Wharton Consulting Club

Case Interview Study Guide

INTRODUCTION

Welcome to the new Case Interview Study Guide! This is our newest case guide with a few important changes that we have made to make your life a little easier as you prepare for your interviews.

The cases enclosed were actual cases given to Second Years during the Fall semester recruiting season. They represent the latest arsenal of cases interviewers have used on students. You should view them as being representative of the type of cases you will get during your interviews. Usually, interviewers draw on their actual consulting experiences to create their interview cases. Moreover, the interviewer will modify the case based on your responses. Thus, each case is different for each student.

We have modified this guide from previous versions based on your inputs. Many students have told us it is difficult to actually give cases. We have thus added a section on how to give good cases. Also, we have modified the format of each case. Cases now will generally have **INTERVIEWER HEADS-UPS.** These tell the interviewer what the case is looking for and how to lead the interviewee.

We hope these changes help. Good luck on your interviews!!!!

CASE INTERVIEWS: THE BIG PICTURE

What Consulting Firms Are Looking For

Consulting firms use case interviews to gauge how well a candidate will perform on the job. As you practice cases, keep in mind what skills and attributes the recruiters are looking for and take it upon yourself to demonstrate them. The following are three questions most recruiters are probably trying to answer when interviewing a candidate:

1. Can the candidate solve problems for our clients?
Use the case interview to demonstrate your analytical skills, logical reasoning, business savvy, and creativity. Show the interviewer that you can listen closely to the question being asked of you, break the problem down into components, formulate meaningful questions, proceed logically through an investigation, and draw reasonable conclusions.

2. Can I put this candidate in front of a client?
Too often, candidates are only concerned with demonstrating problem-solving skills and forget that consulting is a service industry which values communication and presentation skills. Use the interview to demonstrate composure, maturity, and confidence. Show that you are tactful and friendly and that you can present your thoughts using clear, concise language.

3. Will this candidate like consulting?
While it may sound hard to believe at this point, case interviews can and should be a fun experience. If you look pained during the interview, the interviewer will probably infer that you won't enjoy serving the firm's clients. Show the interviewer that you are

interested in the case and empathetic to the client, and that you have a lot of enthusiasm and energy.

One additional note: don't forget that a case interview is first and foremost an interview. Everything you've ever learned about interviewing still applies. Try to connect with the recruiter and establish a positive rapport. Be candid, pleasant, and maintain eye contact. And don't forget to show the recruiter that you're human. A friendly smile and upbeat attitude go a long way.

Types of Case Interviews

There are three major types of cases: business cases, mini-cases, and estimation cases. By far the most popular are business cases, in which the interviewer describes a business situation a firm is in and asks you to help the client face that situation. Most often, the case is an actual engagement that the interviewer is currently working on or has worked on in the past. Mini-cases are shorter versions of business cases and focus on a single problem a client may face. Estimation cases, which are sometimes imbedded within a business or mini-case, seem to be becoming less popular. In an estimation case, you are asked to estimate something that you could not possibly know, such as the weight of a Boeing 747.

How to Use this Guide

Before you begin to practice case interviews, get familiar with the case interview format. Spend some time reviewing the *Solve the Case* sections of this guide which describe how to approach each type of case. Then read through some of the practice cases and solutions in order to get a feeling for what the cases are like. Try to get a sense of how the author of the solution framed the case, asked questions, and proceeded with his or her analysis. But don't think that the solutions provided are the only solutions or even the best solutions. They just provide an illustration of how one person approached the case.

When you're ready to practice interviews, it may be best to start with another first year student. Take turns playing the roles of interviewer and recruit. The interviewer should read the question and solution to him/herself in full before starting the interview. By doing this, the interviewer will be better able to answer the recruit's questions. The interviewer should also be prepared to make up facts and ask additional questions as the case proceeds. Any facts are fine, just as long as they are consistent with the other facts that have been revealed thus far. When the case is over, the interviewer should give the interviewer candid feedback. Discuss what went well and what didn't. The interviewer should share any impressions s/he may have had, such as when the recruit was repeating him/herself, not listening closely to hints, etc. It may be helpful to tape the interviews on video so the recruit can watch his/her body language and reactions to the interviewer's comments and questions.

The number of practice cases provided in this guide have been increased significantly this year, but if you run out, it is easy to make up some of your own. Use a situation from your previous employment as the basis for a case or come up with cases based on articles you've read in *The Wall Street Journal* or magazines such as *Business Week* or *Fortune*..

SOLVING THE CASE: BUSINESS CASES

Listen to the Question

While it sounds obvious, you need to listen very closely to the business situation described by the interviewer. Often imbedded in what the interviewer is saying are helpful hints about how to proceed with case.

Gather Information

A case interview is typically an interactive process, and most likely the interviewer will volunteer additional information as the case progresses or when you ask questions. The amount of information you receive up front can differ greatly depending on the style of the interviewer and the type of case you get. Some interviewers will give a lot of detailed information up front and will volunteer relatively little additional information later. In such cases, it may make sense to write down some quick notes to help you remember the pertinent facts. Other interviewers start out with a simple two sentence summary, and expect you to probe for more information by asking thoughtful questions.

Remember, it is expected that you ask questions; one of the most valuable skills of a successful consultant is the ability to ask probing questions. Sometimes it helps to preface a series of questions with a statement describing where you are going with your questioning. So you may say something like "now I'd like to ask some questions about the client's distribution channels." Statements such as this allow the interviewer to understand your logic and give the interviewer the opportunity to redirect you if s/he doesn't want you to pursue those issues any further.

Analyze the Problem

When you have gathered your initial information, think clearly about the problem you are being asked to solve. It is fine to take a moment to collect your thoughts, but don't forget how important it is to maintain eye contact. A major consulting firm said that many interviewing students spend too much time at the beginning of the case with their faces buried in their notes. You should ponder the case to yourself just long enough for you to lay out a framework for analyzing the case step by step. You should do your remaining thinking and problem-solving out loud so the interviewer can understand your train of thought.

Remember that the purpose of using a framework is to structure your thinking logically and to make your logic transparent to the interviewer. Do not get the impression that there is a "right" framework that you can learn in class and memorize. The textbook frameworks of your introductory business school classes (some of which are summarized at the end of this section) should only be a guide in helping you start to think about frameworks. Blindly applying a framework will make your solution seem canned. Just keep in mind that creativity and originality are also highly valued by consulting firms. Think logically about what a good way to approach the problem would be, relying as much on your life experiences to develop your approach as on any standard framework.

An attribute of a good framework is that it be "MECE," which stands for Mutually Exclusive and Collectively Exhaustive. This means that your framework should provide you with a number of different options that do not overlap (the ME of MECE) and together account for all possible causes (the CE of MECE). For example, if you are being asked to solve a problem about declining profitability, do not just look at the expense side of the income statement. Profitability is a function of revenues and expenses, and these two factors are separate while together they make up the entire formula for profitability.

Listen carefully to any clues the interviewer may give you. If you go down the wrong path, the interviewer will often try to redirect you. For example, when the interviewer says: "Are you sure about that?" or "Is that the only possible solution?" you should probably reevaluate your analysis. Do not be afraid to discard your framework or line of questioning and use something else. For example, if you initially interpreted the problem to be a marketing problem, but then realize from subsequent information the interviewer provided that it is really an operations problem, just say that you will use a different approach to probe deeper into that aspect of the case. If you get stuck, summarize what you have found out up to that point. That helps the interviewer trace your line of thought and buys you some time to think about where to go next.

Finally, use simple language. Consultants are not looking for you to use buzz words. Talk to the interviewer as if you're talking to your friends, family, or former co-workers. It will make you seem more natural, and give the interviewer confidence that you can communicate clearly with clients.

Summarize Your Findings

When your analysis has yielded a number of different possible causes for the problem at hand, list the alternatives and suggest research that may be helpful in practice to test hypotheses you may have developed. For example, if you find out that machine failure accounted for a shortage of supplies which led to decreased sales and loss of profitability, suggest that the company research the maintenance procedures, raw material supplies, and physical condition of the machines. Then make a suggestion about what could be done to alleviate any of these problems.

Because of the complexity of some of the cases you will be presented with, it may not be possible to get to the point where you start making suggestions for improvements in the time frame allotted. This does not matter, as long as you demonstrated your ability to think clearly and to apply the correct business tools to get to the causes of the problem. The firm probably took weeks rather than just thirty minutes to get to the point where you stopped in the interview. Just push back and give a "big picture" summary of what you have found out up to that point and how you would proceed with your analysis. Try to be especially articulate when giving your wrap-up summary of the case.

The following four pages provide some of the frameworks that may help you to start thinking about how to frame a problem.

Framework 1: Income Statement
Used for analyzing changes in profitability.

A simple income statement is often a very useful framework. By analyzing profitability through its component factors such as revenues, cost of goods sold, and operating expenses, you can quickly direct your analysis. For example, if profits are declining because of a fall in revenues, you may want to focus on marketing issues; if profits are declining because of rising expenses, you may want to look into operations and financing issues.

Below are three ways a company can increase profits and the issues you may want to consider:

Increase Unit Price
- Demand elasticity
- Market power
- Product differentiation
- Whether a price premium is justified?

Increase Sales Volume
- Increase sales to current customers with current products
- Increase sales to current customers with new products
- Increase sales to new customers with existing products
- Increase sales to new customers with new products

Decrease Total Costs
- What costs are fixed and what costs are variable
- To what extent and in what time frame are costs avoidable
- How are costs allocated

Framework 2: Fixed vs. Variable Cost
Used to analyze cost structures and changes in profitability and to assess economies of scale and scope.

