Extra Practice Cases

Market sizing

Case 3: Pianos

Market Sizing

Prompt	What is the 2012 market size of acoustic pianos in the state of New Hampshire?

[redacted]

Case 3: Pianos
Sample Framework

MARKET SIZING

[2014 Anderson Casebook]
PIANOS IN NH

1. What is 2012 market size of acoustic pianos in state of New Hampshire?

Def^n: Acoustic pianos – includes upright, grand, and baby grand pianos
– Digital keyboards are out of scope.

Market size $$$ = (Population of NH / Avg. household size) * % Owning a Piano * % Pianos per households * Replacement rate (life span) * Avg. Piano Price.

Can take weighted avg. depending on the wealth of income classes or hobby / professionals

Customers
↓
- Households
- Churches
- Concert Halls
- Museums
- Malls
- Inventory retail stores

Things to note: NH is one of the smallest states of U.S. [Assume population to be 1-2M]

: % households with a piano
- Average wealth of NH
- Mix of electric vs. acoustic pianos
- Macroeconomic impacts on piano purchases (e.g. elastic demand for pianos)

Avg. price of pianos
↳ * Type of piano (upright vs grand)
* Level of experience with piano (basic / intermediate / superior)
* Brands of piano (luxury brands)
* Hobby / professional
* Power of a piano
- I took a weighted avg. of mkt. share of pianos by students / adults / professional musicians

Replacement rate of piano → Durable instrument
↳ Gets passed from one generation to another generation

With such cases, PROVIDE EXPLANATION AS TO HOW CHANGES TO ASSUMPTIONS WOULD AFFECT ESTIMATION

IZAK ZENG

Case 3: Pianos

Market Sizing

Guidance	Average Household Size: • Reasonable estimate = US average of ~2.5 is acceptable (or 2-3 if candidate chooses to round) % of Households with an acoustic piano: • Here you should have the candidate talk through what the factors are in piano ownership: − Average wealth of households in NH (relatively higher than other states in the US) − Mix of electric keyboards vs. acoustic pianos − Macroeconomic impacts on piano purchases (e.g. elastic demand for pianos) • Reasonable estimate: likely under 5% of all US households. Acceptable answers from candidates range from 3-10% of households, given reasons listed above Average price of piano: • Prices of pianos vary by piano type (i.e. upright pianos are less expensive than grand pianos) • Reasonable estimate: $5,000-$10,000 Replacement rate of pianos: • Candidate should reason that households will not purchase a piano each year and should divide the number they have arrived at thus far by the average life of a piano (or multiply by the replacement rate) • Candidate should further reason that pianos are on the more durable side of musical instruments • Reasonable estimate: pianos should last 30-50 years Calculation: (1.5 Million People / 2.5 People per HH) = 600,000 HH * 5% Piano Ownership = 30,000 Piano HH * $7,500 per piano = $225,000,000 Total Market Size / 40 years = $5.6 MM / Year

Case 3: Pianos

Market Sizing

Performance Evaluation	**Expected:** • Candidate develops a structured approach to finding a solution • Clarifies assumptions that he/she makes based on reasonable logic **Good:** • Completes all “Expected” requirements • Picks easy numbers or rounds appropriately to simplify calculations • Clearly walk the interviewer through the calculations **Excellent:** • Completes all “Excellent” requirements • Arrives confidently at the final number • Provides an explanation as to how changes to assumptions would affect the estimation

Case 2: Chinese Cars

BACKGROUND
Firm: Roland Berger
Round: 2005 Summer, First
Content: Market sizing, qualitative and quantitative

CASE QUESTION

Our client is a large Chinese conglomerate with a lot of cash on its hands. They decided to invest this money in a plant that, by the end of this year, will have a full production capacity of 8 million aluminum wheels annually. Management assumes that it will be able to sell 20% of its production in the domestic Chinese market.

The company hired Roland Berger to determine if it can sell the remaining 80% of its production to the US market, which is the largest vehicle market in the world. What do you think?

INTERVIEWER BRIEFING

Recommended approach:
This case is essentially asking you to do two things:
1) Determine the size of the US car market so that you can understand the relative impact of the Chinese company's goals.
2) Assess the feasibility of entering the US market and provide suggestions on how this company might go about doing so.

Market Sizing: Determine how many wheels your client could supply to the US market – both in number of wheels and number of cars (1/4 of the wheel number). Then ask about the size of the US new car market and the secondary market to determine what share the company would need to capture to sell 80% of its production in the US.

Feasibility and Possible Actions: This is where you need to drill down to uncover automobile industry dynamics:
- How do OEMs get the wheels for the cars they produce?
- How would a Chinese company distribute its wheels to the US market? Directly or through intermediaries?
- How entrenched are supplier relationships? Do OEMs buy based on price only, or do the relationships matter too?
- What regulations are involved in supplying an OEM?

Once you understand how the supplier-OEM relationships work, you can provide some suggestions on how this company might feasibly enter the US market.

Key Facts:

- 17 million vehicles produced in the US each year. 70% equipped with aluminum wheels.
- 10% of used car owners whose cars are less than 5 years old buy aluminum wheels
- 85 million cars in the "after market," 24 million of which are less than 5 years old
- Most companies will select one supplier who will supply the aluminum wheels for the entire life-time of a car model. Suppliers are usually selected 24 months before a new model goes into production and have stringent quality controls.

EXAMPLE DIALOGUE

Interviewee: Okay. I'd like to first determine the production figures of the Chinese manufacturer and compare them to the size of the total US automobile market. This will help me understand the relative size of the Chinese company's production numbers and whether their plan is realistic. Once I know how much market share the Chinese company wants to capture, I'd like to discuss the US automobile industry dynamics to determine if/how the Chinese company should enter the market.

Let's start with their production numbers. Let's assume that cars require only 4 aluminum wheels and that spare tires are made out of some less expensive material. This means that your client produces wheels for 2 million cars per year. 80% of 2 million gives us wheels for 1.6 million cars, which we are trying to sell in the US. So how big is the US new car market and how large is the secondary market (people who buy aluminum wheels for an older car)?

Interviewer: *About 17 million vehicles are produced in the US each year. About 70% are equipped with aluminum wheels. About 10% of used car owners whose cars are less than 5 years old buy aluminum wheels.*

Interviewee: That means that roughly 12 million new cars each year are sold with aluminum wheels. Can we assume that there are about 280 million cars in the after-market, about 1 car per person, considering that people in New Jersey own on average 2 cars?

Interviewer: *No, that number is much lower. There are about 85 million cars in the after market, but only about 24 million are less than 5 years old.*

Interviewee: I see. That means the after-market is about 2.4 million sets of aluminum wheels per year. Considering that your client needs to sell 1.6 million sets, they'd have to capture a 66% market share, which seems very unlikely in such a fragmented market. That means we should probably focus on the new car market. How do the major car companies procure the aluminum wheels they put on their cars?

Interviewer: *That's a good question. Most companies will select one supplier who will supply the aluminum wheels for the entire life-time of a car model. Suppliers are usually selected 24 months before a new model goes into production and have stringent quality controls.*

Interviewee: We probably would have to add another 12 months to even get on a company's preferred supplier list, which increases the lead time to about 3 years before we can hope to supply aluminum wheels to a major US car manufacturer. Since you mentioned earlier that your client's plant will be ready for production by the end of this year, this does not look like a viable option either. What about trying to expand distribution on a broader basis than just the US?

Interviewer: *They thought about that as another option, but they would really like to work with just the US.*

Interviewee: Assuming that your client can produce quite a bit cheaper in China than most competitors can in the US, it might make sense to sub-contract some of this production capacity to suppliers of the major US car manufacturers. This is probably less lucrative than selling directly to end-customers or car manufacturers because the client would have to share its profit margin with the supplier. That said, it would probably be the most efficient way to enter the US market on a large scale.

Interviewer: *Yes, this is exactly what they did.*

Case Title:	Gas Station
Company:	Bain & Company
Interview Round:	1st Round – Full Time
Case Tags:	Market sizing
Duration:	25 minutes

Question:
How many gas stations are there in Japan?

Follow-up question: If you had 2 hours to refine your data, how would you spend them? (i.e. which assumptions are most important; the "drivers")

Things Interviewee Should Consider / "Framework":
There are several other ways to attack this one, including a simple scale-up (a town of 80k might have 20 gas stations, so just proportion that up to 120M people…) or some sort of parallel to the United States, as long as cultural differences are considered.

Facts to Share (if prompted):
- Population of Japan = 120 million
- Public transportation is very convenient and widely used, so car ownership and usage is much lower than in the U.S.

Summary of Key Insights:
Be sure to have a couple of suggestions on how to approach the problem. You will be asked for multiple solutions, and why one is better than another. Be organized with your numbers.

