KNOWLEDGE FOR ACTION

Wharton Consulting Club Casebook 2017

Wharton
UNIVERSITY of PENNSYLVANIA

Note to the Reader

Dear Consulting Club Member,

This casebook is meant to provide you with a brief overview of consulting recruiting and interview preparation as well as a number of practice cases. Please note that this is meant to supplement the excellent work done by our and other schools in earlier casebooks, so we strongly encourage you to not make this your sole reference.

Good luck!

- 2017 Wharton Consulting Casebook Editorial Team

Industry Overview – Management Consulting

Management consulting involves solving complex business problems and offering recommendations to companies

Overview of management consulting

- Problem-solve complex and unstructured
- Work closely with senior management on the client side
- Intellectually stimulating work and ability to build a strong set of skills
- Constant travel (depending on office location and consulting firm) can pose significant challenges
- Industry (prior to economic downturn) was expected to grow at 8.8% in 2009
- Most firms have a global presence and offer international project opportunities

Interview Process

- Case interview – involves solving a business case; candidate expected to drive towards a solution and ask for relevant data; focus on structure
- Fit interview – numerous behavioral questions focusing on prior experiences

Typical Career Path

- Consultant/Associate
- Senior Consultant/Associate
- Manager/Project Leader
- Partner

Wharton
UNIVERSITY of PENNSYLVANIA

A Typical Consulting Interview

	Meet & Greet	The Fit	The Case	Wrap-up
Process	• Wait in hospitality suite with other candidates / recruiters • Interviewer asks for you by name • Handshake / greeting • Walk to interview suite / small talk	• Interviewer may give personal background • Questions about resume / experience	• Interviewer will start case • Keep track of time so that you by when you are expected to reach a conclusion	• Your chance to ask questions • Walk back to hospitality suite with interviewer
You should	• Appear warm, confident, professional	• Convince interviewer that you are fit for the firm • Pass the "airport test"	• Maintain confident, controlled, upbeat demeanor	• Not ask stock questions • A good chance to get to learn about the interviewer's personal experiences at the firm

Wharton
UNIVERSITY of PENNSYLVANIA

Case types and case interview methods

What is a case?

A business issue/problem company is facing in a few sentences
Takes about 25 minutes; has limited data which is usually provided if asked for
Approach to solution is more important than the final solution

There are two common case interview methods:

‘Go with the flow’ cases (typical of most firms) – You will determine which areas to explore and lead the discussion, i.e. drive the case
Command and control (typical of McKinsey) – Interviewer guides the discussion and case has heavy brainstorming components and quantitative work

- Common case types* (not a comprehensive list):
  - Profitability
  - Market Entry
  - Acquisition
  - Organization
  - Industry Analysis (incl. non-profit)
  - Market Sizing
  - Capacity Expansion (incl. outsourcing)
  - Investments

Wharton
University *of* Pennsylvania

Overall flow of a Case

Understand the question (~3 min.)

- Listen actively
- Ask clarifying questions
- Take judicious notes
- Organize notes as slides
- Formulate an initial hypothesis about possible solutions
- Write down key question

Plan your approach (~1-2 min.)

- Mention you will take a minute to plan your approach
- Draw out a framework as checklist of topics to explore
- Select 3 to 5 major topic areas
- Identify relevant sub-topics
- Present plan of attack to interviewer – start with the most important

Probe for information (~12-15 min.)

- Follow your plan!
- Ask specific questions to test hypothesis
- Adjust hypothesis and plan as data emerges
- Organize notes as slides
- Highlight insights from any numerical calculations
- Note conclusions

Assert a conclusion (~3 min.)

- Drive the case to a conclusion before time expires
- Answer the question
- Take a definite stand
- Make best conclusion with data on hand
- Make recommendations and follow them with supporting evidence
- Address “risks” and “next steps”

Wharton
University *of* Pennsylvania

Table of Contents

Wharton
UNIVERSITY of PENNSYLVANIA

KNOWLEDGE FOR ACTION

Unicloth

Wharton
UNIVERSITY of PENNSYLVANIA

Case 1: Unicloth

Level of Difficulty: *Medium*

Case Similar to Cases at Firms: *BCG second round*

Topics Tested: *i.e. market sizing, mathematical calculation,*

Prompt: *Our client, Unicloth, is an Asian clothing retailer attempting to establish a profitable presence in the United States. However, since they arrived five years ago, they have struggled to achieve that goal and have engaged our firm to find out why and to recommend next steps. How can we help?*

Framework and Clarifying Questions

Sample of Strong Framework:

- Product
  - What do they sell?
  - Where is it made?
  - Competitive product?
- Market
  - Who are the competitors?
  - What are the economic conditions?
  - Have there been new entrants?
- Revenue
  - Average price per unit
  - Number of units sold in the US per day
- Cost
  - COGS
  - Rent
  - Store maintenance
  - Labor
  - Cost of lost sales

Framework and Clarifying Questions

Clarifying Questions

Product:
- This company sells casual clothing, think jeans, t-shirts, knit sweaters, dresses, etc.
- They follow the designs of the company's home market in Asia
- They are manufactured in China and Bangladesh

Market:
- The retail market has been stable, no economic downturns, etc.

Revenue:
- Price: average product price is ~$40. This is in line with mid-tier competitors such as American retailer Bap and a bit below European retailer Mara

Revenue

- Revenue
  - Price: average product price is ~$40. This is in line with mid-tier competitors such as American retailer Bap and a bit below European retailer Mara
  - Sales:
    - Market sizing: The retailer has a US presence comprised of three mall stores plus one flagship store on 5th Avenue. Have candidate attempt to calculate annual sales based on intuition.
      - Three mall stores:
        - Sell on average 1,375 items per day
        - Have candidate calculate: 1375 items * $40 = $55,000 per day
        - $165,000 per day all mall stores put together
        - $60,225,000 annual revenue from mall stores

      - Flagship store on 5th Avenue
        - Sell 4,500 items per day
        - Have candidate calculate 4,500 items *$40 = $180,000 per day
        - $65,700,000 per year

      - Move forward with **$125 M revenue** per year

Costs

- Costs - have candidate brainstorm what costs might be. If they don't come up with all of them, give them the below
  - COGS
    - Profit margin on clothing sales is 30%
    - Cost of items per year is $125 M * .7= $87.5M
    - Round to $90M/year
  - Rent:
    - Flagship store rent: $1.5 M per month = $18 M per year
    - Mall store: $200K per month * 3 stores = $600K per month, $7.2 M per year
    - Round to $25M per year
  - Maintenance of stores, utilities, etc.
    - $5 M per year

COSTS CONTINUED ON NEXT SLIDE

Costs Continued

- Costs - continued
  - Labor:
    - Flagship store:
      - 500 associates, average 20 hours per week, $8.5 per hour = $85,000/week, $4.42 M per year
      - 5 managers, $100K salary = $.5M per year
    - Mall stores:
      - 20 associates per store * 3, 20 hours per week, $8.5/hour
        - $10,200/week, $530,400 per year
      - 1 manager, $100K salary
        - $.12 M per year
    - Total labor cost:
      - Round to $6M per year
  - Storage, sending unsold clothes back to warehouse, markdowns, etc.
    - $12M per year
- Total costs
  - **$138 M- not breaking even!!** (Under by $13M vs. $125 M revenue)

Improving Profitability

Now that we have all of the revenue and costs, let's work on making the company more profitable. Have the candidate brainstorm and then guide them through the below:

- Costs
  - Manufacturing- We are already producing our clothing in the cheapest manner possible.
  - Shipping- We could cut 5% of our COGS by shipping the clothing by boat instead of air
    - **Savings: $4.5M annual** (90M * 5%)
  - Labor- We have what we need, cannot reduce
  - Rent- Have candidate brainstorm how you could potentially reduce the rent burden. Some options:
    - Move location of flagship- No, we need it for marketing
    - Close mall stores- We are not ready to make that move as we are hoping to continue expanding in the suburbs in the future
    - Share the rent with another business- YES! Opening a coffee shop within the store would cut 25% of our debt burden at the flagship store.
      - **Savings: $1.75M annual**

Improving Profitability

- Revenue
  - Have candidate brainstorm how we can improve revenue
    - Train the sales staff better to sell- No, they're pretty well trained
    - Lower prices- No, it wouldn't solve our margin issue
    - Online store- We are not ready to make that investment at this time
    - Turns out that American customers don't love the styles and have some trouble with Asian sizes (the styles tend to be too conservative, the colors are too muted, our clothing tends to run small for the US market)
    - Adjusting design and sizes and continuing to manufacture separately for the American market will cost us $12M annually, but it will provide $23M additional revenue per year
      - **Incremental revenue: $11M annual**
- Total incremental income
  - $1.75M + $4.5M savings
  - $11M incremental revenue
  - Total $17.25M→ makes up for $13M deficit

Recommendation

The CEO is about to walk in and **she** would like to hear the candidate's recommendations- have him/her make some. **Make sure you say she and give the candidate feedback if he/she falls prey to bias and calls the CEO a "he"**

Currently we are seeing revenues of $125M annually, but costs of $138M, meaning we are $13M in the red. However, we have studied the cost and revenue structure of your retail operation and found that there are a few actions you can take at this time. On the cost side, we recommend changing your means of shipping from air to boat, a change we have found will bring $4.5M in annual savings. Additionally, we recommend seeking a partner to share your rent/space at the flagship store. We believe, for example, that placing a coffee shop within the store would save you 25% in rent, for a savings of $1.75M annually and perhaps encourage your customers to shop more. Finally, we recommend revamping your inventory for the American market by adjusting designs and sizes to better meet demand. We estimate this will drive $11M in additional annual revenue. Together, these measures will more than make you profitable, breaking even and making $4.25M in profit. Potential risks of this plan include having an unreliable retail partner at the flagship store, making products that the American market still doesn't like, and delaying inventory stocking through the new shipping method. For this, we recommend a study into whom the retail partner should be, engaging in extensive market research to produce the correct SKUs for the market, and adjusting US warehouse operations and lead times to ensure that stocking is not delayed.

Wharton UNIVERSITY of PENNSYLVANIA

KNOWLEDGE FOR ACTION

Brazilian Highway Concessions

Wharton
UNIVERSITY *of* PENNSYLVANIA

Brazilian Highway Concessions

Level of Difficulty: *Medium to hard*

Case Similar to Cases at Firms: *McKinsey final round*

Topics Tested: *international expansion, graphical interpretation, market entry, mathematical calculations (ROIC).*

Prompt: *A leading Brazilian highway concessions company is looking to expand internationally. Economic growth in Brazil has stalled, and in order to continue to grow both top-line revenues and bottom-line profitability, the client wants to diversify its portfolio and decrease its exposure to the Brazilian economy. What factors should the client consider as it thinks through its international expansion options?*

Opening Framework and Clarifying Questions

Sample of Strong Framework

Culture and management complexity
- What are the language and cultural barriers?
- Which countries would be a good fit for current leadership's working and managerial culture?
- Can management adapt to the managerial styles of countries that are not similar to Brazil?
- Is geographical distance a problem to manage assets?

Pipeline and economic prospects
- What is the pipeline of projects? Will there be significant privatizations or new projects in the future?
- What is the size, complexity and value of future projects?
- Is the country growing? Does it require infrastructure investment?
- How advanced is the current infrastructure framework?

Political environment
- What is current regulation for the privatization of public infrastructure? Which governments are pro-private sector participation?
- Is the political climate volatile in the country? Is there high probability of changes in regulation?
- Is the country receptive to business overall?

Competitive environment
- Who are the current players in infrastructure in the country? Are there international players?
- How large are they and how concentrated is the industry?
- Is it likely to be strong competition on bids for public auctions? How are the valuations of the latest projects?

Sample Clarifying Questions and Answers

Where else does the client currently operate besides Brazil?	The client operates only in Brazil, has scoped opportunities in South America. Their staff speaks primarily Portuguese.
Does the client operate in any industries besides road concessions? Are their adjacent industries they could pursue?	No, the client currently only focusses on road concessions (building and operating public roadways).
Who are the clients typical customers and how do they typically win business?	The clients' customers are always municipal, state, or national governments. They bid, usually through competitive RFPs.
Does the company want to focus on a specific region, or is it open to all geographies?	The client wants to consider all geographies, with a bias towards opportunities in South America.

Graphical Interpretation: Introduction

After several conversations with the client and an initial analysis by our team, we've decided that opportunities outside of South America are not worth pursuing because of 1) cultural differences; and 2) managerial complexity. The team has gathered the below data in order to assess which countries in South America would be the most attractive ***(provide the interviewee with the graph)***.

Based on the graph, which markets should our client focus their efforts on? Which should it definitely eliminate? Correct answers here are Mexico, Colombia, Chile and Peru (upper right quadrant). You may also be able to argue Argentina as well – for which ease of doing business is not enough but pipeline is strong.

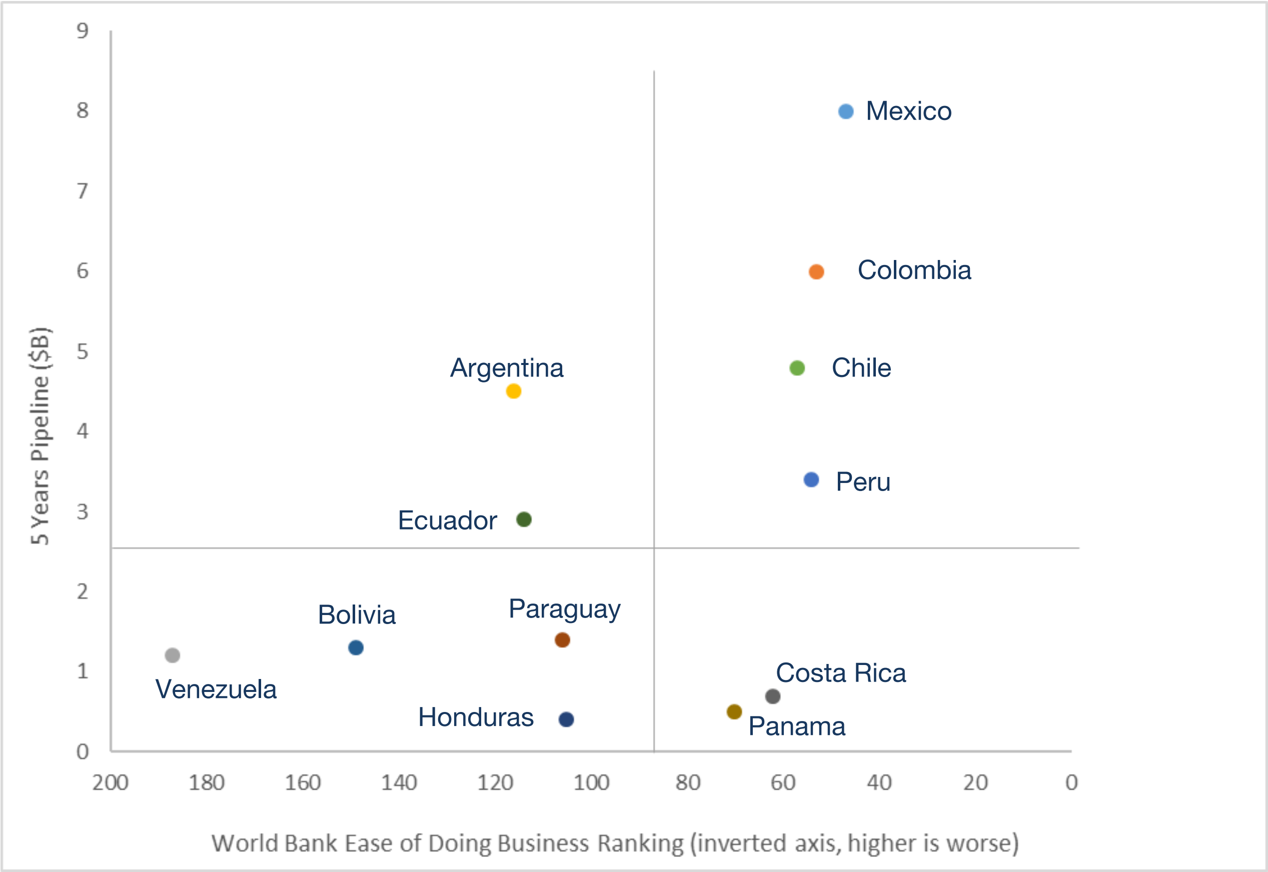
Assuming the client chooses to enter one or more of these markets, how should it approach market entry? Correct answers here could be greenfield or primary investment, joint venture (JV), or acquire a competitor (M&A).

What are the primary pros and cons of each market entry approach?

- Primary investment: limited knowledge of market / greater control
- JV: less control / some market knowledge
- M&A: more expensive / lower idiosyncratic risk / local market knowledge

Graphical Interpretation

Data for interviewee



Primary Investment vs. M&A (Qualitative)

The client has determined that there are no viable JV opportunities, and so wants to decide whether to go the primary investment or M&A routes. If you were going to evaluate the two opportunities side by side, which inputs would you need to compare the value of each investment?

- **Primary investment**
- Annual profit = (Km*$/km*vehicles)*(1-opex)
- Payback = initial investment/annual profit
- Investment Value = annual profit/discount rate [*assume perpetual concession]
- ROIC = (investment value/initial investment)-1
- **M&A**
- Annual profit = revenue*(1-opex)+(revenue*synergies)
- Payback = initial investment/annual profit
- Value = annual profit/discount rate
- ROIC = (value/initial investment)-1

Provide the interviewee with the data sheet after s/he has walked through the major inputs listed above.

Primary Investment vs. M&A (Quantitative)

Data for interviewee

Input	Primary investment	M&A
Km	300	NA
$/Km	$5	NA
Expected traffic (vehicles/month)	20,000	NA
Annual revenue	Km*$/Km*expected traffic	$120,000,000
Opex	30%	40%
Investment	$150,000,000	$750,000,000
Contract term	Perpetual	NA
Discount rate	10%	10%
Synergies	NA	15% (of revenue)

Primary Investment vs. M&A (Quantitative)

Answers for interviewee

Input	Primary investment	M&A
Annual revenue	**$30,000,000** (300*5*20,000)	**$120,000,000**
Annual opex	**$9,000,000** (30,000,000*.3)	**$48,000,000** (120,000,000*.4)
Annual profit	**$21,000,000** (30,000,000-9,000,000)	**$90,000,000** (138,000,000- 48,000,000)
Payback period	**7 years** (150,000,000/21,000,000)	**8.33 years** (750,000,000/90,000,000)
Value	**$210,000,000** (21,000,000/.1)	**$900,000,000** (90,000,000/.1)
ROIC	**40%** ((210,000,000/150,000,000)-1)	**20%** ((900,000,000/750,000,000)-1)

Once interviewee has come up with an ROIC, ask them for their conclusion.

Wrap-up

What should the client do?

The client should enter a South American market (preferable Mexico, Chile, or Colombia) through a primary investment:

- There are high levels of cultural similarity and low levels of managerial complexity within the South American markets.
- Mexico, Chile, Peru and Colombia all have large pipelines and attractive business environment relative to other South American markets.
- A primary investment in one of these markets is likely to yield a higher ROIC and shorter payback period relative to currently existing M&A opportunities.

As follow on steps, the client may wish to understand whether further negotiations may yield a lower price for an M&A opportunity, how sensitive our investment analyses are to macroeconomic factors, and the likelihood of winning deals as a primary investor in the new country.

