

Wharton Consulting Club

2004/05

Practice Case Interview Guide



Welcome Consulting Club Member,

This manual is the result of significant contributions by your fellow class mates, who have contributed real case questions from the 2004 2<sup>nd</sup> year recruiting season to assist you in preparation for consulting case interviews.

Many students are initially daunted by the prospect of preparing for case interviews which are foreign to anything they have previously experienced. In our view however, there is no need to feel overwhelmed. Preparing for case interviews is much like learning to play a new sport. Until, you actually get out and start playing it can be difficult to understand what is going on, but once you get into it, it all comes together with practice.

Literally volumes have been written on the topic of case interviews and we strongly recommend that you review at least one of the many publications available. Readily available resources include the 2003 Wharton Case book, which includes a detailed introduction to the Case Interview process, David Ohrvall's *Crack the Case*, or the Vault Guide to Case Interviews. Reading these texts however is very much like reading a text on how to play basketball – it might give you a basic understanding for how to play the game but until you go out and shoot a few jump shots you won't be much of a player.

It is with that in mind that we have focused this year's guide on actual cases, including questions from real interviews together with the interviewee's solution supplemented by comments and recommendations from the Case Book Editorial Team (who have had the time to consider preferred solutions and frameworks away from the pressure of a live case interview)

Our advice:

- Read at least one preliminary guide (more if you feel necessary)
- Form a small group of 3-4 members with similar expectations and time commitments
- Get together regularly to practice cases choosing cases of as many different types and from as many different sources as possible (all interviewers are different and you need to get used to very different styles of interview)
- Give honest feedback on each others performance (you would rather find out about your errors now rather than in a rejection from a live interview)
- Get used to thinking out loud and structuring your thinking clearly
- Do as many cases as you need to feel comfortable with the process. For some people this will be ten for others it will be sixty. Only you can tell when you are really getting a grip on things.
- Remember to use a good dose of commonsense. Case interviews are about real world situations, you will normally have a better sense for the right answer than you initially give yourself credit for. Your own experience and your first year subjects should equip you well to know what the issues are.

Good luck!!

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## CASE 1: OPTICAL FIBRES (BCG – Round 1)

Our client makes optical fibre (has volume advantages to copper wire) which is mainly used by the telecom, cable and mobile phone industries. It's made in glass strands and rolled onto 25 km spools. Their customers (who are generally major Telecoms networks) would buy a huge quantity, bundle it up, dig a trench and put the bundle of fibres in the ground. They've seen a 50% decline in revenues, and have recently brought in a new CEO. The new CEO would like to know:

- a) Why did revenues drop 50% in one year?
- b) Can he expect an improvement, and if so in what timeframe?
- c) How does our company compare to our competitors?

### Additional Information Provided After Relevant Questions:

- Optical fibre is similar to a commodity, so consumers do not purchase by brand and pricing is in line with competition.
- There has been no significant change in supply from the company's perspective.
- There are no direct substitutes and no regulation changes during this period.
- The "usage" of the optical fibres, for voice, data and internet, has actually doubled each year. (meaning you would think you'd actually need twice as much each year)
- Customers are asking for less.
- No major changes in customer's industry. Even spread across industries for product sales.
- Current usage is 5 T/second, but capacity is 100 T/second.

### Interviewee's Solution:

#### ***Why did revenues drop 50% in one year?***

I determined the problem was that because it is such an effort and expense to dig the trenches to put the fibre bundles in, the customer does it as infrequently as possible which leads to overcapacity.

#### ***Can he expect an improvement? If so when?***

I found out that they buy a year in advance of needing it. Since usage doubled yearly, I worked out that customers would reach capacity in 3.5 years, and therefore we would be impacted for 2.5 years.

#### ***The CEO wants a benchmark slide with how we compare to our competitors: what would be the main items you'd want to see on that slide?***

I asked for Market Share (leader), Cost (lowest cost), People (no advantage), Customer Base (no advantage), Product (no real advantage), and Balance Sheet (highest)

#### ***He asked if we could weather the storm or if we were in trouble.***

I said if we had a pretty healthy financial situation, we could weather the storm for 2.5 years but that it would be worthwhile looking for other ways to diversify since this would be a cyclic problem.

## Commentary/Recommendations:

The key to answering this question is understanding what is actually going on in the industry. To get to the heart of this issue you could ask:

Clearly our client has lost a significant portion of their revenue. To understand why there are three key things I would want to examine.

- First, what has changed about our **Client** – we haven't heard of any major reason why things would be going wrong internally but some of the things that I would want to look at are: Have they lost key sales personnel with good customer relationships? Have they lost their good reputation because of some incident or accident etc? Have there been perceived quality problems? Etc
- Second, I would want to look at our key **Competitors** – Are they offering a better product? (probably not if the industry is commoditized) Are they selling at a lower price? Are they offering better service/delivery times etc? Are there now more competitors? Are our competitors better placed geographically to meet the needs of our customers? Are there some competitors that are doing better than us? If so how do they differ from us? Are they bigger and leveraging their scale, etc?
- Third, I would want to look at the needs of our **Customers** and whether these have changed. – If there is nothing wrong with our product (Client) and our Competitors haven't suddenly got better then the downturn in sales must have something to do with the needs of our Customers. What is their current usage? What is their current capacity? What is their anticipated usage? What are their purchasing patterns relative to capacity? etc

This structure should drive you to identify the key issue. The way the facts are presented it looks like most of the questions on Client and Competitors will yield little return and the richest part of the discussion will focus around Customer needs. This should provide the opportunity to discover all of the facts about the growth in demand and the capacity constraint currently in place. It could also lead to understanding the “lumpy” nature of these capital purchases.

This discussion should also draw out enough information to answer the follow up question on how our client compares to its competitors.

## CASE 2: HOLDING COMPANY (Booz Allen – Round 1)

Client is a holding company or conglomerate. They are a longstanding client of ours. Their revenues are about 1.5B/year. They hold all sorts of companies, mostly around low tech manufacturing, including roughly in the “Oil and Gas” “Automotive” and “other” categories. The holding company doesn’t really have a unified portfolio, but basically places bets on companies it acquires. It is now looking at an auto parts manufacturer, and trying to get an idea of whether it should acquire it.

What kind of things would you want to investigate to find out whether it was a good idea?

### Additional Information Provided After Relevant Questions:

- Financial health is excellent – sitting on a lot of cash. Their portfolio is well diversified. They are not looking for “synergies” necessarily.
- After market products – winches for cars, trucks, ATV’s (revenues of 300M for this product line).
- They have 90% of the market in the US, and the market is expected to have flat growth.
- Second division is drive train mechanism for switching car from 2W drive to 4W drive. It’s a small niche market, mostly luxury cars.

### Interviewee’s Solution:

***What were some options for the Winch products since the market in the US seemed tapped out?***

We talked about markets not really existing in other geographies because it was mainly ATVs and they weren’t as common in other countries. We talked about leveraging the technology and although nothing else could be made with it, they did discover a use as a “tool” for home and shop use (to lift bricks etc).

***Who would the customers be here?***

We talked about small contractors and home use consumers (do it yourself) I asked where they shopped and it turned out that small contractors shopped mainly at wholesalers and big box shops like Home Depot. The trend was moving towards big box. These shops only renew their contracts once a year with manufacturers.

***How would you figure out margins for Home Depot?***

We talked about how margins were based on margin/square foot and that you could ask for a small space, but keep it extremely well stocked at all times and keep our packaging small.

***How would you bring in customers in this entirely new market?***

Advertising through do it yourself channels on TV, magazines, in-store demos. (this apparently didn’t work as well b/c they had to send people to 350 stores to do the demos and for a small company it was too much).

***He then wanted to talk about sales in the Drive Train component area:***

I asked about consumers, and we talked about consumers being both end consumers and auto manufacturers. I asked how often cars were redesigned and he said every 4-5 years, but the trend was going down towards every 3 years.

***What does this tell us?***

The opportunity to get in a redesign is better.

***What does this tell us about the future as this time continues to go down? Is this an advantage?***

I said no, because now you will likely have more competitive pressure from those who saw this as a barrier.

***Lastly, he wanted to know how I would evaluate the overall deal tactically.***

I talked about doing some sort of return on investment calculation to make sure the return was adequate, and that the results we needed in a particular time frame existed.

## **Commentary/Recommendations:**

My concern in this case would be that the interviewee hasn't developed a clear set of criteria for assessing the potential acquisition and used these to drive through the case in a structured fashion.

