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Top Consulting Interview Prep

CONSULTING CASE INTERVIEW PREPARATION GUIDE

2006- 2007 Recruiting Season

September 16, 2006

MICHIGAN
ROSS SCHOOL OF BUSINESS
CONSULTING CLUB

The Case List

Note: Do not read all of these cases as soon as you receive this guide. While reworking 'completed' cases both alone and within groups is highly encouraged, pre-reading cases removes the element of surprise which stems from addressing a case for the first time, this sensation is very difficult to replicate.

1. **Business School Journal**
2. **Bottle Shifters**
3. **Retirement Plan**
4. **Airplane De-icing**
5. **Deposit Slips**
6. **CPG Profits**
7. **Petrochemical Spin Off**
8. **PCB Manufacturer**
9. **Home Garden Chemicals**
10. **Gardening Retailer**
11. **Pipeline Manufacturer**
12. **Tobacco Leaf Processor**
13. **Incinerator**
14. **German Luxury Car Maker**
15. **Hotel Franchisor**
16. **Pharmaceutical Pricing**
17. **Diabetes Testing Meter**
18. **Drug Store Profitability**
19. **Direct Mail Campaign**
20. **Cleaning supplies**

Case 1: Business School Journal (I of II)
AT Kearney, Round 1

Problem statement narrative	Guidance for interviewer and information provided upon request(1)
Your client is a European academic institution that wants to increase the brand profile of their business school. One strategy that they have identified is creating a business journal. The university has done its own research, but has also asked you to do a pro bono assessment of this strategy. They want to know if the strategy will increase their brand image, and also if it will be profitable.	University has traditional image, Business school is very new B-school rated in top 10, but they want it to be rated in top 3 Other strategies that they are doing: conferences and symposiums, sponsorship of students from corporations Professors very good, but business school not well known for any one thing, as Wharton is known for Finance, or Kellogg for Marketing Alumni well respected, but school is new, so alumni much smaller than others Harvard Business School largest journal publisher with 75% market share (HBS has 75,000 subscriptions); remainder split between 6 others HBS charges $10/issue of $120/year (12 issues), Lowest charge of others is $60/year (4 issues) Other revenue: Advertisements, currently at $2000/page, average 10 pages of advertisement per issue As subscriptions go up, can charge more for advertisements Costs: Writer - $500/article, 10 articles/issue; Printer (2 options: outsource or internal): Outsourced - $15/journal, internal – initial cost $1 million for printing machine; Distribution: $0.50/journal; Managing editor: $80,000/year fully loaded

Case 1: Business School Journal (II of II)

AT Kearney, Round 1

Candidate should calculate marginal contribution per customer…

	Io	FC	VC	R	Marg. Contribution
Outsource	NA	\$5K*4=\$20K + \$80K = \$100K	\$15.5*4= \$62/customer	\$60/customer \$20K*4=\$80K	(\$2)/customer
In-house	\$1mln	\$100K	\$0.5*4= \$2/customer	\$60/customer; \$80K	\$58/customer

Then determine if the two options make sense

Outsource: At a marginal loss of \$2/customer, the university would have to rely solely on advertising revenue. The current \$80K assumes a circulation up to 4000, the average of the 6 smaller competitors. This would not be enough to cover fixed costs, much less the loss on each customer (-\$2*4000 - \$100K = -\$108K; an additional \$28K in advertising revenue would be required).

In-house: At a marginal contribution of \$58/customer, the university would be able to cover fixed costs with a readership of approximately 345 (V=(\$100K-\$80K)/\$58). However, recouping the additional \$1M will take 5 years if the university can replicated reach a circulation of 4000/year, or longer if it can not.

A solid interview will address other factors besides profitability

- **Drivers for readership of business journal (small alumni base will keep expected circulation numbers low)**
- **Alignment with strategy (will a journal promote an Ivy League/traditional brand image?)**
- **Risks associated with implementing a journal (high failure rate for new publications)**

Sample recommendation

Client should not pursue a business school journal. Producing a journal would require a large initial up front investment, with a five year minimum payback period. Additionally, the journal does not serve the correct audience to advance the university's desired brand image, and could actually risk it, as there is a high failure rate for new publications. The university's resources could be better directed to other strategies, such as…

Case 2: Bottle Shifters (I of VI)

Bain, Round 1

Problem statement narrative	Guidance for interviewer and information provided upon request[1]

"Bottle Shifters" design and distribute bottles. Its customers are small/medium sized companies (in the food/drinks sector e.g. startup /brewery). It is the biggest 3rd party manufacturer in the industry.
 	
Our client – a Private Equity firm has acquired them as there is a huge market. They are looking to increase profitability. They have already optimized the cost structure.
	Sample structure to tackle the case:
	
	-Understand the market and the company's market position
	- Market size and growth
	- Value chain
	- Competition
	- Products
	- Customers
	
	-Explore the revenue side (ignore the cost given the problem statement)
	- Price (can we charge more?)
	- Quantity (how can we sell more volume and sell more items with high profit margins?)
	  - Product mix
	  - Customer mix
	  - Store mix
	  - Channel mix
	
	-Potential risks/issues

Case 2: Bottle Shifters (II of VI)

Bain, Round 1

Interviewer guide

-Market size: hand out the Market Data slide and ask candidate to calculate the market size

-Competition: Bottle shifters is the dominant player. There is one more player with half of the revenues. The rest of the market is fragmented.

-Customers: Bottle Shifters serves food and Drink sector only. Competitors serve other sectors besides food and drinks.

-Products: Bottle shifters has expertise in design. Although majority of the products are customized, they have standardized products as well. Products include bottles, cans, etc.

-Value Chain: hand out the Value Chain slide and explain. Bottle Shifters is involved in 2 steps in the value chain: Designing and Distribution (and not manufacturing). They also customize their products for their customers.

Interviewer guide (contd.)

-Price: If candidate asks about price and whether it is possible to increase it, interviewer could say: “Great question. That’s exactly the first place we looked at. However, their pricing is quite high, and it’s alright. There’s not much scope there.”

-Product Mix: if candidate asks about product mix, ask why he/she wants that information (a good answer would be: since different products might have different profitability we want to see if we can optimize the product mix and increase overall profitability. Hand out the Product Mix slide.

Store Mix/Customer Mix/Channel Mix: good questions but no data available.

Case 2: Bottle Shifters (III of VI)

Bain, Round 1

Market Data

Total volume of liquor sold in the US annually: 1.43B liters
Average size of a bottle: 0.75 liters
  Standardized: 80% (price: 0.30$)
  Customized: 20% (price: 0.70$)

Case 2: Bottle Shifters (IV of VI)

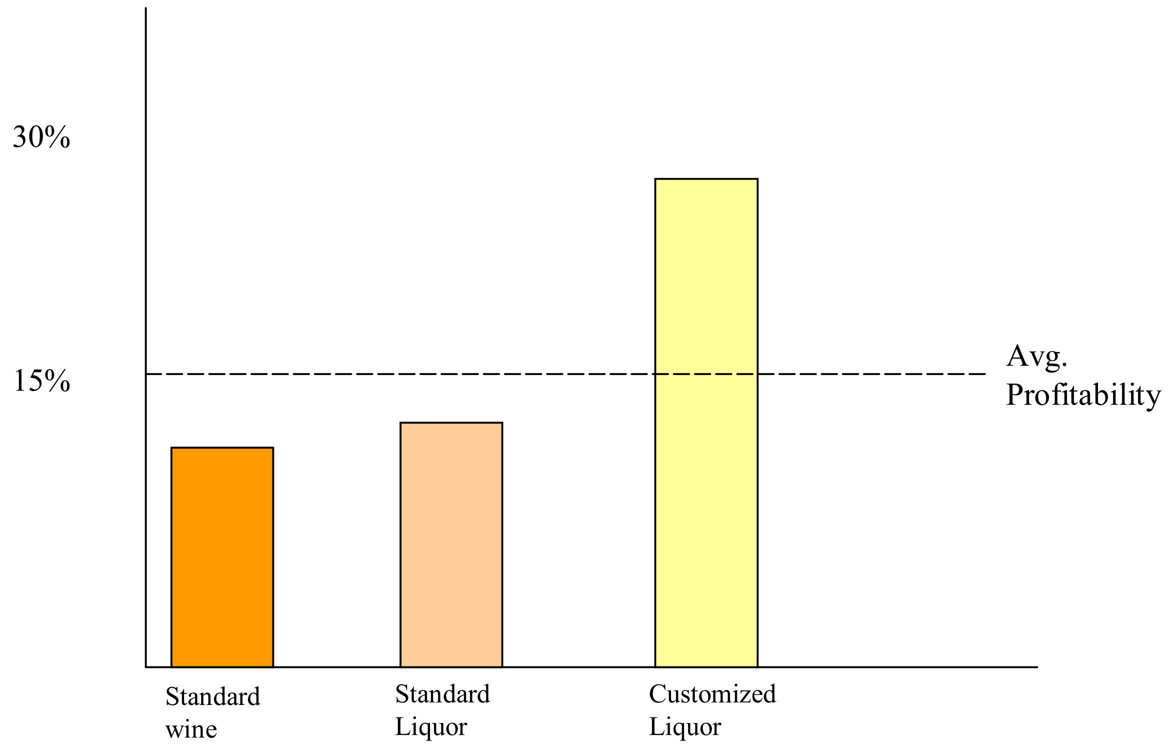
Bain, Round 1

Value Chain

Case 2: Bottle Shifters (V of VI)

Bain, Round 1

Bottle Shifters Product Mix



# of accounts	698	2	2
Revenues	1.4Mn	8.6Mn	0.7Mn

Case 2: Bottle Shifters (VI of VI)

Bain, Round 1

Solution guide

Calculate Market Size

1.43B liters was rounded to 1.5Bliters (after checking with interviewer)

Total bottles: 1.5B liters/0.75liter = 2B bottles

Standardized: 1.6B (80% of 2B)
⇒ Market size for Standardized: 1.6B * .30$ = $480M

Customized: 0.4B (20% of 2B)
⇒ Market size for Customized: 0.4B * .70$ = $280M

Product Mix

Product for customized liquor has the highest profitability yet Bottle Shifters sells a small volume of such product. The market size for the customized bottles did not look much at first glance. However, if compared to Bottle Shifters' sales in this category (0.7M), there is a high growth potential in this category.