KNOWLEDGE FOR ACTION

Snack Foods Acquisition

Wharton
UNIVERSITY *of* PENNSYLVANIA

Snack Foods Acquisition

Level of Difficulty: *Medium*

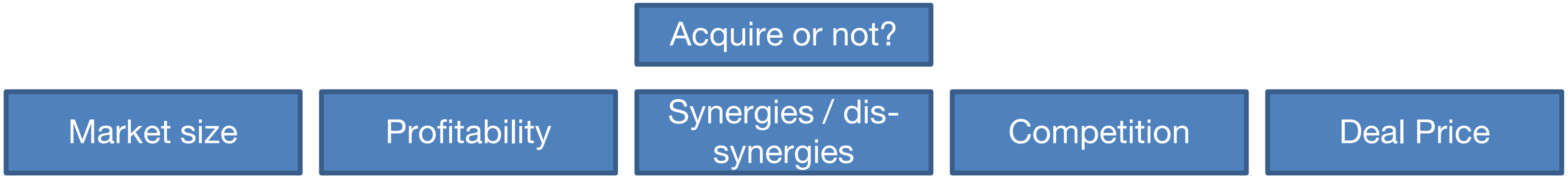
Case Similar to Cases at Firms: *Bain Round 1 case*

Topics Tested: *market sizing, break-even analysis and payback period, mathematical calculation,*

Prompt: *A US snack foods company specializing in snacking peanuts, Peanut Co., is planning to acquire another company specializing in snacking almonds, Almond Co. Peanut Co. is currently the market leader in snacking peanuts, but the overall segment is growing slowly compared to the market and they want to diversify. They have hired you to tell them whether this is a good idea.*

Framework and Clarifying Questions

Sample of Strong Framework:



Market size
- *How large is the market for snacking almonds?*
- *How much is this industry expected to grow? Is it trending up, down, or stagnant?*

Profitability
- *How profitable will this product be (e.g., pricing, costs)?*
- *Is snacking almonds a more premium market then snacking peanuts, in terms of price?*

Synergies / dis-synergies
- *Can we leverage Peanut Co.'s existing capabilities (distribution, mktg, sales)?*
- *Will entering cannibalize existing sales?*
- *Is the overlap between almond and peanut customers high?*

Competition
- *Is Almond Co. the preferred brand in the market?*
- *Who are the current competitors?*
- *What are the barriers to entry?*
- *How large is the threat of new entrants?*

Deal Price
- *What is the deal price?*
- *How will we finance the deal?*

Sample Clarifying Questions and Answers	
Are we only looking at the snacking almond market?	Yes – all other almonds (e.g., for cooking) are excluded
Since the snacking peanut market growth is slowing, is this trend affecting the entire snacking nut industry?	No – the almond industry is not impacted because almonds are considered to be higher in nutrients

Sizing the US market for snacking almonds

- Candidate could do market sizing based on frequency of purchase.
- Provide the following **assumptions**:
  - Assume the population of the US is 300M
  - 1 snack almonds packet: 16 ounces
  - Price of 1 packet: $2

Ask candidate reasons for numbers brainstormed

	"Don't snack nuts"	"Casual consumers"	"Health conscious consumers"	"Frequent consumers"
% of US population	75%	10%	10%	5%
Population size	210M	30M	30M	15M
Number of snack almonds packets consumed / year	0	25 (2 / month)	60 (5 / month)	120 (10 / month)
Total consumption	0	750M	1800M	1800M

- **Total number of packets: 0.75B + 1.8B + 1.8B = 4.5B (round to 5B)**
- **Cost of 1 packet: $2**
- **Total market size: 5B * $2 = $10B**

Pressure test if this is too large

Total market size is $8-10B

Breakeven for Peanut Co. on this investment

- Provide the following **assumptions**:
  - Almond Co.'s current market share: 10%
  - Almond Co.'s profit margin: 50%
  - Purchase price for Peanut Co: $1.5B

- Almond Co.'s revenues: $1B
- Almond Co.'s profits: $500M
- Assume revenue and cost structure stays the same over the next few years
- Purchase price is $1.5B
- Payback period = $1.5B/$500M = 3 years

More complex questions:

- If the purchase price was doubled and Almond Co.'s market share was halved, what would the new payback period be? (3*(2/(1/2)) = 12 years
- What assumptions are you most uncomfortable with? Which ones would you test further?

Wharton
UNIVERSITY of PENNSYLVANIA

Given Peanut Co.'s existing snack nuts business, what else would you consider?

- **Potential Benefits**
  - *Cross sell almond products to existing peanut customers*
  - *Leverage current distribution network to expand reach of Almond Co. and drive sales*
  - *Can extend innovation from peanuts to almonds (e.g., flavor, packaging, etc)*
- **Potential Risks**
  - *Potential for cannibalization of existing sales*
  - *Potential of brand dilution*

Wharton
UNIVERSITY of PENNSYLVANIA

Recommendations to the CEO of the Peanut Co.

- Good summary will include the following:
  - Answer – acquire or not? Either can be justified. See below
  - Strong justification on why? (Include 2-3 key numbers from the case)
  - Outline key risks with recommendation
  - Outline 2-3 key next steps
- If recommendation to acquire Almond Co.:
  - Large and growing market
  - Quick payback period of 3 years
  - High overlap with customers
  - Risks: could cannibalize current peanut sales, could dilute/confuse brand
  - Next steps: can we get a more favorable deal price; determine what exact innovation can be carried over from peanut business
- If recommendation is to not acquire Almond Co:
  - Cannibalize current sales
  - Could impact our current margin structure
  - Could dilute brand
  - Risks: if competitor acquires Almond Co and succeeds, Peanut Co's competitive position would be weaker
  - Next steps: determine if there are other players that we could acquire

KNOWLEDGE FOR ACTION

U.S. Shoe Manufacturing

Wharton
UNIVERSITY *of* PENNSYLVANIA

U.S. Shoe Manufacturing

Level of Difficulty: *Hard if you aren't familiar with operations strategy*

Case Similar to Cases at Firms: *McKinsey final round*

Topics Tested: *onshore/offshore, operations, mathematical calculations (unit profitability, total landed cost).*

Prompt: *A major U.S. shoe manufacturer is currently manufacturing its entire product line domestically. Because of increased labor costs and competitive pressure, the manufacturer is now interested in understanding whether it should offshore some or all of its production and, if so, where it should offshore to and what percent of its total product line should be manufactured onshore vs. offshore. What factors should the client consider as it compares onshore to offshore manufacturing?*

Opening Framework and Clarifying Questions

Sample of Strong Framework

Demand factors
- Demand volatility
- Demand growth
- Demand diversity (foreign vs. domestic)
- Competition (foreign vs. domestic)
- Required service level

Supply factors
- Supply volatility
- Supply lead time / responsiveness
- Availability of suppliers
- Direct labor vs. total costs
- Capital investments and economies of scale

Technological factors
- Access to human capital (knowledge and skills)
- Manufacturing infrastructure (downstream suppliers, manufacturing facilities)
- General infrastructure (roads, electricity, ports)
- Process innovation (efficient frontier of production)

Macroeconomic and regulatory factors
- Tariffs, quotas, and other protectionism
- Trade and global institutional agreements
- Exchange rates
- Political stability
- Cultural affinity and managerial alignment

Sample Clarifying Questions and Answers

What other products does the client currently sell besides shoes?	The client currently specializes in shoe manufacturing, but also manufactures some apparel as well.
Where else does the client currently sell its products besides the U.S.?	The client currently sells its products in developed markets (North America, Europe, and Australia)
What are competitors, both domestic and foreign, currently doing with respect to onshoring / offshoring?	Most of the clients' competitors currently do not offshore their production due to manufacturing and managerial complexity.
Outside of the U.S., in which markets are shoes typically manufactured? Where are high-quality shoes manufactured?	Lower quality shoes tend to be manufactured in China, Southeast Asia, and Central America, high quality ones in Eastern Europe.

Unit Profitability

The client has begun assessing a manufacturer based in Vietnam. They want us to do an in-depth analysis of the per-unit profitability of shoes produced in our existing facility vs. the Vietnam facility. Assume no capex in either case (U.S. capital is sunk, Vietnam arrangement would be cost plus). **What does the equation for per-unit profitability for shoes look like?**

profit = retail revenue – (COGS + labor + SG&A + transportation + quality + tariffs + retail margin)

Give the interviewee the below data and have them solve for profitability.

	U.S.	Vietnam
Retail revenue	$200	$200
COGS	30%	20%
Direct labor	25%	5%
SG&A	20%	25%
Transportation	4%	10%
Quality	1% defect rate	5% defect rate
Tariffs	NA	10%
Retail margin	10%	10%
Profit	**$10**	**$15**

Unit Profitability Conclusion

Given estimated profitability at both facilities, what should the client do? What are the key considerations and sensitivities that this basic model contains?

Based on the unit-profitability analysis, the client should offshore manufacturing to Vietnam because it is 50% more profitable on a unit basis to manufacture there. There are several considerations and sensitivities to keep in mind:

- Material costs and labor costs are much lower in Vietnam than in the U.S., driving most of the Vietnam manufacturing cost savings.
- Production quality is significantly worse in Vietnam (5% vs. 1%), and further quality deterioration would impact profitability and swing the decision to the U.S.
- Producing in Vietnam also entails added transportation and tariff costs, which are vulnerable to macroeconomic shifts (increased fuel costs, increased tariffs).

Are we missing anything else in this analysis that might drive costs higher in the offshoring case? Or is it possible that the client should split manufacturing across the two options and, if so, what proportion of shoes should be made in Vietnam vs. the U.S.? *Once the interviewee has touched on most the above, introduce this question. Direct the interviewee to the opening framework and ask about lead time and the volatility of demand.*

Total Landed Cost

The client just gave us one piece of information in addition to the costing data. Shoes manufactured in Vietnam have a lead time of three months (time from order to delivery). Shoes manufactured in the U.S., in comparison, have a lead time of one month. **What additional factors should the client add to the unit profitability model in order to make the right sourcing decision? Why are they important?** *Wait for the interviewee to touch on the below:*

- Average demand per period
- Volatility / standard deviation of demand per period
- Cost of capital / holding cost per period

These factors are important because uncertainty of demand combined with a longer lead time implies working capital costs. Vietnam's lead time is longer than that of the U.S., leading to higher working capital costs and an opportunity to do dual sourcing where the client manufactures base demand in Vietnam and excess demand in the U.S.

Total Landed Cost Conclusion

In consideration of the importance of demand, volatility, and cost of capital, we've come up with the following equation to enable us to calculate the proportion of shoes that should be manufactured offshore. *Give the interviewee the below equation and inputs, you can ask them to recall the Vietnam cost advantage*:

Offshored fraction = $1 - \delta\sqrt{\frac{h}{2\mu\Delta c}}$

δ **=** standard deviation of demand / period = 20

μ = average demand / period = 1,000

h = holding cost / unit / period = \$1

Δc = Vietnam cost advantage / unit = \$5 (*can ask interviewee*)

80% = $1 - 20\sqrt{\frac{\$1}{2*1000*5}}$

Therefore, based on these assumptions, the client should manufacture 80% of its shoes in Vietnam and the remaining 20% in the U.S.

Wrap-up

What should the client do?

The client should manufacture 80% of its shoes in Vietnam, and 20% of its shoes in the U.S. as a hedge against volatility and keeping in mind the cost of capital.

- The unit profitability advantage for Vietnam excluding lead time and the cost of working capital is $5 ($15 vs. $10).
- This cost advantage comes primarily from lower COGS and labor costs, and is somewhat offset by quality, transportation, and tariff costs.
- Demand is not highly volatile, nor is the client's cost of capital, and as a result, we find that the majority of expected demand can be met by Vietnam capacity.

As follow-on steps, the client may wish to understand the sensitivity of these assumptions to quality, transportation, and tariff costs, as well as future changes to the volatility of demand for the product. Greater volatility or higher cost of capital will push the client to shift more manufacturing back to the U.S.

KNOWLEDGE FOR ACTION

Chicago Parking Meters

Wharton
UNIVERSITY of PENNSYLVANIA

Chicago Parking Meters

Level of Difficulty: *Medium*

Case Similar to Cases at Firms: *Not sure*

Topics Tested: *mathematical calculation, marketing brainstorm, market sizing, etc.*

Prompt: *The city of Chicago is planning to sell the rights to all of its parking meters for 20 years to a private company. The idea is that in exchange for a lump sum, the city of Chicago would turn over the operation and revenue stream of its ~40,000 parking spaces to a private operator.*

The deal will bring in a big amount of cash for a cash-strapped city and relieve it of the responsibility of maintaining meters – something it isn't very good at. The city is planning to use a competitive bidding process with the highest bidder winning the contract. Bidders will be expected to set the prices for their parking meters and should be aware that they bear the risk of consumer demand for parking spaces and should factor that in when pricing their bids. Additionally, the contract also requires a high-tech upgrade replacing the old coin-based meters with new machines that accept cash, credit or debit cards, which is a service enhancement that should be incorporated in the bid.

Your consulting firm has been hired by the Company Parking GenNext to give a reasonable price for the rights to collect all money from Chicago's meters over a 20 year timeframe to win the competitive bid. How would you go about estimating it?*

**Money collected on parking tickets goes to the city, not the company.*

Framework and Clarifying Questions

Sample of Strong Framework:

In this question, the candidate should think about the following

During Stage 1, the candidate will do a relatively simple estimate based on future revenues and expenses (classic revenue / expense framework)

During Stage 2, as a follow-up to the answer in Stage 1, the candidates can be asked to think more creatively of other considerations, e.g., alternative pricing strategies, concerns on quality (brainstorming portion)

As long as the candidate uses a framework that includes the things above, it should be considered strong

Sample Clarifying Questions and Answers	
Questions on usage and revenue assumptions	*See slides 46, 47*
Questions on growth and discount rate	*See slide 50*
Questions on one-time and recurring cost assumptions	*See slide 48, 49*
Sample numerical solution	*See slide 51, 52, 53*
Sample brainstorming answers	*See slide 54*

Motivation for the Case

In 2008, Chicago sold the rights to all of its parking meters for 75 years to a private company for $1.15 billion. Info can be found here:

http://chicagometers.com/fact-sheet.aspx

Revenue and Usage Assumptions (1 of 2)

The candidate should make assumptions on the price per hour per meter, usage and growth / decline over a 20-year period to come up with an overall revenue estimate. In the interest of time and if the interviewer so desires, the following information / table can be provided:

Number and Price of Meters

In Chicago, there are ~40,000 metered spaces. And there is a three-ring structure when setting meter rates in Chicago; information is summarized below:

Ring	Description	Price per Hour	% Meters
I	Downtown Loop	3	3%
II	Central Business District	2	16%
III	Suburbs + Others	1	81%
			100%
		Total number of meters	***40,000***

Revenue and Usage Assumptions (2 of 2)

Usage of Meters

- Assume Ring I usage is 12 hours per day, Ring II 8 hours per day, Ring III4 hours per day
- Assume weekend / weekday usage are same (ask them what do they think if you want to assess creativity but then for the math, ask them to assume it's the same)
- Assume 30 days a month, 12 months a year

Cost Assumptions (1 of 2)

Beyond estimating the value of the revenues from parking meters, the candidate should explain what costs are necessary to enforce the system. This should include:

- **One-time investment** to upgrade the parking meters to accept cash, credit and debit cards. For simplicity, we can assume that the newly installed meters will have a life of 20 years and the bidder will not be expected to change them during the period.
- **Recurring operating expenses** – labor costs, maintenance costs, etc.

One-time investment

- 40,000 parking spaces ≠ 40,000 new parking meters.
- We can assume (or help lead the candidate to assume) that the 40,000 old single-space coin-operated meters will be replaced 5,000 new meters (such that each meter is capable of handling 8 spaces)
- Unit cost for one parking meter could be assumed to be in $20K, including installation costs

Recurring expenses

- Candidates should be expected to estimate how many people will be required, the hourly wage per worker, ongoing maintenance costs, etc.

Wharton
University *of* Pennsylvania

Cost Assumptions (2 of 2)

Recurring expenses

- Candidates should be expected to estimate how many people will be required, the hourly wage per worker, ongoing maintenance costs, etc.

- If candidate is stuck you can give the following:
    - Assume on average one person needed to monitor 10 new machines or 80 spaces
    - Assume on average a wage of $10 an hour for 8 hours a day for 300 days a year
    - Assume maintenance cost of $200 per machine per month.

Discount Rate and Growth Rate Assumptions

- A multi-year estimation also brings in time value of money, which potentially complicates the analysis, but we could always tell candidates to ignore that for purposes of this case (after seeing if they even thought about it).

- Candidates should be expected to put some thought into the risks to consumer demand when estimating revenues and how it would impact the growth / decline. A few considerations include changes in population, changes in preferences (consumers preferring to bike), economic activity, advancements in technology (driverless cars, alternatives to parking meters, etc.)

- For numerical calculations they can assume that the growth rate is zero

Sample Numerical Solution (1 of 3)

20-yr Revenue

	Hours per day (a)	Number of Meters (b)	Price per hour (c)	Annual revenue a x b x c x 30 days x 12 months	
Downtown Loop	12	1200	3	15,552,000	
CBD	8	6400	2	36,864,000	
Suburbs + Others	4	32400	1	46,656,000	
			1-year revenue	99,072,000	
			20-year revenue	**1,981,440,000**	***or ~2 billion***

Assuming zero growth

Sample Numerical Solution (2 of 3)

20-yr Cost

One-time Investment	
Number of new machines (40000 / 8) - (a)	5,000
Cost per machine	20,000
Total one time cost	100,000,000

Recurring Expense	
Monthly per machine maintenance cost - (b)	200
Annual Maintenance Cost - (a) x (b) x 12 months	12,000,000
Hourly Wage - (c)	10
Number of People - (40,000 / 80) - (d)	500
Annual Wage - (a) x (d) x 8 hours x 30 days	12,000,000
Total annual recurring costs	24,000,510
20-year recurring costs	480,010,200

Total cost	**580,010,200**	*or ~600 million*

Sample Numerical Solution (3 of 3)

NPV

20-yr Revenue	1,981,440,000	
20-yr Costs	580,010,200	
PV of Free Cash Flows (ignoring everything else)	**1,401,429,800**	*or ~ 1.4 billion*

Sample Brainstorming Answers

NPV

- In this more creative component of the case, we can ask the candidate to think of some of the other considerations that will test how innovative they are in their problem-solving approach.

- One idea is to have them think of alternative pricing strategies. These could include variable pricing schemes (e.g. surge pricing for busier times of the day) and potentially leasing of parking spots to specific people, or whatever else the candidate can come up with , keeping in mind that there are 20 years for executing these schemes. Think MGEC!

- Candidates could also be asked to think of the different kinds of technological advancements along the way that would help the bidding company stay competitive and boost revenue. For example, the bidding company could consider launching mobile apps that would inform customers of parking availability if they are near a parking meter and would also send alerts if the time is expiring.

- Depending on how the question goes, the interviewer can also ask questions on reputation and image. For example, in any privatization, the public expects that the quality of service will improve. So what would be the strategy that the candidate would suggest to ensure that?

KNOWLEDGE FOR ACTION

SLS
Oil & Gas Services

Wharton
UNIVERSITY of PENNSYLVANIA

High engineer attrition at SLS Oil & Gas Services

Level of Difficulty: *Hard*

Case Similar to Cases at Firms: *Bain and BCG Final Round cases*

Topics Tested: *Operations and General Management*

Prompt: *Our client SLS is one of the world's largest oil and gas services provider operating in 85 countries and employing about 100,000 people from over 140 countries. They help find, scope and drill as much oil and gas as possible for their clients – which range from major international oil companies to petrostates such as Saudi Arabia and Russia.*

Of late they are seeing a very high attrition rate among their Field Engineer (FE) population across several offices globally, the Mumbai office in India being one of the most affected. The CEO is concerned and has asked you for advice specifically for the Mumbai office. She hopes that if the problem can be fixed in Mumbai, similar fix can be implemented everywhere else. It is indeed a matter of grave urgency for SLS.

Framework and Clarifying Questions (1 of 2)

Overview for the Interviewer

The case is mainly about three things – (1) Clearly understanding the business and the life of an FE in Mumbai (2) Identifying the reasons for high attrition in Mumbai (3) Coming up with specific and actionable recommendations for Mumbai

This case is heavy on brainstorming and is relatively difficult to structure. It is also more qualitative than quantitative. Leave it up to the interviewee to structure as (s)he wishes and give them information only if requested. Since this case is from an industry and function that people might not be familiar with, it is important to understand the context clearly before diving deeper. If the interviewee gets stuck at any point during the case, feel free to direct them towards what needs to be evaluated.

Sample Clarifying Questions and Answers	
What does a Field Engineer do?	Field Engineers work with specialized oilfield equipment which they lower inside a well, and then record and analyze data to identify whether and how much oil and gas is buried in the ground. They spend a considerable amount of time working on oil rigs. All oil rigs in Mumbai are offshore i.e. at sea (see **Exhibit 1** that shows two types of offshore oil rigs in Mumbai) Most offshore rigs are bad with poor food, poor internet and poor accommodation.
How is attrition rate defined?	(No. of FEs quitting in a year / Avg. no. of FEs in that year) %
Where are FEs going?	Mostly going to do Masters or moving to a completely different industry
How high is the attrition rate?	28% in 2016 in Mumbai (similarly high in several other offices globally)
What has the CEO requested?	Identify the cause(s) of high attrition and make recommendations on fixing it

Framework and Clarifying Questions (2 of 2)

Sample of Strong Framework

1. Business in Mumbai and the life of an FE

- a. What does SLS do in Mumbai?
- b. What exactly do FEs do and what is a day in the life of an FE like?
    - i. Background of the FE
    - ii. Work-Life balance
    - ii. Relationship with Managers

2. Identifying the reasons for high attrition

- a. What information to collect and how to collect it
    - i. Face to face interviews with managers, FEs, HR etc.
    - ii. Anonymous questionnaires and feedback forms
- b. Analyze the information – potential reasons for high attrition
    - i. Internal (SLS related) reasons
    - ii. External (non-SLS related) reasons

3. Recommendations for fixing attrition

- a. Short-term
    - i. Give more Time-off/Vacation
    - ii. Team-building activities
    - iii. Get More engineers
- b. Long-term
    - i. Revamp Offshore Staffing Model
    - ii. Hire FEs compatible with Schlumberger culture
    - iii. Relook at compensation

Key Discussion Points (1 of 4)

1. Business in Mumbai and the life of an FE *(Provide information if asked)*

a. What does SLS do in Mumbai?
> Help major oil and gas companies scope, drill and extract oil and gas from Mumbai offshore
> Sends equipment and FEs offshore to rigs (that are owned and managed by clients), where the FEs work with SLS equipment to meet client's objectives

b. What exactly do FEs do and what is a day in the life of an FE like?
> FEs are hired after undergrad from the best engineering schools around the world
> SLS has historically offered an unconventional, fast-paced, challenging and extremely rewarding career
> *Two key differentiators for the FEs has been compensation and opportunity for global travel!*
> FEs are hired as Juniors and after ~2 yrs. become Seniors. 1 FE (Sr. or Jr.) stand-by on rig, 2nd FE sent during operations; both make bonus when offshore. Optimal time an FE likes to spend offshore before swap is 3 wks.
> FE would either be offshore (on the rig) stand-by or managing operations, in the office, or on vacation
Exhibit 2 is data for Mumbai office. Ask interviewee for observations. Following should be pointed out –
> # of engineers has been constant (Has activity been constant? Yes – 25 rigs for the last 5 yrs.)
> # quit has been going up – answering why and how to resolve is what the case is about!
> # transferred out went down to 0 – management decision could be demotivating engineers!
> # transferred in has gone up – is anything being done to improve team-spirit among new and old engineers?