Case Title:	Gas Station
Company:	Bain & Company
Interview Round:	1st Round – Full Time
Case Tags:	Market sizing
Duration:	25 minutes
	Sample framework

GAS STATIONS IN JAPAN

4. No. of gas station in Japan?

Approach:

- Population of Japan
- Segment by income levels / households
- Estimate the no. of cars
- Fuel consumption for cars → No. of refills required (monthly/weekly)
- 1 Gas station can cater to how many cars?
- Estimate the no. of gas stations

↓

- No. of pumps at each gas station
- Utilization (per fill up) – Days/Hours
- Efficiency (5 minutes per fill up)

- Use numbers that are easy to work with

Walkthrough of Solution:

The following is a sample solution:

Equate supply with demand:

Work in tanks filled, since we will deal with the amount of time it takes to fill a tank

Demand = households * % car ownership * tanks filled per month * days/month
+ business demand = above # * (ratio of trucks to cars on the road) * (ratio of frequency of fill-ups, i.e. every day vs. once/month)

40M * 40% * 1 tank/month * month/30 days = 500,000 tanks/day +
500,000 * (1 truck/20 cars) * (one fill-up per month/every day, or 30) = 750,000

Total supply = 1.25 M tanks per day

Each station has about 10 pumps

It takes about 5 minutes for each fill-up.

Under 100% utilization, that would equal 10 pumps * 12 * 24 = 3000 fill-ups per gas station per day

To figure out utilization, divide up the day and make some assumptions

0:00 – 6:00 = 5%
6:00 – 10:00 (around rush hour)= 50%
10:00 – 16:00 = 20%
16:00 – 20:00 (around rush hour) = 50%
20:00 – 24:00 = 20%

Take the weighted average = (6*.05 + 4*.5 + 4*.2 + 4*.5 + 4*.2)/24 = 25%

So there are 25% of 3000, or 750 fill-ups per station per day

1.25M/750 = about 6600 gas stations

Follow-up question: 6600 seems low. Go through each assumption and do a gut-check

- Over a 24-hour span, are gas stations really 25% utilized? Probably not…
- % car ownership and fill-ups per month will be big drivers
- Since business use is so large, the ratios used in that equation are also quite important

Case 2: Penguins?!?

Market Sizing *Bain & Company*

Guidance	Important: Try not to laugh… This is a real case from Bain & Company. It's a hard case. The candidate will have to think out of the box to solve it. Therefore, it's not a case for beginners. Before the candidate start his/her framework, ask him/her what he/she knows about penguins.
Prompt	Penguins have evolved. Now they can talk and they are organized as an advanced society. The ambassador of Penguinland (former Antarctica) has reached out to Bain & Company because he is worried about the growing population growth of penguins. Currently, there are about 23 million penguins and the population is growing 32% per year. **How many penguins can live at Penguinland and what is the best way to accommodate everyone?**
Guidance	The candidate must calculate how many penguins can live in Antarctica. That means, the candidate should be thinking on what the penguins eat (fish), how far can they be from the ocean, etc. The penguins are not involved in commercial activities. They still act as penguins. Orient the candidate to think out of the box.

Case 2: Penguins?!?

Market Sizing *Bain & Company*

Guidance	The candidate should present a framework touching on food habits, predators, space for building their nests, etc. The key driver in this case is how far they can live from the ocean.
	
	Information to be given upon request:
	• Predators: the penguins negotiated with all predators. The polar bears now live in a Zoo in San Diego and the whales lives at Sea World.
	• Food: There are a lot all over the ocean. It's more than enough to feed every penguin.
	• Penguin habits:
	    • They are all married and have a baby penguin
	    • They need space for both penguins to live and a nest for the baby
	    • Penguins do not need space for leisure. They need space just to sleep
	    • Penguins must eat everyday
	• Penguinland (Antarctica) area: Provide exhibit 1. Allow the candidate to approximate the map to a square.
	
	If the candidate does not realize that he needs to calculate the Antarctica area, ask him to do so.

Case 2: Penguins
Sample framework

PENGUINS

17. The ambassador of Penguinland is worried about growing population growth of penguins. Currently, there are 23M penguins and popⁿ is growing at 32% a year. Pop ↓ How??

How many penguins can live at Penguinland and what is the best way to acomodate everyone?

PenguinLand

- Area
- Limitations
  - Food chain
  - Space
  - Predators
  - Diseases
  - Environmental factors
  - Distance from ocean

Penguins

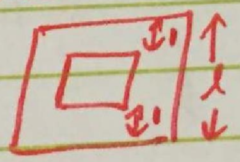
- Why are they growing?
  - Birth rate
  - Better temp?
- Habits
- Talking penguins?

Benefits?

Other animals

- Any other animals?
- Similar trends?

Note :- Area of square



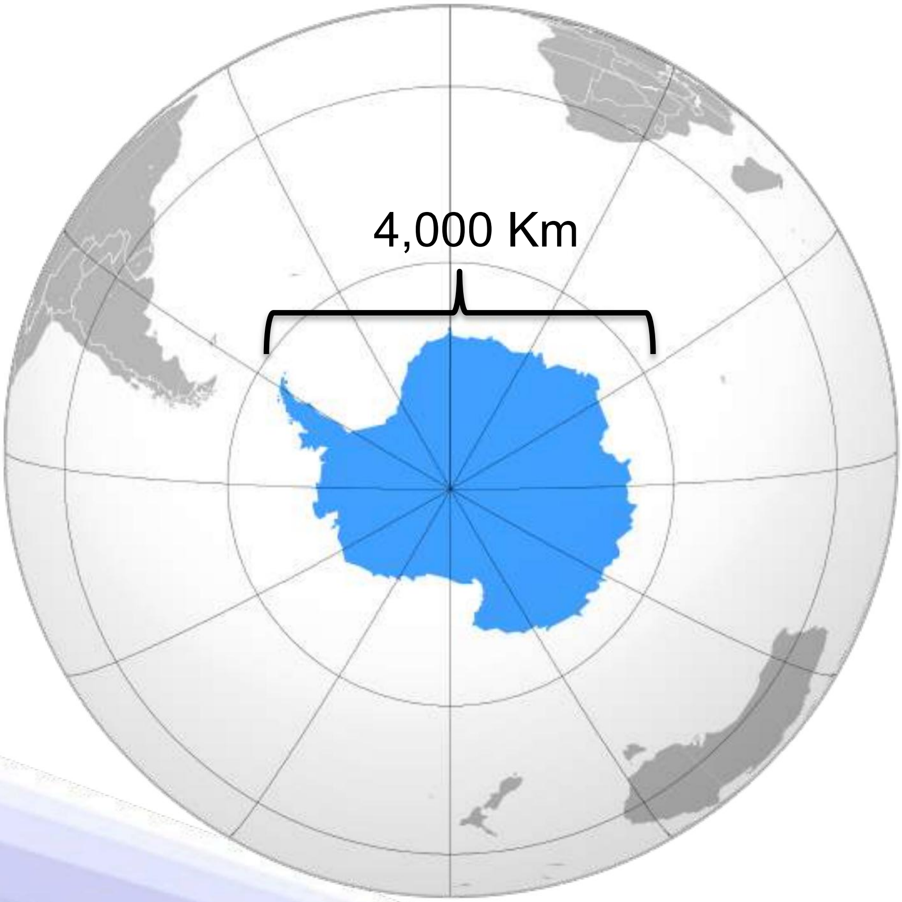
$l' = l - 2$

- Look at
  - time to eat a fish
  - walking distance from the ocean

Case 2: Penguins?!?

Market Sizing *Bain & Company*

Exhibit 1: Penguinland Map



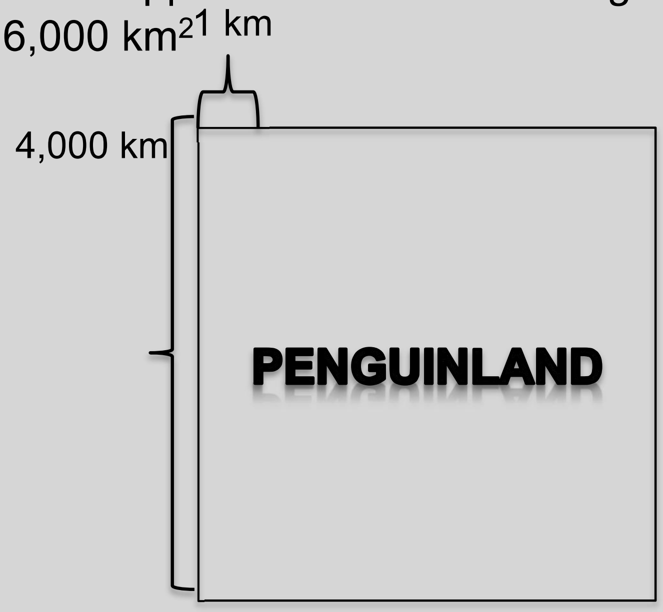
Case 2: Penguins?!?