Potential Risks/Issues

Possible answers: - Financial investment
- Competitive reaction

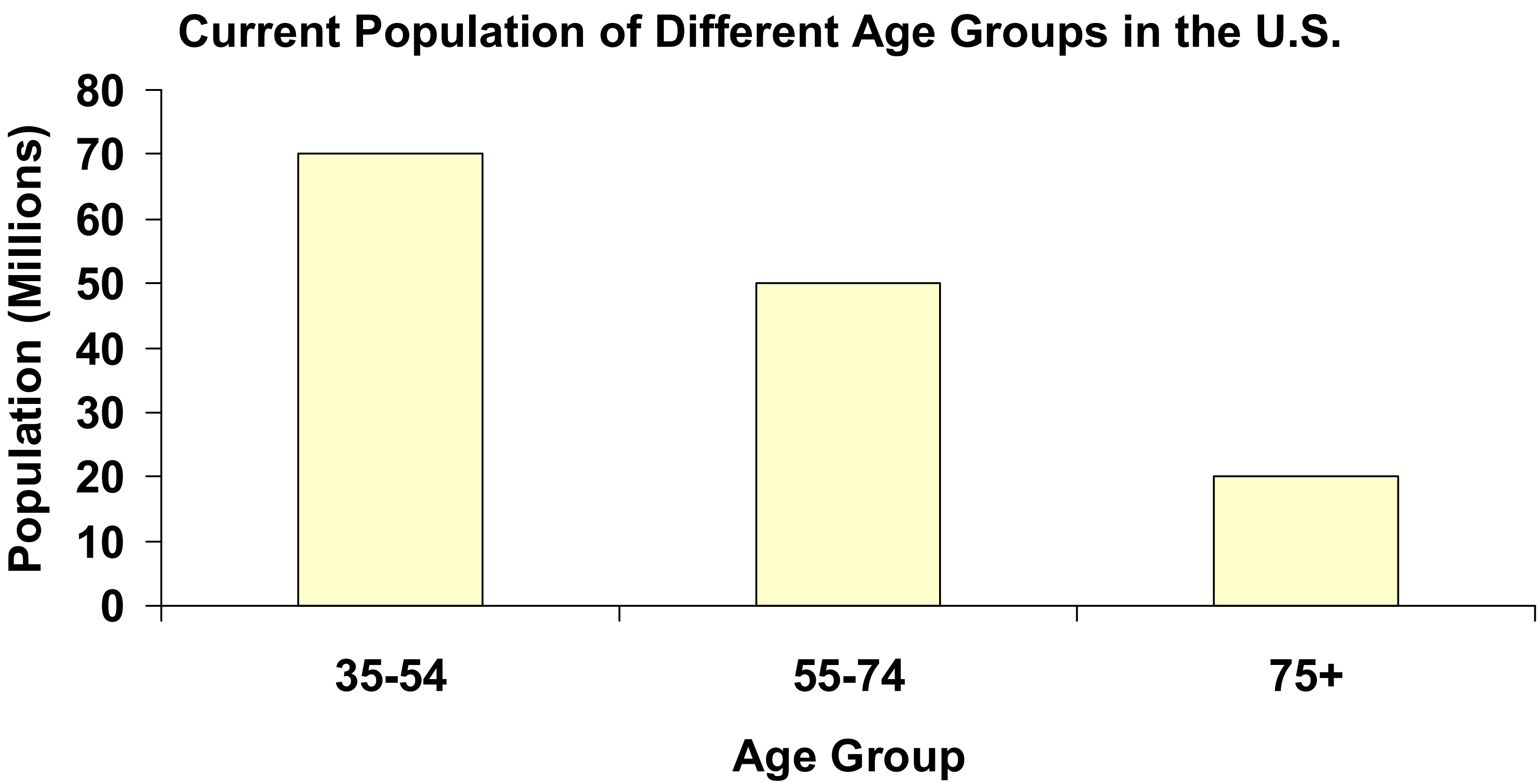
Case 3: Retirement Plan (I of VI)

Bain, Round 1

Problem statement narrative	Guidance for interviewer and information provided upon request[1]
(GIVE CANDIDATE HANDOUT, WHICH STATES THE BELOW FACTS) The client is a large international asset management firm, FinCo, looking the enter the use market for retirement plans. FinCo trying to decide whether to provide IRAs or Defined Contribution plans. Today both markets are the same size (~ $3 Trillion), and both generate the same fees. FinCo is interested in knowing the five year growth outlook for each of these markets	IRAs: people typically roll over their retirement plans into IRAs when they switch jobs because they allow you to defer paying income tax on the benefits. Since both markets have the same fee structure, assume revenues are only a function of market size Handout 1: current break down of different age groups Handout 2: Growth trend for age groups 2050-2010. This chart shows total percent growth over the five year period (not annual growth or CAGR). Handout 3: Average balances in retirement accounts per person. Hand 4: Reason for selecting retirement plan provider. Question to candidate: what does this slide tell you?

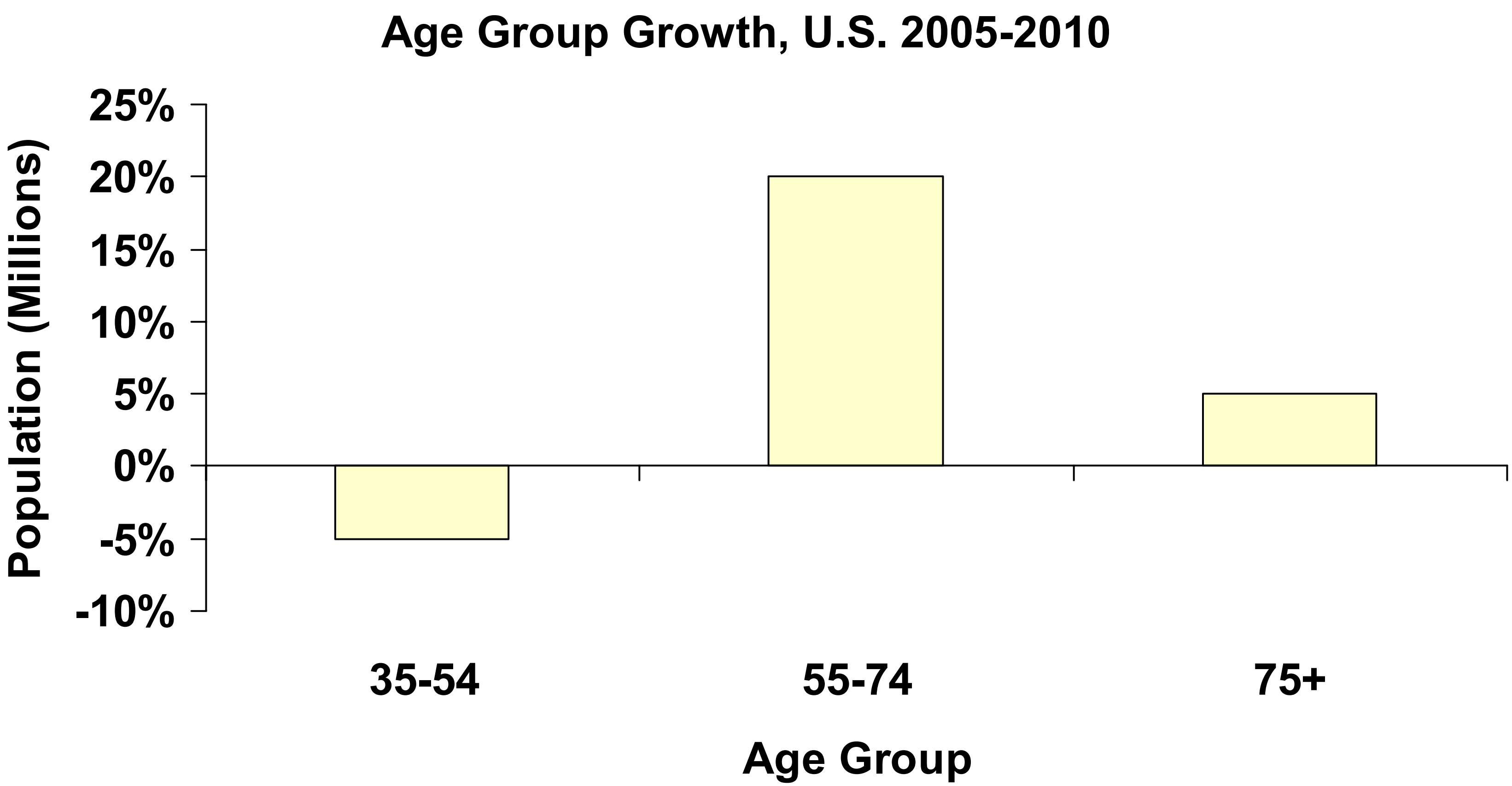
Case 3: Retirement Plan (II of VI)

Bain, Round 1



Case 3: Retirement Plan (III of VI)