Exhibit 3 shows utilization (% of FEs not on vacation) and effective utilization (% of FEs offshore) trends. Wait for interviewee to ask about relevant information – otherwise show this and ask for observations.
> Gap widening between the two – fewer FEs on vacation and more FEs sitting in office not making bonus!
> Managers not using FEs efficiently (Why?) – only 1 or 2 FEs required in the office on any given day.

Key Discussion Points (2 of 4)

Math Question

This question is not difficult but requires a very good understanding of the FE staffing model at SLS, which the interviewee should have gotten clarified by now. If not, help her/him proceed.

a. Based on **Exhibits 2 & 3**, calculate the no. of FEs expected to be in the office any given day.
b. Now given that on any given day only 2 FEs are needed in the office, 1 standby FE for each of the 25 rigs and 36% of the rigs have operations on-going, how high can effective utilization be taken and how many FEs can be sent on vacation?

a.
50 FEs with a utilization of 80% and effective utilization of 60%.
*40 FEs (50*80%) are at work and 30FEs (50*60%) are on the rig. This translates to 10 FEs being in the office on any given day, and 10 on vacation.*

b.
*25 (1*25) standby FEs for each rig + 9 (1*25*36%) FEs on rigs due to operations – This information about 2nd FE sent to rig during operations was given earlier to the interviewee in Slide 4. If they miss this, remind them again.*
34 FEs are therefore needed offshore which translates into an effective utilization of 68% (34/50).
Given only 2 FEs are needed in the base besides this, 14 FEs can be sent on vacation.

Wharton
University *of* Pennsylvania

Key Discussion Points (3 of 4)

2. Identifying the reasons for high attrition

a. What information to collect and how to collect it *(Ask this Question if interviewee doesn't)*
> FEs should be interviewed first before managers and HR - in person meeting preferred over a questionnaire
> Ask about managers, motivation, reasons for their peers quitting, if SLS is meeting their expectations

b. Potential reasons for high attrition *(Ask this Question if interviewee doesn't. Following are the FACTS – agree or disagree with the interviewee as (s)he mentions these)*
> Internal (SLS-related) reasons
> Management change in 2014 – risk-averse; keeping more people on reserve rather than on vacation
> Fewer vacations/days-off for FEs and more days in the office – no bonus
> Those FEs which are offshore are spending a lot of time offshore

Exhibit 4 showing Level Loading should be shared once the above point has been made (or not). This shows the % of FE population spending different amount of time offshore at a single stretch. Remember 3 wks. is optimal. Interviewee should drill deeper and enquire about segmentation of this data.

Exhibit 5 shows that Sr. FEs are 'suffering' longer runs offshore and Jr. FEs are consequently making lesser bonus – both are unhappy! Interviewee should question why this might be happening (otherwise ask them). Reason is that the new risk-averse management is not confident with Jr. FEs' competency.
> No transfer outs – demotivating FEs stuck in the same office for years
> More new recruits – inadequate cohesion within the group

> External (non-SLS related) reasons
> FEs are quitting and going for Masters or switching industries – is SLS recruiting the right people?
> Compensation difference decreasing between SLS and other companies that require similar skillset
> Booming start-up culture in India – plenty of exit opportunities

Key Discussion Points (4 of 4)

3. Recommendations for fixing attrition *(Interviewee should list most or all of these)*

a. Short-term

> Train Management – Make the offshore staffing system process-driven rather than people-driven
> Increase vacation/time-off by reducing utilization but offset by increasing effective utilization
  > Swap FEs predictably after they spend ~3 wks. offshore on the rig
  > Make offshore life more enjoyable by sending food, games etc. from town
> Improve level loading by improving competency of Jr. FEs – track competency and train as required
> Introduce team-building activities to improve team-spirit
> Increase vacation/time-off by reducing utilization but offset by increasing effective utilization
  > Swap FEs predictably after they spend ~3 wks. offshore on the rig
  > Make offshore life more enjoyable by sending food, video games etc. from town

b. Long-term

> Keep transfer-out rates reasonably healthy as before, or send FEs on short-term assignments outside Mumbai
> Recruit the right talent – set expectations correctly during employer info sessions
> Relook at the compensation structure to make it competitive again
> Internal or External (i.e. on-campus) marketing to promote the unique work-culture at SLS
> Hire more engineers (but it will increase cost)

Exhibit 1

< Semi-submersible *a.k.a.* semi-sub

< Deepwater drillship

Exhibit 2

	2012	2013	2014	2015	2016
# Engineers (start)	50	52	55	51	50
# Engineers (end)	52	55	51	50	50
# Hired	6	6	5	2	6
# Fired	1	2	1	0	0
# Quit	2	3	7	10	14
# Transferred Out	4	3	1	0	0
# Transferred In	3	5	0	7	8
Attrition %	3.9	5.6	13.2	19.8	28.0

Wharton
UNIVERSITY of PENNSYLVANIA

Exhibit 3

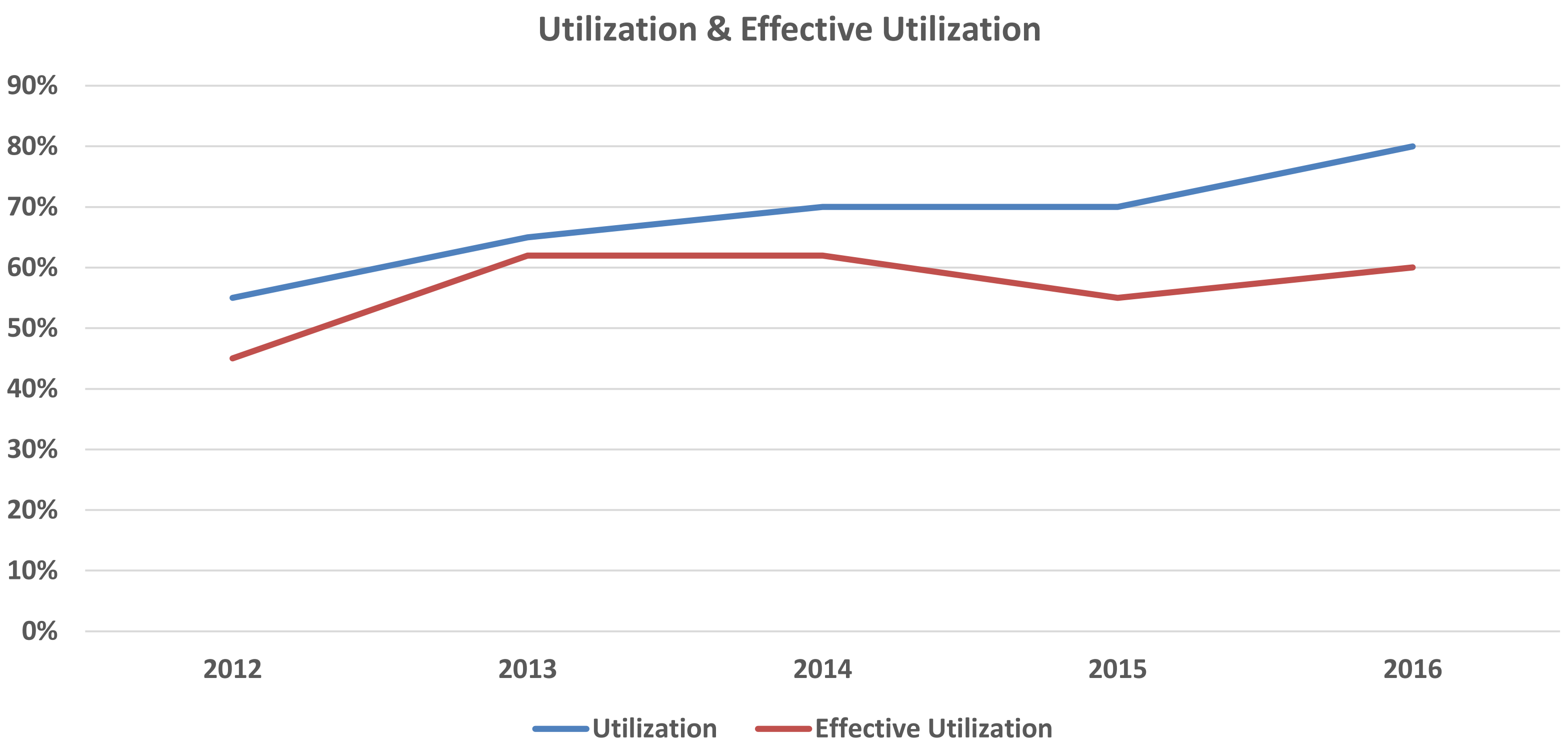

Utilization & Effective Utilization
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
2012
2013
2014
2015
2016
Utilization
Effective Utilization

Exhibit 4

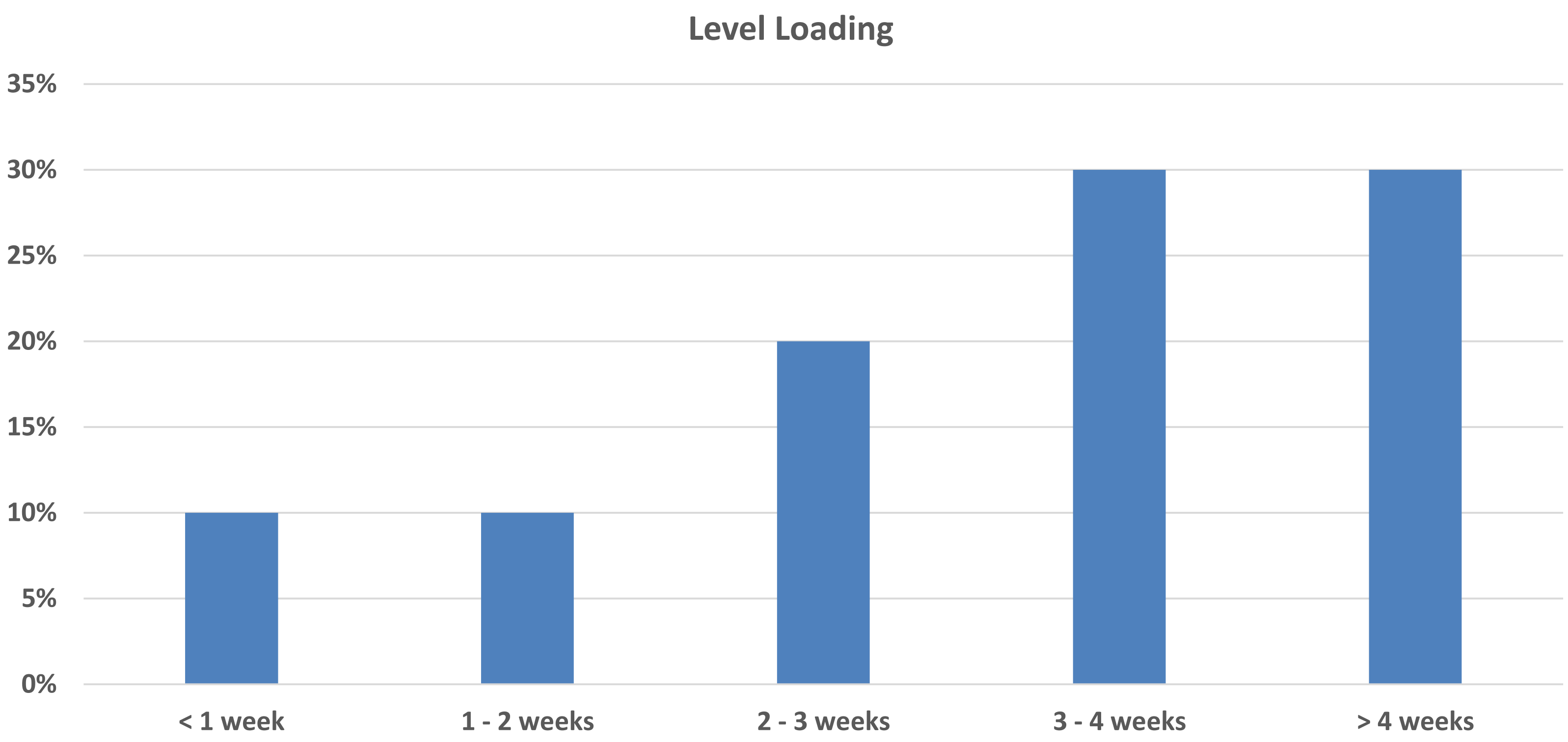
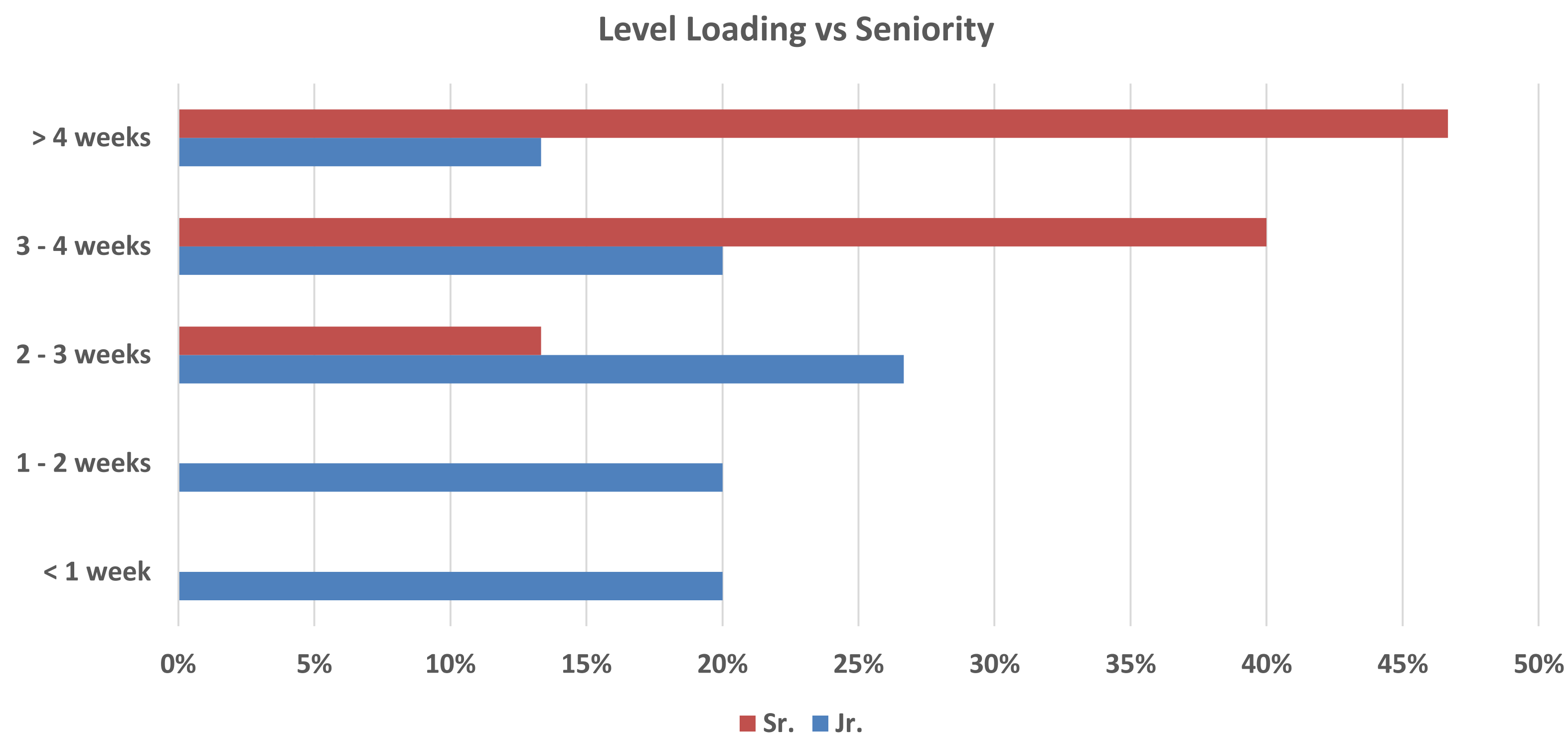

Level Loading
35%
30%
25%
20%
15%
10%
5%
0%
< 1 week
1 - 2 weeks
2 - 3 weeks
3 - 4 weeks
> 4 weeks

Exhibit 5


Level Loading vs Seniority
> 4 weeks
3 - 4 weeks
2 - 3 weeks
1 - 2 weeks
< 1 week
0%
5%
10%
15%
20%
25%
30%
35%
40%
45%
50%
Sr.
Jr.

KNOWLEDGE FOR ACTION

Salt Lake City Airport

Wharton
UNIVERSITY *of* PENNSYLVANIA

The Salt Lake City Airport

Level of Difficulty: *Easy*

Case Similar to Cases at Firms: *Parthenon-EY*

Topics Tested: *Brainstorming, Market sizing*

Notes the casegiver: *This is a highly structured case without the use of a traditional framework. That being said, the interviewee should still structure their thoughts, be engaging, and come up with a great final recommendation.*

Prompt: *Our company is pitching to the President of the Salt Lake City International Airport next week, hoping to earn a big contract with the Airport moving forward. We know that the SLC Airport is the only commercial airport for more than 2.5M people in the greater Salt Lake City area, is the 21st busiest in the nation with 650 flights per day, and is owned entirely by the City of Salt Lake. The Airport President is a mayor-appointed individual who oversees all aspects of the airport's operation.*

Notes to the casegiver

•This case a bit atypical as it does not call for a typical framework. That being said, answers should still be structured, math should still be organized (and correct!), and time for brainstorming (10-15sec) should be used.

•Continually push the interviewee to consider a typical airport and the Salt Lake City market.

•Continually push the interviewee to use airport related terminology (passengers in the terminal not customers buying widgets).

Off the top of your head, what are the most important things that the Airport President must think about?

Answer guide: A good answer will be structured and consider the various stakeholders of an airport (i.e. Passengers, Airlines, Airport Vendors, Security, City Tourism, City Chamber of Commerce).

Example of a good answer:

The three most important things the Airport President should think about when running the airport are the effects to Passengers, Airlines, and the Airport's Vendors.

Passengers are important because if passengers have a bad experience, they will choose to drive, take the train, or visitors simply might choose to go to Colorado to go skiing and locals might simply not travel. This will certainly hurt the airport.

The Airlines are another key stakeholder, because if they are unhappy they will fly to SLC less. This will hurt the local business and tourism economy, likely increase airfares if there are fewer flights which hurts passengers, and also lead to layoffs if there are fewer passengers.

The Airport Vendors are another important stakeholder, because they affect the passenger experience and represent local jobs. The Airport President should make sure that there are an appropriate number and variety of vendors, and similar to a shopping mall, be the intermediary between the different vendors.

How many passengers does the SLC Airport handle annually?

Additional information to provide when asked:

- **What is a passenger?** A passenger is measured by a person who passes through the airport, either to board or deplane an aircraft. People who are passing through the airport on a layover switching planes are considered one passenger.

- **What about people dropping off friends at the airport?** Taxi drivers, Uber drivers, and people picking up their friends are not passengers.

- **How about Pilots, Flight Attendants, and TSA Workers?** We are only counting people who have a paid ticket to fly, not people at the airport for their job.

- **Are we counting only one-ways or roundtrips?** We are considering each visit to the airport. For example, a family of four traveling roundtrip from SLC to Los Angeles for vacation would count as 8 passengers (4 when they leave and 4 when they return).

How many passengers does the SLC Airport handle annually?

Answer guide: A good answer will be structured and break down passengers into usable sub segments.