Market Sizing *Bain & Company*

Guidance	Calculation: Approximating the map to a square: Area = 4,000 x 4,000 = 16,0000,000 km^2 Now that the candidate has calculated the Antarctica area, he needs to calculate how far can a penguin live from the ocean. He/she will need to calculate how fast can a penguin walk and how many hours per day can a penguin walk. Information to be given: • Penguins only walk and eat during the day. They must sleep the whole night • Penguins must eat every day or they will die • Even if a penguin stays in the ocean for only 1 second, it's enough to eat one fish • The longest day of the year has 22 hours of sunlight • The average size of penguin leg is 20cm. The average size of a human leg is 1m • Humans can walk at an average of 5km per hour The candidate must realize that the walking speed can be written as a function of the leg length. Therefore, if a penguin has a leg that is 1/5 of a human's, the penguin speed will also be 1/5 of the human's speed. In this case: 1 km per hour. Since the longest day of the year has 22 hours of sun light (and 2 hours of night), the shortest day of the year has only 2 hours of sunlight. Since the penguins must walk from their nest to the sea and from the sea to their nest, they cannot live from more than 1 hour (1km) from the sea.

Case 2: Penguins?!?

Market Sizing *Bain & Company*

Guidance	Now that the candidate figured that the penguins can live only 1km away from the sea, he/she needs to calculate the total habitable area and how many penguins can be fit in this area. The total habitable area can be approximated* to 4 rectangles of 1km by 4,000km. Area = (1 x 4,000) x 4 = 16,000 km^2  *Note: The correct area calculation is (4,000 km x 1 km) + (4,000 km x 1 km) + (3,998 km x 1 km) + (3,998 km x 1 km) = 15,996 km^2, but is ok to round to 16,000 km^2 Orient the candidate to estimate the number of penguins. He/she will need to know the size of the penguins. Information to be given upon request: Penguin size = 1 m^2 Nest size = 1 m^2 Remember the candidate that the penguins need space to move from their nests to the sea. Therefore, they will need roads.

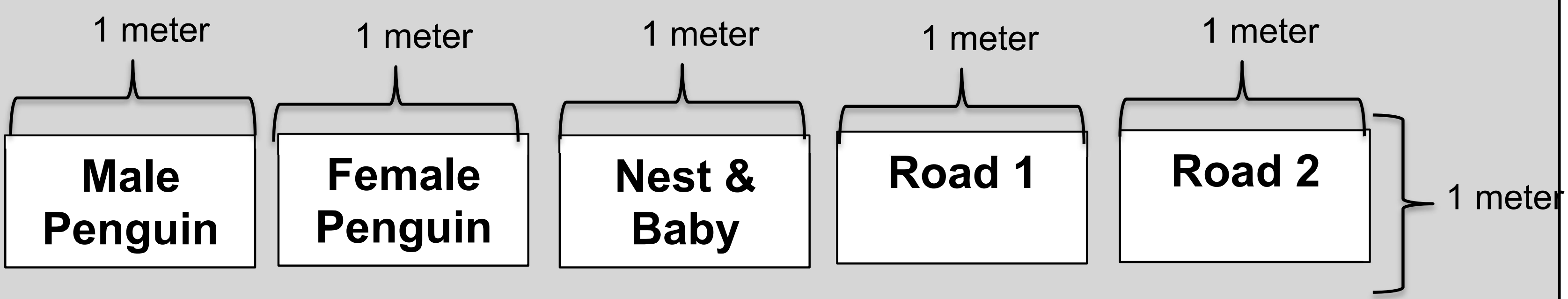
Case 2: Penguins?!?

Market Sizing *Bain & Company*

Guidance

Tip: the penguins will need roads. Ideally, they will need 2 roads, so some penguins can go to the sea while others are coming back the their nests.

The optimum solution is to allocate the penguin as follow:



According to this layout, it’s possible to accommodate 3 penguins (1 male, 1 female and 1 baby) for each 5 square meters.

$$Total\ Number\ of\ Penguins = \frac{Habitable\ Area\ (in\ m^2)}{Home\ layout\ size} x\ 3\ penguins$$

$$Total\ Number\ of\ Penguins = \frac{16{,}000{,}000{,}000\ m^2}{5\ m^2} x\ 3\ penguins$$

$$Total\ Number\ of\ Penguins = 9{,}600{,}000{,}000\ penguins = 9.6\ B\ penguins$$

Case 2: Penguins?!?

Market Sizing *Bain & Company*

Performance Evaluation	**Expected:** • Correctly calculates the number of penguins • Needed some help to understand the drivers to calculate the maximum penguin population **Good:** • Completes all "Expected" requirements • Suggests that the map can be approximated to a square or circle • Develops a framework that contains important issues such as Predators, Feeding Habits, etc. • Understands that the penguins must walk 1km to reach the sea and then they need to come back **Excellent:** • Completes all "Good" requirements • Understands that the calculations must consider the shortest day of the year • Suggests the same allocation layout • Could solve the case without much help from the interviewer

Strategy

Case: Mighty Mining Company

(inspired by) McKinsey, Round 2

Problem statement narrative

Your client is a global mining company with a location in South Africa. This particular location is performing below average financially. McKinsey has been hired to identify the problem and make recommendations to address it. What would you do first to approach this problem?

(Note to interviewer: This leadoff question is meant to focus on actions one would take before diving into the framework – actions such as collecting data, visiting the location to observe operations, interviewing employees, etc)

Overview for interviewer

This question is intentionally vague, as many Partner level cases can be, to encourage the candidate to ask questions at this stage.

This is command and control, so start with the first question, then provide the detail to the right and ask for a full analysis (framework). After the framework is developed by the candidate, dive deeper into cost and operations and ask follow-up questions.

Case Type: Operations
Case Style: Command & Control

Information to be provided after actions identified

The processing plant is located 160 miles inland and it uses a fleet of large trucks to transport minerals from the plant (which is located near the mineral source) to a port city. The minerals are then loaded onto barges and shipped to clients around the world. The plant needs to operate at maximum capacity to meet customer demand.

The minerals produced are commodities with low margins.

Case: Mighty Mining Company

(inspired by) McKinsey, Round 2

Sample Framework

OPERATIONS

MINING COMPANY

1. Your client, a global mining company in South Africa. This particular location is performing below average financially. McKinsey has been hired to identify the problem and make recommendations to address it. What would you do first to approach this problem?

Company

- Business model
- Goals

π

- Rev
  - Price
  - Volume - tons of metal
  - Metal / Minerals
  - Customer
    - Govt.
    - corporations
  - Distribution channels
  - Marketing
- Cost
  - Fc
    - Mining area lease
    - Equipment / Machinery
  - Vc
    - Labor
    - Repair / Maintenance
    - Hazards
    - Insurance fee
    - Taxes
    - Transportation / Distribution costs
    - Operational efficiency

External

- competition
  - commodity?
  - New entrants
  - ⊖
- Political environ.
- local mkt. conditions
  - weather
  - Crime rate
  - Economy

Note: Revenue
- Historical trend
- Benchmark it with competition

Growth — See if the company growth can potentially match the market growth

Plant operating at full capacity ↳ Operational disruptions

- Machine throughput
- Downtime of labor — less productivity
- Supply-chain
- Transportation

- Power outage
- Local protests
- Labor strikes
- Climate / weather conditions
- Disaster - natural
  - man-made
- Crime
- Political intervention

Potential Issue Tree & Approach to Solving the Case

Key elements of analysis to solve the case

Revenues	Costs	Operations
Revenue: explore historical data, trends, product specific data Benchmark against competitors and other corporate locations.	**Costs:** explore fixed costs (PP&E, overhead) and variable costs (material, labor) **Transportation:** considering this product is a commodity, transportation makes up a large portion of the product cost and should be separated out.	Explore operational issues that might lead to poor performance such as interruptions in operations (is plant operating at full capacity, is it running 100% of the time or are there power outages or other disruptions, are there local protests, is theft or local unrest impacting plant), employee skill level, employee morale, etc
Possible follow-up and guidance to interviewer	**Possible follow-up and guidance to interviewer**	**Possible follow-up and guidance to interviewer**
Although important to mention, the focus of this case is cost and operations so don't let the candidate spend too much time here.	If the candidate has not already done so, ask them to identify the key cost line items on the income statement and elaborate on the COGS for this industry. **COGS:** Labor, Materials, Shipping/Logistics **Operating Expenses** Administrative, Overhead, D&A	If the interviewer gives a vague response such as "I would want to understand the local market conditions" then push for specific examples of operational issues that would impact a plant in the middle of South Africa. It is important that the candidate identify general operating issues and locally impacted issues.

Follow-up Questions

Follow-up question #1

In gathering data from the client, you find that transportation costs are significantly higher as a portion of COGS than any other African plant location. Why might this be? (If the 160 mile trip from plant to port has not been mentioned, inform interviewer of the transportation details here)

Guidance for interviewer:

Response should cover a range of ideas as the interviewer is looking for out of the box thinking. Some ideas might be: the plant is sending trucks that are not full increasing trips needed, drivers are not going directly to the port (poor route planning, sleeping on the job, etc), trucks are hijacked along the route, drivers must pay bribes to get through certain road blocks.