There are a number of potential approaches but I would probably break it down as follows:

- Before anything else I would ask for some more information on the potential target's business. What products do they sell? What are their revenues and margins? Etc. Then I would analyze whether this makes the acquisition desirable by looking at the following:
  - First I would want to look at whether this is an attractive industry to be getting into generally – The automotive parts industry seems to be generally consistent with the other products in their portfolio so I would assume that they probably have the skills to manage this sort of business, is that correct? I would also want to look at the growth prospects for this industry. Is the automotive parts industry expected to grow faster or slower than other low tech industry companies they may also choose to invest in?
  - Second I would want to examine whether this is the right company within the automotive parts industry to buy – in particular I would want to know to what extent our client could derive value from the acquisition. Will there be any synergies with the other companies that our client owns? Will our client be able to improve profitability by driving costs out of this business? Are there opportunities to increase sales or grow the business faster than existing management is predicting?
  - Finally I would want to consider these potential improvements from a financial perspective. Does the client have a certain NPV or ROE target that it is looking to achieve before it invests?

### CASE 3: ELECTION (Booz Allen – Round 1)

**What do you think is going to happen after the election if Kerry wins and Drug Reimportation from Canada is legalized? I'd like to know what you think the impact will be to Lipitor (Pfizer) and if it's negative, how we can mitigate it.**

#### **Additional Information Provided After Relevant Questions:**

- In the US, the Lipitor market is \$7B.
- Lipitor is manufactured in Puerto Rico.
- Drug reimportation is not currently legal, so is mostly conducted via the internet.

#### **Interviewee's Solution:**

##### ***What is the impact?***

I broke it up into a short term revenue impact and a long term impact on the pharma large margin model. I drew the value chain for the drug model:

Pharmaco, PBM –Pharmacy Benefit Manager (negotiates price)

Pharmacy (sells)

Consumer (buys)

In between you have the Doctor talking to the pharmacy and the health plan ultimately picking up the tab. We established that the healthplans will be pushing for this, and the PBMs will put pressure on the Pharmacos as the gatekeeper to the contracts with health plans.

##### ***What will be the financial effect?***

I asked what the pricing was currently. It is sold for \$70 per month, and we were looking at \$30 per month for the same drug in Canada. That meant the \$7B would be \$4B less. Big effect!

##### ***What can Pfizer to do mitigate?***

I asked if there were drugs that they sold in the US but not in Canada – there are. This is an option – they can bump margins on those products. They can lower costs (they should already be doing this but b/c their margins are so big, it's not a priority). They can also limit the amount of cheaper drug output to match the Canadian market size (ie. since Canada's pop is 10% of US, they can release less and limit the market for the "reimported" drugs) I also suggested pushing for longer contracts with the PBMs so that we could extend past patent life of Lipitor and keep margins, but he asked if the PBMs would have to allow that. They would also know when they were coming off patent, so would likely not sign those types of contracts.

#### **Commentary/Recommendations:**

Booz and some of the industry specialist consulting firms will often ask case questions that are industry specific and require you to demonstrate your industry knowledge.

A Bain, BCG or McKinsey is extremely unlikely to ever expect you to have this level of knowledge about a particular market before the start of a case but they can still be used as reasonable practice cases.





## CASE 4: PERPETUAL MOTION (Bain – Round 1) *NEW PRODUCT/MARKET ENTRY*

I was flying back from my client the other night, and working away on my laptop. Beside me was seated a mad scientist, who engaged me in conversation, and was excited to find out I was a consultant. It seems that he has created a perpetual motion machine. It requires no energy, and keeps on going. He wants to know how to make money with it.

### Additional Information Provided After Relevant Questions:

- No additional information provided

### Interviewee's Solution:

- We started with a general framework on the things I would cover. She pushed me into the category of what it might be used for and we stuck on cars.

*She asked me what the size of the opportunity could be.*

I did a quick market sizing, based on the # of cars in the US, and what % I would guess are traditional fuel vs. alternative fuel (a small %) and then assumed a % of those bought new cars yearly and ended up with a large #. (40B, I think)

*What would convince these people to buy our technology in their cars?*

I talked about value proposition, pricing, awareness, proof of technology.

*How would we convince the traditional fuel customers to buy this?*

\*no response provided

**How would you price this? And how would this change over time?**

I talked about making sure we covered our COGS, and then looked at EVC especially in terms of actual fuel costs and time spent refueling, environmental feel good factor etc. I thought that initially we'd price at a premium and later in the life cycle when it was more mature, I figured we'd potentially be competing on price since other alternatives may creep in.

*What would GM think of this if we were to approach them with it?*

I talked about how they would probably be thinking about the fact that their bread and butter business (traditional fuel) would be threatened, but ultimately they would need to decide whether they thought the competitors would come out with this before them, or whether they would want to be the first to market with it. I also talked about how it may take a while to implement because of operational difficulties, design etc.

*Would you invest with the Mad Scientist, if he asked you to? Why?*

*What is your 30 second elevator speech to Warren Buffet?*

## **Commentary/Recommendations:**

Looking at the potential to use this technology in cars is clearly a great option and the case approach that the interviewee went through looks pretty good.

Starting from a more generic level however I would probably tackle the question as follows:

If we look at the benefits of a perpetual motion machine, it is basically a source of energy. In assessing potential applications of the technology then I would ask the question “Where is there the greatest demand for energy?” or “Where is the best market for a new source of energy?”

This could lead to a reasonable discussion of a number of different options: energy at home, energy in industry, energy in transport. Transport makes sense as a market to drill down on this product because it is clearly such a large source of energy consumption.

From a pricing perspective you may need to think about the price of the technology as against the savings that it generates. You would need to ensure there was still sufficient savings to justify consumers wishing to try a new technology. Equally it would be important that the mad scientist prices the product so that car manufacturers can implement the technology profitably.

30 second speech:

This is a source of limitless energy. As energy demand continues to grow it becomes a more and more precious resource. Who would not want to invest in a limitless source of a precious resource?

## CASE 5: NUTRACORP (McKinsey – Round 1)

Nutracorp is a \$5B nutrition foods company based in France. They have a broad EU presence and have excellent market share in France, Germany, and Spain. They have two lines of products: Premium Infant Products, which includes milk and solid foods for infants up to 2 years old. These are sold through the retail channel. Medical nutrition supplements, which are for sick patients (HIV, Cancer, Diabetes), and are basically a pill or powder that help the patient recover their strength. These are sold through the Direct Sales Channel.

The CEO feels that the growth potential for this company has maxed out in Europe. We'd like to explore the US Market.

### Additional Information Provided After Relevant Questions:

- Since this is a McKinsey structured case, and would be most valuable given in that style, it is written up that way so people get use to the choppiness.

### Interviewee's Solution:

#### *1. What are the key areas you would explore to determine whether this is a good idea?*

I basically talked through my own personal framework for market entry, which included the internal aspects: capabilities, channel/supplier relationships, customers (are they the same), and profitability as well as industry things like: the growth rate and size of the US market, the competitors and regulatory issues.

#### *2. a) Now let's talk about the medical nutritional food supplements for the Diabetic Market. How would you go about sizing this market? Patients take 2 supplements per day, and they cost \$1.50 per supplement. Go ahead and estimate it.*

(Additional information provided if asked: 5% prevalence rate, 90% compliance rate)

300 M in the US, 5% prevalence gives 15 M people with diabetes, 90% of them take these supplements, gives 13.5M, x 1.5 \$/supp x 2 supp/day x 365 days gives about \$14.8B for a market estimate.

#### *b) How could we grow this market?*

Would be driven by raising compliance (small effect); prevalence of diabetes in population; increase in dosage price or amount.

#### *c) How would the competitors in the US react to us entering the market?*

I probably missed some, but I used increase in sales force, differentiating/positioning their product as better, blocking channels, more dollars to advertising.

#### *3) Which channel do you think makes the most sense for them to go after as they enter? Here I was given a chart that looked like the one attached on the next page.\**

Specialty Retailers seemed to be right answer, but I can't recall what I said, and to this day am not sure what the reasons are. He explicitly said this is not a quantitative question.