The distinction between fixed and variable cost is extremely important, and you are bound to encounter at least one case centering around this issue during your consulting interviews. Make sure you understand the cost structure of a company in analyzing its profitability. Capital intensive industries such as manufacturers typically have high fixed cost which makes capacity utilization a crucial part of their business. When fixed costs are high, there are often opportunities for economies of scale or scope. Use your common sense to understand what the important input factors are for a company, and whether these are likely to be fixed or variable. Carefully analyze the allocation of overhead expenses in this framework.

Framework 3: Four C's
A general tool for analyzing a company and its environment.

To analyze a company's strategy in terms of its chosen market position, you have to evaluate the different factors that will determine its success. Customers' needs have to be known and the firm's capacity and cost structure need to be able to satisfy those needs at an acceptable level of profitability. This capacity and cost structure should be difficult to imitate by the firm's competitors in order to sustain the profitability.

Customers
- What do the customers want and need?
- How will we satisfy those needs?
- What is most important to them?
- How much will they pay for it?

Competitors
- What are your competitors doing?
- What are their strengths and weaknesses?
- How are they meeting the customers' demands?
- What is their cost structure?

Company

Capacity
- What is your company's financial, organizational, production, and marketing capabilities?
- What are your strengths and weaknesses?

Costs
- What is your cost structure?
- How is overhead applied?

Framework 4: SWOT
Another general tool for analyzing a company in its business environment.

This tool is similar to the Four C's above. It is important not only to analyze what the firm can and cannot do, but also how these capabilities can help the firm take advantage of any opportunities, or ward off any threats that occur in the environment.

- Strengths
- Weaknesses

Used to analyze the capabilities of the company

- Opportunities
- Threats

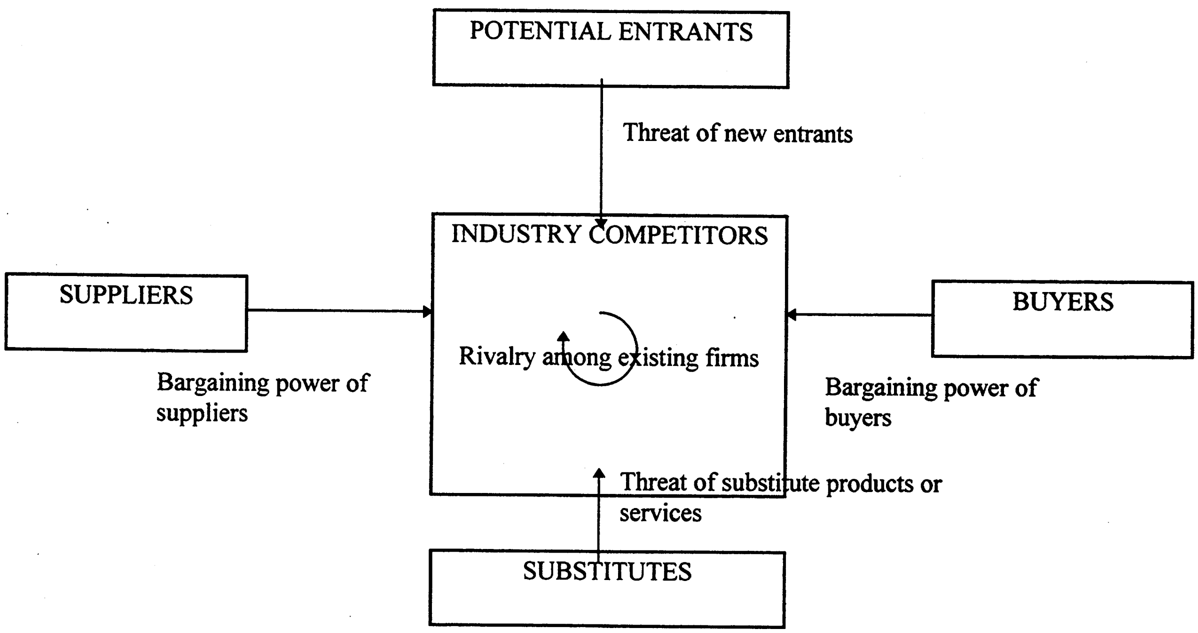
Used to evaluate the company's environment

Strategy 5: Four P's
Useful for marketing related cases such as new product introductions, new market developments, and market share increases.

Everyone should be familiar with the four P's of marketing: product, price, place, promotion. They are used as a framework for putting together a marketing plan. Remember that the four P's are the implementation of a strategy that first depends on the selection of a target customer segment and a product positioning.

Strategy 6: Porter's Five Forces
Used to evaluate the attractiveness of an industry in terms of the ability to earn high returns.

The ability to earn above market returns depends on the degree of efficiency of the market. In a perfectly competitive market, no producer will be able to earn super natural returns. Porter's framework is a way to assess the competitiveness of a market, and thus the ability to earn super natural returns.

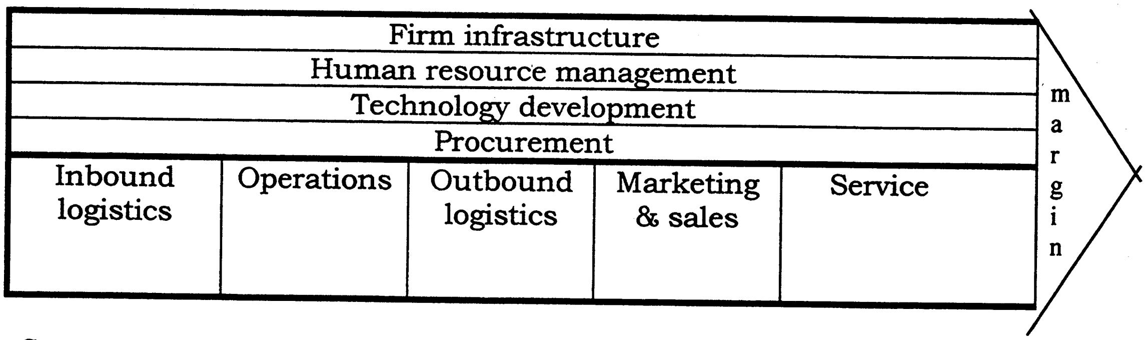


Source: Michael E. Porter, *Competitive Strategy* (New York: Free Press, 1980)

Strategy 7: Value Chain Analysis
Useful to analyze how value is created for the customer and which parties are involved. Often used to determine which party extracts the highest returns in creating the goods or services for the end customer.

Another one of Porter's contributions, the value chain analysis is helpful in trying to understand how an industry is structured. A prime example is the personal computer industry. The good that the end customer receives is a combination of hardware, software, and support services. Intel supplies components, IBM builds the case and provides the services, and Microsoft supplies the operating software. Since the component supplier Intel and the software supplier Microsoft both operates in more or less of a monopoly position, they are able to extract most of the value added which goes into the final product. IBM has to compete in a market place with many competitors and low barriers to entry, and will thus receive a much smaller portion of the cumulative value added.

MARGIN = TOTAL VALUE TO BUYERS - COST OF PRODUCING VALUE



Source: Michael E. Porter, *Competitive Strategy* (New York: Free Press, 1980)

Framework 8: Seven S's
Useful in determining sources of competitive advantage for a company.

Peters and Waterman's Seven S framework helps you understand the factors internal to a company that can create a source of competitive advantage. It emphasizes that all these attributes need to form a network in order to reinforce and sustain each other. While it may be possible to duplicate any one of these attributes, it will be very hard to copy the entire network.

"Hardware"
- Strategy
- Structure
- System

"Software"
- Style
- Staff
- Skills
- Shared Values

Source: Thomas J. Peters and Robert H. Waterman, *In Search of Excellence* (New York: Warner Books, 1982)

SOLVING THE CASE: MINI CASES

Mini cases fall somewhere in between business cases and estimation cases. They are typically short and focus on a single problem. While not true for all mini cases, many focus on solutions to a problem rather than on finding out the underlying causes of a problem such as in business cases. To find a solution to such a case, it is useful to think in terms of a decision tree which covers all the possible courses of action.

Define the Decision Criteria

First establish what the qualities of the desired outcome would be. For example, if the problem you are presented with is: "How can DeBeers respond to fake diamond manufacturers," the desired outcome could be that DeBeers maintains its market position and does not experience heavy price pressures while avoiding high expenditures.

Formulate the Different Choices

The next step is to formulate the first level of your decision tree. In the DeBeers example, some possibilities could be to (a) purchase the fake diamond manufacturers, (b) try to establish legal or trade group certification criteria for diamonds, (c) pressure distributors not to sell fake diamonds, (d) start a public relations campaign to convince consumers not to buy fake diamonds, (e) lower the price of diamonds to force the fake diamond manufacturers out of business, and (f) close the business and retire. This type of case is an opportunity to show your creativity; try to think of novel approaches to a problem.

Evaluate Outcomes of Choices Against Decision Criteria

Once you have formulated the choices, go down each branch, making assumptions, and evaluate the merits of the decision in light of your decision criteria. For example, choice (a) would allow DeBeers to either use the fake diamond technology itself to profit from the technology or would allow it to shut it down and continue business as usual. The cost of this option may be prohibitive, however, and if there are numerous companies who possess this technology it may be altogether unfeasible. Therefore it will probably fail under the "Avoid high expenditures" criterion. Option (b) may allow DeBeers to pursue a successful differentiation strategy, especially when coupled with a public relations campaign decrying "all those cheap men who buy their loved ones an el cheapo fake diamond, which of course means that their love for them is fake as well." This option satisfies the first two decision criteria, and probably is not unduly expensive given the sales volume retained.