Example of an answer (flights based):

We know there are 650 flights per day. Let's say the average plane has 30 rows of 6 seats per row, or 180 seats per flight. Most flights are 80% full. So we know there must be

365 Days
x650 daily flights
x180 seats per flight
x75% booked
= ~34M passengers per year

How many passengers does the SLC Airport handle annually?

Answer guide: A good answer will be structured and break down passengers into usable sub segments.

Example of an answer (population based):

Let's consider SLC residents and visitors as two separate constituents. Starting with residents, we know there are 2.5M people. Let's break them down into a few groups.

1. Let's say 10% are people who travel regularly for work (like consultants). They travel roundtrip every week probably 45 weeks per year. Assuming people live to 100 with equal distribution, we're really only talking about people 25-65 which is 40 years of 25K people each. That's 40*25K*2*45=<u>9M</u>

2. Let's say the next 10% of workers travel for work, but less frequently. Let's say they make one trip a month. That's 40*25K*2*12= <u>2.4M</u>

3. Let's say the rest of the 80% of adults 25-65 are parents and, with all the kids, they travel once per year for vacation or the holidays. That's 40*25K*8*2*1= <u>1.6M</u> and the kids 5-25 (maybe under 5 is too young) is 20*25K*2*1=<u>1M</u>

4. Let's say the senior citizens (older than 65) only travel once per year. That's 35*25K*2*1=<u>1.75M</u>

Adding this all up, that's 9M+2.4M+1.6M+1M+1.75M, or 15.75M resident passengers. Let's double this because planes are usually half local and half visitors, so <u>there are 31.5M passengers each year.</u>

Wharton
University of Pennsylvania

Choosing between two projects

Question - The President of the airport is thinking about which of two projects to undertake. The money to build both has already been accounted for through municipal bonds, so you can ignore construction costs. The first is to open a sit down restaurant in the terminal and the second is to open a lounge in the terminal. Which of the two options would you suggest the President pursue?

Additional information to provide when asked:

- **What are the goals or decision criteria?** The decision should be based on the criteria you said was important for the President to consider in part one.

- **What would be the revenues and costs of the two?** The restaurant would bring in a $15 check per passenger, and cost $6 per passenger. The lounge would cost $30 per passenger who enters, and cost $12 per passenger to provide.

- **Does the airport already have either a sit-down restaurant or a lounge?** No, the airport does not have either.

Choosing between two projects

Answer guide: A good answer will be structured, considering the criteria and revenues/costs.

Example of an answer:

First, let's consider the financial element. We know a restaurant would earn ($15-$6=) $9 of profit per visitor, while the lounge would bring in ($30-$12=) $18 of profit per guest. So they are both profitable, and depending on how many passengers use the two we could say which is more profitable (ie, if there is more than twice the interest in the restaurant, than the restaurant will be more profitable). Earlier I said passenger experience is a key consideration and also airport vendors. Considering the passengers, we know the majority of passengers are their for business reasons, and business travelers would most likely prefer a premium lounge. Considering airport vendors, while there is not a sit-down restaurant, there must be counter or take-out food vendors who would not like to see a sit-down establishment take away business, so they too would most likely prefer a lounge. It seems that a lounge is the way to go.

KNOWLEDGE FOR ACTION

Clothing Chain Acquisition

Wharton
UNIVERSITY of PENNSYLVANIA

Clothing Chain Goes Global and Local

Level of Difficulty: *Medium to Hard*

Case Similar to Cases at Firms: *Deloitte Human Capital first- and second-round cases*

Topics Tested: *mergers and acquisitions, culture, change management, workforce development and stabilization*

Prompt: *Yermakov Ltd, a US-based clothing company with stores in 65 countries and 100,000 employees based around the world, is in the process of "localizing" its image. In addition to continuing to use its traditional supply chain and manufacturing process for many of the Yermakov clothing lines, Yermakov is also introducing new, local lines of fashion. Yermakov's ability to do this is based on the company's ongoing acquisition of a dozen high-end boutiques and specialty clothing shops. These acquired businesses exclusively use fair trade sourcing, have close relationships across their supply chain and buyer base, and in general are much smaller in size that Yermakov – the largest employee base of any of the companies being acquired is 120 people. These employees have deep, specialized knowledge about their industry and are passionate about local fashion and local business.*

Clothing Chain Goes Global and Local

Prompt, continued:

Yermakov Ltd. has spent the last year working with another consulting firm to analyze and finalize its recent business acquisitions. Yermakov is now approaching Deloitte Human Capital because, six months in to this new post-acquisition era, the company is experiencing what one of Yermakov's senior staff referred to as "growing pains." A large number of employees who worked for the acquired companies declined offers to continue working under the Yermakov umbrella, and customer acquisition and retention in the local fashion market has been lower than expected. This is making long-time Yermakov employees anxious, which is affecting their day-to-day performance.

Yermakov has approached Deloitte Human Capital for help stabilizing their workforce and communicating a compelling change agenda.

Clarifying Questions

Pro tip: Human Capital cases have much longer prompts that typical consulting cases, and it's important to remember what you've been told. Don't hold back on the note-taking!

Pro tip: The interviewee should take a moment to ask 1-2 insightful clarifying questions. Then briefly summarize the case.

Sample Clarifying Questions and Answers	
Is the other consulting firm still working with the client?	No – but they do have a point of contact from the team that's available for communication OR Yes – they're still wrapping up final agreements
Are most of these 12 acquired companies located in countries where Yermakov already has a business presences?	Yes – that was part of the criteria for acquisition
For the acquired companies, did their staff have much advance notice of the acquisition?	It differed from company to company, but in general there usually was about a month's notice to employees
Does Yermakov have an in-house team (apart from acquired company employees) that has expertise/professional background in local fashion?	No

Framework

Pro tip: The interviewee should ask if they can take a minute to gather their thoughts (put a framework together)

Pro trip: The framework below is recommended for Human Capital cases in particular

Sample of Strong Framework:

Key Business Issue(s)

	Assess	**Implement**	**Evaluate**
Work stream 1	Activities Data Sources	Activities Work Outputs	Activities Measurement Tools
Work stream 2	“”	“”	“”
Work stream 3	“”	“”	“”

Framework

Framework breakdown:

Business Issue: Use this as an opportunity to restate why you/your consulting team has been asked to work with the client. What problems will you be solving?

Work streams: What approaches are you prioritizing to solve the client's business challenges? How will you break down these work steams into distinct phases (assess, implement, evaluate)?

Pro tip: It is recommended to have three work streams. You can do more (suggest no more than five), but be mindful that you have limited time to put your framework together. To have the best of both worlds, stick to three and in the corner, have a box for "Other Considerations." This will show your interviewer that you're aware of other work stream potential, but that you also know how to prioritize.

Pro tip: Prioritize your work streams, and start with your most important one. Explain why you think it's the most important.

Framework

Pro tip: As you fill out your framework, be sure to note key risks of the approaches and activities you're recommending. What are ways to minimize these risks?

Pro tip: Time to fill out your framework is limited. Use shorthand whenever possible, and leave some boxes/buckets sparse if needed.

Pro tip: Always state your assumptions.

Pro tip: Even though Human Capital cases aren't "numbers" cases, human capital work still needs to have a clear impact on the client's revenues, profits, etc. You'll get bonus points on your framework if, as you talk through it, you call out top line/bottom line impacts.

Pro tip: Clearly state your conclusions and recommendations before you wrap up going through your framework.

Framework

Sample of Strong Framework for this Case:

Biz Issues: Acquisition Management, Workforce Stabilization

Work Stream 1: Communication/ Change Mgmt

Assess

Stakeholder analysis
Change readiness assessment

Bonus points to interviewee for mentioning you will review work done by prior consultants

Bonus points for mentioning which depts. will be involved and why

Implement

Change management strategy – demonstrate how employees benefit from acquisition. Comms should be straightforward with vision, timeline and steps to make vision a reality. Should demo that Yermakov mgmt. had things under control.

Create two-way communication channels (company intranet, all-hands meeting, etc.)

Can also mention pulse surveys

Bonus points for mentioning how progress along change curve helps Yermakov recoup their acquisition investment

Evaluate

Change curve, % awareness, understanding, adoption; open rate of change communication messages

Framework

Sample of Strong Framework for this Case:

Biz Issues: Acquisition Management, Workforce Stabilization

Work Stream 2: Talent

Assess

Bonus points for mentioning data sources

Gap analysis, pulse survey/employee listening tools, compensation and benefits benchmarking

Implement

Bonus points for explaining how these activities will help facilitate a managed change experience

Talent strategy, roadmap
Competency modeling, predictive modeling – what workforce skills are now needed for the newest version of Yermakov?
Career pathing
Rewards/recognition strategy

Evaluate

Employee engagement surveys
Pulse surveys
Offer/acceptance rate
“Good place to work” ratings

Bonus points for explaining impact on business outcomes (e.g. morale, productivity, retention)

Framework

Sample of Strong Framework for this Case:

Biz Issues: Acquisition Management, Workforce Stabilization

Work Stream 3: Culture/ Employee Engagement

Be sure to state assumptions, e.g. I assumed that employee engagement went down post-acquisitions. In the short-term I want to get back to baseline, and post-intervention I expect to see rates go up.

Assess

Nice opportunity to integrate a market stat, e.g. less than 1/3 of executives say they understand their company's culture

Review employee engagement surveys/create them if they don't exist
Stakeholder interviews/workshop

Implement

Bonus points for mentioning a product the firm can offer for this activity, e.g. Deloitte's CulturePath

Employee engagement strategy
Can include variety of approaches: more face time with senior leaders, professional development opportunities for employees
Strike a balance between maintaining fundamental elements of Yermakov culture while preserving core elements of acquired company culture

Evaluate

Employee engagement levels pre- and post-intervention

Wharton
UNIVERSITY of PENNSYLVANIA

I picked different work streams. Am I wrong?

No. In Human Capital cases there many different ways to respond to the same prompt well. In this case, alternative work streams include:

- **Leadership alignment** (for example, what is the reporting structure for all the CEOs of the acquired companies? Are they still able to maintain some autonomy? How is this affecting performance and business outcomes?)
- **Stakeholder management**
- **Employee engagement** (similar to Culture)
- **Employee benefits and rewards** (for example, perhaps staff are leaving because the acquisition change people's benefits packages in an unappealing way, or created a situation where different employees have different benefits, generating resentment, This can be assessed, addressed and monitored for improvements in staff retention rate – which would be a positive business outcome).

Pro tip: there aren't a ton of Human Capital cases out there, but you can use the same case multiple times – just push yourself to change the work streams each time.

Potential questions for the interviewer to ask

- Why did you prioritize these three work streams?

- Let's say Yermakov can't afford to do as much business with us as we would like, at least initially. If you had to prioritize one work stream, which one would it be and why?

- What do you think is the biggest risk with the plan you laid out? How will you minimize it?

- I didn't mention it earlier, but a major part of the challenge of all these acquisitions is that each company works on a very different technology platform. How would you deal with this aspect of the acquisition integration?

Notes for the interviewer

- When the interviewee walked you through their framework, when it came to activities like a stakeholder analysis, did they address both internal AND external stakeholders? This is important.

- It is optimal for the interviewee, when talking through their framework, to reference firm-specific products, resources, etc. that would be relevant to leverage (for example, company learning center that clients can come to, affiliate partner that does research in a relevant area, etc.). Is the interviewee keeping an eye out for how to optimize business opportunities from Yermakov, and how to build a long-term relationship?

- Did the interviewee integrate firm knowledge as they went through the case? If not, prompt them to do so.

Notes for the interviewer

- Did the interviewee incorporate human capital market trends into their analysis? If not, ask them which current trends are most relevant to the case in question. Examples include the gig economy, automation, millennial workforce expectations, etc.

- When the interviewee goes through their framework, it is perfectly acceptable (and good practice) for you to ask, “what do you think about XYZ as an additional work stream?” or “for work stream 1, would you consider ABC as an activity instead?” Part of your evaluation of the interviewee should be how gracefully they manage this unanticipated shift in direction.

- Did the interviewee make note of dependencies between work streams? If not, prompt them about this with a question.

Wharton
UNIVERSITY of PENNSYLVANIA

Sample good answers to brainstorming questions

Q: What's the primary reason you think Yermakov is currently experiencing workforce challenges?

A: Very little advance notice was given to employees of acquired companies about the acquisitions, and very limited information was provided to them about how the acquisitions would affect their day-to-day work – work these employees are extremely passionate about. This created a lot of unnecessary uncertainty and anxiety. It doesn't sound like Yermakov senior mgmt./HR went out to their newly acquired companies to formally welcome people, develop rapport, hear concerns or understand the culture of the companies they acquired. If Yermakov had actively done more to demonstrate that it wasn't just acquiring businesses, but also the human capital within those businesses, stakeholders would have been more aligned around the changes brought about via acquisitions.

Sample good answers to brainstorming questions

Q: People get unhappy about this or that at their jobs all the time – it's normal. Why is this such a problem for Yermakov?

A: People are the most important asset a company has, and when people feel undervalued, they underperform and often leave the company. Yermakov just made a huge investment in acquiring companies, and in this case the human talent, networks and passion for the work are the most valuable assets they captured. If Yermakov isn't able to retain their acquired employees – something which may require allowing company sub-cultures to flourish – it risks losing major potential upside on its investment.

Sample good answers to brainstorming questions

Q: Yermakov is making significant investments to change/upgrade its competitive offering in the marketplace to include local fashion. Yet, very few people at Yermakov seem to really understand what local fashion is. These same people are ambassadors of the Yermakov brand. How can this be addressed?

A: This is where training comes in. Long-term Yermakov employees may not become the company's leading local fashion experts, but they can be trained on key talking points and incentivized to identify synergies as a result of the acquisitions. There can be professional rotations at local fashion subsidiaries/acquired companies, site visits, etc. as well.

KNOWLEDGE FOR ACTION

Pharma Company Outsourcing

Wharton
UNIVERSITY *of* PENNSYLVANIA

Pharma Company Goes International, Outsources Benefits, Integrates New Technology

Level of Difficulty: *Medium to Hard*

Case Similar to Cases at Firms: *Deloitte Human Capital first- and second-round cases*

Topics Tested: *international expansion, outsourcing, technology integration and adoption, talent, training*

Prompt: *Waltham&Rose, a pharmaceutical company based and solely operational in the US, has recently announced its imminent international expansion to Germany and France. The company will be increasing its employee numbers by 50% as a result of this expansion. To ease workloads and minimize complexity during this growth phase, Waltham&Rose executives are strongly considering outsourcing health benefits management. Executives have also decided to, for the first time, integrate a cloud-based CRM software, which all employees (many of whom have worked for Waltham&Rose for decades) will be required to use.*

Pharma Company Goes International, Outsources Benefits, Integrates New Technology

Prompt, continued:

Waltham&Rose has sought out Deloitte Human Capital to develop and help implement a seamless CRM technology adoption process, and to help ensure new Europe-based employees feel they are a part of the Waltham&Rose "family," and represent the brand well.

The pharma industry has become increasingly competitive in recent years, with peer companies having already invested significantly in global expansion and technological advancements. Waltham&Rose executives feel they have no time to waste in implementing the above changes.

Clarifying Questions

Pro tip: Human Capital cases have much longer prompts that typical consulting cases, and it's important to remember what you've been told. Don't hold back on the note-taking!

Pro tip: The interviewee should take a moment to ask 1-2 insightful clarifying questions. Then briefly summarize the case.

Sample Clarifying Questions and Answers	
Are any Waltham&Rose senior executives planning to relocate to Europe?	There have been some discussions about this, but as yet there is no firm plan for any senior executive to relocate
Since the company has operated purely domestically for decades, do that have any in-house expertise about European business regulations?	No
You mentioned that some employees have worked for Waltham&Rose for decades – what's the demographic breakdown of their workforce overall? In terms of age, in particular?	It's largely people in their forties and fifties, most of whom have worked for the company for at least 10 years
Is there already a plan in place for outsourcing the healthcare benefits?	No – and outsourcing is new territory for Waltham&Rose

Wharton
UNIVERSITY *of* PENNSYLVANIA

Framework

Pro tip: The interviewee should ask if they can take a minute to gather their thoughts (put a framework together)

Pro trip: The framework below is recommended for Human Capital cases in particular

Sample of Strong Framework:

Key Business Issue(s)

	Assess	**Implement**	**Evaluate**
Work stream 1	Activities Data Sources	Activities Work Outputs	Activities Measurement Tools
Work stream 2	“”	“”	“”
Work stream 3	“”	“”	“”

Framework

Framework breakdown:

Business Issue: Use this as an opportunity to restate why you/your consulting team has been asked to work with the client. What problems will you be solving?

Work streams: What approaches are you prioritizing to solve the client's business challenges? How will you break down these work steams into distinct phases (assess, implement, evaluate)?

Pro tip: It is recommended to have three work streams. You can do more (suggest no more than five), but be mindful that you have limited time to put your framework together. To have the best of both worlds, stick to three and in the corner, have a box for "Other Considerations." This will show your interviewer that you're aware of other work stream potential, but that you also know how to prioritize.

Pro tip: Prioritize your work streams, and start with your most important one. Explain why you think it's the most important.

Framework

Pro tip: As you fill out your framework, be sure to note key risks of the approaches and activities you're recommending. What are ways to minimize these risks?

Pro tip: Time to fill out your framework is limited. Use shorthand whenever possible, and leave some boxes/buckets sparse if needed.

Pro tip: Always state your assumptions.

Pro tip: Even though Human Capital cases aren't "numbers" cases, human capital work still needs to have a clear impact on the client's revenues, profits, etc. You'll get bonus points on your framework if, as you talk through it, you call out top line/bottom line impacts.

Pro tip: Clearly state your conclusions and recommendations before you wrap up going through your framework.

Framework

Sample of Strong Framework for this Case:

Biz Issues: Acquisition Management, Workforce Stabilization

Work Stream 1: Organizational/ Job Design

Assess

Gap analysis
Change readiness assessment

The company is in a hurry – bonus points for calling out ways you can get the information you need quickly (e.g. all hands half-day workshop)

Implement

Predictive competency modeling
Revamped job descriptions
Creation of new positions (e.g. Outsourcing Manager, CRM Manager, International Compliance Manager)
Recruitment strategy (internal vs external)
Hiring and training timeline

Bonus points for calling out who at Waltham& Rose internally will be involved in this process. All external hires, or also internal promotions? Have you called out links between gap analysis and ore redesign strategy?

Evaluate

Progress against strategy and timeline
Individual job performance

Framework

Sample of Strong Framework for this Case:

Biz Issues: Acquisition Management, Workforce Stabilization

Work Stream 2: Training and Learning

Assess

Bonus points for mentioning that training and learning are key drivers of employee engagement, which is a key driver of profitability

Assess current training opportunities
Assess: what kind of learning organization is Waltham&Rose
Stakeholder analysis: what kind of learning personas exist at the company?

Implement

Bonus points for mentioning that the training strategy would be piloted first, before global roll-out

Bonus points for identifying different types of content consumption, e.g. nano learning tools, video, game-based, TOT

Training and learning strategy
Different forms of content consumption to align with different learning personas, employee job responsibilities, etc.
Rationalize curricula (eliminate redundancies)
Rewards system integrated into training and learning strategy

Evaluate

Pace of learning, adoption rate, knowledge retention, user feedback

Wharton
University *of* Pennsylvania

Framework

Sample of Strong Framework for this Case:

Biz Issues: Acquisition Management, Workforce Stabilization

Work Stream 3: Technology Adoption

Assess

How are employees reacting to CRM, healthcare changes? Can you pre-emptively address negative employee engagement outcomes?

Technology impact assessment
Will CRM interface be accessible outside of office network?
Costs of data migration (CRM, healthcare)
Stakeholder analysis

Implement

Bonus points for calling out potential risks to your plan. How can you mitigate them?

Technology adoption strategy – including transition plan
Consistent communication re: timeline, anticipated changes, learning opportunities, benefits to employees
Contingency plan

Evaluate

What key milestones will you use to measure progress?

Measure employee acceptance of changes
Usage rates, reductions in manual workarounds
Cost savings

Wharton
University *of* Pennsylvania

I picked different work streams. Am I wrong?

No. In Human Capital cases there many different ways to respond to the same prompt well. In this case, alternative work streams include:

- **Change management**
- **Communication**
- **Talent**
- **Employee engagement/Culture**

Pro tip: there aren't a ton of Human Capital cases out there, but you can use the same case multiple times – just push yourself to change the work streams each time.

Potential questions for the interviewer to ask

- Why did you prioritize these three work streams?
- Let's say Waltham&Rose can't afford to do as much business with us as we would like, at least initially. If you had to prioritize one work stream, which one would it be and why?
- In this case, how could you set the stage for additional business opportunities later on?
- What do you think is the biggest risk with the plan you laid out? How will you minimize it?
- Waltham&Rose have expressed reluctance to invest in training. How will you address this?

Notes for the interviewer

- When the interviewee walked you through their framework, when it came to activities like a stakeholder analysis, did they address both internal AND external stakeholders? This is important.