	Mass Retailers	Specialty Shops	Mom and Pops
US # of stores	10	10	500
Total Revenue	\$10.5B	\$2.1B	\$1.5B
% of infant nutrition market	40%	40%	20%

## Interviewee's Solution (cont.):

**4) Switching gears again to the medical nutrition products – let's talk about Cancer patients. How many cancer patients would we need to attract to our product to break even? We have 50 Sales Reps \$10M budget for PR, our direct costs are 80% and assume they take 2 doses per day for 5 months out of a year.**

Additional information provided if requested:

- Sales reps salaries are \$100K / year, plus \$100K in benefits. The price of a dose is \$1.

I did a breakeven that looked like:

$10M + (200K * 50 \text{ reps}) = (2 \text{ doses} * 5 \text{ months} * 30 \text{ days} * 20\% * \$1) * \# \text{ of pts}$  and ended up with # of pts = 330K

**5) The CEO would like your recommendation of your suggestions, based on what you learned today as well as any other ideas you have to add.**

\*no response provided

## Commentary/Recommendations:

Different interviewers, not just different firms, can have very different styles of interviewing and much of this comes down to mood or personality so it is definitely worthwhile making sure you are prepared for interviews that are more like an interrogation as well as interviews where you get to take the lead. Remember also that, although they may be firing questions at you, you still need to be thinking about how you can demonstrate an understanding of the complete set of issues. Don't just answer the question, but also think about how you can set out a structure around your answer.

The interviewee's response to the first question is a good example of this. They have laid out a set of issues that they would want to explore in determining whether this is a good market to enter. There is no one structure for this question and a number of different approaches would be equally acceptable. You may want to do a Porter's Five forces analysis of the US market and overlay a comparison of other international markets that may be more attractive – for example, are their higher prevalence rates in Asia? Or a greater propensity to pay?

The candidate appeared to have difficulties with question number 3. This question could potentially be approached by asking two questions:

- Firstly I would want to determine where we can get the biggest bang for our buck – that is, which sales channel gets us the best access to the market per client. The answer appears to be overwhelmingly the Mass Retailers where 10 chains give us access to a \$10.5B market. (Note there may be an inconsistency here as both specialty retailers and mass retailers are listed as 40% but with very different sales numbers).
- Next I would want to consider whether there are any factors limiting or complicating access to my preferred channel – On its face the mass retail channel looks like the best because it has a very high sales number for a very small number of clients (10 chains). We would need to know however what the restrictions on accessing this channel are. Mass retailers may charge a premium for shelf space making this an extremely expensive option. Alternatively mass retailers may carry only a small number of well known brands making it almost impossible for new entrants to gain access until they have established a reputation in the specialty retailers that carry more brands etc.

A good answer would involve at least identifying these potential issues

## CASE 6: PARTY GOODS (BCG – Round 1)

Our client is a manufacturer of party goods. They have two product portfolios: everyday and seasonal. Everyday products pertain to occasions that happen throughout the year such as birthdays and anniversaries. Seasonal goods are for occasions such as the 4<sup>th</sup> of July or Thanksgiving. They have a design facility that comes out with different party themes and takes care of licensing for goods using characters like Mickey Mouse or Shrek. They also have a manufacturing and distribution facility and a sales force that provides support to retailers.

One of their large and new customers came to management complaining that their prices are too high. They claimed that this is due to high distribution costs. After some analysis, the client found this to be true. We have been asked to figure out how we can decrease distribution costs.

### Additional Information Provided (spreadsheet):

Freight Calculation						
UPS Zone	Number of Stores	Price per Box	Everyday Months		Seasonal and Everyday Months	
			Boxes Shipped Per Month	Total Cost Per Month	Boxes Shipped Per Month	Total Cost Per Month
1	1	3	200	600	800	2400
2	1	4	200	800	800	3200
3	1	5	200	1000	800	4000
4	1	6	200	1200	800	4800
5	1	7	200	1400	800	5600
Monthly Total				5000		20000
No. of Months				8		4
Annual Total				40000		80000
<b>Supplier Alternatives:</b>						
Truckload - fill empty truck with goods up to 1000 boxes per truck, costs \$1500 per truck, makes only one stop						
Less than Truckload - fill part of truck with goods up to 500 boxes per truck, costs \$1000 per truck, makes only one stop						
<b>Sample Computation:</b>						
For Everyday Months:						
Use UPS for Zones 1 and 2 where Cost per month less than \$1000						1400
Use less than truckload for Zones 3, 4, 5						3000
Total Monthly Cost						4400
Cost Savings per Month						600
For Everyday and Seasonal Months:						
Use Truckload for all Zones since truckload cost of \$1500 is less than UPS cost per month						7500
Cost Savings per Month						12500
Total Annual Cost Savings						54800

### Interviewee's Solution:

**Interviewee:** I first need to understand the distribution process and cost breakdown. Then, I want to benchmark against competitors and find out what they are doing in terms of distribution. Then, based on the info, I want to figure out what the best alternatives are for our client.

**Interviewer:** That's a good framework. Let's start with costs. What do you think are the costs related to distribution?

**Interviewee:** Labor, Trucks, Sorting machines, OH, freight etc. I went through the entire value chain and identified costs.

## Interviewee's Solution (cont.):

**Interviewer:** *Here's a breakdown of freight costs. They use UPS to distribute goods. (Explains table attached) What do you think?*

**Interviewee:** I'd like to get more information about other suppliers, the geographic concentration of our customers and seasonal volume.

**Interviewer:** *Other competitors use a mix of UPS and trucks to distribute goods. (See spreadsheet for more info) How do you think we can save during our everyday months? How about during the seasonal/everyday months?*

**Interviewee:** (computes cost difference and savings)

**Interviewer:** *You're meeting with the CEO tomorrow. How will you summarize your findings?*

**Interviewer:** There's great opportunity to save using a combination of UPS and truckload services. From our initial computations we can save as much as \$54,800 annually. (see computation)

## Commentary/Recommendations:

This case is relatively straightforward and, if you can do the math, then the case should practically solve itself.

The key to being successful is to ensure that you ask the right questions upfront to obtain all of the necessary information to calculate the cost savings and that you then logically and thoroughly drive through those calculations.

The candidate has done a pretty good job of that here, first asking about the distribution process and about the alternatives used by competitors to elicit information before starting the calculations.

If you are good with numbers then these cases can be a little boring as you are never called on to do anything really creative and you will probably never feel out of your depth. That is not necessarily a bad thing however as there is probably very little risk of you going too far wrong.

If you are not good at math, then this will be a good practice question. It is essential that you get to the point where you are proficient and comfortable in analyzing data and running a series of computations to calculate cost savings or profit improvements. These questions are not uncommon.

## CASE 7: CPG – RAZORS & BLADES (BCG – Round 1) MARKET SEGMENTATION

Our client is a global CPG company, with multiple lines of business (toothpaste, batteries, hair care, etc). They are the global market leader in every market they play in, and have come to us specifically asking how they can grow their share in the *razors and blades* market. What do you tell them?

### Additional Information Provided After Relevant Questions:

- Market is divided by wet-shaving and dry-hair removal (e.g. waxing, electric, etc).
- Wet shaving is divided into cartridge-systems and disposables in shaving. Client has 70% of the men's shaving market; 35% of the women's cartridge-system market.

### Interviewee's Solution:

Thru some basic math on sheets she gave me but then kept; I determined that Client has 50 of every 100 women who wet-shave; but only 35/100 of all women who *remove hair*. Certain countries had different attitudes; people along coasts were more likely to remove hair than in middle of countries. 4 reasons that women weren't wet-shaving:

- Fear of being cut
- Wet shaving considered a chore
- Masculine – shaving not seen as feminine
- Shaving considered "lower class"

BCG took these reasons & implemented various marketing programs to change consumer perception & improve % of total market that client had.

### Commentary/Recommendations:

We are not given a lot of information from the actual interviewee so I would recommend using the following data to flesh out the detail of the case as needed:

Percentage of men who use hair removal products regularly: 95%

Percentage of men who shave as their primary form of hair removal: 90%

Client's share of men's shaving market: 70% (70% of disposables and 70% of cartridges)

Percentage of women who use hair removal products regularly: 90%

Percentage of women who shave as their primary form of hair removal: 70%

Client's share of women's shaving market: 50% (35% of cartridges and 65% of disposables)

Disposable systems cost on average half the amount per shave as cartridge systems.

Cartridge shaving costs on average half the amount per hair removal as dry-hair removal.

Case recipients should then have to ask relevant questions to extract this data. An analysis could then determine that there is little room for growth in the men's market and the client would need to focus on growing its share in the women's market.