Choose an Option

Select which decisions meet all the criteria, and make a choice from those based on which one satisfies them best.

In estimation cases you are asked to come up with an "educated guess" of some number, such as the all-time classic: "How much does a Boeing 747 weigh?" While the questions may sometimes seem "off the wall," this is an important skill to possess in consulting work. As a consultant, you will often have to make decisions based on incomplete or unavailable data, in which case it becomes important to generate reasonable estimates. For example, there may be no direct data available on the number of gas stations in the state of Pennsylvania, but this may be of great importance to your client in the oil and gas industry. You will have to make an estimate based on data that you can get (number of cars sold, population, average gas mileage, just to name a few) and use logical inference to estimate the number you are looking for.

Making Assumptions

In these types of exercises it is not important whether your assumptions are right or wrong (in the real world you have a research department to find that out for you), but make sure that your estimates are at least reasonable based on common sense. For example, if one of the assumptions you make is about the US population, do not say that you assume it is 10 million. It is important that you use easy numbers for your assumptions because you will have to do some arithmetic off the top of your head. If you start out with an estimate of the US population of 237 million, you will probably start sweating profusely when you have to divide or multiply this number. Use 250 million, it is a lot easier to work with.

Logical Reasoning

Estimation problems are based on logical reasoning applied to a number of known data points (your assumptions) to arrive at the desired answer. Since your logic is what is tested, lay it out clearly for the interviewer. Before you start making assumptions, tell the interviewer what your logic is going to be to figure out the answer. Once you have done that, make the assumptions and do the math.

To come up with a logical approach to answer an estimation problem, start with the answer and reason backwards about causal relationships. Think of this as a tree diagram. For example, if you are asked to estimate the number of basketballs purchased by the NBA and its teams each year, start out by thinking what basketballs are used for (the cause for purchasing basketballs). Most likely, they are used for games and practice. These are then the first two branches of your tree diagram. To continue to solve this problem, attack one branch at a time. Do not try to move down different paths at the same time, it will only lead to confusion.

To continue with the basketball example, let's take the "games branch" of our tree diagram. We know that the number of balls is a function of the number of games and the number of balls per game (the causal relationship). What does the number of games depend upon? It depends on the number of teams and the length of the season (See, it doesn't take a rocket scientist or basketball coach to figure this out, common sense is sufficient). You can make an assumption about the number of teams and length of the season or you can continue to go down the tree to find the root causes for those numbers. Make sure, however, that you do not make the problem too complicated. If you have a reasonable idea of the numbers, go with the assumption and start filling in the equations. Examples of digging deeper into the drivers of the number of games are estimating the number of teams by the number of major cities in the US, or estimating the number of games by the length of the season in weeks and an estimate of the average number of games per week per team.

Once you have figured out the first branch, do not forget to do the second one. It is easy to get wrapped up in a long chain of reasoning and completely forget about the "practice branch" in this case. Write the number you came up with for the game balls on a piece of paper so you do not have to use valuable brain space to remember it. Most interviewers won't mind if you take simple notes. A similar reasoning approach as above for the practice balls would try to estimate the number of teams, the number of players who practice on each team, the number of practice sessions, and the average life of a ball.

Doing the Math

Once you have come up with the logical approach, you have to fill in the numbers. Again, choose easy numbers for your assumptions. Even though the length of the NBA season might be 82 games, choose 80 because it is easier to use. It is important that you use the right equations to calculate your answers. The number of games, for example, was determined to be a function of the number of teams and the length of the season. Say that there are 25 teams (easy number) times 80 games in a season, that makes 25 x 80 = 2,000 games played per year, correct? Wrong! Since one game takes two teams to play, you have double counted the number of games. The correct answer is 1,000.

Since most of us are used to calculators and don't often add up large strings of numbers in our heads, it is useful to practice your arithmetic. Calculators are generally not allowed, and it can be quite embarrassing to stumble on a simple calculation in an interview. This danger is especially prevalent since you will probably be a bit nervous, and thus less able to think clearly. The only way to get better at it is by practice; lots of it.

Sanity Check

When you have come up with a final answer, do a quick check to see if it is reasonable. You don't want to say with a big smile on your face that you have calculated the number of basketballs in the NBA to be 10 million. Think first whether it sounds reasonable, and possibly do a quick check. For example, you could multiply the number of balls by an estimate of the average price for a basketball, and see if the resulting figure is reasonable in relation to what you would estimate the total NBA budget to be. If it turns out to be around 50%, you have probably made a logical or calculation error somewhere along the way.

HOW TO GIVE A GOOD CASE

The key to giving a good case is to understand what the key point of the case is, and then slowly guide the candidate to the main point. You basically must act as an all-knowing guide that only reveals the correct path at the right moment.

This is not easy. Your instinct is to help the candidate too much. Be harsh!!! Your interviewers will be. Some will give you nothing to work with. Others will lead you astray. The more realistic you are the better the case will be.

Strategy Cases

These are the big picture questions. Don't let the candidate get bogged down in the details of the case. The purpose of these cases is to see if the candidate can assemble a set of data in a logical manner and then construct a logical recommendation based on the given data.

Your role as interviewer is to discuss with the candidate the case at a high level and slowly provide him / her with the data they will need. Remember to keep the candidate focused on the issue at hand.

Estimation Cases

Estimation cases require precision and mathematics. You should push the candidate away from the big picture and towards the math. You should only provide enough data so the interviewee can do the math.

Data Hunt Cases

Another case giving methodology is to not provide any data. This technique can be used in any type of case. Essentially, you the interviewer barely give any data. When the interviewee asks a question, you can reply with "What do you think?", for example.

Case 1: Big-Mac Light?

McDonald's is thinking about offering health food in the U.S. In broad terms, it is considering three strategic options: 1) Roll-out dedicated health food restaurants; 2) Integrate a health food menu into their current restaurants; 2) Forget the entire health food business all together. How would you analyze this business opportunity for McDonald's?

Interviewer Heads-Up

The point of this case is to have the interviewer analyze various related issues McDonald's must face in regards to its decision and then conclude with an actual recommendation. Your task is to assist the interviewee drive towards a solution, and then assess the thoroughness of the recommendation.

Case Discussion

There are many ways to solve this case. However, the candidate should be able to discuss the following basic analyses during the interview:

Market Definition What is health food? McDonald's defines health food as all non-red meat-based restaurants. This includes Kenny Rogers Roasters, Koo Koo Roo, Boston Market, etc.

Competitor / Industry Analysis Determine overall industry attractiveness based on the degree of competitor rivalry and each competitor's positions.

Clearly there are a large number of competitors but they share common weaknesses: they are smaller than McDonald's; lack the multi-unit management expertise of McDonald's, and lack the advertising resources of McDonald's.

Market Analysis Determine overall market demand for health food. The market analysis can be conducted in numerous ways: Look at sales of other health food restaurants; look at sales of health food grocery stores / products; survey current McDonald's customers; survey potential customers.

Company Capabilities What core competencies and transferable skills would McDonald's be able to leverage from its traditional fast food business?

Clearly McDonald's will be able to leverage its marketing skills and administrative skills (e.g. overhead activities). However, McDonald's will need to develop an entirely new set of operational routines. They will need a new "assembly line" , identify new "raw materials", and probably new equipment.

Costs and Risks What are the costs (fixed and variable) in establishing a new health food store. What are the risks involved? Both of the potential "Go" options involve high costs and risks.

Key issues to consider: How does any new initiative affect McDonald's brand name. The firm will most likely have to develop a new name if they launch a full scale chain.

What additional costs will be incurred with each option: training, new store locations, menu design costs, store start-up costs, etc.

Case Solution
Clearly there is no right answer. Rather it is more important to be able to discuss what approach you would take and what you would want to analyze. Moreover, your recommendation should be based on the logic you discussed during the interview. If you said a new brand name was important, you shouldn't recommend that McDonald's should launch a healthy food menu in its existing stores.

Case 2: Count the Fries?

How many individual french fries does McDonald's sell in the U.S. each year?

Interviewer's Heads-Up

This is a simple estimation case. The candidate should come up with a number.

Case Solution.
Since this is a estimation case, we'll just cut to the chase. Here's the answer.

The Algebra is:
<u>restaurants in the U.S.</u> X # <u>fries sold per store</u>

<u># restaurants</u>:
= average number per city X # cities in the U.S.
=1000 cities X 10 restaurants per city = 10,000 stores

<u># fries per store</u>:
- each store has four registers
- each register is active for 8 hours a day
- each register sells 1 package of fries every 10 minutes or six per hour
- each package of fries contains 50 fires
- assume store is open 365 days

Thus we have:
4 registers X 6 packages per hour X 8 hours per day X 365 days per year X 50 fries per pack. Using approximate numbers we have:

4 X 6 = 24 ➔ 25 per hour
25 per hour X 8 hours per day = 200 per day
200 per day X 360 days per year =72,000 packs per year
70,000 packs X 50 fries per pack = 3.5 million per store
3.5 million per store X 10,000 stores = 35 billion individual fries!!!

Whew!!

Case 3: Reverse Mortgages Market Entry

You are working for the CEO of a financial services company in San Francisco which lends to high-risk individuals. The CEO reads about a bank in Florida that is offering reverse mortgages. The CEO wants to know if he should offer this product.