Follow-up question #2

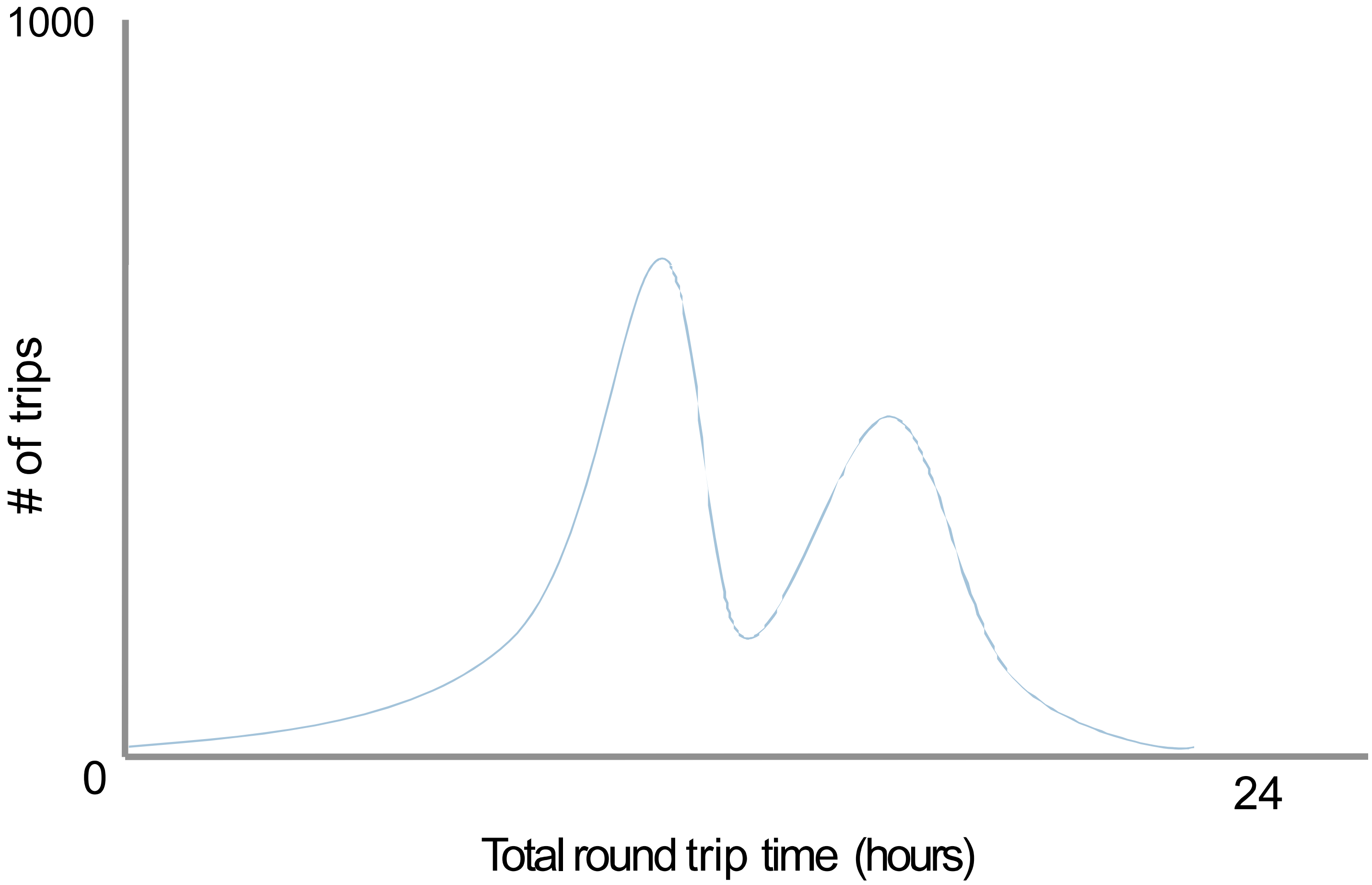
You collect historical data on the average time it takes a truck to make the 200 mile trip from the plant to the port, what should you expect the graph to look like?

Interviewer: (The graph should be a normal distribution) You expected the graph to be normally distributed but your data reveals the following graph. What can you draw from this data?

Guidance for interviewer:

The candidate should identify that the first peak is expected (per the normal distribution) but the second peak needs to be analyzed. Ask for ideas of what might cause the second peak. These could include certain drivers taking too many breaks, traffic patterns, etc.

Mighty Mining Trip Time Distribution



Final Question and Sample Recommendation

Follow-up question
You discover that the port closes at 10pm and any truck that does not arrive by 10pm must wait until the port opens again at 4am to drop off its load and return to the plant. The minimum roundtrip travel time is 7 hours and the plant owns 20 trucks; however, a barge needs 30 truckloads to reach capacity and ship out. What would you recommend Mighty Mining to do about this situation? Remember: the plant must operate at max capacity to meet customer demand

Sample Recommendation	Rather than crunch numbers around optimization, it is sufficient that the candidate identify that there are several bottlenecks in the supply chain (travel time, port hours of operations, capacity of trucks versus barge) and recommend potential solutions that may be considered: • In the short term, the company needs to identify the latest a truck can leave and still arrive by 10pm. They could use employee incentives to encourage drivers to reduce rest stops along route to make the 10pm cut-off. Driver shifts should be rearranged to optimize material delivered to the port. • In the long term, see if they lobby that 24 hour port operations is more profitable for all parties. • Evaluate the costs of setting up a storage facility by the port for night deliveries against purchasing more trucks. • Analyze costs of upgrading fleet to larger size trucks. • Consider leasing trucks vs. purchasing.
Risks Next	Since location already is poor performing, must analyze cost of capital to ensure that investing in capital improvements is highest NPV alternative (ship from other better plants?). Changes in customer demand could lead to an investment that is not needed long term.
Step	I would analyze these options and present a final recommendation for the client including justification for any investment needed by the company to mitigate the risk of senior management not wanting to invest.

Case 7: Chemical Brothers Int.

Valuation *DMCC* *Unknown Round*

Prompt	Your client Chemical Brothers International (CHEMBRO), is a major chemical producer, has retained your firm's services to evaluate the feasibility of acquiring another major player in the industry, Plastics of America (POA). Both companies are bulk commodity chemical producers. Your task is to analyze the future prospects of POA's major product line, a chemical used in the production of plastics. Should Chembro acquire POA?
[redacted]	
Prompt – Part II	What strategic issues need to be addressed in evaluating an M&A proposal?
[redacted]	

Case 7: Chemical Brothers Int.

Valuation *DMCC* *Unknown Round*

Analysis	The candidates framework should cover the following buckets. Allow the candidate to ask for information about the major categories before giving the information. If the candidate is missing one of the buckets, prompt them with a question to get them on track. **Market Analysis** ▪ End-users come primarily from the automotive industry ▪ Market size has been slowly declining over the last five years ▪ Within the last couple of years, prices have declined rapidly **Competition / Industry Analysis** ▪ There are 10 major producers; the largest one with a 35% share; number two has 25%, and POA is third with 20%; the remaining share is divided amongst others ▪ The two largest competitors earn a small return; POA is slightly above break-even; the rest are operating at break-even or at a loss ▪ Relative capacity utilization in the industry is 60 to 70 % and has been so for the last 3 years. POA is also currently working at 75% of capacity ▪ The two largest competitors are highly diversified with this particular product line representing no more than 20% of their revenues ▪ Highly regulated industry with expensive pollution control equipment ▪ High barriers to entry because of the low profits and high investments required **Product value proposition / brand portfolio** ▪ The price has been driven by self-destructive cuts from the leaders to gain temporary share points ▪ We do not foresee the development of any significant byproducts. ▪ Other possible uses: None. ▪ Complementary Assets: 50% of POA's sales are to the automobile industry

Case 7: Chemical Brothers Int.

Analysis	**Finance and Operations** ▪ Cost is based on size/efficiency/age of plant, etc. Within the industry, POA is in an above average position. ▪ There are several operational improvements that could be implemented, and management has not been aggressive in its pursuit of quality and cost controls. ▪ Great economies of scale exist in marketing and transportation. (Not quantifiable) ▪ Operational synergies could represent an additional $30 million in profits
Prompt – Part III	After discussing the above-mentioned qualitative aspects in some detail, provide the candidate with **Exhibit 1** when the conversation shifts to the topic of valuation. Ask candidate to compute the present value of acquisition.
Guidance	*You may allow the candidate to use 10% rate of return and not 9% (12% Return on Capital – 3% Growth Rate) if requested. However ask him the effect on NPV of a higher vs. lower discount rate, to gauge his understanding of the concept. Answer: Higher discount rate means lower valuation.*
Analysis	NPV analysis: Based on the information from Exhibit A, the net present value of the target company is = $90M / (10%) = $900 million (assume perpetuity), which is less than the purchase price tag of $950 million. Industry Attractiveness: not particularly attractive, unless the larger competitor can use economies of scale and dominant position for economic gain.