Potential strategies to explore would include:

- Grow the total women's market – encourage more women to shave
- Grow market share (especially cartridge share) – encourage existing customers to migrate from cheaper disposables to more expensive cartridge systems
- Increase price – introduce marketing aimed at shifting the image of shaving up-market to enable the client to sell at a higher price. i.e. address the price discrepancy between wet & dry.



## CASE 8: SUPERMARKET (BCG – Round 1)

**Our client is a supermarket in the UK. They've been the market leader for 50+ years; however in the past 3 years they have seen growth stall, and an upstart take their market share. They are now at 30% market share & flat growth. What's wrong? How do you help them fix the problem?**

### Additional Information Provided After Relevant Questions:

- Costs: COGS = 60%; Maintenance = 9-10%; Labor = 15%; Marketing / Distribution = 2%
- Competitor growing @ 6%/year
- Simplified visual of a store aisle with 30 ft. for Bread, 10 ft. for Hair Gel, 20 ft. for frozen meals & 20 ft. for Canned Tomatoes, with unit volumes, revenue & profits

### Interviewee's Solution:

Thru simple calculations, if you shifted 10 ft. of shelf-space from Bread to higher-margin Hair Gel, you might have higher profits of \$30/week/aisle.

\*\$50 average basket size = \$1500 \* 20 aisles/store = 30,000; \* 500 stores in UK = 15,000,000 \* P/E ratio of 10 = 150 million extra profit; and we're talking real money here, from a simple aisle-optimization!

#### *Interviewee Notes:*

Demand elasticity was a significant factor here. I nailed that; but failed to calculate some #s properly.

#### *Actual Outcome of the Case:*

Upstart competitor had figured out optimal shelf-space issue by optimizing:

1. Elasticity of sales to shelf-space
2. Consumers changing demands towards prepared foods
3. Competitive offerings.

*\*Client supermarket had to figure out the same & put into their own cost/reality model to make this work.*

### Commentary/Recommendations:

There are a number of potential issues that the interviewer could be looking for you to analyze here and this is a situation where it is important that you have a good structure to systematically work through the options.

I would be concerned that leaping in and analyzing the margins on shelf space doesn't necessarily cover off all the issues – it also may not explain why one company is growing and the other is not.

I would approach this question as follows:

- First, I would like to understand the differences between our client's offering and that of our competitors to determine the drivers of our competitors' growth.
- Then, once we understand the factors driving their growth I would like to explore the ways in which our client could modify its strategy to increase its growth rate.

- Looking firstly at the differences between our client and our competitors, I would like to know the following:
  - What is the relative market share of each of our competitor's and how has this been growing?
  - What is the difference between the products and services we offer and those offered by our competitors?
    - Do they offer different categories of products?
    - In which categories have their sales been growing?
  - In what offer ways are our competitors differentiated from us?
    - Have they been opening more stores?
    - Are their stores in areas that have a faster growing population?
    - Do they target a demographic segment that has been growing?
    - Are they growing sales through alternate channels (e.g. online)

Hopefully from asking these questions you would get some information as to the higher margins that competitors are earning by stocking different product ranges and an analysis of the profitability improvements resulting from this change could follow.

If you are giving this case as an interviewer I recommend that you think through prepared answers to the questions set out above to give the case more life. Exactly what answers you give doesn't matter provided they drive the candidate to the conclusion that margin by product category is an important difference.

**Client is a chewing gum manufacturer. Analysts' reports are giving our client's stock poor ratings. We want to figure out what's going on.**

### **Additional Information Provided After Relevant Questions:**

- Our client makes all varieties of gum – sugar, sugar-free, whitening, etc.
- Revenues have remained constant, though profit has decreased.

### **Interviewee's Solution:**

I first looked deeper in profit decreasing issue. It turns out that lower profit margin gum has been selling more while higher profit margin gum has been selling less, which explains the profit loss.

Gum flavor is the most significant cost factor (the cost structure was broken down into gum base, flavors, chemicals, and sugar for me). The issue was that a flavor can only be used for gum, so even though the gum manufacturers were much smaller than the flavor producers, the gum manufactures had the "power" once the flavor producer created the flavor. The flavor had to be sold or it would go bad.

Our client could create an exclusivity deal with a flavor producer and agree to buy the flavor producer's entire flavor for a reduced price, benefiting both parties in the agreement.

### **Commentary/Recommendations:**

By far one of the most common types of case interview questions you will receive is one requiring you to analyze changes in profitability. Once you have done a few of these you will recognize that they can all be approached in a fairly similar fashion.

A similar approach can be applied to most profitability questions. The simple structure is:

- Identify as a profitability issue
- Analyze revenue issues
- Analyze cost issues
- Identify cause of profitability decline
- Outline options to address cause of decline
- Select a preferred option
- Explore other ways that profitability might be improved generally (if any)

Applying that approach to the specifics of this case I would probably answer it as follows:

"I am assuming that if analysts are giving our stocks poor ratings that is either because profitability has been declining or because profitability is forecast to decline in the future, is that correct?" (expect interviewer to say yes, profitability has been declining)

"If that is the case then, in coming up with a recommendation for the client, I would want to explore the potential causes of that decline. Given, that profitability is revenue minus costs; I'd like to start by looking at what has been happening on the revenue side to see if this is the cause of declining

profitability and then move to costs, examining each of the different cost components for our client to see where there have been significant increases.” (expect interviewer to say that sounds OK)

“So do we have any information as to what has been happening on the revenue side” (expect this to get shut down as an avenue when they say that revenue is constant)

“Well if revenues are constant but profits are declining then that must mean that costs have been increasing. Do we have any information on what elements of cost have been going up” (your interviewer may ask you to outline what you think the major cost components would be or they may give this to you. Eventually you will get to the fact that gum flavor is the most significant component and that flavoring costs have been going up because your client has been selling more of the flavored gum (which has higher cost and lower margin)

“OK, having identified that the most significant cause of the cost increase is that we are now selling more of the flavored gum, and that flavoring carries a significant cost, I would like to turn to looking at how we can improve our clients profitability by reducing this cost” (if you have missed a major cost bucket at this point the interviewer will probably correct you by asking if there is anything else you think you should look at first)

“In looking at potential cost savings I would like to explore the following alternatives:

- Can we use less flavoring? Would sales actually be affected if we simply put less of the flavoring component into our mix?
- Are there cheaper sources of flavoring? Could we save money by using a different supplier? What are the alternatives?
- Could we negotiate a better deal from our existing supplier? Could we get better terms by agreeing to exclusivity arrangements? Or perhaps consolidating orders to a smaller number of larger batches?

Depending on the interviewer’s responses and the information available you should be able to drive to a conclusion and recommendation.

In reaching this recommendation it may be worth noting that we could also explore marketing non-flavored gum more heavily to try to shift consumer preferences back to gum where we earn a higher margin? Or perhaps we could look at restoring our margin on flavored gum by raising the price of flavored gum?” (These alternatives are unlikely to be realistic if the market is highly competitive – as we would expect, but they may be worth mentioning for completeness)

**The client is a US market-leading alcohol manufacturer. They are considering restructuring their distribution strategy and want to know if they should have one or 50 distribution centers.**

### **Additional Information Provided After Relevant Questions:**

- Distribution centers lie in between the bottling plants (all over the US) and the customers.
- Customers are the spirits retailers.

### **Interviewee's Solution:**

I drew a list of advantages of 1 versus 50 distribution centers:

**Advantages of 1:** cost of location/real estate; cost of labor in warehouse; less inventory needed (less deviation of demand); better management/infrastructure efficiencies; costs of breakage lower (less moving, less “bumps,” fewer breakage opportunities).

**Advantage of 50:** reduced risk (fire in one distribution center and you have serious problems if that's the only center); less time involved in order process.

I then drew a map of the United States and determined transportation costs would be less.

***Twist added:** Given to me that the total cost of 50 distribution centers would be \$600MM while total cost of 1 distribution center would be \$500MM, but CFO still decided to go with 50 distribution centers. I was asked why I think he went with that decision.*

Conversation included hedging risk is a huge factor not easily quantifiable, but that customer service (proximity to customers makes response faster) would result in more loyal customers and result in higher acquisition and retention rates of customers.