Interviewer's Head-Up

This is an estimation case with a few strategic issues scattered at the end. The key is to have the interviewer estimate the market potential for this product and then compare the expected costs of distributing the product.

Case Discussion and Solution

What is a Reverse Mortgage?
A Reverse Mortgage, as the name implies, is the inversion of a normal mortgage. The bank pays you an annuity stream in exchange for the proceeds from your house when it is sold. The sale happens when you die or go into the nursing home. The bank will only provide a reverse mortgage for up to 50% of the market value of the house

Market Estimation
The key is that this CEO is looking at the San Francisco market.

Variable	*Value*	*Comment*
Population of San Francisco	2 million	
% of population that is retired (>65)	10%	San Francisco is a "young" city.
% of retirees that own majority of equity in their homes	75%	The equity value of the house = market value-mortgage value. So only people with lots of equity would be interested.
% of above with low incomes (<$30K)	2/3's	People with high incomes don't need an annuity

This gives us an approximate market size of 100,000 households.

Revenue Estimation
The bank charges a 1% origination fee on value of total equity mortgage. Assume each household has a mortgage of $200,000. Loans are securitized so the bank doesn't receive any interest payments. You can assume a 5% market penetration rate.

Thus we can calculate the estimate revenue:

- 100,000 households X
- 5% penetration X
- $200,000 mortgage X
- 50% bank loan value X
- 1% origination fee =
- $5 million in revenue

Costs
A major obstacle the bank faces is product distribution. The bank will most likely have to use a direct sales force (very expensive) to reach its target customers.

Summary and Wrap-up
The market is too small to bother with, especially since the product is easy to copy. Plus, the reverse mortgage offers few synergies with existing clients.

Case 4: Supplier Management

Your client is a large HMO. They are interested in developing a strategic approach to managing their suppliers. Their suppliers fall into four broad categories:

- *non-medical supplies (paper, copy machines, etc.)*
- *non-medical services (janitorial, lawn-care, etc.)*
- *medical products (Q-tips, MRI machines, sutures)*
- *medical services (specialist doctors, nurses, etc.)*

The client wants to know: how should it manage each of these suppliers groups to improve its profitability.

Interviewer Heads-Up

This case is purposefully ambiguous. Let the interviewee struggle to grasp what you are looking for. The key is to let the interviewer determine different approaches for segmenting their supplier base. A tip to give the interviewer is to ask "What do you want from your suppliers?" You should help guide the interviewee towards the solution below.

Case Solution

This case is a difficult one because it doesn't provide any details. How a firm manages its suppliers will vary according to what the firm seeks from its suppliers. A simple way to frame this problem is to think about what a firm wants from its suppliers. An obvious desire is to obtain the lowest cost possible, not the lowest per unit price, but the total costs-defect rates, late deliveries, etc.

Another key variable you would desire that is less obvious is revenue enhancement. This means that suppliers can provide value-added supplies/services that help you gain some competitive advantage in the market place.

What you end up with is a simple 2X2 matrix shown below. The text within each corner describes how you would want to manage the different suppliers.

Total Cost \ Value-Add	Low	High
High	Encourage Competition (Non-medical services)	Selectively Buy (Medical Services)
Low	Bid on Price (Non-medical supplies)	Lock-in with Contracts (Medical Products)

Case 5: Classical Music Radio Station

WFLN was the only classical music radio station in Philadelphia, but recently it changed its format to alternative music after it was bought out by a new owner. As a result, there is now no classical station in Philly. What do you think about the prospects of opening a new classical radio station in Philly?

First, I'd like to take a look at four major "buckets of questions." One—is there in fact a market for classical music in Philadelphia? How many people are interested in classical music? What types of segments exist among radio audiences? Two—let's look at the customers. Not just the consumers who will listen, but actually the advertisers who will be generating revenue for the station. Three—what sort of competition exists, not just radio stations, but other forms of entertainment media for this audience. Four—what sort of company would need to be built, and how would I get the resources and expertise needed to run a classical radio station?

Sounds like a good structure. Let's talk about the market first.

Philadelphia has about 2 million people in it...

...but let's take the entire listening audience of the greater Philadelphia area to be about 4 million.

OK. The first segment I'll look at is what I'll call the "mature" segment—listeners who are 60+ years old. Assuming a uniform distribution of people across ages 0-80 (approximate average life expectancy), that places 1 million people in this segment. This is probably a good target for classical music, since these people probably have had greater exposure to classical music during their lifetimes, and are probably more receptive to classical music than other types.

Next, let's take the "youth" segment for children 10 and under. This segment, using the same logic, is about 500,000 people. This is a terrible segment for our station.

Next, let's talk about a "professional" segment. These are people in white-collar jobs, with higher education and income, and also some exposure to classical music. Another good segment for our station, I'll estimate their number at about 1 million.

Last, the "other" segment consists of everyone else in the Philly listening audience, most of whom are not classical music fans. This last segment, numbering the remaining 1.5 million, has a wide range of individual tastes, and thus may be a fair segment for us.

Assuming 100% of the mature segment, 50% of the professional segment, 33% of the other segment, and 0% of the youth segment are potential listeners, this makes a maximum audience of 2 million people.

Good, but why do you assume that the professional segment is more likely to listen to classical music than the "other" segment?

Professional workers tend to have higher than average education and income levels, thus allowing them broader exposure to music beyond the pop music our other segment receives. Furthermore, much interest in classical music may be due to having music lessons as a child, which are expensive and predominantly available to only higher income, professional consumers.

OK. Let's talk about the customers.

Given that we have a potential audience of 2 million listeners, I think we can convince advertisers that we have a compelling targeting potential for their brands, products, and services. This is particularly true since there is no real competition for us in classical music radio.

Are advertisers the only source of revenue?

Not really. We can always try to get donations from consumers and corporations as a sort of "arts" sponsorship, as public radio and television do frequently.

Great. For now, let's concentrate on advertisers. How much money do you think we can raise using advertisements for revenue?

Advertisers are willing to pay a higher CPM for specific, targeted opportunities that reach consumers who are likely to be interested in their brands. From my own background, I'm familiar with CPM rates for Web banner ads, which range from $20 to $75 CPM depending on how focused your Web page is. Since we offer a reasonably specific customer segment base, I'll assume we can charge $50 CPM, which is towards the high end, but not as high as a very specific Web site.

I'll assume that we don't get the entire potential audience of 2 million, but only one-twentieth of that. With an audience of 100,000, that yields $50 * 100,000 = $5,000 per ad.

How do you feel about that figure?

It sounds way too high to me.

You're right. Why do you think it's too high?

Since radio is a mass broadcast medium, there's really no way to tell if anyone is listening or if the right people are listening. With a Web page, you can definitely keep track of traffic and ensure you are getting your money's worth in views from consumers if nothing else.

Good. Let's use a figure of about 1% of what you had calculated.

If ads cost $50 for advertisers, we then need to determine how many ads we can run per day. Assuming one-tenth of airplay time is ads, that makes about 2.5 hours per day of ads. Let's further assume the average ad is 30 seconds long. This yields $50 per ad * 2 ads per minute * 60 minutes per hour * 2.5 hours per day = $15,000 per day in advertising revenue. Since you can sell ads every day, $15,000 times 365 days per year = $5,475,000 in potential advertising revenue per year.

Does this sound like an attractive opportunity to you?

We have to look at the costs of establishing and running the business first. Since I don't have any experience in radio or classical music, I need to higher a station manager who can run the daily operations. Let's assume a salary plus benefits package of $100,000 annually is required. Next, let's assume a rotation of 10 DJ's to play different programs and provide variety, at a package worth $50,000 each per year. We'll also need some MBAs to do marketing to get advertisers and drum up publicity, at a package of $75,000 per year. Finally, let's assume a staff of 10 people for various support and service functions, each at a cost of $30,000 per year. This makes total staff costs $1,200,000.

Next, we'll have to get the equipment lined up. We can probably lease a tower instead of buying one, so I'll assume a cost of about $15,000 per month for $180,000 per year. Next, we'll have to lease the land and building that we'll place the tower on. We won't have to set up directly in downtown Philly, so we can probably get a small building lease for about $5,000 per month, or $60,000 per year for the real estate. Next, we'll need to lease the radio equipment—receivers, amplifiers, etc. This will be a bit more expensive than a standard home system, so let's assume another $5,000 per month for $60,000 per year. Finally, let's go and buy the CD library we'll need—assume 1,000 CDs at $10 each for $10,000. This brings the facilities costs to $310,000.

Last, let's make an initial advertising blitz for $50,000, and then spend $2,000 on advertising per month after that. This makes the first year's marketing budget $74,000. Total costs of running the station are thus $1,200,000 + $310,000 + $74,000 = $1,584, 000.

Does this sound like a good opportunity to you? Should we do this?

With an upside of nearly $5.5 million per year for an annual cost of only $1.5 million? Yeah, I think this is a great idea. We should definitely do this!

So tell me why you want to be a consultant?

Case 6: Chemical Manufacturer's Portfolio of Businesses

Our client is a specialty chemical manufacturer. More specifically, this is a $50 million division within a multi-billion dollar conglomerate. Our client runs one chemical plant, with common facilities in terms of vats, mixers, etc., to produce chemicals for four major markets. First is textiles, which are chemicals that are dumped into large vats with cloth designed to leech out unwanted minerals from cloth. Second is fibers, which assist in the extension and spinning of fibers and add lubricity. Third is metal working, which again creates chemical additive fluids designed to soften metals for shaping. Fourth is oil fields, which has chemical products that also add lubricity to the oil wells and drilling equipment.