Case 7: Chemical Brothers Int.

Valuation *DMCC* *Unknown Round*

Performance Evaluation

Expected: Candidate identifies that the purchase price is higher than the NPV. Recommendation wrap-up should clearly include a —go/ no go‖ decision followed by quantitative (valuation) and qualitative (industry and compatibility analysis) facts..

Good: A strong candidate will recognize that this case deals with internal factors (synergies and economies of scale) as well as some external factors (opportunity costs and industry attractiveness).

Excellent: An excellent candidate will include some of the following additional insights.

A more comprehensive NPV would include the new cash flow from synergies, as well as the previously calculated NPV. Therefore the $900 million + [Synergies 30M/(12%-3%) = 333M] = $1,233M value of target > 950 price tag.

In addition to the cash flows expected from synergies, the potential economies of scale and tax advantages from funding the acquisition with debt could be seen as other sources of revenue.

These considerations further improve the deal.

- Competitive and regulatory responses to block the merger are reasonable to assume due to concerns over industry concentration.
- Benchmarking the value of the POA acquisition to other similar M&A in the industry.
- Consider what multiple of operating profits other acquisitions been valued at?

Case 7: Chemical Brothers Int.

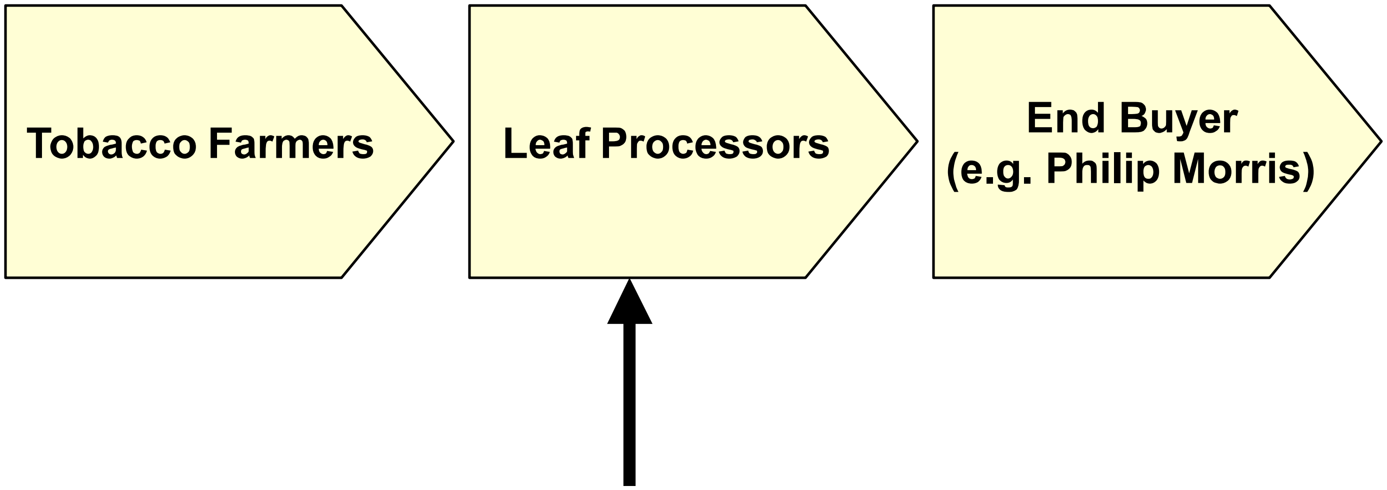
Exhibit 1

Purchase Price	**$950 M**
Annual operating income before tax	$90 M
Cash	*$30 M*
No. of employees	*2000*
Return of capital	*12%*
Market risk premium	*7%*
Growth rate	*3%*
Tax rate	*40%*

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 6: Due Diligence on Clothing Retail Specialist
Introduction

Problem Statement Narrative

A PE fund is thinking about acquiring a clothes retail specialist, leader on the French market. The French clothing retail market is composed of 2 segments:

- Urban: trendy, high quality, quite expensive
- Suburban: mass market, lower quality, low prices

We only have a few data on the target: total annual sales $800m, 800 stores, 4 brands on both the urban and suburban markets.

The PE fund hired us to help them do the due diligence of the firm, in order to assess if it's worth bidding for it or not.

How would you approach this question and what would you recommend him?

This is similar to a strategy case, in which you have to assess the market opportunities, competition, and the companies competitive advantage.

In a real due diligence project in consulting firm, the project team will develop framework and identify key areas to assess, and then ask questions to the target. Therefore, an ideal candidate in this case interview should be able to come up with a framework that is appropriate to assess a clothing retail company, and be able to ask relevant questions in each aspect.

The format of this interview is largely driven by the interviewer. However, an ideal candidate should be able to drive insights and implication on each question asked by the interviewer, and used those to form a view and the conclusion

Case 6: Due Diligence on Clothing Retail Specialist

Framework

Step 1: Develop an overall framework to assess the target

Market:

- Size & growth (volume and price)
- Trends
- Market segments characteristics
- Drivers of this market
    - Buyer & supplier powers
    - New entrants & substitutes
    - Competition
        - Market shares & their evolution
        - Market fragmented or not?
- Distribution channel
- Regulation

Company standalone:

- Business and revenue models (how do they generate cash?)
- Competitive advantage?
- Specific asset, knowledge, resources, capabilities?
- Key financials & cost structure
- Management

Deal itself:

Case6: Due Diligence on Clothing Retail Specialist

Step 2: Interviewers will probe questions according to the framework developed

Market:

- The market is flat in value over the last 5 years (~$25Bn) but volumes have been growing over the same period (~2% per year). What could explain this?
    - According to market value = volume x price, the only reason that can explain this situation is a decrease in price offsets the increase in volume
- What could be the drivers of the decrease in prices?
    - Candidate should explore different reasons based on what might be relevant, combining and distilling from various 4Cs, 5Cs, 4Ps concept. Here, customers, competitions and supply chain are most likely to explain cost drivers
    - Change in demand: consumers asking for lower prices; customers are buying more clothes in each season and look for cheaper options
    - Development of new types of players: H&M and Zara with trendy but low price products
    - Decrease in supply cost, such as outsourcing to lower cost countries such as China, Vietnam, Cambodia, Philippines, etc.

Case 6: Due Diligence on Clothing Retail Specialist

Step 2: Interviewers will probe questions according to the framework developed

Company:

- Cost structure: which type of indicators could you use to assess the profitability of a retail store? Especially if you want to benchmark stores from the same brand.
  - An ideal candidate should have basic understanding that retail is driven by floor space
  - Indicators: sales / sq feet, (or sales / employee)

- For one given brand, we have: 15 suburban stores: average size = 1500 sq ft and average profitability (sales / sq ft) = $1,500 per sq ft, 20 urban stores: average size = 800 sq ft and average profitability = $2,800 per sq ft. What is the total annual sales of this brand?
  - Basic quant question.
  - Suburban: 1500*1,500*15 = $33.75m
  - Urban: 800*2,800*20 = $44.8m
  - Total = $78.55m

- If I tell you that the sum of the sizes of the stores (both urban and suburban) is 40,000 sqft, what would be the profitability margin (in sales/sqft) of the brand?
  - Total sales / total size = $78.55m / 40,000 sqft = ~$2,000 / sqft
  - Basic quant question following the previous question. An ideal candidate should cross-check this result with data given: answer should be in the range between $1,500/sqft and $2,800/sqft based on the data given in previous question

Case 6: Due Diligence on Clothing Retail Specialist

Step 2: Interviewers will probe questions according to the framework developed (con't)

Company:

- We'd like to speak about a concept which is very common in the retail industry. To do so, let's look now at the target's investment plan:
  - Year 1 – it opened its first store and gross margin was 10%
  - Year 2 – same store but gross margin increased to 25%
  - Year 3 – same store but gross margin remained flat to 25%. Manager decides to open new stores from now on
  - Year 4 – 1 additional store: total gross margin = ~18%
  - Year 5 – 3 additional stores: total gross margin = ~17%
  - Year 6 – 10 additional stores: total gross margin = ~16%
- Overall gross margin kept decreasing over those years and the PE fund is worried about that. Is the fund right to worry about it? Why/why not?
  - Ideal candidate should distinguish the difference between individual store gross margin and total gross margin, the concept of "average"
  - Candidate should also ask for additional questions and draw curves to visualize the situation. For example, ask evolution of sales for 1 store, then evolution of costs; could also ask what happened in year 1, 2, 3, etc.
  - Hints from interviewer would be given when candidate probe the right question: 1) all stores are similar, 2) no cannibalization or coordination diminishing returns, and 3) mainly fixed costs
  - **Key concept:** the ramp-up concept in retail industry. One given store reaches its full potential only after a 2 year ramp-up period. The total gross margin will depend on the mix of new stores and matured stores.
    - The gross margin of a new store is 10% after 1 year, 25% after 2 years and remains flat afterwards
    - In year 4, two stores – one new and one matured, the average gross margin = 10%+25% / 2 = ~18%
  - The fund should "de-average" the total gross margin and look at the margin evolution of the same stores, i.e. the SS (same

Case 6: Due Diligence on Clothing Retail Specialist

Step 2: Interviewers will probe questions according to the framework developed (con't)

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Case 6: Due Diligence on Clothing Retail Specialist

Step 2: Interviewers will probe questions according to the framework developed (con't)

Company:

- Based on your answer, if there were 3 additional stores and 2 stores in year 7 and 8 respectively, what was the evolution of the overall gross margin?

