Program Revenues:

Segment	Members	Current Visits	New Visits	Current Revenue	New Revenue
Frequent	2,000	60,000	10,000	$240,000	$40,000
Occasional	1,000	10,000	2,000	$40,000	$8,000
Total	**3,000**	**70,000**	**12,000**	**$280,000**	**$48,000**

Program Profitability:

Net profit = Additional profit – reward redemption costs – set up costs
Additional profit = $48,000*50% = $24,000
Redemption costs = $328,000/20*$1*50% = $8,200
Set up costs = $10,000
Net Profit = $24,000 - $8,200 - $10,000 = $5,800 ($15,800 after year 1)