- It is optimal for the interviewee, when talking through their framework, to reference firm-specific products, resources, etc. that would be relevant to leverage (for example, company learning center that clients can come to, affiliate partner that does research in a relevant area, etc.). Is the interviewee keeping an eye out for how to optimize business opportunities from Waltham&Rose, and how to build a long-term relationship?

- Did the interviewee integrate firm knowledge as they went through the case? If not, prompt them to do so.

Notes for the interviewer

- Did the interviewee incorporate human capital market trends into their analysis? If not, ask them which current trends are most relevant to the case in question. Examples include leadership succession plans, the gig economy, automation, millennial workforce expectations, etc.

- When the interviewee goes through their framework, it is perfectly acceptable (and good practice) for you to ask, “what do you think about XYZ as an additional work stream?” or “for work stream 1, would you consider ABC as an activity instead?” Part of your evaluation of the interviewee should be how gracefully they manage this unanticipated shift in direction.

- Did the interviewee make note of dependencies between work streams? If not, prompt them about this with a question.

Sample good answers to brainstorming questions

Q: You identified several types of training methodologies Waltham&Rose could utilize. Is it really necessary to have so many different approaches?

A: The demographics of the Waltham&Rose employee base have a lot of variation. In the US many of the employees are middle-aged, with a smaller number of employees in their twenties and early thirties. Research shows that people of different ages absorb content differently. Particularly in the area of technology training adoption, where people understand new procedures at platforms at different paces, some learners are comfortable learning at their own pace rather than in a classroom setting, and retain information better when they know they have a video they can always refer back to. Additionally, with employees based in multiple countries and time zones, a multitude of training and learning options will help ensure everyone has equal access to pertinent information.

Sample good answers to brainstorming questions

Q: Waltham&Rose does not have a plan in place when it comes to who will lead the new offices in France and Germany. What are your thoughts on this?

A: It's highly recommended that at least one senior executive from the US headquarters relocate, at least for the medium-term, at each of the new offices. This is essential for maintaining company culture, creating cohesion in a newly international organization, and helping to ensure a seamless transition. Extensive involvement of the HR Director will also be key. Leadership of the European offices by formerly US executives will need to be balanced with German and French hires with senior roles in the new offices. This will ease tensions borne out of cultural differences, language barriers, lack of local knowledge, etc.

Sample good answers to brainstorming questions

Q: You focused a lot on the CRM tool adoption, but didn't talk much about the outsourcing of health benefits. Can you talk a little more about this?

A: Waltham&Rose are new to outsourcing, and while they are taking this move in order to ease workload during a time of growth, they need to be mindful of pain points likely to occur during the transition to outsourcing. Employees typically get anxious when unclear changes to their healthcare benefits are looming, which negatively affects performance. It's also unclear whether Waltham&Rose understand that there are vastly different healthcare regulations in the US and Europe, and multiple outsourcing partners may be required. Additionally, for outsourcing to go well it will be important that employees can easily contact their new healthcare benefits manager, and that the process for doing so is clear and straightforward.

KNOWLEDGE FOR ACTION

Mining

Wharton
UNIVERSITY of PENNSYLVANIA

Competitive Strategy in Mining (Commodities)

Level of Difficulty: *Hard*

Case Similar to Cases at Firms: *ex. BCG, Bain Final Round (MBA) Level*

Topics Tested: *interpreting charts, brainstorming insights on competitive strategy, payback period analysis, supply x demand.*

Prompt: *Our client is an Australian mining company, whose main product is Iron Ore, which it sells exclusively to China. This company is the largest producer in volume in this market with 230 million tons sold each year. It is also the lowest cost producer at 27$ per ton of production costs. We estimate the total Chinese demand for Iron Ore today to be around 980 million tons per year.* ***Our client has won a concession to mine a new site adjacent to its biggest mine, and increases production to 360 million tons per year (i.e. 130 million additional tons per year). Is this worth doing?***

Framework and Clarifying Questions

Sample Clarifying Questions and Answers	
Are there are any company criteria to approve projects? What typically constitutes success?	Board typically approves projects with payback in less than 5 years. You can use payback with no discounting for your math.
How is the market expected to grow?	Consider that the market will remain flat at 980 million tons per year for the foreseeable future
How much upfront investment will be required for this project?	$ 3 Billion upfront
What is the cost of this new volume of production? Are there cost synergies or is this a more expensive mine?	Consider this new mine to have the same exact cost as its current production (27$/ton)
How does the competitive landscape look like?	Show Exhibit A of China's Cash-Cost curve for iron ore.
Should we consider the possibility of international expansion or new minerals?	For the purposes of this case, let's limit analysis to iron ore and China.

Framework and Clarifying Questions

Sample of Strong Framework:

Main discussion focuses on economics, and a profit tree analysis is suggested

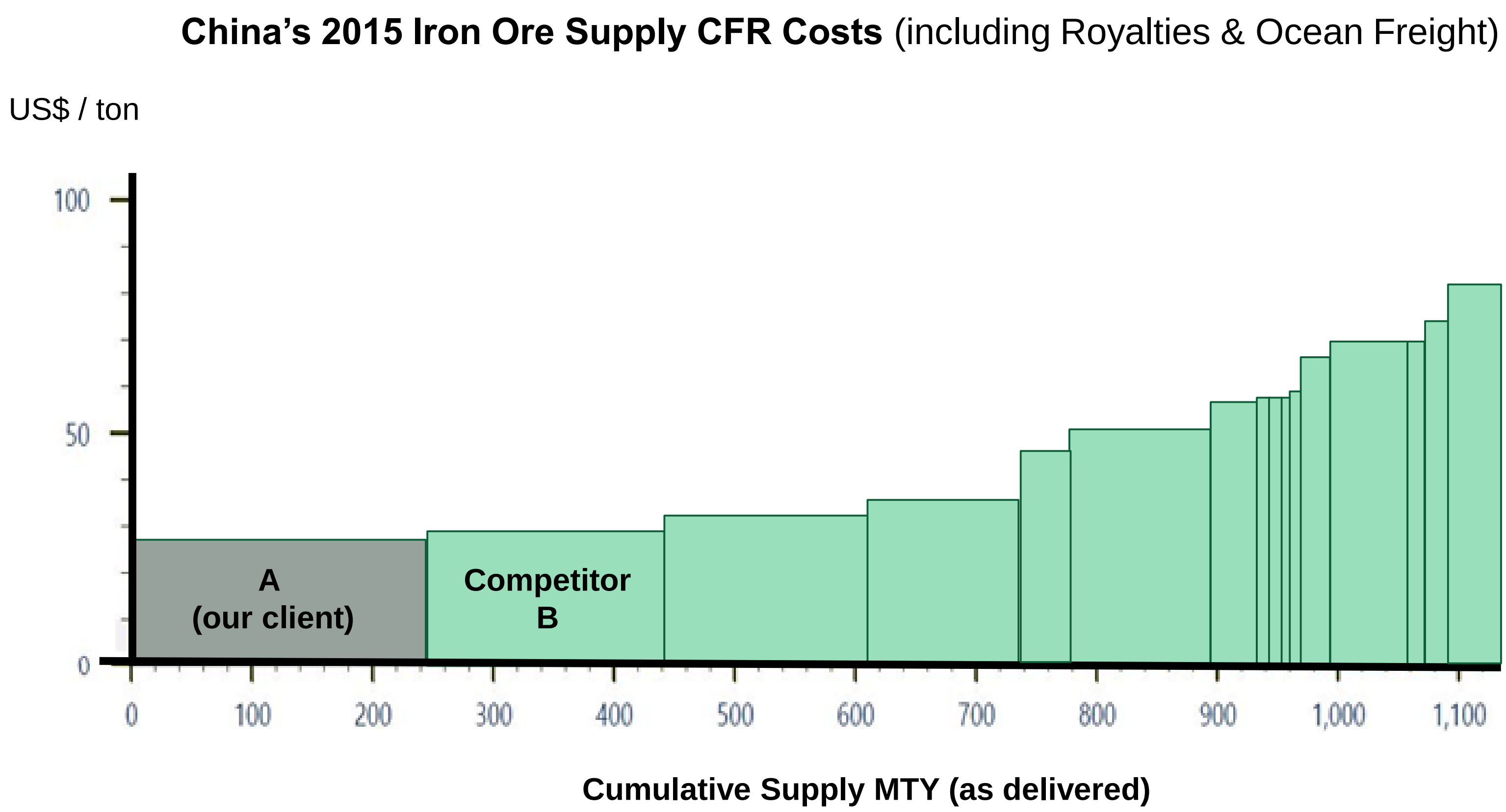
- **Operating Costs:** may be impacted in two ways:
    - unit costs may go up (if site is more complex, if you need more people, etc.) or down (if there are synergies of scale). Interviewer reveals it stays at **27$/ton for new production**
    - volume increases, so total operating costs go up.
- **Revenues:** impacted in two ways. Price will likely decrease from increased supply, but volume will go up. Winning effect will come out of the numbers.
- **Investment costs**: likely need to invest in new machinery and other technology to get operation started (when promted, interviewer reveals this will cost $3 Bn upfront, and company looks for 5 year non-discounted payback)

Other important points to consider:

- **Competitive reaction:** competitors will suffer from a price decrease due to my increased volume too. How will they react?
- **Logistics:** Does firm have the supply chain to absorb this new capacity?
- **Risks in assumptions:**
    - Variation in Chinese demand will influence Price x Volume dynamics
    - New supply (new mine discoveries, or mergers) may influence competitive landscape

Wharton
University of Pennsylvania

Exhibit A – China's Cash Cost Curve



Part 1: Evaluating chart and payback period

First part of the case will consist of evaluating if project has payback in less than 5 years.

- From exhibit A, interviewee should be able to extract that current equilibrium price of iron ore is at 60$/ton (this is where the line x = 980 intersects the curve)
  - **Explanation**: since product is a commodity, and market is perfectly competitive, price is defined by the market. Price therefore converges to the lowest possible that allows 980 Mty demand to be met. From exhibit A, it's clear that everyone below **60 $/ton** can service the market, and the rest is currently not playing.
- Interviewee notes that by adding 130 Mty, price will drop. Referring to chart, the last 130 Mty to the left of the x = 980 line will be pushed to the right, and out of the market. The new equilibrium price is where the curve meets x = 850 (980 -130), which corresponds roughly to **50 $/ton.**
- Interviewee calculates pay-off per year and payback period:
  - New profit = 360 Mty * (50$ - 27$) = $ 8280 MM per year
  - Old profit = 230 Mty * (60$ - 27$) = $ 7590 MM per year
  - Delta profit = $8280 - $7590 = $690 MM per year
  - Payback = = $ 3 Bn / ($ 0.69 MM per year) = **~ 4 years (under 5 year threshold)**

Estimated time: 10 - 15 mins

Wharton
UNIVERSITY of PENNSYLVANIA

Part 2: Competitor Reaction

If not proactively noted, interviewer prompts: how does competitor (example competitor B) likely feel about your move?

- Interviewee should assess that competitor B will lose $10 margin ($60 - $50 price drop), and therefore a total of $10 * 190 Mty (production of B from chart) = $1.9 Bn per year.
- Interviewee should consider a few options that competitor B has:
  - Competitor B can increase his production if he has access to new mines (price will drop even further, but perhaps volume increase will compensate)
  - Competitor B can temporarily reduce production to make prices go up again
  - Competitor B can work to reduce costs
  - Competitor B can assess M&A options (e.g. Higher cost players that are looking to sell, and can potentially have synergies with B's current operations)

Estimated time: < 5 mins

Part 3: Assume you are now in B's shoes

Assume B also has an opportunity to increase production from 190 Mty to 270 Mty (additional 80 Mty). Also assume this has positive pay-off which gives them a real chance at pursuing such project. What should we do?

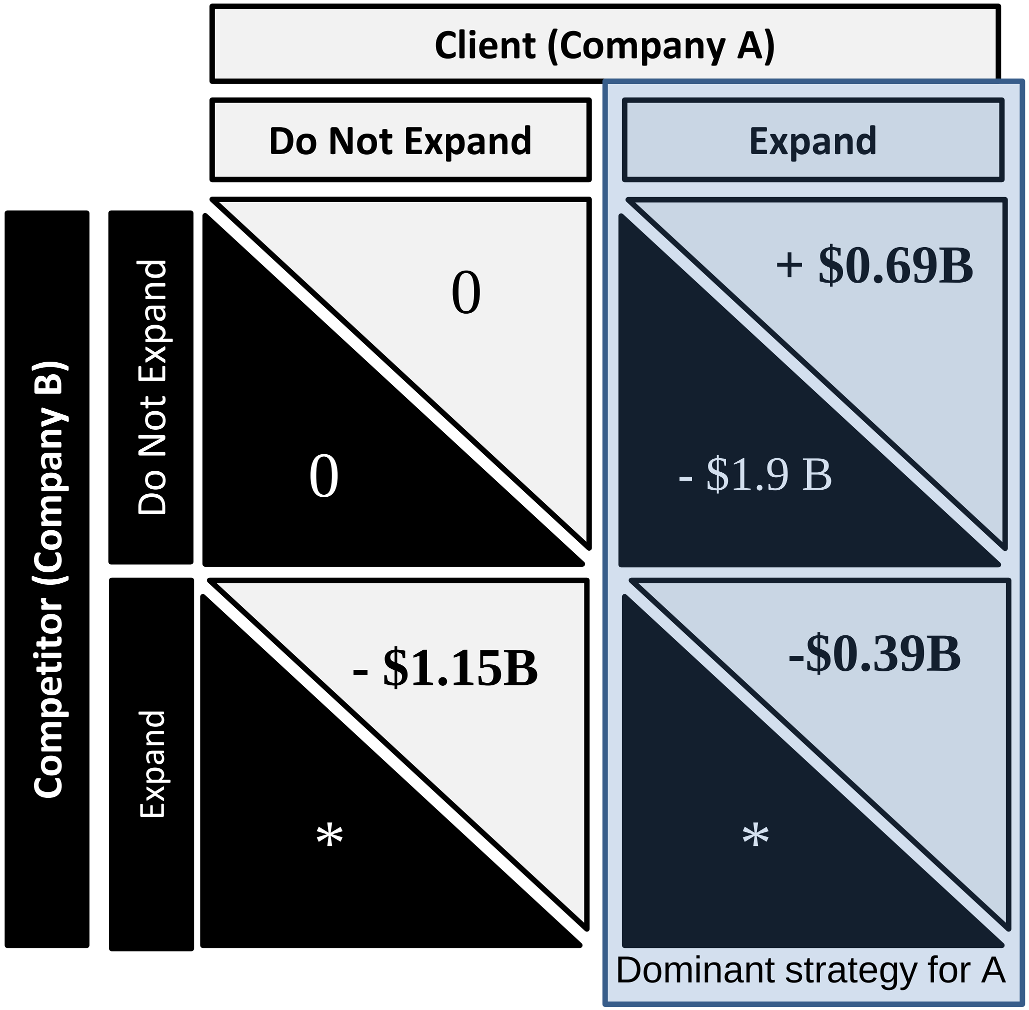
- Interviewee should note that there are 3 additional scenarios to consider:
  - **If we don't react to their expansion** (i.e. we don't expand), prices will drop from their expansion and our profits are negatively impacted. From the chart, new price is taken from x = 980 – 80 = 900. New price = 55 $/ton. That is, we lose a total of 230 Mty * 5 $/ton = $ 1150 MM per year
  - **If we do react to their expansion and also increase volume**, prices will drop even further. From their chart, new price is taken from x = 980 – 80 – 130 = 770. New price = ~ $ 47 per ton. New profit = 360 Mty * (47$ - 27$) = $ 7200 MM per year. Pay-off from this scenario is $ 7200 MM - $ 7590 MM = - $390 MM per year
  - **If we neither company expands:** delta profits are zero.

- Interviewee should be able to assess that given the four pay-off scenarios there is only one dominant strategy for client A: expand. (see example of illustration in the next slide)

Estimated time: 10-15 mins

Wharton
UNIVERSITY of PENNSYLVANIA

Example illustration of part 3:



* Calculation of competitor B pay-offs can be calculated from case data, but are not relevant to decision

Conclusion – final pitch

Summary to the CEO:

- Our recommendation is that **our client should expand**.
  - Given our baseline projection, increased pay-off from expansion is ~ $700 MM per year, which is enough to payback investment in less than 5 years
  - Larger scale gives us competitive advantage (flexibility to increase and reduce production as market fluctuations may occur, better power with buyers and suppliers, etc.)
- Even considering that our competition may react, expanding makes sense:
  - Regardless of what B chooses to do, we are better off expanding. If they expand, we are minimizing our loss from - $1.15 Bn to - $0.39 Bn. If they don't expand, we have the potential to gain $0.69 Bn per year.

Estimated time: 30 seconds

KNOWLEDGE FOR ACTION

Phighting Phillies

Wharton
UNIVERSITY of PENNSYLVANIA

Phighting Phillies

Level of Difficulty: *Hard*

Case Similar to Cases at Firms: *Bain*

Topics Tested: *M&A Due Diligence, Finance/Private Equity, Valuation, Mathematical Calculation, Business Model Brainstorming, Graphs Analysis*

Prompt: *Our client, Alpha Capital, is a private equity firm that is considering buying the Philadelphia Phillies. The current team owners approached Alpha about purchasing the team for $1.1B. Alpha engaged our firm in the due diligence process and wants us to help them understand:*

A. *What is the team worth?*
B. *Should they make this investment?*

Clarifying Questions

Sample Clarifying Questions and Answers	
Fund structure, previous investments	This asset will go into a new fund without hold period constraints or previous investments
Hurdle rates, hold periods, other constraints	Assume these are not major issues
Impetus / motivation for the deal?	We want to maximize our investment. Also assume that fund leadership is filled with avid Phillies fans who want the team to be successful
How does the team make money?	[Before answering, ask the interviewee to brainstorm some ideas] The major revenue streams are: ticket sales, concessions, merchandise, media rights, and advertising/ sponsorships
What are the major cost drivers?	[Before answering, ask the interviewee to brainstorm some ideas] The major cost drivers are: Player salaries, front office costs, sales & advertising, and stadium/facilities costs
Does the team own or lease its stadium and other facilities?	Assume the city of Philadelphia owns these and we are paying annual leasing costs.
Should we be considering revenues and costs associated with Spring Training and the farm system?	Great question, but let's not consider these in our analysis
Are there other potential bidders for the team?	Assume there are not other bidders and we have the first shot at buying the team.

Wharton
UNIVERSITY of PENNSYLVANIA

Sample Framework

- **Key Points of background**
  - Fund structure and previous investments
  - Hurdle rates, hold periods and other constraints
  - Deal thesis and motivation

- **How much is the team worth?**
  - + Revenues
    - Ticket Sales
    - Concessions
    - Merchandise
    - Media Rights
    - Sponsorships and Ads
  - - Costs
    - Player Salaries
    - Front Office Costs
    - SG&A
    - Stadium and Facility Costs
    - COGS/Other
  - Potential Revenue and Cost Synergies
    - Expected Increased Revenues
    - Expected Lower Costs
  - Discount Cash Flows

- **Should Alpha make the investment?**
  - Management Team Considerations
    - Existing team management quality?
    - Would we have to replace management
  - Ability to Execute
    - Asking price below our valuation?
    - Do we have access to capital to purchase the team?
    - Our expertise in running a sports business enterprise
    - Ability to achieve synergies we identify?
  - Other Factors
    - Fan-base reaction to PE buyer?
    - League approval of our purchase?
    - Potential tension between maximizing the investment and winning?
    - Regulatory/legal risks?
    - Risks to sport of baseball (e.g., lower fan interest)
    - Other investments we could make with better ROI?

Current Revenues and Costs (1 of 2)

Note for Interviewer: If you have not discussed revenue and cost drivers yet, have the candidate brainstorm these. Keep pushing them until they are out of ideas or have covered the topics in the tables below. Give hints as needed.

Revenues			
	Information for Interviewee	Revenue Size (Keep Private)	
Ticket Sales	*See table at right. Give blue font figures to interviewee*	$	80,000,000
Concessions	*See table at right. Give blue font figures to interviewee*	$	40,000,000
Merchandise	Sell 1M items per year, at $50 per item. The team earns 20% royalty on total sales	$	10,000,000
Media Rights	Local Media: $40M, National Media: $80M	$	120,000,000
Sponsorships/Ads	$50M	$	50,000,000
Total Revenue		**$**	**300,000,000**

Ticket Sales		
Seats/Stadium		50000
Standard Seats Share		90%
Standard Seat Fill Rate		55.56%
Standard Seat Price	$	25
Premium Seats Share		10%
Premium Seats Fill Rate		75%
Premium Seat Price	$	100
Standard Seat Revenue	$	625,000
Premium Seat Revenue	$	375,000
Revenue/Game	$	1,000,000
Number of Home Games		80
Total Ticket Sales	**$**	**80,000,000**

Concessions		
Fans Buying/Game		20000
Spend/Fan/Game		$25
Revenue/Game	$	500,000
Number of Home Games		80
Total Concessions	**$**	**40,000,000**

Current Revenues and Costs (2 of 2)

Costs		
	Information for Interviewee	Cost Size (Keep Private)
Player Salaries	$110M	$ 110,000,000
Front Office Costs	$20M	$ 20,000,000
Sales & Advertising	$50M	$ 50,000,000
Stadium/Facility Costs	$20M	$ 20,000,000
Total Costs		**$ 200,000,000**

Valuation	
Revenue	$ 300,000,000
Costs	$ 200,000,000
Annual EBIT	$ 100,000,000
Taxes	Assume $0
Discount Rate	10%
Valuation	**$ 1,000,000,000**

Note for Interviewer: At this point, the candidate should see that the valuation is less than the asking price. If necessary, prompt the interviewer to compare this value to the asking price. If they do not bring up synergies, guide them to this topic.