  - The total gross margin should increase as the expansion slowed down and more existing stores would reach their mature state. The overall impact of new stores on total gross margin would decrease.
  - ➔ An ideal candidate should be able to draw on this question to identify the conclusion and implication. Candidate should state that if the target's total gross margin increased after year 7 and 8, then the fund should not worry as the decrease in total gross margin in previous years were due to rapid expansion.

Case 6: Due Diligence on Clothing Retail Specialist

Recommendation

Can you summarize what we did together in 1 min?

An ideal candidate should be able to summarize the key facts during the discussion and draw implication.

- Despite the total market value is flat but business volume is increasing. The decrease in price may drive the less competitive players out of the market.
- During this period, the target seems to have maintained a healthy margin and the interim drop in margin was due to the rapid expansion. It also seems that there are still rooms for further expansion until the market becomes saturated.
- In order to make a more informed decision on the investment, we might need to look into how other competitors are playing in the market, the supply chain management to maintain cost competitive. However, with information we have now, there is no significant risk observed yet and hence should still be a “go” before assessing other aspects.

Case 17: Contract Manufacturer Co.

Prompt	Your client is Contract Manufacturer Co., which produces components for a number of diverse products. They have grown quickly and had 2011 revenues of $17 billion. They now serve 350 customers across nearly 20 industries, including consumer electronics, mobile phones, healthcare, and defense. They are dependent on their end-markets, e.g. how many consumers buy mobile phones next year, but they only "see" this demand through their customers, e.g. Apple and RIM. They are therefore very vulnerable to changes in market demand but find it difficult to estimate this demand. Third party sources, e.g. financial analysts and market research organizations who follow the space, are also very inaccurate. The CEO of Contract Manufacturer Co. has become increasingly frustrated by their vulnerability to the market and their inaccuracy in predicting end-market demand. He wonders whether they should be better able to identify market trends and in particular, whether they could better utilize data they have accessible via their customer relationships. **How would you go about advising the CEO? Should Contract Manufacturer Co. be able to develop a proprietary view of their markets?**
Guidance	This is a high-level, strategy case that should lead to an interesting, open-ended discussion rather than a focused analysis. The objective is to test the candidate's ability to quickly understand an industry that is not often discussed and think creatively and holistically about a business problem. The candidate should have most of the information needed in the prompt but may ask clarifying questions before beginning his/her framework. Provide the following information upon request: • Services: customers turn to Contract Manufacturer Co. or their competitors to provide parts quickly and cheaply. They are involved in some design and after-market services but most of their business (revenue) comes from simply manufacturing the parts requested. Customers will generally request parts 3-months in advance

Case 17: Contract Manufacturer Co.

Bain & Company

Guidance	• Competitor landscape: Contract Manufacturer Co. is in a competitive space. Contract Manufacturer Co. is one of the leading players, with about 10% market share. Their largest competitors are Chinese and Taiwanese
	• Organizational structure: Contract Manufacturer Co. is structured by industry verticals, which it terms "sectors," e.g. mobile phones or healthcare would be "sectors." They have sales and account teams dedicated to customers in these sectors and a VP leads each sector. They have a strategic planning group at the corporate level, but it is quite new and not very mature
	• Profitability: Contract Manufacturer Co. is a profitable business but their margins are only 3-5% so they depend on volume
	• Geographic scope: Contract Manufacturer Co. is based in the US but has operations worldwide. Their customers are also global
	• Costs: Contract Manufacturing Co.'s costs include procurement of supplies, manufacturing costs, and labor costs. When customer request parts, Contract Manufacturer Co. needs to invest significant sums in machinery and technology
	
	Ideal recommendations should touch on some of the areas below. The candidate should be measured against the quality of the questions posed and the level of the discussion overall. The candidate should sound interested in the potential for better market intelligence but realistic about the state of the company and whether this is feasible in their environment.
	• External best practices (What):
	    • The candidate may be curious to better understand whether other companies similar to Contract Manufacturer Co. (e.g. their competitors or proxy industries) are able to develop accurate views of their end-markets.
	    • Analysis indicates that in the contract manufacturing space, companies are not very mature at market intelligence. Their competitors do not appear to be any further along in this process.
	    • Best-in-class companies, however, have established market intelligence functions that capture market data, including publically available data (financial statements, research reports, etc.)

Case 17: Contract Manufacturer Co.

Guidance	• Motivation and justification (Why):
	  • The candidate should be curious about the benefits of developing a more accurate view of their markets. The candidate may postulate a few reasons or ask for guidance
	  • While it is difficult to quantify the benefits of better market intelligence, overall it is clear this is beneficial because of the strategic decisions and risks the company is able to take
	  • Specifically, a sophisticated business is able to do the following:
	    1. Accurately forecast revenue
	    2. Improve account planning, e.g. revise production, capacity and resource plans
	    3. Develop long-term strategy, e.g. identify capability gaps and evaluate need for M&A or R&D to fill the gaps
	    4. Build credibility with the investor community by communicating an accurate annual view of the market and corresponding strategy
	• Customer willingness (How):
	  • The candidate may be curious to understand whether customers would be willing to share their strategy and plans with their suppliers, since that is ultimately what a proprietary view of the market will depend on
	  • Our research indicates that most customers were open and willing to discuss their strategies with Contract Manufacturer Co. since they understand that it furthers both organizations' objectives
	  • Customers in certain industries/sectors, however, remain reluctant to share much
	• Sector applicability (Where):
	  • One vital insight is that the ability for Contract Manufacturer Co. to develop an accurate view of the market differs across sectors; that said, there is the potential to improve their market intelligence gathering in all sectors
	  • One way to determine applicability is to use a matrix (see Exhibit 2), plotting need for market intelligence on one dimension and ability to accurately develop a view of the market on the second dimension; the recommendation would then be for the client to first focus on sectors where there is the greatest need and ability to improve market intelligence, in order to get the biggest wins first

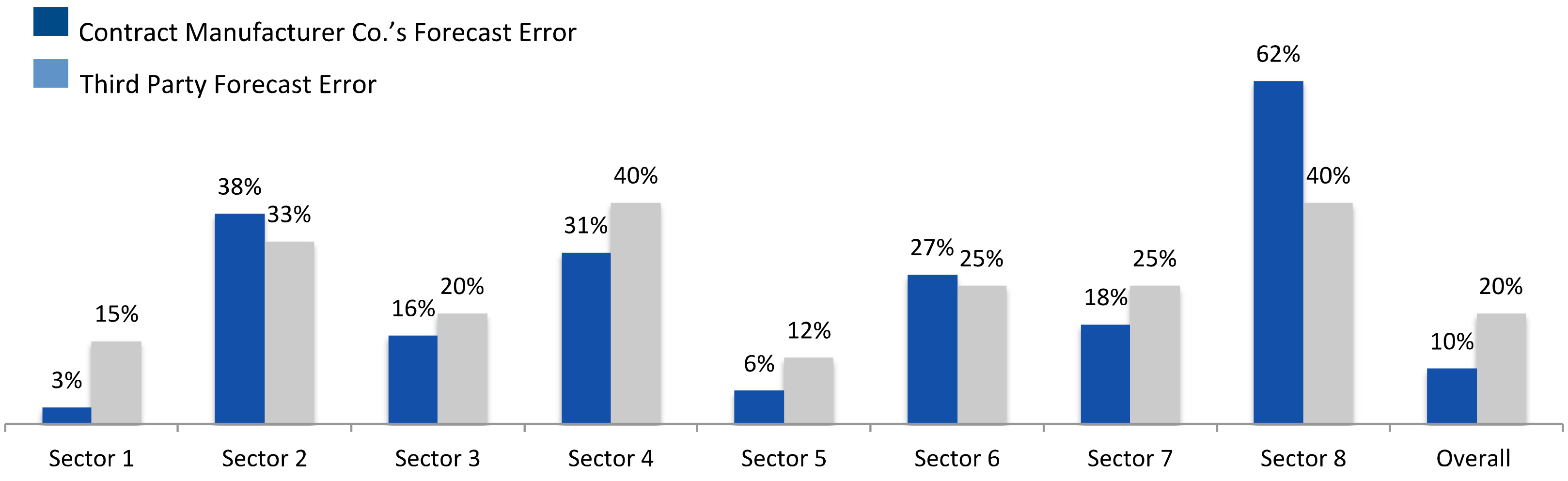
Case 17: Contract Manufacturer Co.