### **Commentary/Recommendations:**

I would analyze this case using the following framework:

Our client should adopt whichever distribution network is the most profitable unless there are compelling risk factors or long term strategic issues that demand otherwise. So in making the decision there are three primary areas we need to explore:

- Costs – what are the incremental costs associated with using 50 distribution centers instead of one central warehouse.
  - What are the transitional costs or one-time set up costs associated with moving away from the existing distribution network?
  - What are the real estate/plant costs associated with running 50 warehouses? Presumably this is significantly more than having one enormous warehouse.
  - What are the transportation costs associated with running 50 separate warehouses? Presumably running 50 warehouses creates some savings because each of the routes is far shorter than if we only have one national warehouse but there may be some interesting issues if running 50 warehouses means we are not operating at scale.

- What are the personnel costs associated with 50 warehouses? Presumably this would involve significantly more staff and we would have a duplication of functions that could be avoided by operating one warehouse?
- What are the capacity/stock keeping costs? Pooling resources normally enables smoothing of demand fluctuations. We anticipate that the total inventory held at all 50 warehouses would be higher than if fluctuations could be smoothed by using only one warehouse.
- Revenue – what is the net revenue impact from expanding the number of distribution centers?
  - Will we be better able to service our customers' needs by having 50 distribution centers and therefore be able to increase demand and sales revenue?
  - Will having a “local” presence enhance the image or reputation of the firm and help increase sales.
  - Will we have a better understanding of market conditions by having employees on the ground in 50 locations and therefore operate in a more responsive fashion helping to increase sales.
- Strategic/Risk Factors – are there factors that cannot easily be quantified in the revenue and cost analysis that make one structure more preferable.
  - What is our exposure if there is a fire in our one warehouse?
  - What is our exposure if there is a local transport strike that affects our one warehouse? Similarly what if there is an adverse weather event e.g. snowstorm that impacts our one distribution center?
  - From a strategic perspective are we better off having 50 centers so that we can more rapidly respond and grow in one area if necessary?
  - Do we need 50 centers because this is what competitors do and this is what our customers will expect/demand?
  - Do we need 50 centers from an internal cost monitoring perspective? e.g. the 50 centers can be benchmarked against each other. Best practices rolled out across the whole system. Inefficiency may be less visible if there is only one center.

**Estimate the number of gas stations in the city of Chicago.**

- 1) Think about all the ways you would go about estimating this and describe them**
- 2) Choose one method and do the estimate**
- 3) Second part of case he asked me to think about if a friend of mine wanted to open a gas station in Chicago, what things would I suggest my friend consider?**

### **Additional Information Provided After Relevant Questions:**

- None provided

### **Interviewee's Solution:**

Estimate was mostly done by me with little input by my interviewer. I used Philadelphia as a benchmark and tried to figure the number of gas stations per block and then estimated the number of blocks. I know a lot of people estimated the number of gallons of gas a gas station would hold, the number of gallons of gas a car/truck can hold, the number of cars/trucks in and out of the city considering weekday commuting and delivering and weekend travel and then estimated how many gas stations would be required to meet the needs of the cars/trucks/etc.

For the second part of the interview, I mentioned that my friend should take into consideration the volume of traffic in the area, the number of gas stations in the area (brand names vs. his no-name gas station), residential vs. commercial area – will he sell diesel fuel for trucks?, cross-selling by having a market as well, etc.

### **Commentary/Recommendations:**

There are a number of ways to go about this estimation and to a certain degree they may be governed by the amount and type of information that the interviewer is prepared to make available.

A good recommendation for any estimation question however is to choose divisions that may be easily estimated or externally verified.

The approaches suggested above are both valid. An alternative however would be as follows:

- Estimate the number of people in Chicago and estimate the number of people per car
- Gives the number of cars in Chicago
- Estimate the total gallons of gas used per car per year
- Gives the total number of gallons of gas used in Chicago.
- If you can get an estimate of the average gallons sold by a service station in a year use this to get estimated number of service stations in Chicago

(Alternatively if you can't get the number of gallons sold per year you could estimate as follows:

- What is the average number of customers per day
- What is the average volume of one sale (average tank size)  
(Gives an estimate of the average sales per store.)

The second part of the case opens a general discussion of the attractiveness of an industry or a business.

A good response should discuss the attractiveness of the industry:

- What are the margins (low)
- What is the intensity of competition (high – this is a commoditized product)
- What is the power of supplier (high – they are massive multinational oil companies)
- What is the power of buyers (high – people can easily drive to a different petrol station)
- Substitutes – not many (walking or riding) – but this isn't really a significant consideration

Overall assessment should be that this is a difficult industry and therefore should only go into it if there is a good individual opportunity. In assessing the attractiveness of an individual opportunity you could look at:

- Local competition – is there an area unserved? Is this a prime location?
- Other sources of revenue – will the site enable large grocery/convenience store sales with higher margins?
- What are the growth prospects? – Is the population increasing? Will traffic flow change?



**Your client is interested in telematics (wireless service to vehicles). Should your client enter this new market? If so, how?**

### **Additional Information Provided After Relevant Questions:**

- They are a wireless carrier (like AT&T, Verizon, etc...)
- They have their own stores and also distribute through retailers like Best Buy and Circuit City.

### **Interviewee's Solution:**

*What is the client's core business?*

They are a wireless carrier (like AT&T, Verizon, etc...)

*Do they currently have distribution channels set up with retailers?*

Yes.

**To determine the potential for market entry, I then needed to do the following:**

- **Define customer segments:**
  - Individual Customers: Commuters, Local, Recreational
  - Corporate Customers: Sales force, Fleet vehicles (trucks, rental cars, etc...), Government (police, municipal, etc...)
- **Define channels:**
  - Auto Manufacturers, Retailers
- **Size the market for each**
- **List risks and rewards of each**

I recommended the retail channel (even though it has not become a big channel) because the market penetration through auto manufacturers would be small (~1% of drivers per year for first 4 years of sales) and time consuming (2-3 years from product design to release).

### **Commentary/Recommendations:**

In making a recommendation to the client I would want to answer three main questions:

- First, is this an attractive industry to enter
  - What is the market size? What are the growth prospects?
  - What are the competitive dynamics?
- Second, is this industry appropriate for our client?
  - What are their core competencies?
  - Can they exploit their existing resources and capabilities?
- Finally, can they enter the industry profitably?
  - What will it cost to enter the market and how quickly can they grow their share?
  - What will it cost to acquire and retain customers?
  - What revenues will they earn from each customer?

## CASE 13: MANUFACTURING (BCG – Round 2)

**Your client is a private company that manufactures switches for machine tools. The switches serve one purpose: to stop the machine instantly. Failure to do so may result in damage to the machine and/or the machine operator. Given the following constraints, how can the company make more money?**

- No changes can be made to the product line
- You only have your current customers
- No international expansion

### **Additional Information Provided After Relevant Questions:**

- Our switches (and our competitors' switches) have never failed.
- Our customers have dealt exclusively with us for several years, although there is no exclusivity contract.
- The sales force has strong relationships with the customers, so they just take the orders each year.
- Cost of machine tools that our customer makes: \$60,000.

Company	Price/switch	Mkt Share (\$1B market)
Our Company	100	30%
Competitor 1	120	60%
Competitor 2	80	10%

### **Interviewee's Solution:**

I asked for revenue information for us and our competitors (provided above). When I asked about perceived quality of our product, I was told that it is comparable to that of both our competitors.

I made an observation that customers are not very price sensitive and suggested raising the price of our product 20 – 25%. My interviewer asked why that number and not a bigger number, so I defended my recommendation.

*He then changed gears and asked me which company I would acquire if I could acquire one of my competitors.*

I mentioned anti-trust issues associated with acquiring Competitor 1. Then I did the math and determined that it would be advantageous to acquire Competitor 2 (C2) and raise the price of our switches to \$125. This would provide increased revenue and would price us only 4% over our only other competitor. Other aspects of acquiring Competitor 2 include the risk of turning off C2's customers by a price increase, but they are unlikely to leave, since there is not much difference in price between \$125 (us & C2) and \$120 (C1).

### **Commentary/Recommendations:**

This is a common type of question that can be simply and effectively answered by using a standard framework. I would approach it as follows:

If we are looking at increasing revenue then obviously we need to look at how we could increase either the quantity sold or the price at which we sell our product.

Looking first at our quantity, it appears there are a number of restrictions. You have mentioned that we have only our current customers and that we cannot expand internationally. Other things we would need to know are:

- Do our current customers take all their product exclusively from us or do they take some product from our competitors also? If they also take product from our competitors then we may be able to increase our sales quantity by some sort of exclusivity arrangement – capturing all of the demand from our existing customers.
- I would also want to know whether there are other machines at our existing customers' factories that are suitable for our product but where it has not been installed. If so then convincing customers to install our product in these other machines would be another way to increase sales and we may need to look at changing or adapting our sales force and marketing strategy.