Synergy Analysis (for Interviewer)

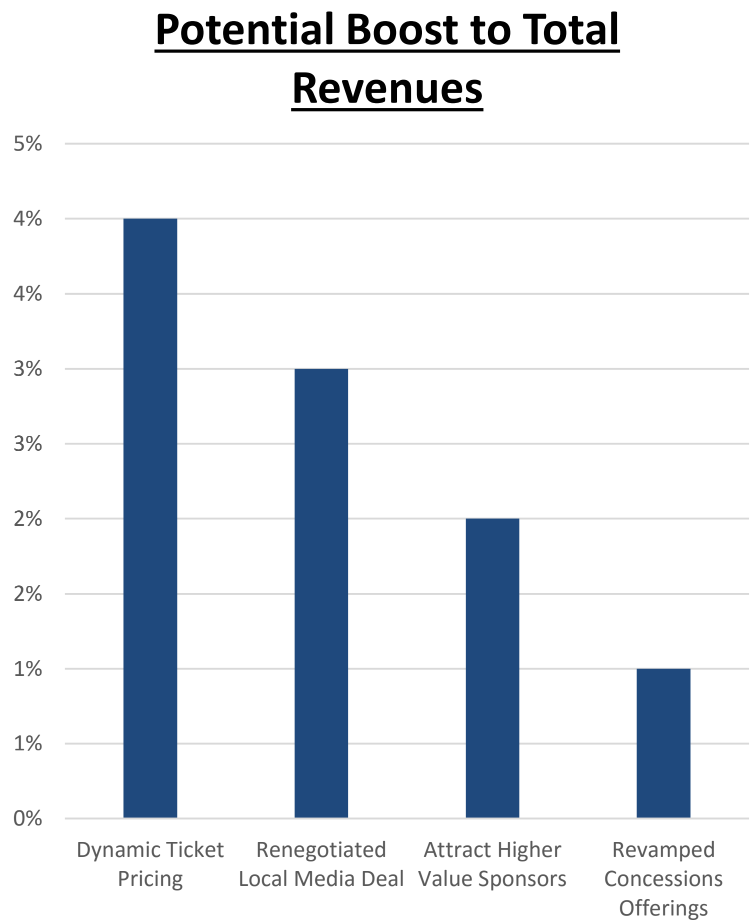
Note for Interviewer: Ask the candidate to look at the graphs on the next slide and give you his/her thoughts. The candidate should spot cost synergies with sales and advertising and connect the revenue percentages to the topline revenue figure previously calculated. These synergies increase the valuation beyond the asking price.

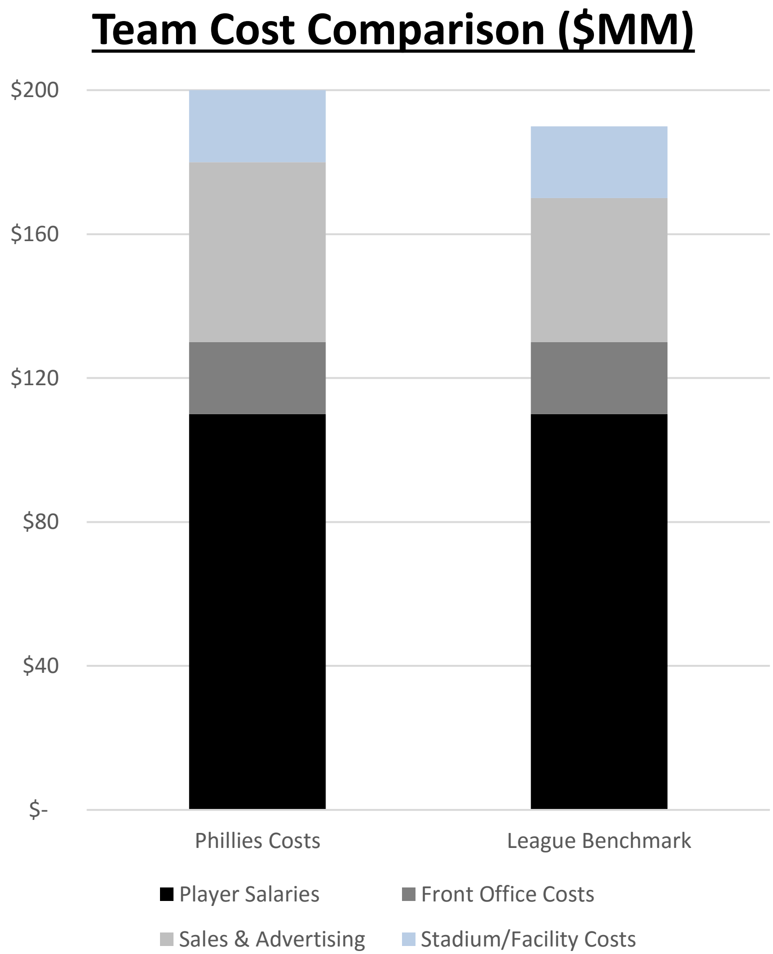
See below for calculations on potential synergies and associated impact on the valuation.

	Phillies Costs	League Benchmark	Savings Potential
Player Salaries	$ 110,000,000	$ 110,000,000	$ -
Front Office Costs	$ 20,000,000	$ 20,000,000	$ -
Sales & Advertising	$ 50,000,000	$ 40,000,000	$ 10,000,000
Stadium/Facility Costs	$ 20,000,000	$ 20,000,000	$ -
	Potential Boost to Revenues	**Topline Revenue**	**Incremental Revenue**
Dynamic Ticket Pricing	4%	$ 300,000,000	$ 12,000,000
Renegotiated Local Media Deal	3%	$ 300,000,000	$ 9,000,000
Attract Higher Value Sponsors	2%	$ 300,000,000	$ 6,000,000
Revamped Concessions Offerings	1%	$ 300,000,000	$ 3,000,000

Impact on Valuation	
Total Cost Synergies	$ 10,000,000
Total Revenue Synergies	$ 30,000,000
Total Synergies	$ 40,000,000
Valuation Impact	$ 400,000,000
New Total Valuation	$ 1,400,000,000

Synergy Analysis (for Candidate)





Other Considerations

Note for Interviewer: If the candidate does not drive us to the "other considerations" bucket, ask them what other types of factors they would want to consider in deciding whether to recommend that Alpha buys the team. See below for some example considerations.

- **Management Team Considerations**
  - Existing team management quality?
  - Would we have to replace management?

- **Ability to Execute**
  - Do we have access to capital to purchase the team?
  - Our expertise in running a sports business enterprise
  - Ability to achieve synergies we identified?

- **Other Factors**
  - Fan-base reaction to PE buyer?
  - League approval of our purchase?
  - Potential tension between maximizing the investment and winning? (e.g., whether to increase spend on player salaries)
  - Regulatory/legal risks?
  - Macro risks to sport of baseball (e.g., lower fan interest)
  - Other investments we could make with better ROI?

Wrap-Up

The MD at Alpha Capital is walking down the hallway and she wants to know what our initial findings and recommendations are. What do you tell her?

Note for Interviewer: This case hinges on the candidate realizing that revenue and cost synergies are required to make this a viable investment. Strong math skills are required, including intuition around the synergies. The candidate could use the prompt to underpin a strong framework (a pre-packaged framework will likely lead to problems. Finally, strong candidates will continue to drive the case throughout, particularly moving from a basic financial analysis to a discussion of the other considerations.

KNOWLEDGE FOR ACTION

Insurance for the Underserved

Wharton
UNIVERSITY of PENNSYLVANIA

Insurance for the Underserved in India

Level of Difficulty: *Hard*

Case Similar to Cases at Firms: *More like a McKinsey case*

Topics Tested: *Mathematical calculation, marketing brainstorm, market sizing, etc.*

Prompt: The Indian insurance market is heavily underpenetrated. The majority of insurable, adult population either is not insured and this has serious consequences – when financial adversity strikes, such as when the main breadwinner of a family dies, or if there is a drought or a flood, people either find it hard to survive or in some cases also commit suicide. When we say insurance, we think of both life insurance and non-life insurance such as health, crop, etc. The distinction is not important for the purposes of our case.

The government of India is thinking of using the Indian postal network as a creative way of reaching the underserved insurance population. The infrastructure already exists and this can be leveraged for distributing much-needed insurance products. The objective would be to provide a safety net to as many people as possible in the underserved markets. To answer this case, the interviewer should ask the following questions (sequentially and as they come out in conversation)

Q1: [Brainstorming]: what considerations should the government think about?

Q2: [Market sizing]: how do we define underserved and what's the size of the insurance market?

Q3: [Indian Postal Network Penetration]: what percent of the overall market can the Indian Postal Network cover?

Q4: [Profitability]: how much money will the postal network make in the first year of launch?

Q5: [Brainstorming]: given the economics, should the government pursue with the insurance through Indian postal network? How can it improve the profitability?

Wharton
UNIVERSITY *of* PENNSYLVANIA

Framework and Clarifying Questions

Sample of Strong Framework **(Q1)**:
What considerations should the government think about?

A strong framework (initial considerations) would consider the following:

- What is defined as the underserved population?
- Is profitability an objective? Or is it only reaching the people?
- Why are the underserved – is it a demand thing (do people not want insurance) or a supply thing (infrastructure does not exist)?
- Will the Indian Postal Network actually help? What kind of capabilities they require? Do new employees need to be hired?
- What will be the economics of this arrangement? Would this makes sense?

Sample Clarifying Questions and Answers (answered for each of the questions separately)	
Q2: Market Sizing	*See slides*
Q3: Indian Postal Network Penetration	*See slide*
Q4: Profitability	*See slide*
Q5: Brainstorming	*See slide*

Q2: How do we define underserved and what is the size of the insurance market?

Data:

For this question, the candidates should be initially given the following table *(shown separately on next slide)*. The government has done some segmentation and surveys and come up with the following four:

Segment	Annual Household Income	Number of Households (MM)	% of income willing to spend on insurance
Globals	>USD 30K	2	1.0%
Consumers	USD 10K - 30K	10	1.5%
Aspirers	USD 5K - 10K	55	1.5%
Strugglers	<USD 5K	33	2.0%

The underserved population is defined as the aspirers and the strugglers

If the Indian Government decides to sell insurance to so aspirers and strugglers, what is the size of the market (in USD)?

- Average annual income for aspirers is **7,500K** and strugglers is **2,000K**

Solution:

Total Market Size	Market Size for Aspirers + Market Size for Strugglers
	[Income x Households x Insurance Percent for Aspirers] + [Income x Households x Insurance Percent for Strugglers]
	6,187,501,320
Rounded Market Size	**~6 billion**

If you wish, and if time permits, you can why % of income willing to spend on insurance decreases as income increases? Because insurance needs are non-linear; for every 10% increase in income, you don't need to have a 10% increase in insurance; so if you earn more money, you can get away with spending less for insurance

Wharton
University *of* Pennsylvania

Segmentation of Indian Insurance Market

Segment	Annual Household Income	Number of Households (MM)	% of income willing to spend on insurance
Globals	>USD 30K	2	1.0%
Consumers	USD 10K - 30K	10	1.5%
Aspirers	USD 5K - 10K	55	1.5%
Strugglers	<USD 5K	33	2.0%

Q3: What percent of the overall market can the Indian Postal Network cover?

Data:

For this question, the candidates should be given the following information:

- Assume what you calculated in the previous questions represents 100% of the insurance market.
- The dollar value represents the premium amount in USD.
- There are about 150,000 post offices in the country, of which the government thinks 1/3 will be able to provide insurance in the first year of launch to aspirers and strugglers. Assume there is 1 agent per branch and each agent can sell insurance to 10 aspiring households and 5 struggling households every month.

What percent of the market would this represent?

Solution:

Serviceable Post Offices (1/3 x 150,000)	50,000
Total Number of Agents	50,000
Annual Premiums Sales to Aspiring *(10 x 12 x Income for Aspirers x % of income willing to spend on insurance)*	675,000,000
Annual Premiums Sales to Strugglers *(10 x 12 x Income for Aspirers x % of income willing to spend on insurance)*	120,000,000
Total Premium Sales	795,000,000
Total Market Size	6,187,501,320
% share (Sales / Market Size)	**12.85%**

Q4: how much money will the postal network make in the first year of launch?

Data:

For this question, first ask the candidate what are the revenue / expense lever, and they should mention most of the ones below. The one that they might miss is the one related to the loss or claims cost.

Then give them the following information:

- Assume that the government needs to pay-out 85% of the premium money in claims every year.
- Also assume that 10 percent of premiums (or revenues) is paid as commissions to the agents.
- In addition, they get USD 100 per month as a base salary.
- Finally assume that the cost of operating the branches and travel expenses for agents, etc. is an additional USD 100 per month.

How much profit do you think the government can make?

Solution:

Total Premium Sales	795,000,000
Claims cost (85% of Premium)	675,750,000
Commission cost (10% Commission)	79,500,000
Salary costs (USD 100 x 12 mos x 50k agents)	60,000,000
Other costs (USD 100 x 12 mos x 50k branches	60,000,000
Total Costs	875,250,000
Profit (Sales - Costs)	**(80,250,000) – LOSS!**

Wharton
UNIVERSITY of PENNSYLVANIA

Q5: Given the economics, should the government pursue with the insurance through Indian Postal Network? How can it improve the profitability?

Suggestions

There are two questions at play here:

- First question is should the government pursue – **LISTENING skills –** prompt said objective would be to provide a safety net to as many people as possible in the underserved markets. Given profitability was not a concern, this should still be pursued.

- That said, government can think about how to improve profitability?
    - Can pricing be improved so that loss costs are fewer?
    - Can more households be reached?
    - Can we use more branches than 1/3?
    - …

Wharton
University *of* Pennsylvania

KNOWLEDGE FOR ACTION

National Park Service

Wharton
UNIVERSITY of PENNSYLVANIA

The National Park Service

Level of Difficulty: *Medium*

Case Similar to Cases at Firms: *BCG*

Topics Tested: *Mathematical Calculation, Brainstorming, Synthesis & Recommendations*

Prompt: *Our client is the United States Department of the Interior, which is responsible for the National Park Service ("NPS"). The NPS employs park rangers across all federally owned parks, ranging from Yellowstone and the Grand Canyon to the Statue of Liberty and Lincoln Memorial.*

National Parks employ four different classifications of rangers: Law Enforcement, Education, Maintenance, and Administrative.The focus of this case is on the Law Enforcement rangers, who have similar responsibilities to police and firefighters. They are trained in areas that include wilderness medicine and search and rescue.

The client is concerned that job retention is low among the Law Enforcement rangers. They would like you to explore how big the problem is and think about ways to improve it.

Question 1 - Intro/Framework: What are some of the costs to the National Parks Service of rangers leaving?

Sample Response:

There are costs relating to People and Operations which can be categorized as either “direct” (tangible - relate to an actual dollar amount) or “indirect."

	Direct Costs	Indirect Costs
People Costs	Sunk costs of recruiting and training rangers; severance	Decline in morale; reputation of park’s department
Operational Costs	Higher maintenance /operational costs due to inflow of new inexperienced employees	Loss of knowledge of park operations

Note to Interviewer: “Great” response should have a structure and include 4-5 ideas about potential costs. If interviewee only comes up with 1-3 ideas, keep pushing them by asking “what else?”

Question 2 - Math: What is the cost associated with each type of ranger leaving? (1 of 2)

Prompt to read: We have some figures on what the retention problem looks like across the four different types of rangers nationally and what the associated costs are. Please calculate what percent of each type of ranger left in 2016 and what the total costs were per group.

	Law Enforcement	Education	Maintenance	Administrative
# left in 2016	98	175	215	251
total rangers in 2016	2100	3750	8615	9143
cost per lost ranger ($)	$35,300	$6,200	$3,500	$3,500

Question 2 - Math: What is the cost associated with each type of ranger leaving? (2 of 2)

Table with answers:

	Law Enforcement	Education	Maintenance	Administrative
# left in 2016	98	175	215	251
total rangers in 2016	2100	3750	8615	9143
cost per lost ranger ($)	35300	6200	3500	3500
% left	**4.67%**	**4.67%**	**2.50%**	**2.75%**
Total cost ($)	**$3,459,400**	**$1,085,000**	**$752,500**	**$878,500**

Note to Interviewer: Recommended for interviewee to round figures for easier calculation. A "great" response will include a "so what" about these figures. Some insights include: lowest overall number of rangers are leaving from Law Enforcement, but these impose by far the highest cost and thus should be prioritized in the solution. While the same % of education rangers leave, they impose roughly 30% of the same total cost. Maintenance and Administrative rangers should be deprioritized in the solution.

Question 3 - Brainstorming: Potential Solutions (1 of 2)

Prompt: The government conducted a survey among Law Enforcement Rangers and found that their pain points exist across three areas. Family Friendliness, Effective Senior Leadership, and Performance-Based Rewards. Can you brainstorm some solutions to retention within these areas?

Note to Interviewer: Below find descriptions of each category. Only read if asked for definitions of interviewee:

1) “Family Friendliness”: Degree to which the organization is family friendly (ex. some rangers are sometimes expected to move across the country to middle of nowhere, might not have access to schooling)

2) Effective Senior Leadership: Degree to which park Superintendents have the proper background and experience to lead. Note that most superintendents have a background as Education rangers.

3) Performance-Based Rewards: Degree to which rangers receive the right level and mix of benefits (note: while rangers are not primarily motivated by money, they noticed that pay is higher at other government organizations and these organizations also pay overtime, which the NPS rangers don’t receive).

Question 4 - Brainstorming: Potential Solutions (2 of 2)

Sample Response:

Family-Friendliness

- Better matching between rangers and assignments
- Institute matching based on performance of rangers
- Source rangers from local areas rather than require them to move/travel
- Online tutoring for children of rangers

Effective Senior Leadership

- New leadership tracks to escalate law enforcement rangers to leadership positions
- Mentorship opportunities to link leaders and rangers
- Training superintendents (e.g. ride-alongs with rangers to understand local reality)

Performance-Based Rewards

- Improve benefits: salary, travel, health insurance, etc.
- Implement overtime

Note to Interviewer: A “good” response will be structured into the buckets given and will include at least 2-3 ideas per bucket. A “great” response will include a high-level discussion/acknowledgement of the costs associated with these solutions and will include a hypothesis of what the best solutions would be.

Question 5 - Synthesis and Recommendations

Prompt: The Director of the National Parks Service just stepped into the room and would like you to summarize what we've discussed.

Note to Interviewer: A "great" response will primarily address the main question of retention among Law Enforcement rangers (rather than get off topic). It will explain the problem (high costs associated with lost Law Enforcement Rangers), include a potential solution (1-2 ideas to explore), and discuss next steps (e.g. look into associated costs of potential solutions).

KNOWLEDGE FOR ACTION

Penn & Teller

Wharton
UNIVERSITY *of* PENNSYLVANIA

Penn & Teller

Level of Difficulty: *Medium*

Case Similar to Cases at Firms: *BCG First Round*

Topics Tested: *mathematical calculation, marketing brainstorm*

Prompt: *Our client is Caesars, one of the largest gaming and resort companies in the world. Penn and Teller have been the headlining show at the Rio Hotel since 2001, and they are currently the longest-running headlining show in Vegas history. Caesars, who owns the Rio Hotel where the duo performs in the 1500 seat P&T Theater, is wondering if their act has become stale. Penn & Teller's annual contract is about to expire, before Caesars has a meeting with the duo they have asked our company's advice on whether or not to resign the act for another year.*

What recommendation do you have for Caesars?

Notes to the casegiver

- This case a typical Profits case. We suggest you guide the case to consider the revenues, then costs, then profits.
- Time permitting, continue on to the brainstorming question and payback period.
- Continually push the interviewee to consider the Vegas landscape (highly competitive) and use Vegas, entertainment, and live-show related terminology (patrons in seats not customers buying widgets).