Guidance	• Roles & responsibilities (Who):
	  • The candidate may consider who in the organization would be best suited to improve market intelligence gathering
	  • The organization has a centralized strategic planning team that could be responsible for gathering and tracking publically available data; ultimately the sales and account teams will need to be trained to listen and engage their customers in discussions about market direction
	  • There is no right answer about who should own this process
	• Next steps (When):
	  • The candidate should attempt to think through immediate next steps. There is no right answer but the candidate should understand that this is a capability that will take time to develop and will not transform over night
	  • Some next steps might include:
	    1. Getting buy-in for this idea across the organization
	    2. Performing analysis to understand in what sectors to prioritize efforts
	    3. Consider running a market intelligence "pilot" in a few sectors
	    4. Evaluate the systems in which they currently capture customer data and ensure they will allow for more mature data gathering
	    5. Begin to more comprehensively track publically available data
	
	As the discussion progresses, the interviewer should give the exhibits to the candidate:
	• Exhibit 1: the first insight here is that third party forecasters are just as inaccurate and indeed in most cases, more inaccurate than Contract Manufacturer Co. at forecasting the market. The taller the bar, the greater the forecast error and therefore the less accurate the forecast. The second insight is that the accuracy differs across sectors, so the candidate should begin to think about the applicability of this work to specific sectors
	• Exhibit 2: this is one way to prioritize the sectors (the candidate may have recommended an alternative approach). The insight is that the client should focus their efforts on the top right quadrant (see Exhibit 2, for interviewer only)

Case 17: Contract Manufacturer Co.

Bain & Company

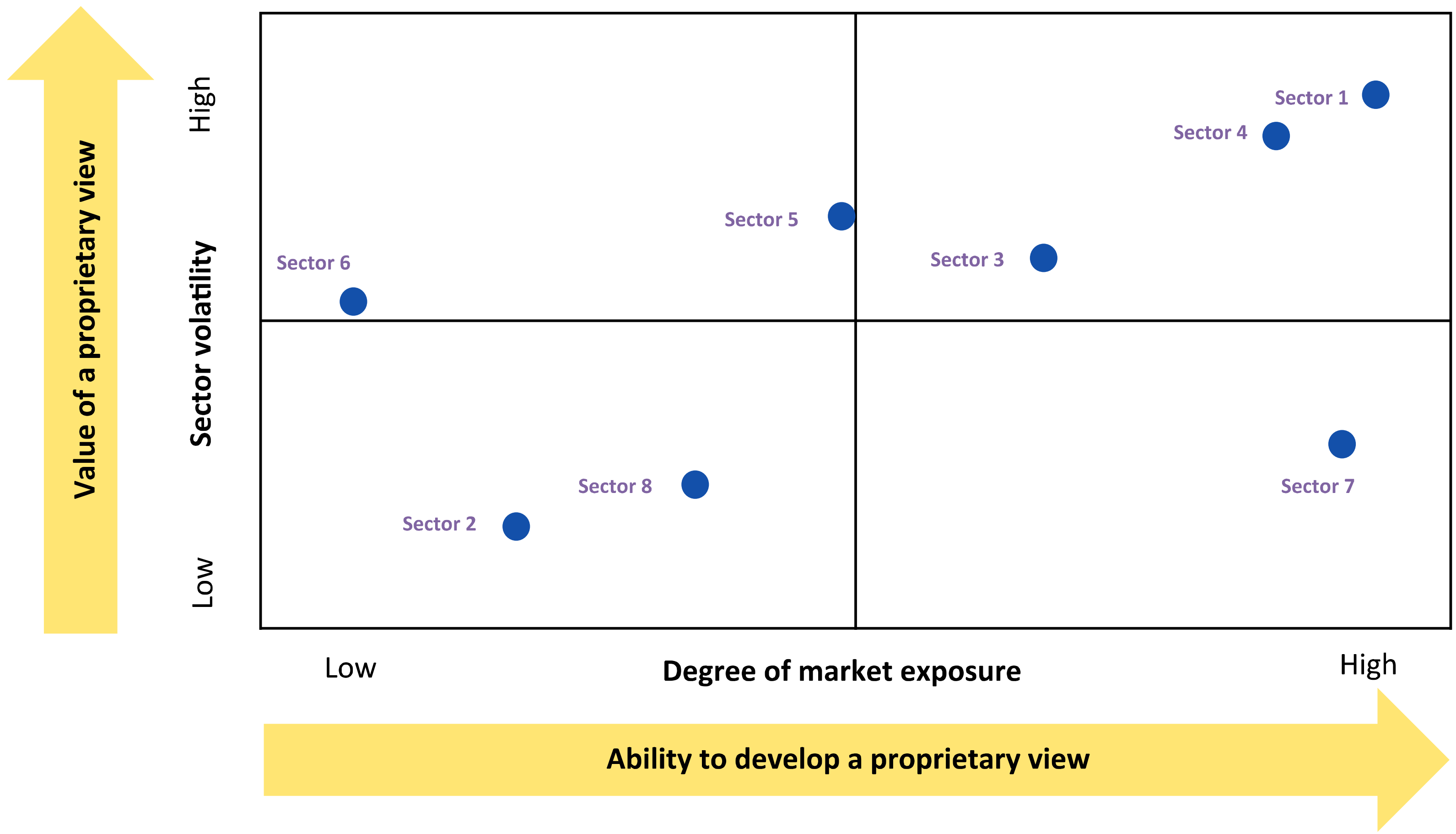
Exhibit 1: Annual revenue forecast errors



Note: Contract Manufacturer Co. is forecasting each sector's revenue for the next year; the third party source is forecasting the size of the overall market (sector) next year

Case 17: Contract Manufacturer Co.

Bain & Company



Case 17: Contract Manufacturer Co.

Bain & Company

LEVEL OF EFFORT REQUIRED DIFFERS ACROSS SECTORS

Value of a proprietary view

Sector volatility

Sector volatility	Low degree of market exposure	High degree of market exposure
High	**More challenging** • Sectors with fewer customer relationships and a high degree of volatility • Less accessible and less accurate external market data • Difficult to establish an accurate proprietary view but greater need for one	**Greatest impact** Sectors with many customer relationships and a high degree of volatility Less accessible and less accurate external market data Greater need and opportunity to establish an accurate proprietary view
Low	**Look externally** • Sectors with fewer customer relationships and relative stability in the sector • More accessible and more accurate external data • Opportunity for greater reliance on external market research	**Quick wins** • Sectors with many customer relationships and relative stability in the sector • More accessible and more accurate external data • Opportunity to more quickly and effectively develop a proprietary view

Low **Degree of market exposure** High

Ability to develop a proprietary view

Case 17: Contract Manufacturer Co.

Performance Evaluation	**Expected:** • Understands the client situation and question at hand • Develops a framework that addresses an overview of the issues at play **Good:** • Completes all "Expected" requirements • Asks some of the clarifying questions to narrow the focus of their framework (or after developing the framework, as part of the discussion) • Leads a good discussion around the issues • Reaches a conclusion with minimal prompting **Excellent:** • Completes all "Good" requirements • Raises most issues listed and suggests some other, creative areas not mentioned in the case • Provides a high level overview of next steps the client should take to implement some of the suggestions and risk mitigation

Hotel Co. Spinoff

Bain Style Case: Difficult

Problem statement narrative

Your client is Hotel Co., an international hotel corporation that owns and operates 2,700 hotels worldwide, as well as a separate timeshare business with 75 properties worldwide. Their hotel rooms are typically sold on a per night basis, whereas their timeshare properties are sold more like traditional homes via a mortgage which in turn gives the buyer the right to stay at a timeshare property for a set period of time each year.

The CEO of Hotel Co. has approached you and has asked for guidance on whether or not they should spinoff their timeshare business into a separate stand alone entity called Timeshare Co.

Guidance for interviewer and information provided upon request

- Hotel Co. wants to weigh a few criteria, including the financial impact, risk, and strategic outlook.
- Hotel Co. only uses a five year timeframe for all financial decisions.
- Hotel Co. would be spun off and taken public, with 20% of the IPO proceeds being paid back to Hotel Co. The remainder of IPO proceeds would go to Timeshare Co. and the underwriters.
- Hotel Co.'s bankers think they can sell 10 Million shares at $220 each.

Hotel Co. Spinoff

Bain Style Case: Difficult

Sample framework

HOTEL CO. SPINOFF

DIVESTURE

3. Hotel co wants to spinoff its house mortgage business through a public IPO. Should it spin it off?

Hotel Corporation
- Operating model
- Why spin-off?
- Brand
- challenges?