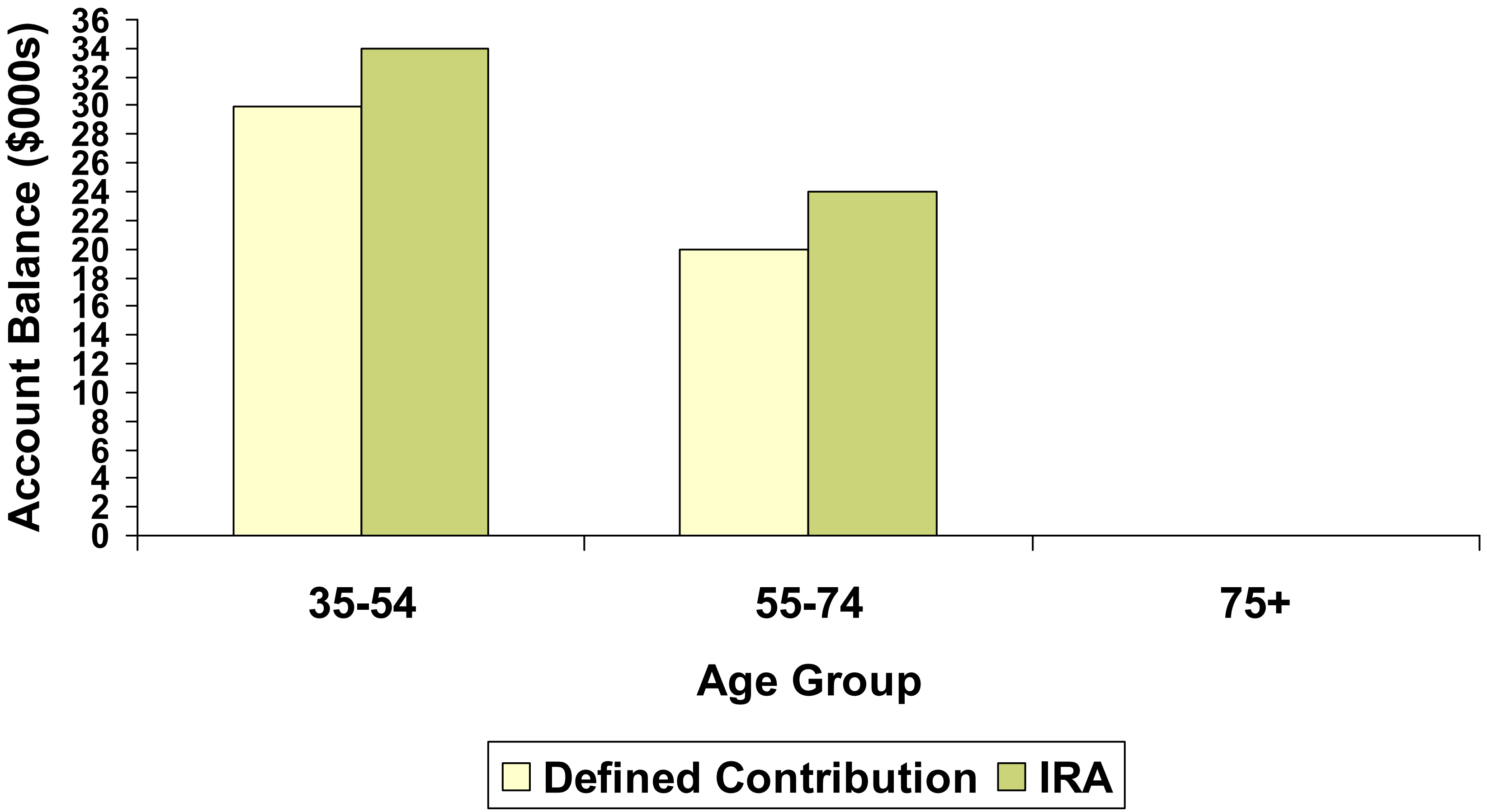
Bain, Round 1



Case 3: Retirement Plan (IV of VI)

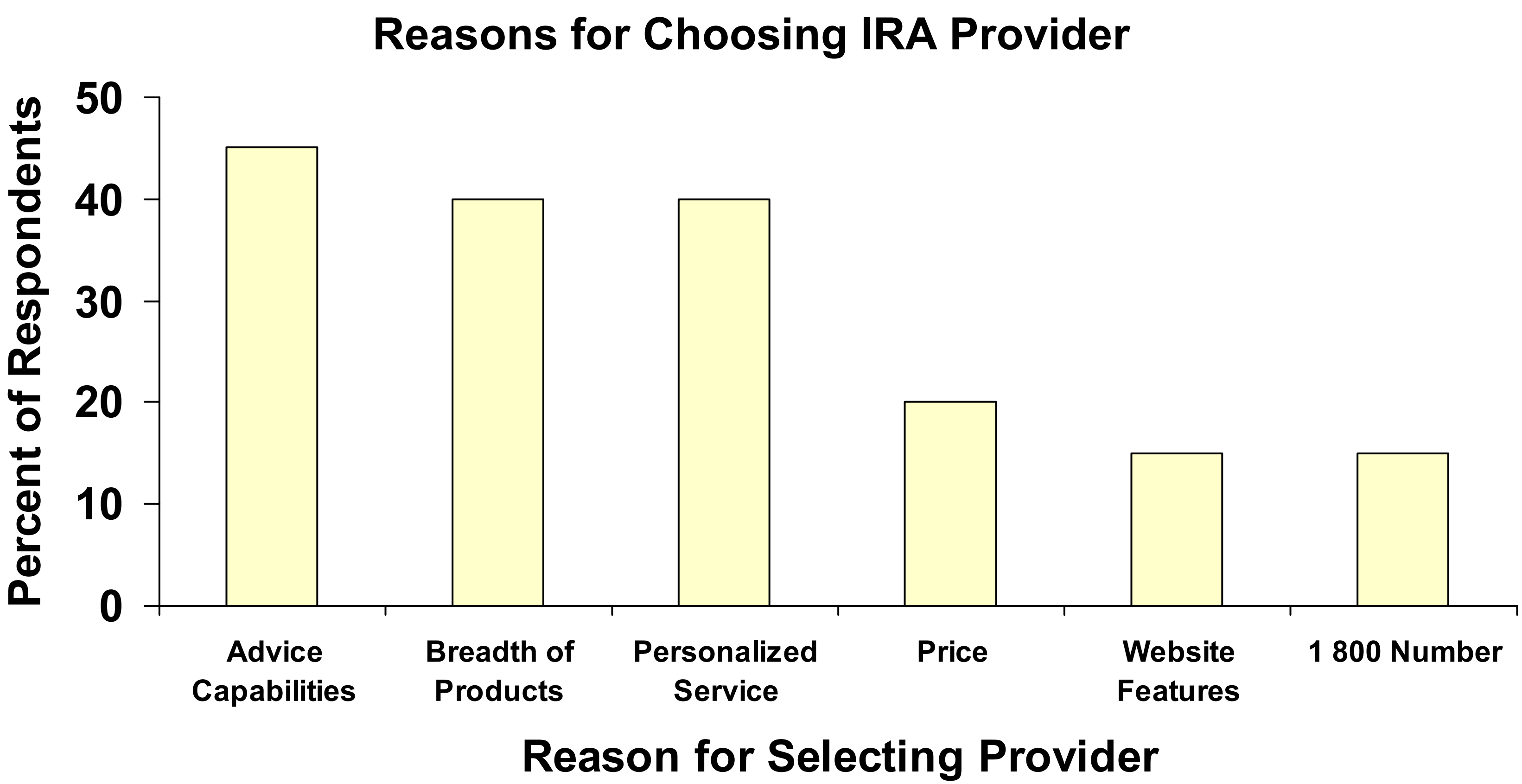
Bain, Round 1

Current Population of Different Age Groups in the U.S.



Case 3: Retirement Plan (V of VI)

Bain, Round 1



Case 3: Retirement Plan (VI of VI)

Bain, Round 1

Candidate should calculate the population growth for each age group

Age Group	2005 Pop.	% Growth	Pop. Growth	2010 Pop.
35-54	70M	-5%	-3.5M	66.5M
55-74	50M	+20%	+10M	60M
75+	20M	+5%	+1M	21M

Then calculate the market size of each type of retirement account

Age Group	Account Balance of Defined Contribution	Account Balance of IRA
35-54	$30K x 66.5M = $2.0T	$34K x 65M = $2.21T
55-74	$20K x 60M = $1.2T	$26K x 60M = $1.56T
75+	$0 x 21M = $0	$0 x 21M = $0
	MARKET SIZE = $3.2T	MARKET SIZE = $3.77T

Case Wrinkle

- There are different player planning to enter each market.
  - Discount brokers are Defined Contribution market, but may enter the IRA market. These firms, such as Fidelity Investments and Vanguard, are characterized by low price / low touch model
  - IRAs tend to be provided such as full service brokers (e.g., Merrill Lynch
- Given the data on Handout 4, how would you assess the threat of a discount brokerage entering the IRA market?

Solution Guide.

IRAs represent the larger market and thus present a greater revenue opportunity. Entrance threats from discount brokers will be minimal because they do not have the capabilities to compete in this market.
Next step: research market share of full-service firms currently in the IRA market and make sure we can steal share from them. Also explore the costs of launching and operating these services.

Case 4: Airplane De-Icing (I of IV)
Bain, Round 1

Problem statement narrative	Guidance for interviewer and information provided upon request[1]
Your client is AirCo, a U.S. airline that has significant operations at on the of Chicago airports. Due the cold weather, the client's place often have to be de-iced, but because the need de-icing is very unpredictable, the client decided to outsource the de-icing to IceCo last year. However, IceCo's performance has not been satisfactory. The client is considering in-sourcing airplane de-icing, but currently does not have enough resources do the de-icing in-house. The client requires a 4-year payback on investments and wants to know if they should in-source or outsource the de-icing?	• Cost comparison on in-sourcing vs. outsourcing – see Handout 1, but first have candidate outline what the major cost bucket are. • If the client in-sources the de-icing, they will need to hire 150 people for the whole icy season, but the actual number of workers per month fluctuates and can get as high as 60. We have to pay workers for the whole month, even if we only need them for one week • Each worker costs $4,000 / month • There are 5 months in the icy season • The performance problems result from IceCo taking too long to de-icy the planes, leading to delays. We cannot quantify the impact of this.