Framework and Clarifying Questions

Sample Clarifying Questions and Answers

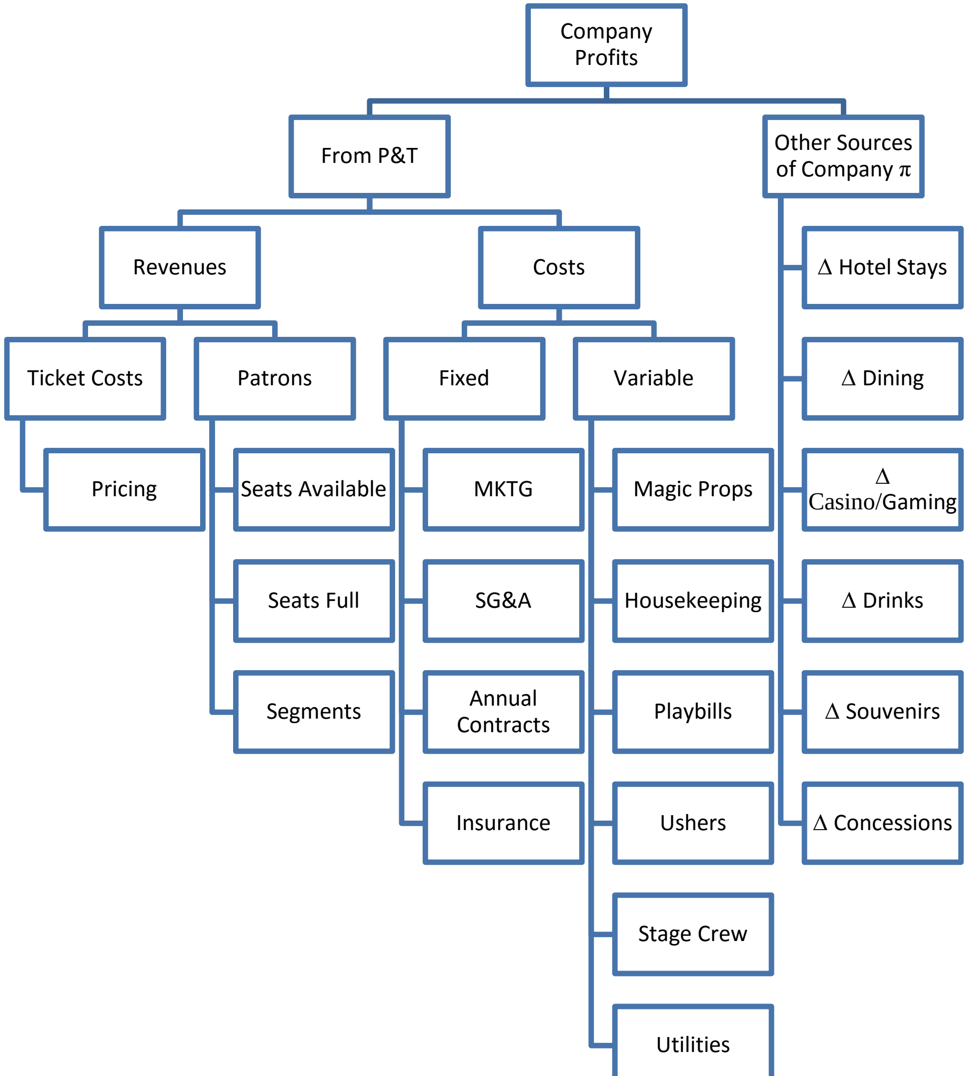
What goal does Caesars have? As one of the largest entertainment companies on the Strip and around the world, Caesars solely cares about the company's total bottom line profitability.

How long is a contract for Penn & Teller?: As is the Vegas standard, all contracts are for a one-year time period.

Why does Caesars think the show is stale? The show has plateaued, with no change in bottom line profitability in the past five years.

Who is Caesars/P&T biggest competitors? Caesars's biggest competitor is MGM Resorts, which also operates about 33% of the Strip. P&T compete against a whole bevy of nighttime entertainment, such as other shows, nightclubs, and gaming.

Sample of Strong Framework:



Keys to a Strong Framework

- Does it go "three levels deep"?
- Does it use case-specific terminology (seats & ticket versus quantity)?
- Does it consider the company's bottom line and not just P&T?
- Does it consider sources of revenue beyond tickets sold (concessions, overnight guests, casino spend)?
- Is it MECE?

How profitable is the Penn & Teller Show? (Revenue)

Additional information to provide when asked:

- **How many seats?** The theater has 1500 seats in three categories, A B and C. There are 300 Category A seats (best seats in the house), 800 Category B seats, and 400 Category C seats (balcony, or in the back of the theater).
- **Do the seats always sell out?** No. On average, 100% of the A, 80% of the B, and 50% of the C are sold.
- **What are the prices?** Category A costs $120, B costs $75, C costs $55
- **How many shows do P&T perform?** They perform at the Vegas standard 6 shows per week, 40 weeks per year (they have 1 day off per week, and three months per year when they are working on other endeavors like TV appearances and book deals)
- **How has revenue changed?** These numbers have been static over the past 5+ years, hence why Caesars thinks the show has become stale.

How profitable is the Penn & Teller Show (Revenue)

Category	Number of Seats	% Sold	Attendance per show	Price per ticket	Ticket Revenue
Cat A	300	100%	300	$120.00	$36,000
Cat B	800	80%	640	$75.00	$48,000
Cat C	400	50%	200	$55.00	$11,000
				Revenue per Show	**$95,000**
Revenue per show	**Shows per week**	**Weeks per yr**	**Revenue per yr**		
$95K	6	40	**$22.8M**		

Keep in mind
- *Is the math done organized?*
- *Are math shortcuts used?*
- *Are units maintained (thousands, millions)?*

How profitable is the Penn & Teller Show? (Costs)

Additional information to provide when asked:

- **What are the costs to putting on the show?** Costs are broken into six main buckets. Both Penn and Teller each make $2M per year. The Crew (stagehands, showgirls, ushers) in total costs $2K per show. Housekeeping costs $1000 per week. The Props (the doves, playing cards, etc) costs $200 per show. Utilities (the lights) cost $52K per year. SG&A (Marketing, box office staff, etc) costs $15K per month.
- **Does housekeeping clean year round?** No, they are only needed the 40 weeks the show is live.
- **Is SG&A paid year round?** Yes, that is a 12 month per year expense.
- **How have costs changed?** These costs have been static over the past 5+ years.

How profitable is the Penn & Teller Show (Costs)

Item	Cost	Timeline	Annualized Cost
Performer Contract	$2,000,000	per person/year	$4,000,000
Crew	$2,000	per show	$480,000
Housekeeping	$1,000	per week	$40,000
Props	$200	per show	$48,000
Utilities	$52,000	per year	$52,000
SG&A, MKTG	$15,000	per month	$180,000
		Cost/yr	**$4,800,000**

Keep in mind

- *Are numbers converted to a common cost unit?*
- *Is the math done organized?*
- *Are math shortcuts used?*
- *Are units maintained (thousands, millions)?*

How profitable is the Penn & Teller Show (Revenue-Costs)

Revenue (per year)= $22.8M

Costs (per year)= $4.8M

Annual Profit= $18M

Margin=~80%

What can Caesars do to make the current show more profitable?

A good answer will structure this brainstorming question in a way that sees what can be done with each element of the initial framework and show creativity

Some examples

- **Revenue**
  - Ticket Price
    - Increase Prices?
  - Quantity Sold
    - Switch some B seats into As, Cs into Bs (higher margin seats)
    - Offer bundle discounts
  - Other
    - Retool concessions offered
    - Add gift shop with better souvenirs
    - Shorten the show so viewers gamble more (higher margin activity)
    - Bundle tickets with dinner or other activities (like an overnight stay)
- **Costs**
  - Revisit contract with P&T
  - Check union vs non-union labor

Wharton
UNIVERSITY of PENNSYLVANIA

Caesars has the opportunity to switch the P&T show for one featuring the recent winner of America's Got Talent. Should they?

Sample Clarifying Questions and Answers

What goal does Caesars have? As one of the largest entertainment companies on the Strip and around the world, Caesars solely cares about <u>the company's total bottom line profitability</u>.

How long is a contract for the AGT winner?: As is the Vegas standard, all contracts are for a one-year time period.

Are there any costs to making the switch? Putting in a new show will require a reconfiguration of the theater and a <u>one-time</u> marketing blitz. This would cost $2.4M to do and would occur before the first show.

What are the revenues of the new show? The new show would bring in only $90K in ticket sales per show (compared to P&T of $95K). All other sources of revenue (gaming, concessions, etc) are insignificant.

What are the costs of the new show? The new show would cost significantly less than the P&T, costing $3M per year as opposed to $4.8M.

Caesars has the opportunity to switch the P&T show for one featuring the recent winner of America's Got Talent. Should they?

Change in profits:

Each show brings in $5K less, or $-\$5{,}000 * 240 shows = -\$1.2M/yr$

Show costs $1.8M less per year

Overall, show is $600K more profitable

The $2.4M upfront costs would take 4 years to payback ($2.4M/$600K)

Yes	No
• P&T is stale, AGT is fresh • AGT is $600K more profitable	• 4 years is a long time in such a competitive market • AGT winner might not have long-lasting appeal

Wharton
UNIVERSITY of PENNSYLVANIA

Wrap-up: The SVP of Entertainment wants to know what we discussed. What recommendation do you have for Caesars?

Caesars <u>should</u> resign P&T	Caesars <u>should not</u> resign P&T
• The Show is profitable, making \$18M on \$22.8M revenues • The option to bring in a new show would have a high one-time cost of \$2.4M but a payback period of 4 years, which is too long in such a competitive market. • Moving forward, we can look at how to further increase revenues by XXXXX, minimize costs by XXXXXX, and further look into XXXXXXX.	• While the P&T show is profitable, the AGT would bring in \$600K more profits. • The AGT winner is new, and would help freshen the stale show. • Moving forward, we can look at how to further increase revenues by XXXXX, minimize costs by XXXXXX, and further look into XXXXXXX.

Wharton
UNIVERSITY of PENNSYLVANIA

KNOWLEDGE FOR ACTION

Wellington Equestrian Festival

Wharton
UNIVERSITY *of* PENNSYLVANIA

Wellington Equestrian Festival

Level of Difficulty: *Hard*

Case Similar to Cases at Firms: *Bain and BCG*

Topics Tested: *mathematical calculation, business strategy brainstorm for unique industry*

Prompt: *Your client is Mark Bellissimo, CEO of Wellington Equestrian Partners (WEP). Mark, a Harvard MBA with no background in the equestrian industry aside from watching his daughters ride at competitions, created WEP in 2006 with the mission of transforming Wellington, FL from a town with a large horse show to a community with a vibrant equestrian industry. As of now, Mark has succeeded in creating an incredible competition circuit in FL (called the Winter Equestrian Festival) and is seeking an investment from a reputable investment firm. In order to do so, he needs to 1. assess the total economic impact the festival has on the community each year, and b. brainstorm ways to expand his business that the investor might be excited about. You have been asked to assist Mark with this analysis and with crafting a 60 second pitch, that includes expansion plans, for the outside investor.*

(For context, top riders and trainers from around the world come to Wellington, FL for 12 weeks every winter to compete against elite competition and avoid the cold weather. You can think of this like you would any other sporting league/venue with on and off seasons.)

Framework

Economic impact calculation (candidate should identify factors that would contribute to the economic impact from this sporting event):

- Revenue from competitions
  - Entry fees, training fees, stabling/care/food fees, equipment fees, spectator tickets, etc.
  - Identify ways to calculate revenue – by horse, by exhibitor, etc.
- Revenue from other items
  - Nearby hotels, restaurants, retail outlets, etc.

Candidate should then begin to brainstorm ways to expand business offerings

- Suggestions should be organized and include both short and long-term options
- Should mention a method for evaluation
- Creativity is encouraged
- Should note risks
- Identification that this sport is not unlike any other local, seasonal sporting event is key

Calculations: Economic Impact

Answer is ~$112.5 million annually. A well-thought out answer in the ballpark of that figure that includes many of the listed categories below is sufficient. (Candidate should first brainstorm the categories and seek more information on quantity and pricing for each, which can be provided upon request.)

Items in red should be immediately provided if asked for or if candidate begins to make assumptions; **items in bold are key**

As mentioned in prompt, festival is 12 weeks, or 3 months

Can probe candidate for less obvious categories, but candidate should be able to brainstorm what types of revenue streams exist for a sporting event (entry fees, coaching, equipment, etc. as well as local hotel bookings, spectators, retail spending); unique to horses are vets and stabling/care fees – can ask *where do the horses stay?*

Category	Sub-Category	Quantity	Price	Total
Competition				
	Stabling and care fees	**3,000 horses**	$3,000/horse/ month	$27,000,000
	Entry fees	5 entries/ horse/ week	$75/entry	$13,500,000
	Veterinary fees	1 vet/ horse	$2,000/ horse/ 3 months	$6,000,000
	Misc. equipment fees	**15,000 exhibitors**	$1,000/ exhibitor/ 3 months	$15,000,000
	Training fees	1 trainer/ exhibitor	$1,000/ exhibitor/ 3 months	$15,000,000
Spectators		200,000 people	$15 ticket	$3,000,000
Hotel bookings		120,000 nights	~$150/night	$18,000,000
Restaurants & shopping		15,000 people	$1,000 / 3 months	$15,000,000
TOTAL				**$112,500,000**

Sources:
http://www.wellingtonfl.gov/home/showdocument?id=8808
http://www.mypalmbeachpost.com/business/equestrian-sports-festival-110-million-boon-for-county-tourism/zo92iudwRHHX0D9hzVXRyO/

Wharton University of Pennsylvania

Expansion Plans (1 of 2)

Candidate should brainstorm ways to expand business offerings; suggestions should be organized and include both short and long-term options; creativity is encouraged; a method for evaluation should be mentioned; risks should be noted; identification that this sport is not unlike any other local, seasonal sporting event is key; *note, all of these ideas are ones that Mark has actually implemented in some capacity in real life*

- Internal strategies:
  - Expand festival past 12 weeks: more weeks = more revenue
    - Risk: loss of prestige
  - Offer multiple festivals past 12 weeks: more weeks = more revenue
    - Risk: what is competitive landscape at different times in year?
  - Repurpose venue for other events during off-seasons (concerns, sports, etc.)
    - Risk: expensive and potentially damaging to property
  - Increase number of exhibitors: make venue as competition-friendly as possible through enhanced quality (horse-friendly conditions)
    - Risk: expensive so entry fees might need to increase
  - Increase spectator attendance: make sport accessible to local community (food, carnivals for kids, instructional pamphlets, access to parking, advertising, etc.)
    - Risk: success rate - will people come?
  - Acquire more property in surrounding neighborhoods: expand venue
    - Risk: will acquisitions lead to more profit?

Expansion Plans (2 of 2)

- External strategies:
  - Partner with local hotels & tourism board to increase traffic to city: attract more out-of-towners, ensure all people can be accommodated in existing or new hotels
    - Risk: increased traffic does not lead to increased festival revenue
  - Attract media attention: more attention for sport = more spectators and future participants (NBC Sports)
    - Risk: media gets involved and viewership is not interested; irreparable reputational damage
  - Increase sponsorship: pull in sponsors who target equestrian demographics (Rolex, Fidelity Investments)
    - Risk: sport appears too elite for average consumer
  - Partner with schools and riding academies to encourage sport participation: increasing the market size of sport should increase profits of companies within sport
    - Risk: target population won't compete at high level for many years
  - Offer other companies encouragements to promote festival
    - Risk: what is success rate of these details?
  - Expand to new locations
    - Risk: expensive and what does competition look like?
  - Expand into different industries
    - Risk: does WEP have qualifications to do so?

Final Pitch

A successful pitch includes both an answer to the economic impact question as well as some well thought out suggestions for Mark.

Any number of ideas/structures would suffice. One example is:

The Winter Equestrian Festival that WEP hosts every year contributes over $112.5 million annually to the local economy through current revenue streams. WEP could increase this number through some exciting new initiatives including offering multiple festivals throughout the year, partnering with the local community to increase spectator attendance, and expanding to new locations. These changes will increase market share within the equestrian industry, making WEP ready for an investment. Risks would include that the expensive expansion plans do not lead to converted sales and how your competitors respond, but we believe you can mitigate these risks given your dominant market position. Some next steps would be to assess the market share potential in other locations and survey your current competitors for their willingness to return to Florida multiple times a year. Overall, WEP is ready to secure this investment.

What is WEF? (Background information)

What is the Winter Equestrian Festival?

The Winter Equestrian Festival (WEF) is the largest and longest-running event in horse sports, a 12-week equestrian event staged annually from January through April at the recently renovated Palm Beach International Equestrian Center (PBIEC) in Wellington, Florida.

Why is the Winter Equestrian Festival Unique?

The WEF is a “qualifier” for the United States Equestrian Team and offers selection trials for international events, such as the FEI World Cup Finals and the Olympic Games. In addition to Olympic-caliber competition, the WEF hosts the nation’s premier competition for children, juniors, adults and amateurs; for riders aged from 6 to 70 years old in more than 55 divisions of competition. The breadth of competition offers an opportunity for cross-generational participation in the sport. The WEF is 12 weeks of competition with estimated thousands of competitors and spectators in attendance. Each week is considered an individual horse show and up to 3,000 horses competing in any given week within 15 show rings throughout the 100-acre equestrian show complex. Each show week starts on Wednesday and concludes on Sunday with at least one major competition on a Saturday night or Sunday afternoon in the International Arena.

Reported WEF Statistics:

• Riders from 30 countries and 49 U.S. states are represented. • Exhibitors compete for more than $6 million in prize money. • 15,000 exhibitors, 100 vendors, 3500 “others” sponsors media, jumpers, staff crew, judges, etc. • More than 3,000 horses with a net value estimated at half a billion dollars compete within the circuit. • More than 90 food and retail vendors generate significant commerce dollars on the property.

KNOWLEDGE FOR ACTION

Medical Devices Co.

Wharton
UNIVERSITY of PENNSYLVANIA

Medical Devices Co.

Level of Difficulty: *Medium/Hard*

Case Similar to Cases at Firms: *BCG Final Round*

Topics Tested: *Deal Structure Brainstorm*

Prompt: *Our client, Medical Devices Co., is a medical device company that manufactures a blood clotting product called BloodStopper. This product is currently sold in liquid vials. The product is typically applied with a sponge during post-op. Medical Devices is considering a deal with a sponge manufacturer named Spongy's to create a hybrid product that combines a sponge with the BloodStopper product. The combined product will include BloodStopper in a dry, tablet form. Spongy's will sell the final product.*

Should Medical Devices do a deal with Spongy's? If so, what terms should they negotiate?

For Interviewer:
This case has three main components -

1. Analysis to determine the <u>potential price</u> of the new combined product
2. Analysis to determine how the <u>cost structure</u> for the combined product would change from the original products, and what difference that makes for <u>each company's margin</u>
3. Brainstorm/conclusion on <u>how the deal should be structured</u> given (1) and (2)

Framework and Clarifying Questions

Sample Strong Framework:

A. **Consumers** **-** Who are they? Where, and how many? What benefit does the combined product provide to consumers versus the original liquid vial? What is the WTP for liquid vial and the sponge independently? What is the WTP for the combined product?

A. **Product –** Does Medical Device Co. own the IP on BloodStopper? Is there anything "unique" about the sponge? What is the difference in cost between the liquid form and tablet form of BloodStopper? What are the margins on the sponge? What are the margins for each player in the combined product?

A. **Competition –** Are there other companies making a product like BloodStopper? What are the barriers to entry? Are there other sponge manufacturers?

A. **Deal Structure –** Should Medical Device Co. proceed by selling to Spongy's, seek out a different partner, or restructure the arrangement?

Sample Clarifying Questions and Answers	
If Spongy's sells the final product, does Medical Devices sell the tablet to Spongy's?	Yes, the proposed plan is for Medical Devices to sell the tablet to Spongy's. Then Spongy's will take care of marketing and customer relationships.
Are there any financial or operational targets for the deal?	No. Medical Device Co. would like to determine the best course to maintain or improve profitability.
Are there any other uses for BloodStopper?	None that we know of right now.

Consumers & The Product

A. Consumers – Candidate should drive to define the BloodStopper and sponge consumer, what they pay now, and willingness to pay for combined product.

Information to Provide if Asked

Customers: 1,000 hospitals with operating rooms, throughout the U.S.

Benefits: The combined product -

- Enables greater efficiency in operating rooms
- Preferred by buyers since no need to make separate purchases of BloodStopper (glass vial) and sponge
- No proven improved medical benefit

Pricing:

- WTP for Original Liquid Vial = $85
- WTP for Standalone Sponge = $10
- WTP increases by 10% for the combined product.
- Assume all products are single use

Candidate should calculate new price:

- Combined Product = *($85 +10)* 1.1* = ***$104.5***

B. Product – Candidate should seek to determine whether Medical Device Co. or Spongy's is the more powerful player by analyzing margins and evaluating how "special" each product is.