Our client is currently losing $8 million per year. We have been hired to determine whether or not the business can be turned around, and help the client determine how to do it if possible.

I'd like to examine this problem using a matrix of different criteria to compare each of our products in these four different markets.

	Market size (US/Total)	Growth	Capacity	Profitability	Competition	Customer Opinion
Textiles						
Fibers						
Metal						
Oil fields						

I'd like to start by learning more about the size of these various markets, in terms of total sales for the industry and also the market share our client commands.

In textiles, the total market is well over $500 million annually, and our client sells about $15 million here. In fibers, our client sells about $10 million in a total market size of $300 million. In metal, our client sells about $15 million in a market of about $300 million. In oil, our client sells about $10 million in a $90 million market.

Are the growth rates in these markets significantly different?

No. Each market tends to grow or shrink with GNP.

Is capacity an issue for us, if we were to increase production of any product line or eliminate a product line? Is the industry overcapacity? Is our production technology up-to-date?

There really aren't any productivity or capacity problems for us, since we can use the same facilities to produce most of our products. Each product is basically mixed in 10,000 gallon vats. If we do run out of capacity due to huge surges in demand, we're usually able to outsource production to third-party manufacturers at a reasonable price.

That suggests that we shouldn't look at making large investments in PP&E. Now, I'd like to know more about the competition in each of these markets.

Textiles is a highly fragmented business, with hundreds of companies making hundreds of products for hundreds of customers, and thus it tends to be a hustle business. Fibers has five major players including us, and eight large customers. Metal has about twenty large firms involved. Oil is much like fibers, with very few significant players.

Next, I'd like to know how customers feel about our client's products as compared to the rest of the industry.

In textiles, our client seems to be at about parity with the competition. It's hard to tell in the fibers market, since about half of our sales go to an internal client in another division of the company. Our metal products are very well received, and customers tell us that they'd like to see our sales force more often. Also, our oil products are the top of the line in the industry, but they are very expensive. Our product here is like a "silver bullet" in the industry—it works extremely well, but it's so expensive that you only purchase it when you absolutely need it.

Next, I'd like to know about how profitable each of these product lines is for our client.

Metal is profitable, oil is about break-even. Textiles is somewhere between break-even and slightly negative, and fibers is very negative.

I'd like to start my further analysis in the fibers market. Why are we unprofitable here?

Our facilities don't seem to be able to produce the type of reactions needed to continuously generate a large volume of the fibers chemicals effectively. Our yields are poor when compared to the rest of the industry.

Is there any chance our parent firm can purchase this product from one of the other producers, given that we might be able to put the capacity to more profitable use in a different product?

Sure. Our money is as good as anyone else's.

My first recommendation is to discontinue producing the fibers product for our internal client, and have them purchase the product on the market. Now, I'd like to look more into the metals product. What sort of customers are purchasing this product, and why is our product so well received?

Customers are large industrial clients who use this chemical as an additive to metal working. For us, the production cycle is easy and logistics are no problem in shipping the product through our established sales network. This has made the product profitable for us. Customers have also responded well to our service, which is regarded as superior to our competitors.

How is our service superior?

We handle delivery, production planning, and handling charges for our large customers. We have also been very reliable in on-time delivery.

How important, on a cost basis, is our product to our clients? In other words, is our product a large percentage of their materials costs or a small percentage.

Very small.

In that case, I'd like to explore charging more to clients for our product in return for even better service. Our goal is to capture higher profits through improved service by ensuring that the management of these clients does not ever have to worry about the reliability or quality of our product. By minimizing the hassle our clients have by purchasing from us instead of competitors, we should be able to leverage our superior service into increased profits. Next, I'd like to look more closely at the oil product. Why is our product so much more expensive than competitors'?

We are able to command a disproportionately large market share in oil because we have a proprietary technology that greatly enhances the operations of drilling equipment for exploration companies. We really have the only product on the market that can serve the needs of these customers when their drilling equipment fails.

Since we have an effective monopoly on this type of product, customers will have to buy from us whenever they need it and won't be able to go to competitors. Since customers don't purchase this product unless they absolutely need it now, I recommend we look closely at the value our product provides to customers and possibly raise prices to capture more consumer surplus. Of course, if a competitor is able to duplicate our product, we will have to lower prices as a result, but for now, we should be able to raise price. Finally, I'd like to learn more about the textile market.

Textiles has hundreds of producers, and customers vary from huge textile companies, to small die-tool houses, down to "mom and pop" establishments who require very little product on a regular basis. Many different segments of customers exist.

Given that this is such a huge market, I recommend our client look for a way to differentiate and provide a superior value proposition to a particular segment. The best way to do this would be to determine which segments our client can actually serve well first. For example, we may never have enough capacity to serve the huge customers, but perhaps we can allocate all of our capacity to a few mid-sized firms which provide us with profitable sales. Then, we should rationalize all of our efforts to producing for a few, profitable customers rather than selling product to the market at large.

Great job. Could you summarize your recommendations for me?

1. Exit the fibers market.
2. Emphasize superior service to customers to charge higher prices in metals.
3. Raise the price in oil in order to capture monopoly profits.
4. Establish a customer focus and segment the textile market to focus on a few highly profitable customers.

Case 7: Brainteasers

Imagine you have a scale of justice—one of those scales with two sides that weigh against each other. You also have 8 coins. One of those coins is just slightly heavier than the others. The difference is so small that you can't see it or feel it, but it can be measured. Using the scale, what is the minimum number of weighings you would have to do in order to be sure you found the heavier coin?

Answer: 2—By weighing coins in groups of 3 coins, 3 coins and 2 coins.

Say you have the following information:

$$\frac{Price}{Earnings} = 10$$

$$\frac{Capital}{Assets} = .10$$

$$\frac{Earnings}{Assets} = 1.5\%$$

You can not obtain additional information. Using only this information, how can you find Earnings to Capital and what is it?

Solution:

$$\frac{\text{Earnings}}{\text{Capital}} = \frac{\text{Earnings}}{\text{Assets}} \times \frac{\text{Assets}}{\text{Capital}} = .015 \times 1 / .10 = 15\%$$

Assets cancel out in the equation.

Case 8: **Home Builder Entering New Business**

Your client is a leading manufacturer of home building supplies (i.e. sheet-rock, lumber, etc.), they have excess capacity at their plants and warehouses and are looking to utilize this capacity. They are thinking about entering the door making business. First, estimate the number of new doors installed in new houses and apartments each year, and second, do you think this is a good business for the client?

Interviewer's Heads-up

This is an estimation case with some strategy thrown in. The dialog is shown to provide you with one path.

Case Discussion

There are 250,000,000 people in the US, 60% or 150,000,000 live in houses and 40% or 100,000,000 live in apartments. The average house has 10 doors and the average apartment has 5 doors. People move into new houses every 10 years and apartments every 5 years. There are an average of 5 people in each house and apartment.

House doors: 150,000,000/5 = 30,000,000 houses. 10% , or 3,000,000 new houses built each year. 10 doors in each new house for 30,000,000 house doors.

Apartments 100,000,000/5 = 20,000,000 apartments. 20%, or 4,000,000 new apartments constructed each year. 5 doors in each apartment or 20,000,000 apartment doors.

Total: 30,000,000 + 20,000,000 = 50,000,000 new doors each year.

Tell me about the current providers of new doors.

The market is composed entirely of mom and pop door makers who supply to builders within their geographic location.

Is there anyway our client can provide better service?

You tell me!

Let us begin with costs. Can the client produce the doors more effectively? Does he have any cost advantage (i.e. economies of scale)?

Maybe, but we don't really think that is relevant. The client just wants to know if he should utilize excess capacity and enter the market.

Let us then look closer at the market. How do the current mom and pop outfits serve the market?

They get an order for doors, for which there are approximately 10 different styles, and they generally deliver the finished products within two to three weeks.

Could our client deliver a more differentiated product in less time?

Our client has six warehouses and production facilities across the US and he believes he can deliver an order of doors anywhere in the US within two days.

Time is one way in which our client can differentiate his business, can he also produce a differentiated product?

The client can deliver whatever the customer wants.

If this is the case, then our client can differentiate his business. The question now arises as to whether this industry needs this type of differentiation, or "consolidation", and whether it is sustainable in the long run. I'll start by asking if anyone has tried this before?

Not that we know of, but I am interested in your thinking? What are you trying to discover?

If there is a reason that this industry is so fragmented, and if there is a reason that 10 styles of doors delivered within two - three weeks has proven a successful business model.

We believe that is correct! It the business exists in its' current form because that is what the market demands. There is no great need for more than 10 different styles of doors, in fact, builders prefer fewer styles because it makes their plans more uniform. As far time, builders know well in advance when they need doors, so they plan their orders accordingly. Quick turn around is of no great benefit to them. So what is your advice to the client?

I'll tell him to stay out of this market. It is fragmented for a reason, he can bring no great competency to the market through which he will derive competitive advantage and his capacity could probably utilized in a more fruitful manner.

Case 9: Asian Gas Retail Expansion

I have been working on helping a mid-size U.S. gas retailer who is considering entering the Asian retail gas marketplace. I am looking for breadth here, and then we'll get to the numbers. What issues should they consider before they enter the market?