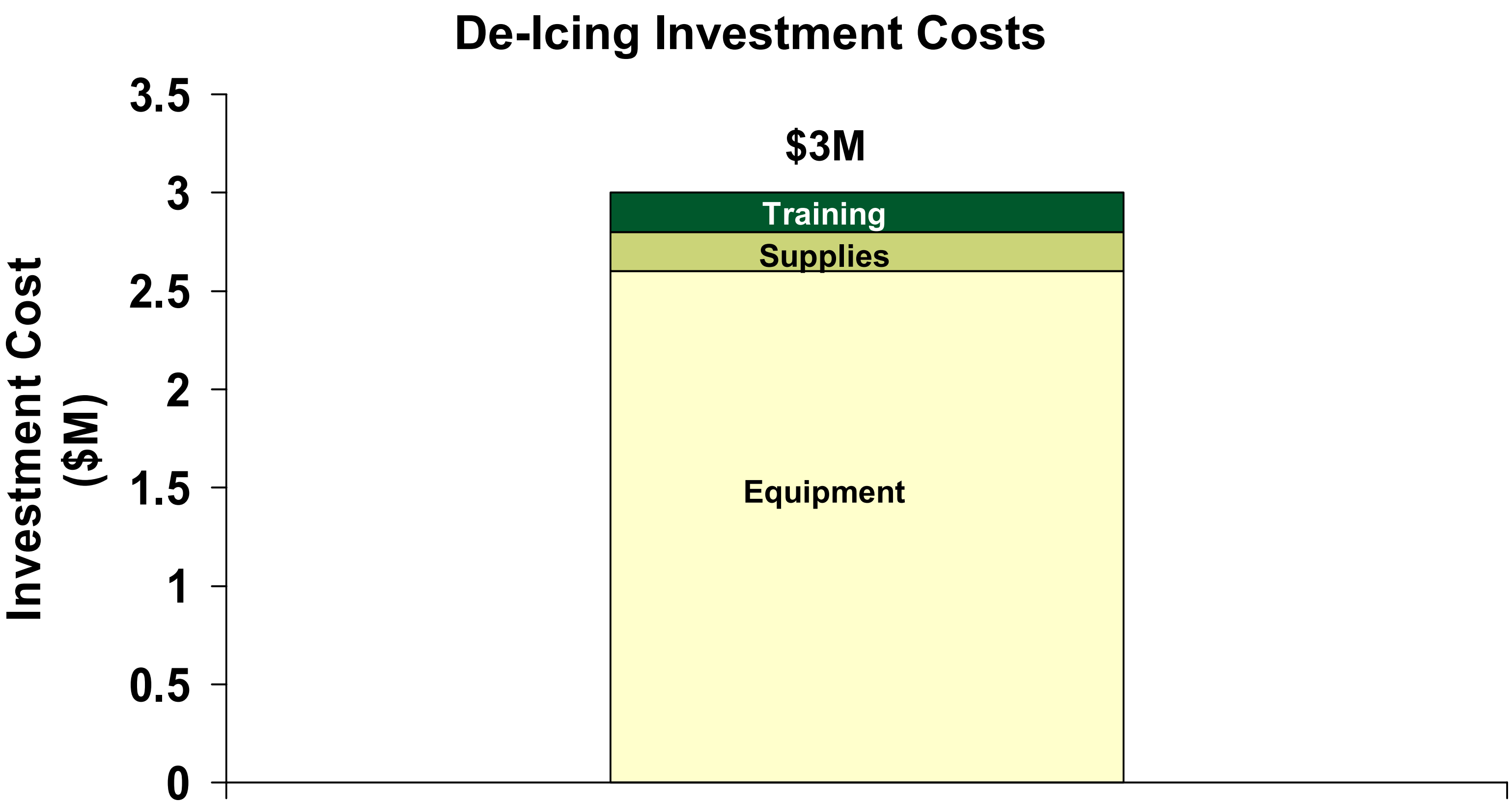
Case 4: Airplane De-Icing (II of IV)
Bain, Round 1

Comparison of Outsourced vs. Insourced De-Icing Costs

	IceCo	Client
Number of Events	3000	3000
Fee per Event	$300	NA
Labor Costs	N/A	?
Cost per Gallon of Chemicals	$5	$5
# of Gallons of Chemical per Event	40	40
Cost per Event	?	?

Candidate: Please complete and explain the 2nd column

Case 4: Airplane De-Icing (III of VI)
Bain, Round 1



Case 4: Airplane De-Icing (IV of IV)
Bain, Round 1

Calculate in-sourced labor costs per event

3000 events/season x 5 months/event = 600 events/month

150 workers/season / 5 months/season = 30 workers/month

30 workers/month x $4000/worker/month = $120K/month

Labor cost/event = $120K/600 = $200 per event

Calculate in-sourced labor costs per event

Outsourced cost:
$300 + $5 x 40 = $500/event

In-sourced cost:
$200 + $4 x 40 = $360

Savings = $140/event

Calculate payback period for the investment

Savings per year:
$140/event x 3000 events/yr = $420K

Payback:
$3M/$420K = 7 years > than 4 year payback requirement

To decrease payback period…

Reduce investment costs – lease equipment instead of purchasing it.

Decrease labor costs to increase savings per event: re-negotiate labor contracts; explore more flexible options instead of hiring by month.

Try to quantify impact of performance problems so these benefits can be monetized and added to the payback calculation.

To improve IceCo's performance…

Implement SLAs that require IceCo to meet pre-determined performance metrics.

Tie IceCo fees to meeting SLAs.

Case 5: Deposit Slips (I of III)

Bain, Round 1

Problem statement narrative	Guidance for interviewer and information provided upon request[1]
Your client manufactures and sells deposit slips to banks at a price of $1/slip. They are the leading firm in this $100Mn industry with 60% market share. There is only one other competitor. Federal regulations will decrease the industry size by 10% next year. Our client wants to maintain its profit to fund other projects. What options does it have and are any of these appealing?	Push interviewee to determine the client's current profit and whether or not the client should lower price / engage in a price war Total Cost for client is $0.70 per slip. Competitor out-sources manufacturing for a total cost of $0.90 per slip. Candidate should determine who would win the price war and if the price war would maintain current profitability.

Case 5: Deposit Slips (II of III)
Bain, Round 1

Candidate should calculate current profitability.	Q = 60% x 100M = 60M TR = Q x $1/slip = $60M TC = Q x $0.70/slip = $42M → Profit = TR – TC = $18M
Candidate should determine who would win a price war…	Client cost of $.70/slip is lower than competitor cost of $0.90/slip, so client will win the war. Rational competitor should not price below cost.
…and whether client will maintain current profits after price war.	The price war will end at P = $.90/slip. Q = 90M (client has 100% of market now, but market has shrunk by 10% due to federal regulation) TR = Q x $0.90/slip = 81M TC = Q x $0.70/slip = 63M → Profit = $18M → Profits are maintained → Go ahead with price war.
A solid interview will address other potential risks…	• Capacity constraints: Q is increasing by significant amount (50%), so plant expansion may be necessary. (Reality was that only two shifts were run, so simply need to add a shift.) • Competitor may act irrationally. • Federal regulation may be a sign of future trends → lower industry profitability in future years.

Case 5: Deposit Slips (III of III)
Bain, Round 1

Additional questions for candidate	Solution guide
• The competitor has another division. Does this change anything?	Provide the following information if specifically asked: -The competitor's other division comprises 75% of its revenues. -This division manufactures a specialty chemical that is sold to banks to check for fraud. (e.g. ink pen that changes color when used on counterfeit money). -This division is highly dependent on bank relationships built through the deposit slip business. Solution: -The competitor is more likely to sell deposit slips below cost because its other division is so dependent on it. -Price war may not be a good idea.

Case 6: CPG Profit (I of II)
Booz Allen – ITG, Round 1

Problem statement narrative	Guidance for interviewer and information provided upon request
A CPG company with national presence has declining profits. The company has hammered on the cost side of its operations, yet profits are still declining. The company has hired BAH to help.	*Information to provide upon request* • Revenue has been declining. • The client has one manufacturing facility with 50% capacity utilization. • Competitors are also struggling with profitability. • There are no numbers in this case. A good candidate will focus on how to increase revenue and ignore the cost.

Case 6: CPG Profit (II of II)
Booz Allen – ITG, Round 1

Why Revenue Has Been Declining?

Possible reasons:
a) Competitors are taking market share from our client.
b) Products are commoditized, leading to lower selling prices and therefore lower profit margins.
c) Substitute products came on the market, undercutting sales.

Interviewer Guide

Encourage the candidate to think of different reasons that could cause revenue decrease, and acknowledge the ones mentioned in the left box.

Ask the candidate what are the options to improve revenue.

Ways to Increase Revenue

- Increase price (not possible)
- Increase sales by
  a) Selling more existing products to existing customers; b) Selling existing products to new customers; c) Selling new products to existing customers; d) Selling new products to new customers.

Interviewer Guide

- Ask: given the current situation, which option should the client look into first.
  - answer c because the current products are becoming commodity and have substitutes.
- Ask: what are the IT issues related to all options,
- Ask: what are the ways to produce new products. One option is acquisition. Once the candidate identifies it, ask what are the IT issues related to acquisition.

Acquisition IT issues and recommendations

- IT costs can be reduced by IT rationalization. However, the implemented technology should be compatible with other systems in the infrastructure.
- Prioritize IT migration by criticality, cost and support needs
- Knowledge transfer and change management issue for users to adopt new systems.

Case 7: Petrochemical Spin Off (I of II)

Booz Allen – ITG, Round 1

Problem statement narrative	Guidance for interviewer and information provided upon request
A commodity petrochemical division has spun off from a major oil company. The new company called ITG group of BAH to look into IT issues and suggest ways to optimize IT expenses. • Initial Facts • The parent company has $300 B in Sales whereas the new company has $30B in Sales. • There is tremendous cost pressure on all areas of operations in the new company. • The parent company has an ERP system. The maintenance of the ERP system is outsourced to a US based company. • The new company will also need an ERP system. •Problem Statement • To the new company, what are the IT issues to separate the ERP system from the parent company? How would you approach these issues.	Candidate should identify core issues including the following: • Vendor management • Accounting • Migration issues • Cost *Information given upon request:* • The existing vendor has scale advantage. It has maintained the ERP system for a long time and is therefore Subject Matter Expert (SME). It is very capable of handling the complexity of the system. • The IT expenditure of the new company is $10M. The IT expenditure of the parent company before spin off is $65M.