Information to Provide if Asked

- Medical Device Co. owns IP on BloodStopper
- Nothing especially unique about the sponges

Product Costs:

- Sponge - $2 to manufacture
- BloodStopper - **Show next slide: "What price would Medical Device Co. charge Spongy's to maintain its margin?"**
  - Brainstorm: types of costs & how change
  - Costs: original vial = $5; tablet = $3.50

Product Margin:

Candidate should calculate:

- Original margin with liquid vial: $85 - $5 = $80
- To maintain $80 margin, **Medical Device Co. would charge Spongy's $83.50** for combined.
- Spongy's combined product margin = $104.5 – 83.50 - 2 = $19

Insight: For Medical Device Co. to maintain its high margin, would mean high COGS for Spongy's.

Cost Breakdown

The costs to Medical Device Co. for the BloodStopper product in the original liquid vial form versus in tablet form are as follows:

Per Unit

	BloodStopper	BloodStopper
	Liquid Vial	Tablet Form
Cost of Goods Sold		
Raw materials	$1.00	$0.90
Manufacturing	$0.25	$0.20
Packaging	$0.15	$0.10
Direct Labor	$2.10	$1.80
Sales & Marketing	$1.50	$0.50

Competition & Deal Brainstorm

Interviewer Guidance: Competition element is not a focus. Key significance is Medical Device Co. could consider doing the deal with another company, or acquire one of Spongy's competitors. Candidate should include figures from margin calculations in justifying decision on deal.

C. Competition – Candidate should recognize that BloodStopper is not in a competitive market, while Spongy's product is common enough that there are several players.

Candidate sample questions: Are there other companies making a product like BloodStopper? What are the barriers to entry? Are there other sponge manufacturers?

- There are 10 large sponge makers.
- There are no other companies that make a product like BloodStopper. It is not easy to replicate.

D. Deal Structure – Ask the candidate if current deal structure makes sense, and what could be some alternatives?

- Current deal – Could be a challenge since Spongy's would have such a high COGS if Medical Devic Co. maintains its margin
- Vertical integration – Who should buy whom? Why?
  - Given that Medical Device has much higher margins and a more "special" product,
- Volume-based discounting – Incentivizes Spongy's to push sales
- Revenue Sharing – Implement thresholds to encourage sales

Wharton
UNIVERSITY of PENNSYLVANIA

Conclusion

Should Medical Device Co. sell their product to Spongy's, and if so how?

Sample Conclusion: Medical Device Co. should not do the do the deal as proposed. For Medical Device Co. to maintain its $80 margin per product, Spongy's would have to assume a high COGS and would realize a much lower profit than Medical Device Co. This could put Medical Device Co. at risk of not having the improved access to marketing and distribution channels partially intended by going into business with Spongy's. As an alternative, Medical Device Co. should plan to vertically integrate by buying the sponges from Spongy's or acquiring another sponge manufacturer, since there are numerous potential targets and Medical Device Co. has a stronger financial position relative to Spongy's.

A strong conclusion:

- Recognizes current deal economics may not favor Spongy's as end distributor of the product
- Proposes alternative deal structure and puts forth the "why?"

KNOWLEDGE FOR ACTION

TV Screens

Wharton
UNIVERSITY *of* PENNSYLVANIA

TV Screens – Supply Chain Pricing

Level of Difficulty: *Medium*

Case Similar to Cases at Firms: *Simon-Kucher & Partners (Final Round)*

Topics Tested: *Pricing, discounting policy, supply chain.*

Prompt: *SKP has been retained by a consumer electronics screen manufacturer, Vivid, to perform a pricing optimization project.*

Vivid's main product is HDTV (high definition TV) screens. Its main customers are well-known TV manufacturers in Asia and the US, who buy other components, build the finished TVs and sell them to retailers who use global distribution channels to reach the end-users.

You have been assigned to this team and today is your first meeting with the project manager to review the information collected and brainstorm about key hypotheses.

Framework and Clarifying Questions

Sample pricing framework:

Pricing/Profit	Sales	Customers	Product	Competition
-Pricing	-Discounting	-Segmentation	-Features	-Relative performance
-Price structure	-Discounting levels	-Trends	-Quality	-Market shares
-Price metric	-Discounting policy	-WTP	-Substitutes	-Comparative pricing/benchmarking
-Price level	-Sales incentives	-Supply chain		
-Quantity	-Sales KPIs	-Suppliers		
-Cost		-Switching costs		

Sample Clarifying Questions and Answers	
Is Vivid concerned about profitability, or just revenue?	*The client is looking at pricing in search of opportunities to grow revenue.*
Are there patents in place?	*Vivid technology is patent-protected, and for manufacturers to switch suppliers would require costly plant reconfiguration.*
Has revenue been declining year-over-year?	*While sales volumes have been increasing, revenue has remained flat.*
Are competitors' experiencing the same revenue decline?	*Unfortunately, we don't have financials for any of the competitors.*

Brainstorm: Data Request

Prompt: *We need to send a request for information to the client at the beginning of the project, what information do you think would be useful to ask for?*

Notes for the interviewer: below are a sample list of data types the candidate might ask for. As he/she mentions them, probe them to explain why. Once they've run out of ideas, proceed to the first data prompt.

Example answers:

Production costs	Customer feedback
End-user street prices	Sales incentives
Sales volumes	Client financials
Discounting data	Marketing/segmentation data
Value chain cost structure	Internal strategy documents

Case Data (1): Production costs & pricing

Prompt:

Production costs for HDTV screens have been as follows:

2015: $400/screen

2016: $250/screen

2017: $200/screen

2018: $180/screen (forecasted)

The retail price (street price) each year has been $1,000/screen

Prompt (if needed): *What can you draw from this?*

Example key takeaways:

- The client has realized significant, but decreasing economies of scale (37.5%, 20%, 10% savings)
- Profit margins have increased every year across the value chain, but we still need the wholesale price to understand client profitability.

Case Data (2): Sales volume & discounting

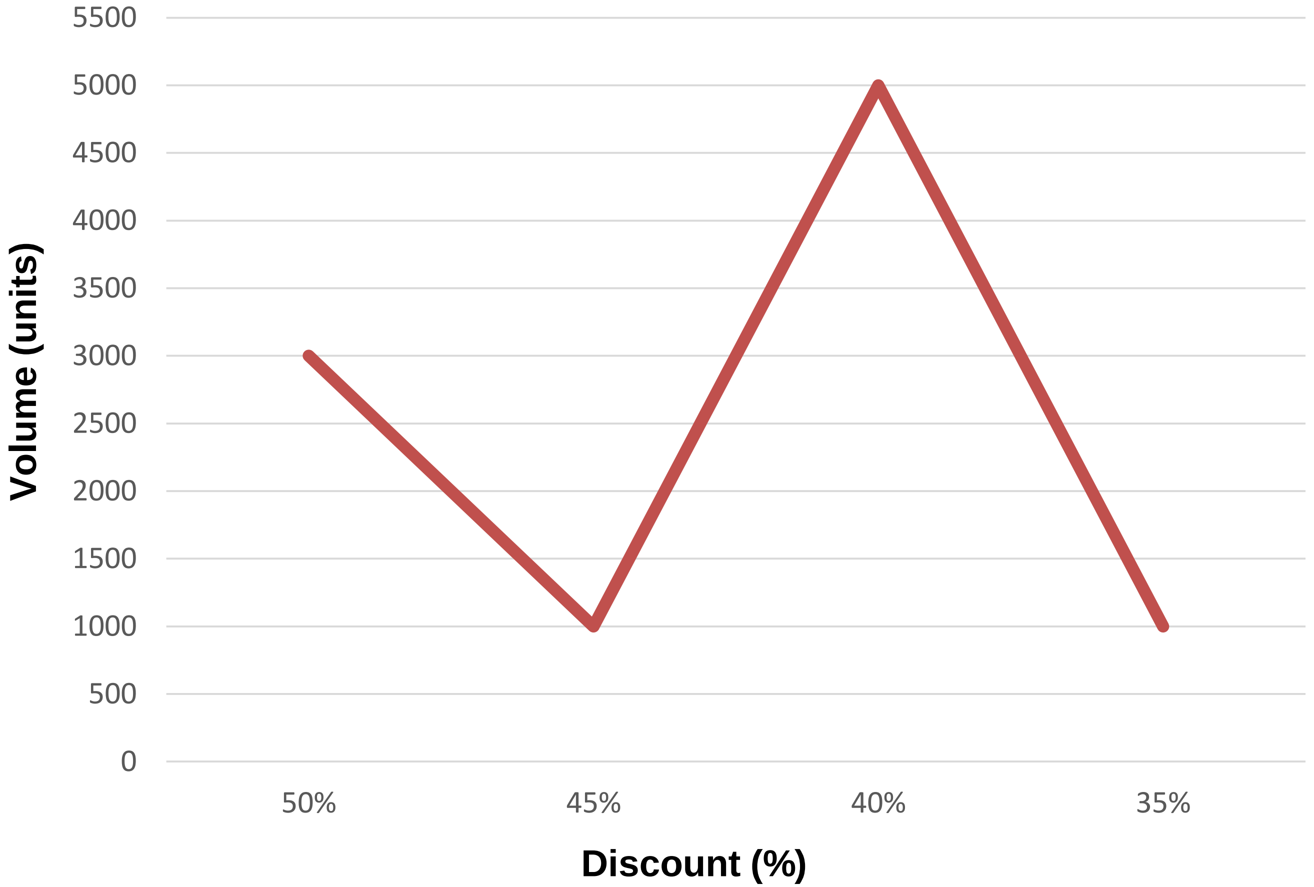
Prompt:

*SKP has collected all data comparing the contract prices at which the screens were sold and the corresponding contract volumes. Marketing has set a **list price of $400** for the screen and a **discount authority floor of 40%** for the sales team.*

*Here's what we've found: (**show the candidate Exhibit 1**)*

Prompt: *What do you see here?*

Exhibit 1: Discount/Volume Curve



*List price: $400/unit

Case Data (2): Sales volume & discounting

Example Key takeaways:

- Almost 40% of sales violates the 40% discounting floor, and there's a peak at the stated limit—salesmen are discounting as much as they can get away with. There may be a volume-based incentive in place right now, and Vivid should consider a profit-based component to sales compensation.
- If there's time, have the candidate calculate the average selling price. The weighted average is $228. If they get stuck or there isn't time, give them the exact answer and continue.

Solution:

(A)

List price * (1-disc) =	**Selling price**
$400 * 50% =	**$ 200**
$400 * 45% =	**$ 220**
$400 * 40% =	**$ 240**
$400 * 35% =	**$ 260**

(B)

Volume * Price =	**Tot. Rev**
3,000 * $200 =	$600K
1,000 * $220 =	$220K
5,000 * $240 =	$1,200K
1,000 * $260 =	$260K
	$2,280K

(C)

Total Rev / Volume = **Avg Price**

$2,280K/10K = **$228/unit**

Case Data (3): Value chain cost structure

Prompt:

We're going to take a look now at a simplified version of the HDTV value chain, consisting of 1) Backlighting suppliers 2) Vivid (the complete screen) 3) TV manufacturers, and 4) Electronics retailers. Please take note of the following:

	Supplier (backlighting)	Vivid (screens)	TV Manuf	Retailer
Cost:	$200	$200	$300	$150
Profit:	$20			$30

With the information we've gathered so far, what can you tell me about the distribution of surplus (profit) in the supply chain, and the TV manufacturer's willingness to pay for Vivid's TV screens?

Case Data (3): Value chain cost structure

	Supplier (backlighting)	Vivid (screens)	TV Manuf	Retailer
Cost:	$200	$200	$300	$150
Profit:	$20	(A)	(B)	$30

Solution:

(A)

Avg Price – Cost = Profit

$228 - $200 = **$ 28**

(B)

Sum known SC components	
$200 + $20 =	$220
$200 + $28 =	$228
$300 + ___ =	$300
$150 + $30 =	$180
Subtotal:	$928

Retail price – subtotal = Manuf. profit

$1,000 – 928 = **$72**

Case Data (3): Value chain cost structure

Example Key takeaways:

- There is $150 in profit surplus distributed throughout the supply chain. Vivid retains ~$28 of that profit, which is better than the backlighting supplier, but considerably less than the TV manufacturer, who's retaining nearly half of all surplus at $72.
- Key question going forward: How strong is Vivid's value-add? Should they be keeping a greater portion of the pie?

Case Data (4): Customer feedback

Present the candidate with Exhibit 2 (interview excerpts)

Prompt: *What can we take from this?*

Example Key takeaways:

- Manufacturing customers exhibit both a high willingness-to-pay for Vivid's quality and a high switching cost to any other supplier. There's a clear opportunity for Vivid to explore a price increase.
- Vivid's salesforce is subject to a high-pressure sales quota with the aim of increasing market share. As we've seen, this is likely creating a discount-heavy sales culture which leaves profit on the table due to excessive price erosion.

Exhibit 2: Internal/External Interviews

Customer interviews (manufacturers)

"Although other screen technologies are cheaper, this product gives the quality we need to charge the prices we charge on the street."

"We built a $1 billion plant to produce HDTVs this year. The plan only works with VIVID's screens"

Internal interviews (sales)

"Although we have discount floors in the TV division, when we are getting closer to the end of the quarter, I need to close the deals to reach my sales quota. The competition is too strong in this market and I need to give the discounts."

"If the management keeps asking us to grow our market share, we need to lower our prices to increase our sales, it's the law of demand, basic economics!"

"We can give higher discounts every year because our costs go down every year too."

Wrap-up

Prompt: *Your team is on the weekly update call with Vivid's CEO and she wants to get straight to the point. What did you find in the data? What are the action items? The project manager nods your way. Go.*

Example Key takeaways:

- Cost structure & Internal interviews: We know that price erosion and continued rampant discounting is untenable, given the leveling off of cost reductions.
- Data and Internal interviews: There is a misalignment of sales force incentives. They are rewarded for reaching volume quotas, and usually end up giving a discount just up to the discount floor, or cave on price all the way down to variable cost. There is a need for a more granular discount authority system and a variable price component to sales compensation.

(continued on next slide)

Wrap-up

Example Key takeaways (cont'd):

- Value Chain: There is $100 of surplus to be split among the TV manufacturer and Vivid. Right now Vivid is getting ~$28 of that pie. That could be viewed as good, given the fact that other suppliers make only $20 profit, but on the other hand, customers have a very high opinion of the value of the screens and have high switching costs. Vivid should target a price increase. (A $40/$60 split of the surplus offers the most compelling message, as both players would then have 20% return on sales. This would mean a Vivid ASP of $240).

KNOWLEDGE FOR ACTION

Home Inspection Co.

Wharton
UNIVERSITY *of* PENNSYLVANIA

Home Inspection, Co.

Level of Difficulty: *Medium*

Case Similar to Cases at Firms: Bain First Round Case

Topics Tested: *mathematical calculation, market sizing, and market entry*

Prompt: *Our Client, Home Inspection Co., is a third party independent home inspection company who conducts the inspections after a home is sold. They currently operate out of Ohio, and they have hired us to help them figure out if they should expand to more states, and if so, which state(s) and how?*

Clarifying Questions

Location Options:	Business Related:	Competition or Other Concerns:
Have they looked at any states right now? Narrowed down to Colorado and Michigan	**How much revenue does Home Ins. Co do now?** $10 million	**Any regulatory concerns?** Typically gov't run, but MI allowed 3rd party 10 years ago and CO was 2 ½ years ago
How many states can they expand to right now? Only could expand to one	**What is their basis for wanting to move?** Increasing top line revenue	MI only allows 20% of their market to be inspected by 3rd party and Colorado is 50%.
Is market size growing, shrinking,? Relatively flat	**What type of inspections do they do?** Any house that are single family homes only	**Competition:** the longer 3rd party has been allowed, the more competition so MI has many competitors, and CO has few competitors
How many people and households are there? (answered on next slides)	**What is the price of inspection?** Changes by state and type of home	
	How often is a house inspected and how many homes are single family? Answered in next slides	

Framework

After asking about some of the clarifying questions on the previous page, a strong framework would be to analyze the Colorado market (market size, competition, distribution options) and the Michigan market (market size, competition, distribution options). As part of this, they should think about market entry and how to attack that aspect of the question along with some of the risks associated with it.

In order to conduct the analysis on the next few slides, the interviewee will need to have all the information pieces on the math slide (bolded columns). If they do not ask for it, prompt them in order from top to bottom. If the case is running long, you can skip the government limitations addition to the case.

Potential Revenue Size of Colorado Market

- See last slide for Math about Market Size of Colorado for total single home inspections. Calculation expectations are:
  - # of households (5 mil people/ 2.5 people/household = 2 mil households)
  - Amount of single family homes (2 mil households * 90% = 1.8 million households)
  - Home inspections per year based on frequency of inspections (1.8 million * 1/9 of household inspected yearly = 200,000 households inspected per year)
  - Total market revenue per year (200,000 * $300 = $60 million/year).

  - If short on time, final answer is **$60 million per year**. Significantly larger than annual revenue of overall company and move to quick market entry option on next slide and then on the next state.

  - If time, work through additional part about government regulations ($60 million * 50% limit = $30 mil) and market entry options on next slide. True opportunity for Home Inspectors for Colorado is **$30 million**.

Market Entry Analysis of Colorado

- Additional Analysis below is for thinking of market entry. This is brain storming and risk assessment:
  - Competitors:
    - Ask interviewee to think whether Colorado would have many or few competitors.
      - As gov't allowed third party only a few years ago, few competitors (2 – 3 independent inspectors and they are spread evenly across the state).
      - If can't figure out, let interviewee know that there are few competitors
    - Since few competitors, market entry could focus on the biggest city (Denver) OR since only a few players, go to where they are not which would be more rural areas/smaller towns.

  - Some Risks of Colorado
    - Change in regulation to limit % similar to MI.
    - Change in market demand if population is growing or shrinking
    - Set up and training the office in state that is far away from home base
    - Could be different culture in using 3rd party inspectors in CO

Potential Revenue Size of Michigan Market

- See last slide for Math about Market Size of Michigan for total single home inspections. Calculation expectations are:
  - # of households (10 mil people/ 2.5 people/household = 4 mil households)
  - Amount of single family homes (4 mil * 75% = 3 million households)
  - Home inspection per year based on frequency of inspections (3 million * 1/12 of household inspected yearly = 250,000 households inspected per year)
  - Total market revenue per year (250,000 * $400 = $100 million/year).

  - If short on time, final answer is **$100 million per year.** Significantly larger than annual revenue of overall company.

  - If tight on time, move to market entry options and final recommendations.

  - If there is enough time, work through additional part about government regulations ($100 million * 20% limit = $20 mil) and below market entry options. True opportunity for Home Inspectors for Michigan is **$20 million.**

Market Entry Analysis of Michigan

- Additional Analysis below is for thinking of market entry. This is brain storming and risk assessment:
  - Competitors:
    - Ask interviewee to think of competition in this market.
      - As independent inspectors have been allowed for 10 years, this has allowed enough time for many competitors, and they have covered the majority of market at this point.
    - Since many competitors, could be tough market, but since it is geographically next to Ohio, could work with southern Michigan. This would decrease set up costs & training because you could reassign employees in current office.
  - Some Risks of Michigan:
    - Regulation limitations by only allowing a few 3rd party inspectors
    - Change in market demand if population is growing or shrinking
    - Market could be saturated

Math (for interviewer only)

	Give all details in this column only if asked or prompt in right direction	CO	Give all details in this column only if asked or prompt in right direction	MI
# of people in state	**5 million**	5 million	**10 million**	10 million
# of households	**2.5 people per house**	2 mil houses	**2.5 people per house**	4 mil houses
amount of single family homes	**90% for CO**	1.8 mil houses	**75% for MI**	3 mil houses
Home inspection frequency	**1 house every 9 years**	200,000/yr	**1 house every 12 years**	250,000/yr
Cost of inspection	**$300 per inspection**	$60 million	**$400 per inspection**	$100 million
With Gov. Limit	**50%**	$30 mil / yr	**20%**	$20 mil/ yr

Recommendation

Recommendation:

- Should Home Inspectors Expand: Yes and where (see below for two options):

For Colorado:

- **Opportunities**: $30 million yearly opportunity with very few competitors.
- **Risks**: Some of the risks could be geographic distance to set up office and hire new employees, and potential changes in regulations similar to Michigan.
- **Next steps**: Scout the area of Colorado to see where the competitors are set up and where we could put an optimal office location.

For Michigan:

- **Opportunities**: $20 million yearly opportunity with closer geographic location than CO.
- **Risks:** Market saturation already, regulation changes to limit 3rd party inspectors, and change in market demand due to MI economy.
- **Next steps**: Scout the area of Michigan to see if a natural expansion into Southern Michigan is plausible or if company would need to get new office location in Michigan.

KNOWLEDGE FOR ACTION

Thank You

Wharton Consulting Club

Wharton
UNIVERSITY *of* PENNSYLVANIA