Interviewer's Heads-Up

This case consists of two parts. First, have the candidate consider as many business issues and concerns as they can identify. You should press their assertions and test them for their logic and relevance. Then have them analyze the following graph.

Case Discussion

Possible business issues could include but are not limited to:

CUSTOMERS
Segments
Profit of each
Transaction Behavior

COMPETITORS
Local vs. international
Capabilities of each firm
Position of each firm

GOVERNMENT POLICY
Monetary policy
Investment policy
Taxes
Oil import regulations

Costs

Fixed vs. variable

Distribution Capabilities
Shipping/pipelines
Import controls

Measurements

Profit
ROI
Free Cash Flow

Interviewer's Heads-Up

Now show the candidate the chart on the next page. Ask them the following questions.

On a first cut analysis, what does the graph tell you?

Hmmm. It seems to show that as per capita GDP rises so does gas consumption.

Right. What else does it tell you?

It shows that China has a lot more people than Hong Kong so it might be a more attractive market. However, we would have to run the actual number's to make sure.

Interviewer's Heads-Up

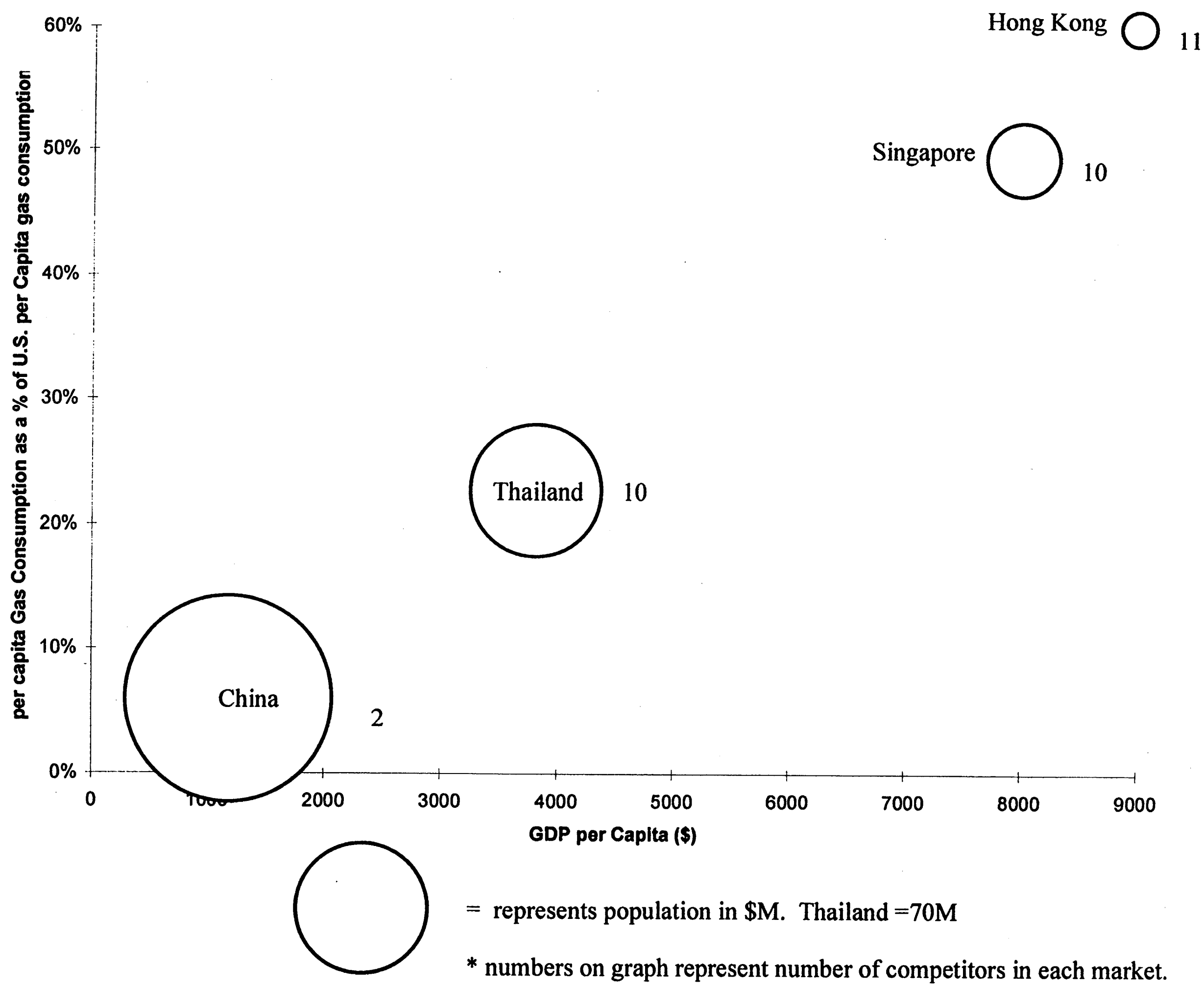
You should have the candidate compare the countries on the graph to check their quantitative skills. Help them into the ballpark with their estimates of the countries by using the data below.

Country	Per Capita GDP	% US per capita gas consumption	Population	Relative Size
China	1000	5%	1B	5
Thailand	4000	25%	40M	1
Singapore	9000	50%	20M	1
Hong Kong	10000	65%	10M	.65

Note: relative size = % U.S. per capita gas consumption X population

Once the candidate has done the math you can ask them:

- How many times bigger is the relative market size of China than Hong Kong? (approx. 100)
- Which market is the most attractive? (Don't forget the competitors!!)
- Which market would your recommend they invest in? Why?


60%
50%
40%
30%
20%
10%
0%
per capita Gas Consumption as a % of U.S. per Capita gas consumption
0
2000
3000
4000
5000
6000
7000
8000
9000
GDP per Capita ($)
Hong Kong
11
Singapore
10
Thailand
10
China
2
= represents population in $M. Thailand =70M
* numbers on graph represent number of competitors in each market.

Case 10: Moolahian Smart Cards

Currently the Republic of Moolah tax code allows for Moolahian employers to pay their employees in tax-free food tickets. These tickets comprise only a fraction of the total compensation employees receive, yet they have created a sizable food ticket industry. Because all employees receive these tickets, almost all restaurants accept them as cash

The current system works as follows. Employers contract with ticket producers to produce the tickets and track the food ticket compensation of each employee. The ticket producers deliver these tickets to the employers who in turn enclose the food tickets with weekly paychecks. The employees then exchange these tickets at restaurants for food. The tickets have "same as cash value" at restaurants.

CARDCO, the largest player ticket producer in the Republic is thinking of replacing these paper based tickets with SmartCards. Under this system employees would be issued a single SmartCard that they could charge once a week at a Card Charger (like an ATM) and then swipe their cards at a Card Reader at participating restaurants.

Tell me, what issues should CARDCO think about in regards to the decision to switch to SmartCards?

Interviewer Heads-Up

The key issue here is to weigh the costs of such a move with the benefits. Though The candidate should identify key issues like:

- customer reactions,
- competitor reactions,
- governmental regulation changes,
- and technology concerns.

The key issue remains: do the economic benefits outweigh the costs.

Let's see. It would seem to me that we should begin by comparing the economic benefits of installing the new SmartCard with the systems costs. First, I would like to determine how much the system will cost to install. What investments will SmartCard require?

Obviously the system requires the chargers and the readers. Is there anything else you could think of?

Well there are the SmartCards themselves.

Yes, and...?
Perhaps the IT systems to track all of the data on the SmartCards?

Right.

Let's see what investments we have identified so far: Chargers, Readers, Cards IT systems. What are the costs for each one?

Let's say the cards cost $15M and the IT systems cost $20M.

How about the card readers and chargers. How many of those would we need?

CARDCO believes it will have to install 100,000 card readers and there are 150,000 restaurants that currently accept food tickets. Both the readers and chargers cost $500 each to install.

OK, now we have $20 million for IT systems + $15M for cards plus $75M for the readers ($500 per reader x 150,000 restaurants) + $50M for chargers ($500 x 100,000 chargers) = $160 million total.

Great now what are the benefits of the system.
It appears to me that the benefits would be the cost savings each player in the value chain obtains from the system. Let's start with CARDCO itself. How much would they save?

CARDCO would save $10M on the printing and distribution costs in currently incurs. What about the employers how much would they save?

I think they would be negligible since CARDCO does all of the distribution. Also the employees wouldn't gain any actionable cost savings. That leaves' the restaurants. They must have a cost for each ticket transaction.

You're right. In fact it currently costs each restaurant $.30 per transaction and each restaurant does 20 transactions a day.

That mean's each restaurant incurs $1,500 per year in transaction costs. ($.3 x 20 X 250 days per year). How much would the restaurants save?

CARDCO expects the restaurants to reduce their transaction costs by 2/3's.

That mean's each restaurant would incur only $500 per year. Thus the total transaction cost savings is $150M ($1500-$500 =$1000 X 150,000 restaurants). That makes the total cost savings of $160M ($150M transaction costs + $10M printing). This equals the investments so its only breaks-even on an economic basis.

That's right. How else could CARDCO make the this a positive investment?

Well, if CARDCO is one of many ticket producers, perhaps they could license their system to other ticket producers who could then supply additional customers to increase the network's utilization. Or they could simple acquire a competitor.

Case 11: Dallas Symphony Orchestra

The Dallas Symphony Orchestra is currently exploring the possibilities of increasing their ticket revenues. So far, they have relied heavily upon corporate donations and government grants, and they would like to increase the proportion of revenues obtained from ticket sales. How would you do it?