Case 7: Petrochemical Spin Off (II of II)

Booz Allen – ITG, Round 1

Interviewer Guide
Ask candidate to interpret the IT expenditure/Sales ratio (a way to measure the efficiency of IT expenditure). The parent company before spin off: IT Expd./Sales = \$65M/\$300B = 0.0216%; The new company: IT Expd./Sales = \$10M/\$30B = 0.033%. The industry Benchmark is around 0.02-0.025%. Therefore, the IT expenditure of the new company is not efficient. Ask: what are the ways to increase the IT expenditure efficiency? Guide candidate towards considering off shore vendors to reduce IT cost.

Cost savings of using offshore vendor	The cost of offshore vendor is 50% less than that of US vendor. However, the productivity of US vendor is 20% more than that of offshore vendor. Therefore, the overall cost savings through off shoring would be 37.5% (50/80=?/100) The new IT expenditure/Sales ratio: \$6.25M/\$30B = 20.83333%.
Risks and strategic consideratio ns	Risks: issues of managing offshore vendors – learning curve, cultural conflict, change management, application support, etc. •Though off shoring might not be an immediate option, the client can use the fact that using offshore vendors will save 37.5% to negotiate better terms with the existing vendor. •The client could use a mix of offshore and US vendors depending on system criticality and comfort level of users. (this is what the client ended up doing.)

Case 8: PCB Manufacturer (I of II)
Booz Allen – Operations, Round 1

Problem statement narrative	Guidance for interviewer and information provided upon request(1)
Our client is a firm who wants to invest in a Printed Circuit Board (PCB) manufacturer. The client wants to know whether it's going to be a good investment.	PCB is used in TVs, radios, mobile phones etc. •The industry has a lot of competition. Companies face challenges such as price pressure, consolidation, etc. •The PCB manufacturer has five plants - 1 in the Philippines, 3 in China, and 1 in the US. •The plant in the Philippines is at 100% capacity utilization for the last two years and still can't meet the demand in the Philippine market as it is the only player. •The client would be granted a 20% ownership stake in the PCB manufacturer for its investment (Valuation is currently $160Mn – based on dcf with no predicted growth) •The PCB manufacturer would use the $40Mn investment to increase capacity at its Philippine plant. •Each plant serves its local market. •The current capacity of each plant is 1Mn units/year. •The client wants to be comfortable that the first year ROI will be higher than 10%.

Case 8: PCB Manufacturer (II of II)
Booz Allen – Operations, Round 1

Candidate should calculate the contribution margin

Variable Cost (per unit)	Philippine	China	US	(ignore the Fixed Cost)
Capacity Utilization	100%	80%	50%	
Labor	$2.00	$1.00	$3.25	
other costs	3.50	2.00	1.75	
Price per unit	6.00	6.00	6.00	
Contribution margin	0.50	3.00	1.00	

Candidate should calculate the ROI

Investment will increase the capacity of the Philippine plant from 1Mn to 10Mn units/year.
Investment will cut the labor cost in half (due to system automation); and will reduce other costs by $1/unit.

Calculations: Original Profit = (6-2-3.5)*1Mn = $0.5Mn
New profit = (6-1-2.5)*10MM = $25Mn
Return of $40M expenditure = $24.5Mn
Return's value to Client = $24.5*20% = 4.9
ROI = 4.9/40 = 12.25% > 10%

Conclusion : It is a good investment for the client.

Other Thoughts

There might be a better alternative to expanding the plant in the Philippines. It may be cheaper to make the product in China and then ship to the Philippines. The company also might look into overcapacity issues at China and US plants. It might be an option to shut down the plant in US, make the goods in China and then ship the goods to US. However, the company should consider factors such as shut-down and transportation costs.

Case 9: Home Garden Chemicals (I of II)
Booz Allen - Operations, Round 1

Problem statement narrative	Guidance for interviewer and information provided upon request(1)
• Our Client is a home garden chemicals manufacturer. Its product lines include herbicides and manure. Annual revenue is $1Bn. • The client primarily targets the consumer market. They sell their product through ‘big-box’ retailers such as Home Depot and Lowe’s. • They have recently come across a new technology that enables them to manufacture a new type of genetically modified grass, and they are considering selling the grass directly to golf courses. Is this a good strategy?	•Herbicides used to kill weeds damage traditional grass. •The new modified grass will not be affected by herbicides = zero grass loss. •Water and herbicides can be delivered together through pipes/sprinkler systems. •Assume the total grass market is $100M, and the golf course grass market is 10% of that with flat growth. •Replanting the grass on a golf course costs $20,000. •Cost of developing the technology: $3Mn per year for the first three years with no sales; 50% profit margin from the 4th year onwards. •Revenue projection: 30% of the golf course market for the first 3 years (i.e. starting from 4th year); 70% market share after that each year.

Case 9: Home Garden Chemicals (II of II)
Booz Allen – Operations, Round 1

Candidate should calculate the payback period

	Year 1-3	Year 4-6	Year 7 +	(assume no discount)
Cash flow each year	-$3Mn	+$1.5Mn	+$3.5Mn	

The payback period is 8 years. The client's policy requires 5 year payback and therefore it's not a good investment.

A solid interview will address ways to improve the payback period

Possible options:
- **Speed up R&D and make the product market ready in less than 3 years.**
- **Gain more market share (more advertising, help customers to further reduce their costs, etc.)**
- **Improve profit margin.**

A great candidate will explore the strategic intent behind the investment

Why does the client want to enter a market with such a small size ($10Mn market compared to the client's $1Bn annual revenue)?

- The client wants to use the golf course market as a test market for the new product. If successful, the client plans to introduce the new grass to the consumer market.

Is the golf course market a good test market given the client's intention?

- Candidate could compare the customer needs in these two different markets: consumers look for convenience; golf course customers look for big cost saving opportunities.

<u>Conclusion</u>: The golf course market might not be a good test market given the small size and different customer needs. The client should explore other markets to test this product.

Case 10: Gardening Retailer (1 of III)
Booz Allen – Home Team, Round 1

Problem statement narrative	Guidance for interviewer and information provided upon request[1]
You have been approached by the COO of a \$2B Midwest Industrial Company who makes fertilizers, pesticides etc. for lawn and garden. They have recently acquired a \$100M retail chain selling patio furniture, garden tools, clothing, décor, ornaments etc. The retail chain have both retail stores and direct order business. The retail chain has a gross margin of 50%, but is still losing money. 1. Why are they losing money? 2. What should they do?	•50 retail stores in the US •Most of the customers are in warm locations (CA, AZ, FL) •40% Customers in California •Stores are upscale

Case 10: Gardening Retailer (II of III)
Booz Allen – Home Team, Round 1

Income Statement

Revenue	$100M
COGS	$50M
Transportation	$10M
Marketing	$15M
Fulfilment	$10M
Labor + Store Rent	$15M
SG&A	$5M

<u>Direct Order Costs</u>
Designing
Printing
Distribution/Shipping

Case 10: Gardening Retailer (III of III)
Booz Allen – Home Team, Round 1

	Procurement	Transportation	Warehousing	Transportation	Retail Stores
Interviewer guidance for each area, but don't read verbatim	Purchased from China	Shipped in large containers to Long Beach, CA. Shipping costs included in COGS (50%)	Transported by Trucks to the Warehouse in Kentucky. Stored in Warehouse and redistributed according to demand	Transported by trucks to different retail stores	Sold by salaried sales people

Recommendation	40% Customers are in California and the containers are shipped from China to California to Kentucky and back to California. Unnecessary costs involved in shipping to Kentucky and back to California. So move the warehouse to California
Growth Strategy	A solid interview will list out options (the 2X2 matrix) for revenue growth, and expanding existing products to new locations would be a good option: • Can expand the number of stores to other warm weather states • Can market a lower end brand in mass market stores like K-Mart, Costco etc.
Additional question for candidate	What are the key profitability drivers in retailing? • Possible answers: Inventory Turnover; Location; Store Layout; Cash Management; etc.

Case 11: Pipeline Manufacturer (I of II)
Booz Allen - Home Team, Round 1

Problem statement narrative	Guidance for interviewer and information provided upon request(1)

The client is a pipeline manufacturer. They think about entering the US market and hired you to advise whether they should do that, and if so, how to enter.
 	
Information given upon request
 	
• The client is located in Eastern Europe and is the market leader in Europe. However, its sales have been flat for the past a few years.
• Their facilities have 85% utilization.
• The current profit margin is 20%, equal to average profit margin of US players.
• The client has lower labor cost but the advantage will be offset by higher logistics expenses if going to the US market.
• The client is able to supply to the US market with products worth of $500Mn.
• Client has $1Bn in cash, and doesn't know how to spend it.
• The US market has flat growth.
	The US market has three distributions channels:
	• Small shops (10% market share)
	• DIYs - Do It Yourself (30% market share)
	• Distributors (60% market share)
	
	There are two types of competitors in the US market:
	• Large companies (6 players) - (63% market share)
	  • Player 1 – x% market share
	  • Player 2 – 2x% market share
	  • Player 3 – 4x% market share
	  • Player 4 – 8x% market share
	  • Player 5 – 16x% market share
	  • Player 6 – 32x% market share
	• Small firms (200+ players) - (37% market share)
	
	• Player 3 has $400Mn revenue coming from the DIY channel and 10% market share of that channel (this is not its total revenue).
	• Recently the client got an offer to acquire Player 3 for $800Mn
	•There is no product difference among players.