Next, I would look at ways that we can increase price. We are told that we can't change the product so we will need to determine if we can persuade our customers to pay more for the existing product. Do we have any information on the prices and volumes sold by our competitors? (In response to this you would expect to get the information provided in the case above)

We can see from our competitors' sales data that the competitor with the highest price also has the highest market share. This suggests that we may be able to increase our price without adversely affecting our sales (in fact it may even increase our sales if price is seen by customers as a proxy for quality)

Before recommending a price increase however I would want to understand if there are any other factors justifying our competitor's higher price and high market share. Do they have a bigger sales force? Do they sell through different channels? Are they entrenched as the industry leader/standard? Do they have better after sales service? Do we target a segment that is more price sensitive than our competitor? [The answer to these questions may affect whether recommending a price increase is appropriate. Given the way the case has been set up, it seems like the focus is going to be on price elasticity so presumably most of these avenues would be closed down by the interviewer, but asking these questions would help to complete the case answer in a MECE fashion.]

**Your client is a cell phone carrier in Western Europe in the late 1990s when growth is exploding. The market as a whole is approximately 60% penetrated. Your client is concerned because acquisitions costs (the cost to acquire a new customer) have been increasing at a 20% CAGR over the past few years.**

**Your client wants to know why costs are increasing and what they should do.**

### **Additional Information Provided After Relevant Questions:**

- Acquisition costs largely fall into two categories:
  1. Handset subsidies (phones are given to clients for free)
  2. Commissions to independent stores who sell the phones
- Total annual acquisition costs are 200 euros per customer.

### **Interviewee's Solution:**

*(The interviewer preferred not to have a framework set up and just have a dialogue).*

Q: First I'd like to know more about the handset subsidies. Have costs been constant over time? Have we always given them out for free? How much of the total spent do they account for?

**A: Yes, we have always given them out. Total handset spending is 100 euros but they only account for 5% of the total CAGR. What does that make the growth in commissions?**

My answer: 35%

Q: Thinking about distribution, do we have any other outlets to sell our products. Are the stores equally distributed from a geographic standpoint?

**A: No**

Q: How does the commission structure work? Are there different % paid based on different plans? What has been the distribution of these plans now and in the past?

**A: Let's assume that we have only one plan for simplicity all of the commissions are paid against it. These plans represent the entire increase in commissions – there are no other marketing expenses etc. Additionally, prices of the plan have been pretty consistent over time, so that is not accounting for the increase in total commissions.**

Q: I'm assuming that since commissions are increasing, it is becoming increasingly difficult to sell to customers. As such, I'd like to explore our competitors and their plans? Have more entered the market? Are their plans unique when compared to ours? How is their distribution channel? How are their commissions when compared to ours?

**A: The competitors have been consistent over time although competition is increasing since everyone now wants a phone. Market share is consistent across the players and their plans are non-differentiated. They have similar distribution channels (note – this was the interviewer's response word for word. In reality, I later discovered they are the same distribution channels down to the store). Commissions have been increasing at a similar rate to what we have seen.**

Q: Ok, let's talk about customers. Have we seen any differences in where they go to buy cell phones? Is there a preference in Europe for certain types of plans or phones and how do we compete from that perspective?

**A: Customers are buying cell phones through the same channels as always and our plans and phones are competitive?**

## Interviewee's Solution (cont.):

Q: Well if nothing else in the landscape has changed, it must just be that we have to give competitive commissions to our sales people to stay in business? Tell me, do they sell phones of competitors as well?

A: *Yes, they do. That's why we have to incentivize them so well. Now what do you think we could do about it.*

Well, I think there are a number of things:

- We could somehow signal the market that we are not going to continue to give escalating commissions through a PR program.
- We could try to differentiate our product offerings both in terms of the plan and the phones we offer.
- We could spend more on marketing (and hopefully, less on commission) in the hopes of helping the consumer determine what type of phone they want before entering the store.
- We could try to establish different distribution chains to reduce total costs; i.e. the Internet.

## Commentary/Recommendations:

A good way to structure this case is as follows:

- First I would want to understand the primary drivers of the increase in acquisition costs. To do this I would like to find information on:
  - each of the components that make up the total acquisition cost elements that make up acquisition costs and
  - how much each of those elements has been growing
- Once we have identified the source of growth in acquisition costs I would then want to explore the options available to reduce those costs.
  - In doing this I would want to focus on the aspects of costs that are the most significant and that have been growing the fastest
  - I would also want to benchmark our costs against those of our competitors to determine whether they use strategies that are more cost effective.

## CASE 15: EXPLOSIVES (BCG – Round 2)

**Our client is a large manufacturer of explosive products. Recently, their largest customer, a mining company, has called for a competitive bid for their next 3 year contract. Previously, we have been their preferred provider and have run uncontested. Our client wants to know how we should price the bid.**

### **Additional Information Provided After Relevant Questions:**

- Our client provides three products:
  1. Ammonium nitrate (AN) which is used to create the explosion
  2. Ignition systems (IS) used to start the explosion
  3. Slot services which are contracting services designed to help clients understand where to place explosives.
- When asked why the bid was put out for RFP, the answer was that we are not sure but suspect it could be internal cost pressures.

### **Interviewee's Solution:**

Q: I'd like to take a look at this by first analyzing the external factors currently impacting our client (what the needs of the mining firm have been in the past and are now, what the competitive landscape looks like, and how the industry's product mix breaks down). Then I'd like to do an internal analysis of the various options available to our client focusing largely on drivers of profitability. To start, what do we know about this mining firm and their current contract?

***A: The mining firm owns two mines, one in Kentucky and one in Wyoming. Previously, 80% of the revenue of their contract has been derived from AN and 20% from IS. They don't purchase any slot services as they have their own people?***

Q: You mentioned the contract from a revenue perspective but do we know what they purchased from a volume perspective and at what cost?

***A: They purchased 40,000 tons of AN at \$1000 per ton and IS at \$250 per ton of AN (there is a predetermined ratio of how much IS you need per ton of AN).***

Q: Great. Next I'd like to understand a little bit more about the competitive landscape. Do we know anything about new competitors that have entered the market and how we compare to those firms?

***A: Nothing has changed from a competitive standpoint as we have the same competitors as always. We are generally seen as the market and price leader.***

Q: From a product standpoint, how do we compare to those competitors?

***A: AN is pretty much a commodity although we do charge about a \$10 premium over our competitors. From an IS standpoint, we are the clear leader and have a quality product for which people will pay for.***

Q: Do all competitors provide both products?

***A: Our largest competitor does although they have bad ignition systems. There are other competitors for ignition system abroad that are closer in quality to ours and AN can be purchased from many places as it is a commodity.***

### **Interviewee's Solution (cont.):**

Q: Great. Now that I know more about the industry landscape, I'd like to look at the current and future profitability of this contract. We know that the client purchased 40,000 tons of AN at \$1,000 per ton so that is \$40 million in revenue. They also purchased IS at \$250 per ton of AN so that is \$10 million in revenue for a total of \$50 million. Do we know the margins on these products?

**A: Yes, AN gets a 20% margin and IS get an 80% margin.**

Q: That means that we are making \$8 million of profit off of each component of the contract currently. What are the specifics of the future contract?

**A: It will be for the same components in the same volumes as this contract.**

Q: Since, the contract is the same as last time, we need to think about who we are really competing against to determine price. In this case, it seems that no competitor offers as robust an offering as we do. However, the customer still has the option to purchase the products separately on their own. Do we know how much they could save by doing so? Also, what would it cost them in internal costs to manage the process?

**A: They could get the next closest IS system to ours for \$100 per ton cheaper by purchasing overseas. Additionally, let's assume that they need 1 person @\$100k per year to manage the process**

Q: That means they will save \$4 million per year on their own although they probably won't want to do it.

**A: If you think they don't want to do it, should we charge them more for our integrated service.**

Q: I wouldn't advertise that to the customer even if we do decide to do it because it is poor positioning. Also, when looking at the number, we could make \$16 million in profit so by looking at the scope, I'm not sure another \$100k matters.

**A: Agreed. So what should we do?**

Q: Well, since AN is a commodity and since we make a much smaller margin on it, I'm not attracted to trying to reduce price there. However, as we make a much higher margin on IS, and it would be much harder for them to get these products from abroad, that may be a good place to reduce price if that is the mine's number 1 concern.