Interviewer's Heads-Up

This is a mini-case, with the emphasis being on whether the candidate is able to focus in quickly on the single main point of the case: supply / demand curve. If the candidate does not immediately jump to it, ask him/ her to draw one after some quick discussion.

I would start by looking at different sources of revenues. Since you have outlined the problem as one of revenues alone, I am proposing not to get into the costs side of the equation until later.

Good. Explain what you will look at.

Well, the way I look at it, revenues are a function of price and the volume of the tickets sold. We can look at either, or both of these in turn.

There is not much to be done with the volume. The tickets are always sold out.

In that case, let us focus on the prices. How are the tickets priced now?

Interviewer's Heads-Up

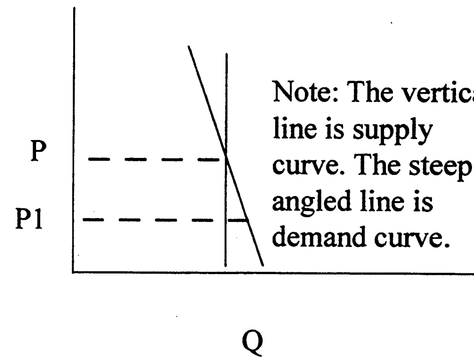
It was clear that the case giver wanted this to be a price driven case. He did not want to discuss other ideas such as merchandising, CD's, tours, etc. as a source of revenue, as can be evidenced below:

Yes, let's examine the prices. Draw me a demand curve for the tickets.

(Thinking aloud is OK at this point): Well, I think, without having done a careful study of the customer segmentation, my first guess is that the customers for a symphony are not very price sensitive, which means that there is probably plenty of room for price movement with little effect on quantity. Right?

Right. What does it mean for the demand curve itself?

Kind of steep (See figure).



Note: The vertical line is supply curve. The steep angled line is demand curve.

Good. Now, what about the supply curve?

I don't think the supply will vary at all. No matter what the price is, there are x number of seats available at any given time.

Very good. Let's look at the supply demand curve that you have drawn now. What if I tell you that they are priced at P_1 now?

Well, since the equilibrium price seems to be at P, I see there is definitely some scope for price increase.

Good. There were other aspects of this case, but let's stop here for now. How do you think you did?

Interviewer's Heads-Up

Obviously, this is a simple supply demand case, and you can lengthen it if you wish. Once the candidate correctly identifies the curve, you can stop the case.

Case 12: (Mini Case to test understanding of financial theory)

You have been approached by a client who has an oil field, and he does not know what to do with it. The price of the oil is at present $16 per barrel, and it has been that way for a while. It costs $18 per barrel to lift the oil. A major oil company has just bid on his plot of land for a 5 year oil lease. What should he do?

Interviewer's Heads-Up

This is a mini-case that tests the candidate's understanding of simple option pricing theory. Since candidates are expected to have taken a fundamental corporate finance course, this question is fair game. Feel free to let the candidate wander all over the map, but he/she must arrive at the following conclusion: <u>one does not price the oil reserve purely based on the existing price to lift and refine the oil</u>. Rather, you pay to have the *option* to lift the oil. This then gets into option pricing theory, Black-Scholes, etc. The underlying asset in this case is the oil itself, and the volatility component of the Black-Scholes model comes from the volatility of the oil prices. The strike price of the option is the cost of lifting the oil from the ground.

Case 13: Venture Capitalist Entering Oil Field Service Industry:

Imagine I am a venture capitalist. I come to you with the following situation: I have recently been approached with a proposal to invest in an oil field services company. This company provides personnel to major oil companies that explore and produce oil. Apparently, this company is up for sale for about 1 million dollars. What are the issues you would look at before making a recommendation to me? (Note: I don't know any thing about the oil industry).

Interviewer's Heads-Up

This case had no "right" answer. The interviewer was looking to see if the candidate explored all the relevant issues and asked the right questions. The interviewer also wanted the candidate to "role play". The following responses were by the candidate who faced the case. Feel free to introduce as many new issues into this case as you can.

I would like to start this case by finding out what kind of returns are you, Mr. VC, is expecting? Typically, VC's look for upwards of 25 to 30% returns to cover their losses in other risky investments.

Let's say I am interested in a 25% investment in this case as well.

To determine if your $1 million is going to return 25%, I would like to examine the cash flows that would be generated by such an investment. First of all, let's examine the industry you are about to make your investment in. Being in the oil & gas industry, the success of your venture is highly dependent upon the success of your clients, namely the oil explorers and producers; their fortune, in turn, depends upon the price of oil which in not in their control. The price of oil, as you know, is controlled to a big extent by the OPEC cartel. Therefore, your revenues are not very well predictable.

Good. What about the costs?

Well, as I see it, your costs are mainly the cost of manpower that you supply to the producers. I assume that the people you hire are temporary, so you can hire and fire them depending on your demand...

Yes, I can.

In that case, your profits are not probably as volatile as your revenues. But they are still not very predictable. Now, what about synergies? In other words, is there any special know-how that you can bring to the table that will reduce the costs of the venture post-acquisition?

No. Remember, I have no expertise in this industry.

That's an interesting point. Not only do you not have any expertise in this industry, you have no special means to reduce the costs! Further, we should not lose sight of your objective: to make returns of 25% or more. With the information you have provided me so far, I am not sure if those kind of returns can be achieved in this type of industry. But for the sake of completion, let's look at other aspects of this proposal. Do you know who your competitors are?

I don't, but I can find out.

Good. I would look at their historical performance to get a measure of the profitability of this industry. It would also give you a measure of how fragmented the industry is, the amount of rivalry that exists within this industry, etc. I would also look at any regulatory issues, as well as union issues. If this industry is highly unionized, you may not be able to achieve man power reduction at will.

Further, I would look at the availability of man power. In other words, the skill set required by this company may be quite specialized. In that case, good trained man power may become a scare and precious commodity, driving up your costs.

By looking at all issues, you may be able to confirm if you can realize the kind of returns you expect from your other ventures. On the face of it, I don't think it is a good buy. You may be able to achieve better returns by investing your $1 million in more attractive ventures where you have some knowledge (after my consulting fees, of course).

Good. This is the recommendation we ended up making to this gentleman who came to us. His lack of competence in the industry was definitely a big issue in making the recommendation. Now, on to the next case...

Case 14: Capital Intensive Investments.

Our client works in the oil industry. They make what is known as "well completion equipment". These products are fairly generic, and are quite capital intensive. The client has been making profits, by the share price has been tanking. I want you to examine the case from two angles: one, is it possible to make operating profits and still see your share prices tumble? Two, what would you suggest they do?

Interviewer's Heads-Up

This case tests a very fundamental concept: the returns from the investment should exceed the company's cost of capital. In this situation, the interviewer was looking for a specific answer, not just the issues. What has been presented below is only the nutshell version. Feel free to engage the candidate in discussions before leading him/her to the correct answer.

Let us take your first issue first. It is very possible that share prices can go down even if the company is making operating profits. If the return on the company's investments does not exceed the cost of capital, the company does not make any "economic profit". In other words, the company is not probably making the kind of returns expected by the shareholders.

Bingo. Now, tell me how this situation can apply to this particular company.

Well, you mentioned that this company's investments in its equipment are capital intensive. This probably means that the fixed costs are high compared to the variable costs. I would therefore look at some capacity issues. Are they running up-to capacity?

Well, the problem is, they have their operations in different locations. Each place invests in additional capacity as need arises.

Does this mean that there are situations when one of the locations is in need of equipment, it is possible that the other location may actually have it available?

Very much so. When one location needs equipment, they just go buy it. Since demand has been robust lately, the company has made significant investments lately.

That probably explains the stock price. The company has been making capital intensive investments, probably creating excessive capacity overall. This creates undue stress on cash flow to shareholders, who then dump the stock. A possible solution is for the managers of different locations to communicate more freely with each other. One may want to look at how the managers are incentivized. It is probable that the managers have no incentives to borrow equipment from different locations.

Correct. Our findings were on similar lines (followed by a 5 minute boring description of the actual recommendation; try not to yawn!)

CASE 15: The Tightest Ship in the Shipping Business

A container shipping company has hired you as their consultant. The board of directors wants you to help the firm raise its return on equity (ROE). For the past 10 years the firm has earned an average a 10% ROE, which the board considers to be too low. They want the firm to earn a 15% ROE. How would you help them?

But, before you answer, I can provide you with some background information. The firm provides container shipping services. Container shipping involves the packing of cargo into a trailer-like box that is then transported on ships, trucks, and rail lines. The firm's primary business focus is to deliver cargo between the US and Pacific Rim.

Interviewer Head's-Up

This is a fact finding case. The challenge is for the candidate to pry data from you one small piece at a time. Once they have collected enough data, the answer is self-evident. Make the interviewee suffer by providing only the smallest amount of help with each question. Use the hints below to guide you.

Case Hints to be Provided

You may give the following hints as the candidate struggles with this case:

1. The firm generates $2 billion annual revenue. That is split roughly 1/3 land shipments (i.e. trucks) and 2/3 sea shipments (i.e. boats).
2. The shipping industry suffers from substantial over capacity.
3. The firm currently experiences 5% net income margins.
4. The firm's shipping revenues have remained constant for the past 10 years. All of boats run approximately 70% full.
5. The firm's cost structure for both shipping and trucking is:

Fixed Costs (60% of Total Costs)	Variable Costs (40% of total costs)
-Depreciation of Equipment=30% -Depreciation of Other Equipment= 30% -Overhead =40%	-Fuel = 50% -Maintenance =50%

6. Asian shipping firms are bringing more ships on-line which will increase shipping capacity 20% over the next five years.