Case 11: Pipeline Manufacturer (II of II)

Booz Allen - Home Team, Round 1

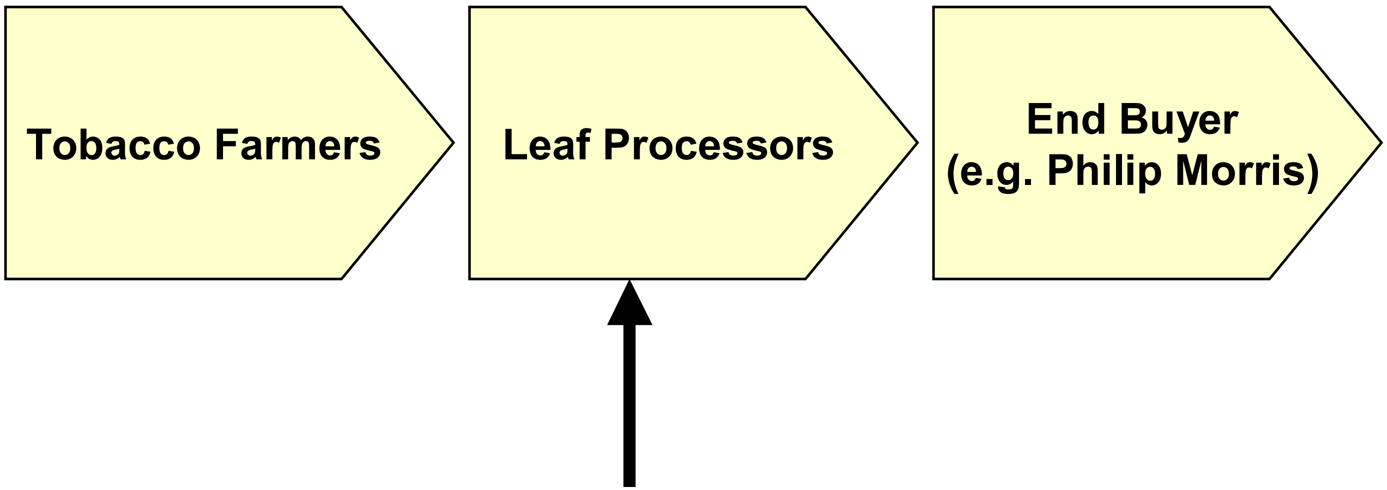
Candidate should calculate x and estimate market size	Player1 – x% Player 2 – 2x% Player 3 – 4x% Player 4 – 8x% Player 5 – 16x% Player 6 – 32x% 63x% = 63% => x=1 **Market size** 10% of DIY is $400Mn => DIY = $4Bn 30% of the market is DIY => market size = $4Bn/30% = $13.3Bn
Candidate should calculate the value of Player 3	Revenue = 4% * $13.3Bn = ~$500Mn Profit = 20% * $500Mn = $100Mn Assuming 10% cost of capital and profit = cash flow: Value of Player 3 = $100M / 10% = $1B, which is greater than $800M => good deal
Candidate should further evaluate the acquisition	• Any potential synergies from the acquisition? • The majority of Player 3's revenue comes from the DIY channel. What are the growth prospects of this channel? Can the client penetrate the other channels? • Why is the offer price lower than what Player 3 is worth? Are there any hidden risks? • Other risks: no experience in US market, learning curve, organizational fit, etc. • A great interview will also explore other modes of entry and evaluate each option. - Exporting products from Europe to the US - Building facilities in the US

Case 12: Tobacco Leaf Processor (I of III)
Booz Allen - Home Team, Round 1

Problem statement narrative	Guidance for interviewer and information provided upon request[1]
Tobacco is a commodity and revenues in the tobacco industry are flat. See Exhibit 1 for value chain. The #2 and #3 tobacco leaf processors are considering a merger. The new merged company will be 75% of the #1 company. Over the past five years, #2 has had flat revenues and slight profitability. #3 has had declining revenues and profitability. Both are global organizations with operations, plants, and distribution at a global level. They overlap in most, but not all, markets. What factors should the firms consider in determining whether to merge? What are the opportunities and barriers?	Market: Only one product and one segment. There are 4-5 end consumers that purchase processed tobacco leaf (e.g. Philip Morris). Competition: #1 has a total market share of 35-40%. Besides the top three players, there are 5-6 much smaller firms. There has been no innovation in tobacco leaf processing for many years. Organizations: #2 is highly centralized with a bureaucratic structure. #3 is decentralized and entrepreneurial.

Case 12: Tobacco Leaf Processor (II of III)

Booz Allen - Home Team, Round 1



This is the part of the supply chain that we are concerned with.

Case 12: Tobacco Leaf Processor (III of III)
Booz Allen - Home Team, Round 1

Opportunities	Barriers
Synergies: merged company can cut redundant costs (they have market overlap). Lack of industry innovation makes cost cutting a promising competitive tactic. Candidate should be able to see that the benefits of the merger is driven by cost not revenue.	**Management / Organizational** issues due to very different cultures. What can #2 and #3 do to mitigate this? • #2 will have more power in the merger. (Mergers are often not of equals. In this case, #2 is bigger and more profitable and thus more powerful.) • #2 will not be likely to want to change culture much (it didn't help #3 with profitability), but #3's entrepreneurial culture may help with innovation. • Open forums pre-merger to manage expectations of merged culture. • #2 should be open to valid suggestions from #3. • #3 should have clear role/stake in merged organization. • Retention issues likely with culture shift, no matter how expectations are managed. **Competition** • Merged company will have ~30% market share (75% of #1's 40% market share). • #1 may feel threatened → #1 may engage in tactics to protect market share. **Macro: Regulatory Issues** - Globally, the merged company will be #2 in market share, but in some countries, it will be #1. This raises regulatory/monopoly issues that the merged company may need to contend with.

Case 13: Incinerator (I of II)

Booz Allen - Home Team, Round 2

Problem statement narrative	Guidance for interviewer and information provided upon request(1)
The client is a waste management company in Italy. They have 3 divisions: - Recycling - Laboratory - Incinerator The head of the Incinerator division has asked for the headquarters funds to build an additional incinerator. The Headquarters has asked our help to determine whether or not the capital investments should be done.	This is not a problem to be solved in financial terms so avoid discussions on whether the money is better spent on one division vs. another. This is a discussion on what is driving the demand for an additional incinerator. *Information given upon request* • Each incinerator acts as a monopolist in the area where it is located (there is no competition at the local level since there is only one incinerator every X squared miles). • The ROI on an optimized plant is expected to be 12% • The utilized capacity of the current incinerator is 80% and it take 2 years to build a plant. • The head of the incinerator unit is stating that demand is increasing by 15% annually. This is the reason why he wants to expand capacity. Note: Candidate needs to determine if the 15% figure is correct or not (don't take 15% granted).

Case 13: Incinerator (II of II)

Booz Allen - Home Team, Round 2

Additional answers for candidate questions	Solution guide
- Demand of capacity for incinerator capacity is negatively correlated to: • Strictness of environmental regulations (the stricter the rules, the lower the amount of waste that will have to be incinerated). The trend for the forthcoming years is stricter rules → demand will be less. • Waste generated by industries. Demand of final goods in textile, automotive, etc. will determine amount to be incinerated. The trend is that production is moving out of Italy → demand is less - Alternative use of material to be incinerated. This material can be used as burning fuel for cement factories, etc. - Benchmark of demand with other EU countries shows that material incinerated is less every year.	• The head of the incinerator unit is overestimating the demand for material to be incinerated. Although a quantification of the demand is not possible it can be easily argued that all external forces are pushing demand for incinerator capacity downwards. • The recommendation should be NOT to invest in additional capacity since it will be already difficult to fill up the existing one.

Case 14: German Luxury Car Maker (I of II)
BCG, Round 1

Problem statement narrative	Guidance for interviewer and information provided upon request[1]
A German luxury car maker wants to grow business and is looking into selling cars in Bangladesh. The GDP growth in Bangladesh is 5% per year. Currently, the only luxury car sold in Bangladesh is Mercedes-Benz and they have been in the market for the past 10 years. The CEO wants to find out if the company enters the market, can they break even in three years?	• Mercedes-Benz imported and sold 10,000 cars in this market over the past 10 years, and has their own dealership in Bangladesh. • There are 1000 new buyers each year. • Existing owners replace their car every 10 years (the interviewee should calculate how many new cars are sold to existing owners – 1000 per year, and therefore the total market size per year is 2000 new cars) • We will have 30% market share (don't give this info out right away, see the 2nd slide) each year. • The price Mercedes-Benz charges is \$100,000 per car. • Assume the discount rate is zero.

Case 14: German Luxury Car Maker (II of II)
BCG, Round 1

<table>
<tr><td>Ask candidate how to estimate market share</td><td>Possible answers:

• Understand customer needs through survey and estimate how well we could meet those needs and therefore how much market share we could gain.
• Find benchmark (It turned out that our client already entered Vietnam and other markets similar to Bangladesh and on average gained 30% market share in each of these markets.)</td></tr>
<tr><td>Break-even analysis</td><td><u>Cost Structure:</u> Initial investment: $7 Mn
V.C. (per car): - Manufacturing $20,000
- Transportation 120% of manufacturing cost (should be: $24,000)
- Customs/taxes 95% of manufacturing + transportation costs ($41,800)
- SG&A 12% of all the above costs combined ($10,296)

the variable cost per car rounds up to $96,000/car. Therefore the profit on each car is $4000. With 30% market share, the client's annual profit will be $2.4Mn and will break even in 3 years.</td></tr>
<tr><td>A great interview should evaluate potential risks of entering this market</td><td>- Assumptions might be inaccurate.
- Bangladesh is not stable politically and economically, therefore our client will bear more risk.
- There could be other new entrants.
- Mercedes-Benz could react to our entry by
• Reducing price (the best answer might also mention that with the low income level in the country, customers who can afford luxury cars might not be price sensitive.)
Ask candidate what price Mercedes-Benz will reduce their car to. Ans: $96,000/car or less
• Improving their services if that's the differentiating factor of our product.
• Blocking some local resources.</td></tr>
</table>

Case 15: Hotel Franchisor (I of II)
BCG, Round 1

Problem statement narrative	Guidance for interviewer and information provided upon request[1]

You have been hired by the CEO of a Hotel Franchise. Yearly revenues have been stagnant at $600MM while the competition has been growing. The CEO wants to know why this is and what can be done.
 	