**A: That makes sense. So what should we price it at?**

Q: Working backwards, I'm not sure that we necessary need to give an entire \$4 million price concession to our client as they do know that we have a premium product. Instead, let's reduce our price by half that so that the maximum they will pay is \$8 million for IS systems. That makes the price \$200 per ton. Does that seem reasonable?

**A: It does.**

## CASE 16: PHARMACEUTICALS (BCG – Round 2)

Two large branded pharmaceutical companies are merging. The head of development (pre-clinical and clinical) has a declining budget and wants to re-think his portfolio. He currently uses a spreadsheet to evaluate his portfolio which contains columns for the chemical name, estimated launch date, and lead indication. Essentially, your client wants you to add a column for the current market value of the partially developed drug so that he can evaluate which ones to push through development. How do you do it?

### Additional Information Provided After Relevant Questions:

- There are 60 drugs in development with 1/3 in clinical trials 2/3 in pre-clinical development.
- It takes 10 years to bring a drug from pre-clinical to launch and there is large attrition along the way.
- Assume that this is a U.S. launch only, that there is no bundling, and that each compound represents a novel therapy.

### Interviewee's Solution:

Q: To determine the market value of the drug, I would want to do an NPV calculation and so the two areas I would primarily like to explore is revenue and costs. I'd like to begin with the revenue side of the equation first and begin discussing the factors that influence volume. Should I begin with a particular drug or should we talk in generalities?

A: *I'd like to focus on the thought process you would use to do the calculation and so I am not concerned about a specific drug. Generalities are fine.*

Q: Ok. The first thing I would want to do is estimate the size of the market and consequently our market share at the time of launch. To do that I'd like to know the # of people who suffer from a particular ailment.

A: *Where would you find that?*

Q: You can go to all kinds of different sources like the American Cancer Society or the American Lung Association who keep track of this information. In particular, I'd take the growth rate for a given disease category over the past few years and use that to extrapolate what it would be when the drug launches to get the total number of people with the illness. Next, I'd want to find out the number of people who are generally treated for the disease.

A: *And where would you find that information?*

Q: Similar sources although I suspect I'd might also be able to look at analyst reports depending on the type of therapy being evaluated.

A: *Good*

Q: Next, I want to discount that number by the number of people who seek treatment using a drug vs. another procedure like surgery to get a true sense of the market. Then I would want to take into account the competitive environment.

A: *What in particular would you look for?*

Q: Well, I would first want to understand what competitors are on the market now and where we anticipate them being from a product lifecycle perspective when we expect to launch our therapy. In particular, I'd want to drill down on comparisons between mechanism of action, indications, and dosing requirements.

A: *What else should you look for?*



## **Interviewee's Solution (cont.):**

Q: Knowing that new drugs are always being developed, I'd want to evaluate those that are currently in the pipeline of our competitors and what we anticipate the impact of them being on the market at the time of launch. You can find this information in publications like R&D directions as well as other trade publications.

A: *Sounds good. Besides volume what else should you be thinking about?*

Q: Pricing. Pricing for drugs has a lot to do with demonstrated efficacy as well as whether you are the first drug in a given class to be launched. Other things that you might want to consider include convenience (dosing requirements) and other drugs used to treat the therapy even if the mechanism of action differs.

A: *Great. What about costs?*

Q: From a cost perspective, I'd want to consider both fixed and variable costs. This would include any new facilities that need to be built to manufacture the drug as well as the R&D and sales and marketing launch costs associated with the product.

A: *And what would you do with this information?*

Q: I'd determine the free cash flow number for each year and then discount that back to the current period. Additionally, since the process has high attrition, I'd also want to adjust for the probability of success at each phase.

A: *Great. Let's say you've done all this and it turns out that 1/2 the compounds in pre-clinical development have no value. How are you going to plug the hole from a revenue perspective?*

Q: Any time you are considering product development there are two options – make or buy. Under the make category, we could try to expedite the development of existing pipeline drugs to address the gap but this is fairly unlikely to prove successful given the highly complex development process.

A: *What else could address the revenue considerations if you can't expedite development?*

Q: You could work with your existing portfolio of marketed products to increase the amount of revenue you can get from them. This could include considering shifting them to over the counter products or evaluating other indications for the drug. However, I suspect we may already be doing this so it is unlikely to be all of the answer.

A: *Good. What else?*

Q: We can buy a product or a group of products to plug the hole. To do so, we should go through a similar compound valuation exercise as we did for our portfolio but also take into account synergies between our two organizations and the previous track record of the other company in launching similar projects.

A: *Sound good. Thanks.*

## **Commentary/Recommendations:**

This case is an interesting spin on the standard market sizing type of question – Rather than evaluate one market, the candidate has to outline a general process for sizing the market for a number of different drugs. Layered on top of this the candidate needs to demonstrate a good understanding of the process for deriving an NPV and the relationship between the NPV and the original market sizing exercise.

The candidate has given a very good answer and there are a number of positive aspects worth noting, including the following:

- Before doing anything else, the candidate sets out a clear road map for tackling the question – “I am going to do an NPV which will mean looking at revenues and costs”
- The candidate clarifies the expectations of the interviewer – “Should we be looking at generalities or specifics?” The last thing you want to be doing in a case interview is giving a great answer that bores the interviewer because it is not the aspect of the question that they were interested in.
- The candidate has a clear and logical approach to sizing the market for each drug. Not only are the steps sensible and meaningful but they are also readily verifiable by available data (such as American Cancer Society data on the number of patients with a particular cancer condition). It is quite common for interviewers to ask how you would go about getting the data to support a certain step in your logic so it is important to be choosing divisions where this information is likely to be available.
- The candidate does not get bogged down when the interviewer changes the question. If you are asked a new question, like how to fill a hole in the pipeline, then develop a new framework for approaching this aspect – “there are two options to consider, make or buy”

Similar techniques could be applied to almost any market sizing question.

## CASE 17: ELECTRONICS RETAILER (BCG – Round 2)

**Your client is a major consumer electronics retailer who sells A/V equipment, computers, content (CDs, DVDs), and software. Recently, the store has seen increased competition from bricks and mortar stores like Wal-Mart as well as online retailers like Dell. Your client has 3 questions:**

- 1) How is the industry evolving?**
- 2) What is the winning retail model?**
- 3) What should we do?**

### **Additional Information Provided After Relevant Questions:**

- None provided

### **Interviewee's Solution:**

**Q:** To answer these three questions, I'd like to look in 3 areas. First I'd like to know more about the current market including understanding customers, the products they are buying, and how these have changed over time. Next, I'd like to take a look at the different types of competitors that are affecting our company and our firm's profitability. Lastly, I'd like to know more about our client in terms of their business model, including core competencies, strategic direction, and their store model, to better understand what options are realistic. Is there a particular, place you would like me to start?

**A:** *Before we get started, can you tell me what you think makes a successful retail model?*

**Q:** Sure. I think there are several elements. First, I think that a retailer needs to have a clear understanding of their customer base. This will drive two things: having the appropriate product mix to serve them and serving them through the appropriate distribution channel (online vs brick and mortar). Secondly, while the above two factors are critical, our client needs to ensure that they will allow for profitability and so careful consideration needs to be paid to revenue and cost considerations. Lastly, to the extent that is possible, we would want to make sure that our business model is not easily duplicated so that we can maintain a competitive advantage.

**A:** *Sounds good. Let's focus on the CD/DVD market. What are the differences between the two categories?*

**Q:** There are potential differences between consumers as DVDs don't have as high an adoption rate as CDs. There are also potential differences between age groups of consumers – I would think younger people might buy more audio products than older people.

**A:** *Those are reasonable. What about in terms of title fragmentation?*

**Q:** I would think that DVDs are much more consolidated in terms of titles as 10 blockbusters a year probably account for the majority of sales. I'm not sure this applies to CDs which I would think have a much wider distribution in terms of titles.

**A:** *How do you see consumer buying patterns change?*

**Q:** More and more, consumers are buying content directly. You can buy songs directly over the Internet decreasing the need to buy entire CDs. You can also get video on demand removing the need to buy DVDs.

**A:** *So what are the implications of this?*

## Interviewee's Solution (cont.):

Q: From the perspective of our client, CDs and DVDs are not going to be a substantial part of their business going forward because the ability to buy content directly from producers removes the middleman. Our client will more directly need to rely on other parts of its product mix in order to be successful. In the interim, it is critical that our client manage the transition carefully in order to maximize the opportunity associated with this closing window which will likely last for several more years.