Case Solution

With all of the hints exposed, the problem is quickly solvable. With excess shipping capacity in the industry, and 36% of the firm's total costs related to the firm's asset size (depreciation), the firm should consider selling its ships to increase its utilization and reduce its expense levels.

Case 16: Oil Lambada

A medium size vertically integrated U.S. oil company wants to expand into the growing markets of Latin America. This firm not only drills and refines gas, but it owns a set of retail gas stations. The firm is interested in expanding its retail chain into Latin America. How should the firm analyze this problem?

Interviewer Head's-Up

This case is a high level strategy case. The candidate should detail an analytic framework, which you should test to see if it is logical. Only few facts are provided in the case. These should be given when the candidate asks for the information or when the interview discussion should incorporate them.

Case Discussion Points

There are many way to approach this case. Basically the candidate should touch upon the following analytic areas.

Market Attractiveness. Is the Latin American region an attractive market to enter? Is it a high growth market? Are consumer spending trends favorable. **YES**

Competitor Presence. What is the competitor landscape like? Are their many or few competitors? What would be our positioning within the markets we enter? Is this defensible? **There are a few competitors and our marketing strategy in the U.S. would appear to work quite well in Latin America.**

Firm Capabilities. Does the firm have the managerial resources to enter the markets? Has it invested abroad before? Can the firm supply its retail stores with existing refining capabilities? **The firm's management has never invested abroad before. The firm cannot completely supply both the Latin American and North American markets with its existing refineries.**

Entry Mode. Does the firm want to enter all of the markets in Latin America or just some? How fast do they want to enter? How much capital can be made available to fund the required investments? **The firm wants to enter the markets quickly, and it wants to conduct a Pan-Latin American strategy. However, capital investment funds are limited.**

Case Solution

There are basically three ways in which an oil firm can enter a foreign market: 1) Direct investment, 2) Joint Venture, 3) Acquisition. Given the points raised above, especially the facts that the firm is resource constrained, a Joint Venture is probably the best method. However, each of the above mentioned entry modes entail different levels of risks and rewards which should be noted. Also, one should question why the firm wants to enter the Latin American market in the first place.

Case 17: Hotel Quickie

Marriott wants to compete directly with Ritz Carlton. What should they do?

Interviewer's Heads-Up

This is a quick case you can throw in the middle of a fit interview. The candidate should brainstorm as many possible actions as possible, and what Marriott needs to change in its operations.

Case Solution

As this is a pure hypothetical case, we'll give you the answer. Essentially, Marriott must upgrade its facilities and staff service levels to compete with Ritz. Rooms would have to be refurbished, lobbies would need redecorating, and restaurants would need to be improved.

Additionally, the service levels would have to be improved. Staff would require training and compensation schemes would have to be changed as well.

Case 18: Consulting Firm Dashboard

You are the CEO of this consulting firm. What operating metrics would you want to look at to make sure you were doing a good job?

Interviewer's Heads-Up

This is another quickie to throw into the middle of an interview. The interviewee should present a framework and discuss their reasons for selecting the components.

Case Solution

As a professional services firm, a consulting firm must satisfy two key constituencies: its customers and employees. Additionally, it faces strong competition from similar firms, so the metrics the firm should look at could be broadly assigned to these three areas. Some possibilities include:

Customer Focused	**Competitor Focused**	**Employee Focused**
Customer Retention	Competitive Bids Won	Employee Retention
Increased Profits	Growth	Employee hire rate
# New Customers		

Case 19: Steel Threat

Client is a rebar steel manufacturer with one plant. The plant is fairly old and is marginally successful. A competitor has built a new plant 300 miles away. What is the competitive threat?

Interviewer's Heads-Up

This is a strategy case with some light math. Have the candidate do a few calculations to help drive to the answer. Also, at the end, the candidate should brainstorm a few strategic options that the steel firm should explore. An important question they should consider is why our steel firm exists at all.

Case Discussion
A logical solution to this case to look at the firm's cost structure, the competitor itself, and the customers / market place. The information you can provide is shown below.

Competitor Information
- The new competitor also manufactures rebar steel.
- The firm's plant cost $200 M to manufacture and is 50% larger than the client's steel mill.
- The competitor enjoys a 10% cost advantage over our steel costs, which is passed onto customers.
- The firm enjoys a 50% labor cost advantage relative to our steel costs.

Customer Information
- Currently we have one customer, located 300 miles away from us.
- The customer buys 400,000 tons of steel from us per year.
- They are satisfied with our quality and price.
- We represent approximately 45% of their total annual steel purchases.

Company Information
- Our capacity is 500,000 tons per year
- We charge $300 price per ton
- We currently run at 80% capacity, and have run at this level for years.
- The firm enjoys a 20% net margin.
- The firm's cost structure is:
    - 20% fixed costs
    - 10% incidental expenses
    - 30% labor costs
    - 30% raw materials
    - 5% inventory expenses
    - 5% overhead

Case Solution
A quick analysis shows that that the firm is extremely vulnerable. We sell our steel for $300 per ton, while the competitor sells their steel for $270. If we assume we have equal gross margins, then our cost per ton is $240 (80% of revenue) while the competitor's costs are $216 per ton (90% of our costs).

Since we seem to be at a significant labor cost disadvantage (50% higher), perhaps the firm could reduce its labor costs per ton.

We currently incur $72 per ton in labor costs (30% x $240 total cost / ton). If we could achieve the competitor's labor cost levels, $36 per ton, then our total cost per ton would be $204 per ton, less than our competitors $216.

However, steel is a competitive industry, and it would seem unlikely that we could obtain such dramatic cost savings. Thus, we should also consider other options.

The firm should perhaps find new customers, or enter into new steel markets, the high quality segment or specialty coated steel.

Case 20: **Hardware and More**

This is a true story that happened about 10 years ago, before anyone really had heard of HomeDepot. So for now pretend you don't know anything about HomeDepot. A regional hardware store wanted us to improve the its profitability. Additionally, the CEO had heard something about a new store called HomeDepot that had entered its market. He wanted us to also determine what kind of a threat HomeDepot would pose.

Interviewer Heads-Up

This is a difficult case. The idea is to stump the candidate to see if they can figure out what is really going on. Most interviewees will look at the firms cost structures, which look identical at first. However, only when they consider the price differences does the answer become clear.

Case Discussion

It is unclear to the candidate whether the profitability issues are related to the threat of HomeDepot. Most of the discussion will surround understanding the market environment, customers, and the cost structures of both firms.

Market Environment / Firm Revenues
- The market is growing at 2% per year and has done so for many years.
- The client's revenues have been flat for the past several years.

Client Firm Description
- The firm's stores are 2/3's the size of HomeDepot's Stores
- The stores are located in the southeast, and mostly on the mainstreet of small cities
- The store's strategy has been to stock the many hardware needs of its clients. This has traditionally been small items like hammers, screws, tape measures, etc.
- The average transaction in the stores is $15.

Home Depot Description
- HomeDepot has only opened one store in our region.
- HomeDepot stores are quite large, in fact 50% larger than our stores.
- HomeDepot stocks many, many items, but they seem to stock much more home improvement items like sinks, bathtubs, cabinets, etc.
- The average transaction at the HomeDepot Store is $60

Interviewer's Tip

The key to the case is that the cost structures look the same, but each firm has different prices. Let the candidate struggle to determine this. Don't provide any assistance.

Cost Structure

- The cost structures of the firm's as a percent of sales are identical:

	Client Firm	Home Depot
COGS	80%	80%
Overhead	10%	10%
Sales & Marketing	5%	5%
Profit Margin	5%	5%

However, HomeDepot's prices are 70% of ours. If we adjust the data for this fact the cost structures look like this as a percent of our sales are:

	Client Firm	Home Depot
COGS	80%	56%
Overhead	10%	7%
Sales & Marketing	5%	3.5%
Profit Margin	5%	33.5%

Since HomeDepot's prices are 70% of ours, each of their cost components must also be 70% of ours, thus you multiply each cost percentage by 70%.

Extra Estimation Cases

- How much tea is in China?
- How much salt is in the ocean?
- How many marriages occur each year in Japan? In New York?
- How many light posts are there in Stockholm?
- How many golf balls are in flight over the golf courses of the U.S. at any one time?
- How much astroturf covers the major league baseball stadiums in the U.S.?
- How many ping pong balls would fill a Yugo?
- What is the surface area of UPS' s truck fleet?
- How many pounds of rubber do the tires of British Airway's airplane fleet weigh?

Additional Mini-Cases

- Why did Dominoe's s stop its "free pizza if we're late guarantee"?
- Should a steel company sell over the internet?
- If you were made the Dean of Wharton, what would you change?
- Why do clients hire consultants?
- If you could start any company, what would it be?
- What is the worst corporate strategy you have seen? Why was it so bad?
- Should a bank launch an internet brokerage?
- Why do you like our firm?
- There is a shining golf star in Stanford by the name of Tiger Woods. You are with Nike, and you want to make sure he signs up huge contract with you when he graduates and becomes a pro. What should you do?
- You are traveling in a plane next to a guy who confides in you that he has just invented this magic potion; and ounce of it, when mixed with an ounce of gasoline, would make gasoline twice as efficient. He has been invited by an oil major for a meeting. What are the factors he should consider on his way to the meeting?