NOTE: finding the solution to this case is very much like looking for a needle in haystack.
	• As a franchise, the client licenses its brand to franchisees which own and operate the individual hotels
	• The client earns revenue by charging the franchisees a royalty charge equal to 10% of each of hotel's revenues
	• The client has 10 franchise brands that it acquired through acquisitions. All brands are economy level hotels (e.g., Motel 6).
	• Hotels in this segment experience tough price competition. Pricing has been stable.
	• Occupancy rate has been stable at 65%
	• The client has seen a decrease in the number of hotel properties. The client used to have 6,000 hotels, now it has 5000 hotels.
	• Competitive research shows that the client's "revenue per available room night" is 80% of the largest competitors.
	    • Revenue per available room night = Firm Revenue/Total Available Rooms
	    • Each hotel has 100 rooms that can be booked 300 days/year

Case 15: Hotel Franchisor (II of II)
BCG, Round 1

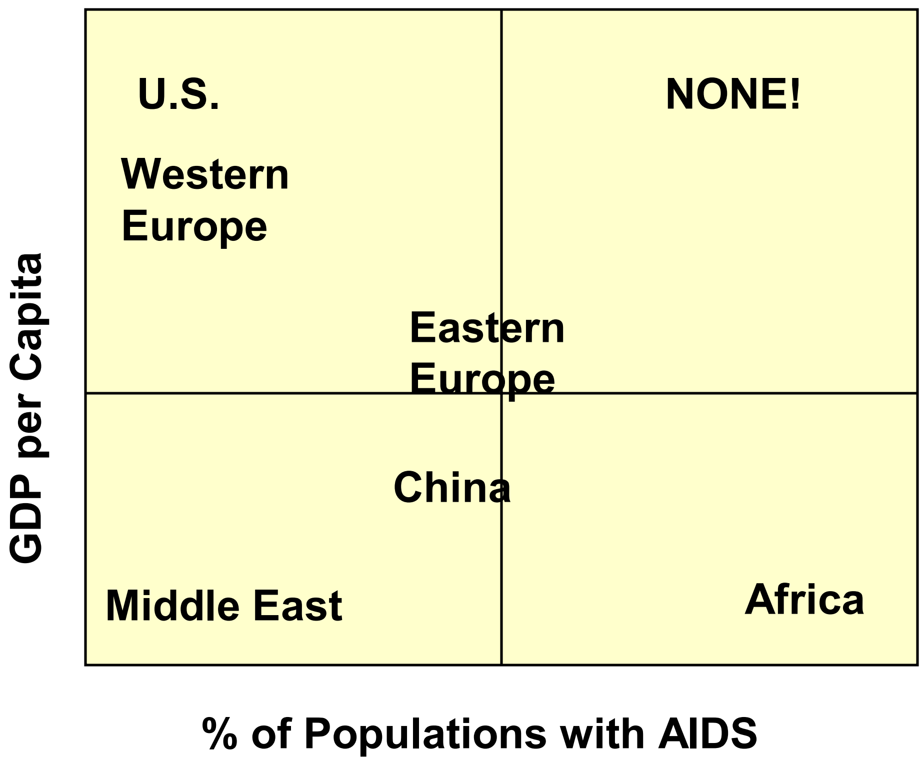
Addition Questions	Solution guide
1. What is the upside of increasing the revenue per available room night to the level of the competitor: • Current Revenue/Room-Night = $40: $\frac{\$600MM\ Rev}{(100\ rms/hotel \times 300\ nights \times 5000\ hotels)}$ • Competitor Revenue Per = $50 ($40/80%) • Upside Hotel Revenue = $1.5B $10 x 100 rooms/hotel x 300 nights x 500 hotels • Upside for hotel franchisor = 10% x $1.5B = $150MM 2. Why has the client's franchisees been leaving the client's franchise? 3. Bonus: What about the methodology would cause franchisees to leave?	1. Candidate should recognize that the decrease in the number of hotel properties has led to the stagnating revenues. This is because franchisees have been leaving and going to other hotel franchises. 2. Candidate should discuss the value that franchisors provide to franchisees: advertising/brand, supplier leverage, overhead services, methodology for running the business. Push the candidate to develop this list. Methodology is the answer. Bonus points if the candidate can determine what about the methodology was the problem 3. Answer: hotels use yield manage management techniques similar to airlines to make sure the rooms are filled. The client does not actively promote its yield management tools to its franchisees. This problem can be solved by investing in more sales people to train franchisees on yield management techniques

Case 16: Pharmaceutical Pricing (I of IV)
BCG, Round 2

Problem statement narrative	Guidance for interviewer and information provided upon request[1]

Your client is a pharmaceutical firm that has developed an AIDS drug. They have already created a plan to role the drug out to the developed world (e.g., U.S., Europe, Japan), but have not yet developed a roll-out plan for the developing world, which nations that range from extremely poor, such as sub-Saharan Africa, to nations that are close to developed, such as Eastern Europe. The client wants to know how it should price this drug for the developing world.	• Candidate should indicate that the drug will be priced different depending where in the developing world it will be sold.
	• When the candidate walks through his/her framework, push them to tell you what factors should be considered in pricing the drug. The two most important factors are GDP/Capita (proxy for the countries willingness to pay) and percent of population infected with HIV/AIDS.
	• Once the candidate identifies the above two criteria, have them draw a matrix with GDP/Capita on the y-axis and HIV/AIDS population on the x-axis. Ask the following questions (see next slide for chart):
	  • Where would you plot the U.S.?
	  • Where would you plot Eastern Europe?
	  • Where would you plot Africa?
	  • Where would you plot China?
	  • What region/countries would be in the lower left of the chart (low AIDS / low GDP/capita)?
	  • What countries would be in the upper right? (high GDP/capital / high AIDS)

Case 16: Pharmaceutical Pricing (II of IV)
BCG, Round 2



The candidate should consider:

- What drives the penetrations of AIDS:
  - Level of education
  - Degree to which religion influences the society (e.g., in the Middle East)
- U.S.: high income and low AIDS rate due to education and affluence; same with Western Europe
- Eastern Europe: lower GDP/Cap than U.S., but not still not a “poor” region. More incidences of AIDS than U.S., but not yet a huge issue
- China: Income lower than Eastern Europe but similar level of AIDS incidence
- Middle East: low income (on average), but low AIDS due to influence of religion
- Africa: very poor and have highest AIDS incidence
- Upper right: there are no countries that fit this criteria.

Case 16: Pharmaceutical Pricing (III of IV)
BCG, Round 2

Once the Income / AIDS rate matrix is create, ask the candidate how the drug should be priced in the following regions. The candidate should hit on the issues raised below.

- Eastern Europe
  - Need to worry about people in Eastern Europe buying the drug and bringing it to Western Europe.
  - Because income in Eastern Europe is not too much lower than income in Western Europe, the drug can be priced to prevent arbitrage:
    - Price of Drug in Eastern Europe = Price of Drug in Western Europe – Cost of Transporting Drug from Eastern to Western Europe
- Africa
  - Ability to pay (income) is below the cost of manufacturing and selling the drug – what are the clients options
    - Walk away – this would a PR disaster since Africa is the region with worst AIDS problem in the world and could lead to regulatory repercussions in the West.
    - Give the drug away (charity)
  - How can the client give the drug away and prevent it from being smuggled to the West?
    - Legal enforcement – governments in Africa will likely be two pre-occupied with other issues to help
    - Distribution – have drug distributed in single doses at hospital or by Red Cross
  - How can the client tell if the drug is being smuggled to the West?
    - Color—code pills by region
- Middle East
  - Can walk away from this market – low ability to pay, but AIDS is not a serious problem.

Case 16: Pharmaceutical Pricing (IV of IV)
BCG, Round 2

What are the revenues client can earn for this drug in China?

Candidate should lay out the following approach: Population of China x % with AIDS x percent that can be reached x market share x price of drug.

Provide data when asked by candidate

- Population: 1 billion
- Percent with AIDS: 1%
- Percent that can be reach: 20% (some may be in rural villages, some may not have education to get tested and thus don't know they are infected)
- Market share: there are four other firms offering an AIDS drug. All drugs have the same efficacy and are priced the same (thus can assume equal share between the five firms → 20% market share)
- Price: $50/month

Provide data when asked by candidate

1 Billion people
x 1% w/ AIDS
x 20% addressable
x 20% market share
x $50/month
x 12 months

= $240MM / year

NOTE: This case does not require a traditional "case summary. The interview can end once the market sizing is completed.

Case 17: Diabetes Testing Meter (I of II)
McKinsey, Round 1

Problem statement narrative	Guidance for interviewer and information provided upon request[1]
Our client is a laboratory that provides diabetes testing services to hospitals in UK. They have developed a self-diagnosis meter that patients can use to do testing on their own. They have hired us to determine if we should take this product to the market: *The candidate should answer the following questions during the course of the case discussion:* •Is there enough long-term demand for this product, given the current competition? • What options does the company have, in terms of taking this product to the market?	**Demand Estimation:** •30% of people and 5% over 65 have diabetes •Out of total population of 10M, 20% are above 65 •No growth in % or population **Competition** •There are 4 other competitors, with market shares of 25%, 25%, 15%, 15% •Client has a 20% share •Growth was over 20% until 2 years ago and has been stagnant since. **Revenues and Costs** Fixed Cost is $2.5M and marginal cost is $20. Per Unit revenue is $25. **Additional points** Patients could opt to use both methods (e.g., self test and also the hospital testing) Product could be promoted as a prevention device (e.g. a low cost option to check for diabetes)

Case 17: Diabetes Testing Meter (II of II)
McKinsey, Round 1

Additional questions for candidate	Solution guide
• Are there any cannibalization effects with regards to hospitals in terms of introducing the product? • If the product can't be launched within UK, what else can the lab do with the product?	<u>Conclusion</u> Due to the limited number of customers available and low future growth, the product should not be launched in the market The company should look at markets outside UK, or sell it to hospitals or competitors. •Key: Good structure, good estimation techniques, risks analysis and breakeven analysis, recognition of long-term growth potential

Case 18: Drug Store Profitability (I of II)
McKinsey, Round 1

Problem statement narrative

Our client is a drug store chain, similar to CVS, They are losing profits in the last few years. Can you help us identify the reasons and means to improve the profits

•The candidate should answer the following questions during the course of the case discussion

•Is the loss of profitability due to product mix, store mix, increasing costs or decreasing revenue? Or a combination of all the above

•What can the company do to improve profits – focused discussion around one area of improvement from above list.