Business Division
- $\pi = R - C$ (R: price, occupancy rates; C: cost)
- Rev by divisions
- Locations

Customers
- Seg. < Ind / corporate
- Tie-ups / Vacation providers
- Behavior / loyalty

Market
- Economy
- Competition - Diff
- Trends

Risks (Data / Industry)

- Revenue earned from 1 business division versus others
- Mortgage default rate may change
- Discount rate
- Uncertainty about share price
- Volatility about market
- Lose customers → (cross-sell opportunity)
- Brand conflict
- Costs ↑

Mitigate →
- collect finder's fee instead of carrying mortgages in-house to reduce volatility.
- Buy mortgage default insurance

Hotel Co. Spinoff

Bain Style Case: Difficult

Question 1: Financial Impact

Questions for the candidate

What is the financial decision making process for whether or not to spin off Timeshare Co.?

- Provide Exhibit 1 (Profit Projections)
- Candidate should notice that industry home sales are a good proxy for Timeshare Co.'s revenues, and forecast out five years of profits.
  - 2011 Forecast: -50M
  - 2012 Forecast: 0M
  - 2013 Forecast: 100M
  - 2014 Forecast: 150M
  - 2015 Forecast: 250M
- Total 5 year forecast profits of Timeshare Co: 450M.
- Per the opening information, if spun off, Hotel Co can expect 20% of IPO proceeds. Bankers expect to IPO 10 Million shares at $220 each, or $2.2 Billion total. 20% of $2.2 Billion is $440M to be earned by Hotel Co. if they spin off.
- Based on those amounts, **it does not make financial sense to spin off Timeshare Co**. ($440M if spun versus five year projected revenues of $450M if kept in-house.)
- Mitigation: $450M revenues are expectations and subject to a lot of risk and variability versus little to no risk if Hotel Co. just takes the IPO payment.

Hotel Co. Spinoff

Bain Style Case: Difficult

Question 2: Risk

Questions for the candidate

What is the risk decision making process for whether or not to spin off Timeshare Co.?

- Provide Exhibits 2 (Mortgage Default Rates) and 3 (Mortgage Portfolio's Contribution to Profits)
- Exhibit 2: Candidate should notice that default rates spiked in 2008/2009, and seem to remain much higher than in the past.
- Exhibit 3: Candidate should notice how important mortgages are to overall success of business. Mortgage revenues always account for around 95% of total revenues.
- Main takeaway: Timeshare Co.'s revenues are risky given the variability of mortgage default rates, and it seems as though default rates will never return to pre-2008 levels. A "new low" seems to have been established around 4.5%.
- Thus, it seems risky to keep Timeshare Co.'s business in house. The economic uncertainty with mortgage portfolios puts too much risk into Hotel Co.'s business. **Spinning off Timeshare Co. would get rid of a lot of risk to Hotel Co.**
- Mitigation: While spinning off the business would be one way to achieve less risk, there are other options available to reduce risk from Timeshare Co.
  - Connect timeshare buyers with mortgage companies and collect a finder's fee instead of carrying mortgages in-house
  - Buy mortgage default insurance to reduce volatility

Hotel Co. Spinoff

Bain Style Case: Difficult

Conclusion

Recommendation

Spinoff Timeshare Co.

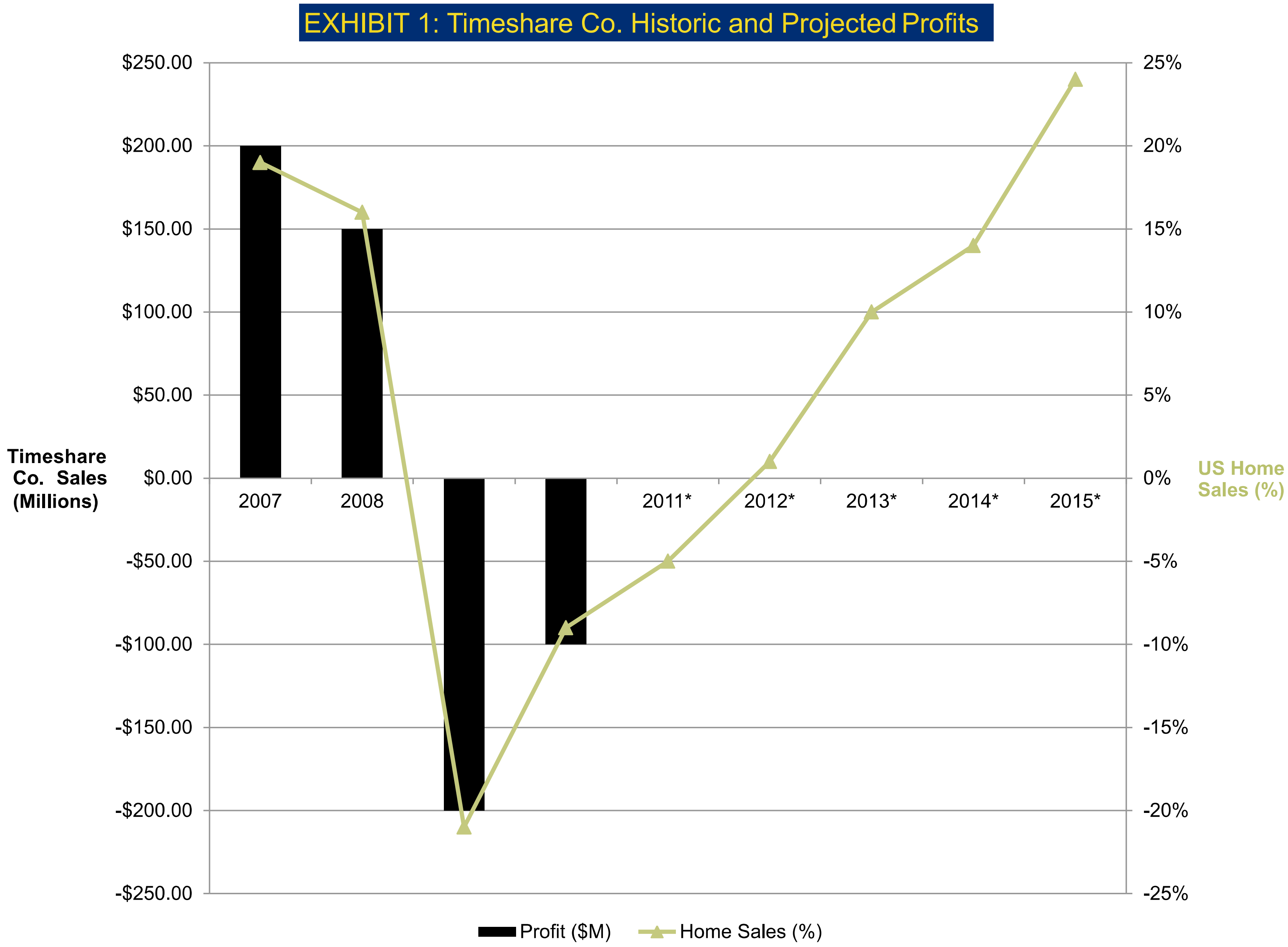
- IPO proceeds are only slightly less than the 5-year expected profits, but profits are extremely volatile.
- It also makes sense from a risk standpoint. While there are other ways to reduce risk, spinning off Timeshare Co. helps achieve a reduction in risk.

Next Steps

- Must examine the impact of cross selling. How many timeshares are sold to hotel customers? How can we continue to cross sell after a spin off?
- Must consider other ways to reduce risks at Timeshare Co apart from simply spinning off the business.

Hotel Co. Spinoff

Bain Style Case: Difficult



Hotel Co. Spinoff

Bain Style Case: Difficult

EXHIBIT 2: Mortgage Default Expectations

Year	Default Rate
2007	1.5%
2008	8.5%
2009	11.0%
2010	9.5%
2011*	8.5%
2012*	6.0%
2013*	4.5%
2014*	4.7%
2015*	4.3%

Hotel Co. Spinoff

Bain Style Case: Difficult

EXHIBIT 3: Mortgage Portfolio's Contribution to Profits

Year	Portion of Profits
2007	95.0%
2008	94.0%
2009	92.0%
2010	94.0%
2011*	95.0%
2012*	96.0%
2013*	95.0%
2014*	97.0%
2015*	96.0%

Corrections

The Coffee Grind:

Number of households says 100K, should be 100M, and 10K should be 10M.

FoodCo:

Only clarification needed is that the $7M increase is from revenue growth to 22M and cost reduction to 14.64M.

Airplane De-Icing:

Problem Statement Narrative:

Your client is AirCo., a U.S. airlines that has significant operations at one of the Chicago airports.

Due to cold weather, the client's planes often have to be de-iced, but because the need to de-ice 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 to do the de-icing in-house.

The client requires a 4-year payback on its investments and wants to know if they should in-source or outsource the de-icing?

Guidance for Interviewer and information provided upon request:

Cost comparison on the in-sourcing vs. outsourcing – see Handout 1, but first have candidate outline what the major cost buckets are.

If the client in-sources the de-icing, they will need to hire 150 people for the whole icy season, but due to the unpredictability of the cold the actual number of workers in any given month might fluctuate to 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-ice the planes, leading to delays. We cannot quantify the impact of this.

Airplane De-Icing Chart:

Change the cost per gallon of chemicals for the client to $4

Also note that this table shows number of events per icy season (i.e. per year)