Guidance for interviewer and information provided upon request[1]

Store details:

•Stores are typical to cvs, located in several areas. They have pharmacy, health and beauty, and general merchandise.

Sales and Profitability by square feet and product type

Product Type	Sales/Sq Ft	Profits
Pharmacy	$20,000/sqft	5%
Health and Beauty	$10,000/sq ft	20%
General Merchandise	$5000/sq ft	10%

60% of the stores are located around hospitals, with heavy competition and in some crime infested areas – these stores make 10% loss

Remaining stores make 25% profits

Case 18: Drug Store Profitability (II of II)
McKinsey, Round 1

Additional questions for candidate	Solution guide
• What factors affect profitability of a particular store	<u>**Conclusion**</u> **The firm is losing profits due to several reasons** **1) Product mix** **2) Store Mix** **3) Location details** **The company should look at** **1) Changing product mix** **2) Closing bad stores** **3) Improving on locations** • **Key: Good MECE structure, deep dive analysis in one area, bringing different points together in final analysis**

Case 19: Direct Mail Campaign (I of II)
Deloitte, Round 2 – Mini Case

Problem statement narrative	Guidance for interviewer and information provided upon request[1]
Our client is a telecom fortune 50 company. One of its divisions (landline) is facing high churn (3% per yr). They have launched a direct mail campaign targeting their customers who have switched to other telecom service providers. How can they make their direct mail strategy more effective? They have kept all the information they had on our customers.	Candidate would want to know why customers switched to other providers: •There is no significant difference in the quality of service provided. It is standard landline service. The client also provides other services such as broadband, and wireless to meet diversified customer needs. Therefore, the main reason for customers to switch is price. Candidate would also want to know the content of the direct mail campaign: •The direct mail is a standard mail that lists current promotions and offers. Candidate can discuss the market, competition, products, customers, etc. Guide candidate to discuss customer segmentation.

Case 19: Direct Mail Campaign (II of II)
Deloitte, Round 2 – Mini Case

Interviewer guide	Solution guide
Ask candidate what are the ways of segmenting customers. -Income: Customers with higher income are less price sensitive and therefore won't switch for low prices. Also these customers place high value on peripheral services viz. voice mail, call waiting etc. -Revenue generated by customers -Brand loyalty - # of years of being our customer	The direct mail strategy should be more targeted.Target at the segment where - The cost of serving the customer is low - Revenue potential of the the customer is high - Probability of conversion is high. One important point is to realize that the cost of serving every customer is not the same. The client has all the data on each customer such as frequency of calling the service center, how often bills are not paid on time; etc. The client can use the data to compute cost of serving the customer. Hence, it's important to segment the customers based on "profitability" and not revenue. ---- Central Idea: One needs to understand the segmentation before analyzing the channels.

Case 20: Cleaning Supplies (I of VII)
ZS Associates, Round 1

Problem statement narrative	Guidance for interviewer and information provided upon request[1]
Your client is a Cleaning Supplies Manufacturer. They are trying to redesign their Sales Force and have approached you for advice	**Provide exhibits upon request**

(1) If detailed exhibits exist, they will be referenced in this box, and included in full on the following slide(s)

Exhibit 1

Case 21: Cleaning Supplies (II of VII)
ZS Associates, Round 1

There are four product lines:

	# Customers	Current Revenue	Prior Year Revenue	%Change
A	12,000	$24 M	$18 M	33%
B	24,000	$30M	$35M	-14%
C	6,000	$24M	$20M	20%
D	3,000	$30M	$18.5M	62%

Which products would you concentrate on first and why?
Suppose a sales person can make 3,000 calls per year, and a customer must be called 10 times in order to make a sale. How many sales people should you hire?

Exhibit 2

Case 21: Cleaning Supplies (III of VII)
ZS Associates, Round 1

The Research Team provided the following revenues and costs associated with the sales force
Estimate the Optimum Sales Force

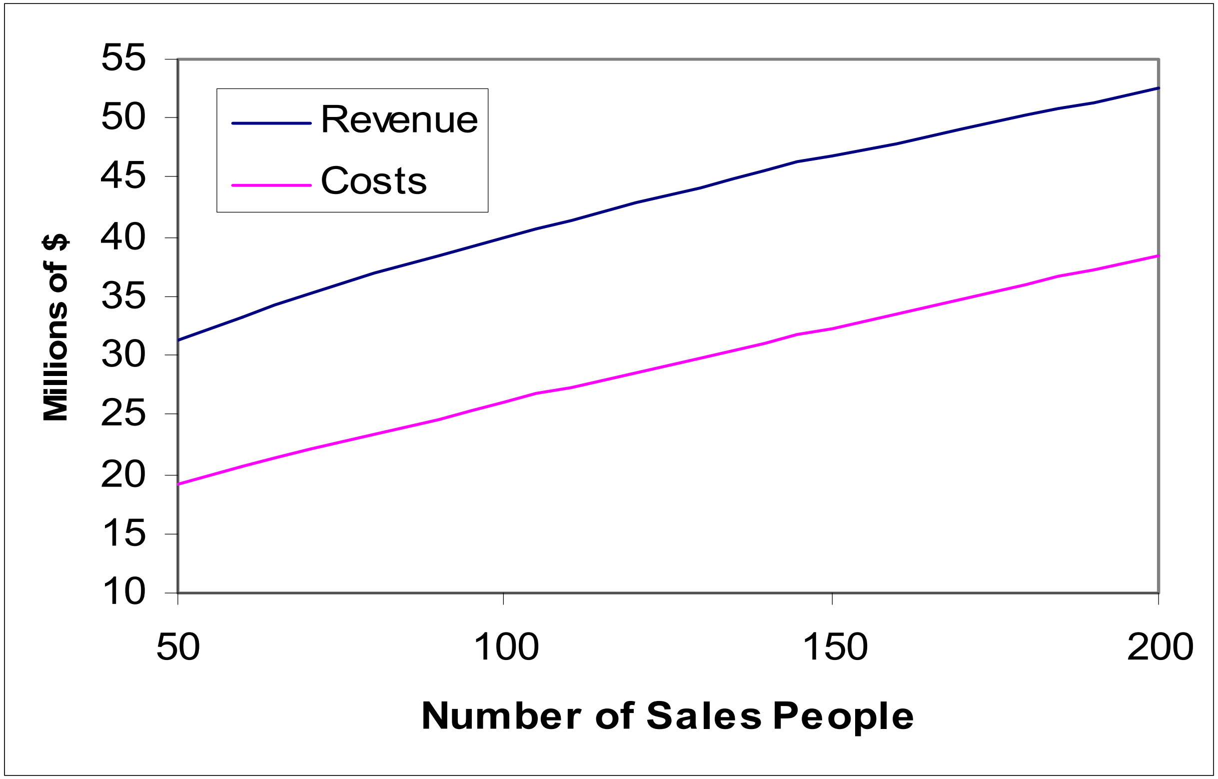


Exhibit 3

Case 21: Cleaning Supplies (IV of VII)

ZS Associates, Round 1

In the previous slide, revenue is given by

Revenue = 3,000,000*sqrt(N) + 10,000,000 (N = number of Sales People)
Gross Margin = 80%
Fixed Costs = 8,000,000
Assume each sales person makes $100,000 in salary and benefits
What is the optimum Sales force?

Exhibit 4

Case 21: Cleaning Supplies (V of VII)
ZS Associates, Round 1

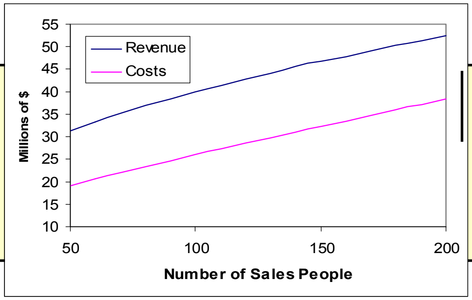
Sales force information for the competition is as follows:

	# Sales People	% time working on sales calls
Client	?	100%
Comp 1	50	100%
Comp 2	100	80%
Comp 3	200	75%
Comp 4	400	50%

How many sales people should the client hire in order to achieve 25% of the industry's total coverage?

Case 21: Cleaning Supplies (VI of VII)
ZS Associates, Round 1

Exhibit	
Exhibit 1	Order of Focus → D,C,A,B (based on Revenue per customer) Total Customer calls = (12,000+24,000+6,000+3,000)*10 = 450,000 Customer calls per year = 3,000 Number of Sales People required = 450,000/3,000 = 150
Exhibit 2	Based on chart, Optimum Sales Force = 150 Draw vertical lines between revenue and cost curve Find N with maximum distance between two curves
Exhibit 3	Profit = 80%*(3,000,000*sqrt(N)+10,000,000)-100,000N-8,000,000 = 2,400,000*sqrt(N)-100,000N To Maximize profit, first derivative should be zero and second derivative should be negative First Derivative: 1,200,000/sqrt(N)-100,000 = 0 → sqrt(N) = 12 → N = 144 Second Derivative: -600,000/sqrt(N^3) → Negative
Exhibit 4	Let x = # Sales People Client needs 25% customer reach x/(400*50%+200*75%+100*80%+50*100%+x*100%) = 25% x/(480+x) = 25% → x = 160



Case 21: Cleaning Supplies (VII of VII)
ZS Associates, Round 1

Additional question for candidate	Recommendations
You have calculated different sizes for the sales force in each scenarios. What size sales force do you recommend?	The optimum sales force ranges between 144 and 160 people. The recommended value should be closer to the lower end since the last calculation, 25% customer reach (N=160), doesn’t necessarily translate to revenues.

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