**A: Agreed. So, let's assume that we did some additional analysis and it turns out that our client needs to double the volume of its other products to counteract this. Fixed costs don't grow in proportion to sales – they grow on a 75% scale curve meaning that even though sales double now FC are only 75% of what they were on a % of revenue basis. Our gross margin is 25% and net income is 0%. What would our net income be if we doubled volume?**

Q: Let's say that Year 1 revenue was \$100 making operating profit 25 and fixed costs 25. In Year 2, we would make \$200 and our operating profit would be \$50. Given the scale curve, our FC should be about \$38 giving us net income of \$12 or 6%.

**A: Exactly.**

## Commentary/Recommendations:

This is a fantastic sample case because the dialogue provided by the candidate demonstrates exactly what the case interview experience can end up being like. Most importantly it demonstrates exactly how that experience can differ wildly from what you were originally expecting, and what the case interview books tell you to expect.

At the outset of the discussion, the candidate develops a framework for answering the question. All they have to do now is walk through that framework right?

Wrong.

After the candidate sets out the framework, the interviewer then practically takes over, firing questions at the candidate, choosing a particular market to focus on, and never really giving them a chance to thoroughly walk through their carefully laid out framework. The poor candidate is left feeling totally defensive, thinking on their feet to come up with answers to the interviewer's interrogation rather than having the chance to ask the questions and gather information at their own pace.

If this happens to you (and it undoubtedly will), don't panic!! It is quite common and not necessarily a bad thing. Despite not getting a chance to do their own analysis this candidate has still nailed the case because they set out a good framework and gave intelligent answers to the interviewer's questions.

This is my assessment of what is going on and why this happens so often:

- Case interviews are about giving the firm a chance to gain an insight into your thought process – can you think like a consultant.
- The candidate set out a reasonable framework (not necessarily the only one but a reasonable one) and the interviewer has taken this as a sign that they know what they are doing. The framework in and of itself is 80% of the answer to the case.

- The interviewer then chooses not to let you walk through the framework, either because they are bored with having asked the same question ten times already that day or because they think they doing so will give them very little extra insight into your thinking beyond what they already got from hearing what your framework was going to be.
- Instead they choose to test you more deeply by asking you a series of questions that give them more insight into your ability to really understand and think about a business problem or market.
- Far from being a sign of failure, getting grilled with questions in this fashion may actually be a sign that you are doing well.

Note, there is a fundamental difference between interviewers asking you questions to prompt you because you don't seem to know what you are doing and interviewers asking you questions (as in this case) because they are really testing you.

Don't assume you can sit back and let them ask you the questions they are interested in. You cannot. You are always responsible for driving the case and you need to set out a framework and start working your way logically through it. If however, at some stage during this process, the interviewer starts firing questions at you then you need to be able to work with it.

Answer their questions as insightfully as you can and let them take you where they want to go. Think about what things would be like in the real world – How would the CD market be different to the DVD market? You must have had plenty of experiences with both so apply some common sense and you are more than half way to a decent answer.

If the questions run out, then tie everything back in to your original framework and keep going. But more times than not the questions will only run out when they bring you to a case conclusion.

These interviews can be terrifying because you feel like you have lost control, but they can also be the most rewarding and, in my view, are the ones most likely to earn you an offer.

## CASE 18: AERO INCA (McKinsey – Round 1)

Your client is Aero Inca – Latin America's 2<sup>nd</sup> largest airline. The airline has a hub in Mexico City and flies to North, South, and Central America as well as a handful of European and Asian destinations. Recently, a number of smaller airlines have expanded and are flying to North America directly, taking market share from our client and decreasing revenue and profitability (which is heading towards the red). Your job is to advise on what we need to increase revenue.

### Additional Information Provided After Relevant Questions:

- Customers basically come from two areas:
  - 1) frequent fliers who depart from Mexico City
  - 2) Through put transfers to smaller cities that go through the Mexico City hub.

### Interviewee's Solution:

**McKinsey:** *How would you think about increasing revenue?*

Me: I would first think about the product mix that we offer in the following manner: (draw 2X2)

- We can continue selling the same product to the same customer
- We can sell the same product to new customers (maybe capitalize more on tourists than business travelers for example)
- We can sell a new product to the same market (maybe offer new destinations to business travelers)
- We can sell a new product to new markets (maybe new destinations to tourists)

**McKinsey:** *That sounds good. Aside from the revenue side, what else should you think about?*

Me: I'd also want to think about costs both fixed and variable that will ultimately affect the profitability of these options. Fixed costs could include planes, the hub, and other equipment (like baggage handling machines) that we need to run our business. Variable costs would include fuel and labor.

**McKinsey:** *What are some of the things that you can do to control costs?*

Me: With regarding to planes, you can evaluate whether or not it makes sense to buy them or lease them. With regard to the hub, we can consider keeping the hub in Mexico City or moving it to another location. With regards to fuel, you can construct a hedge against future rises in prices (maybe build a reserve). For labor, we could consider unionized vs. non-unionized sources.

**McKinsey:** *Ok. So, when evaluating some of these options, the VP of network design comes to you with a question that he needs the answer to by the end of the week. He needs to know whether or not to increase flights to NY (which we already serve). This would mean that we would have to cancel our two daily flights to Mango, Brazil as we need to use that aircraft to go to NY. How would you decide whether or not to go to NY?*

Me: At its core this is a profitability question. I would first want to calculate revenue for the new route based on the expected price of the ticket and volume we expect. Then I'd want to calculate the costs that we discussed before in terms of the NY route. I'd then compare this profit number to what we were making on the Brazilian route.

**McKinsey:** *Assume costs are a wash. How would you figure it out?*

Me: I'd want to know the capacity of the plane used and the expected utilization of both routes as well as the price per ticket. Do we have this information?

### **Interviewee's Solution (cont.):**

**McKinsey:** *The plane holds 200 people. For the Mango run, we get 60% utilization and a ticket costs \$500. For the NY trip, we would add 3 additional trips at a ticket price of \$500. Utilization is currently 80% on these flights.*

Me: Ok, I can start doing some calculations. We would make \$120,000 on the Mango route ( $200 \times 2 \times 0.6 \times 500$ ). As far, as the NY trip, do we expect the same utilization to hold for new flights?

**McKinsey:** *No, we expect utilization across all flights to be 70%.*

Me: Ok, so we need to take into account the lost utilization on the first set of flights. How many are we currently flying?

**McKinsey:** *12*

Me: Ok so we are currently making \$960,000 ( $12 \times 200 \times 0.8 \times 500$ ). Before beginning, the new route calculation, do we expect any competitive response from our change in routes?

**McKinsey:** *Yes. We expect the cost of a ticket to drop to \$450.*

Me: So, our total revenue on the revised flight schedule would be \$945,000 ( $15 \times 200 \times 0.7 \times 450$ ). That means overall we make \$135,000 less on the new structure.

**McKinsey:** *If that's the case what could our client do to maximize profitability on its current Mango route?*

Me: The first thing we should focus on is utilization. If we can get more passengers on each flight then we can increase profitability.

**McKinsey:** *Assume we can't.*

Me: Ok, we can also evaluate the cost structure and what we specifically offer passengers. For example, do passengers on these flights need meals or would they pay for them. We may be able to reduce the number of flight attendants. As mentioned before, we can also look into the options of leasing vs. buying the plane and hedging fuel costs.

**McKinsey:** *Assume we've done all we can on the cost side.*

Me: We may want to evaluate whether or not our profits would be increased if we only flew one flight per day. Even though we wouldn't get as many customers it still may be more profitable for us to only fly one flight.

**McKinsey:** *Do you really want to leave customers behind?*

Me: Maybe. I know that above a certain level additional passengers represent pure profit. So, if our added 40% of utilization on one flight adds more profit than we are getting from only running 60% on both flights, we may want to consider it. This also assumes that there would be no ill will from the customers that now can't fly with the airline.

**McKinsey:** *Sounds good.*

### **Commentary/Recommendations:**

On the whole this is a good solution. The candidate manages the analysis of the NY alternative effectively and clearly defends the recommendation for one Mango flight rather than two in response to questioning. The Candidate sets out a framework for revenue improvement (the 2x2 matrix) and for assessing elements of costs. Potential weaknesses are that not all elements are necessarily covered. The revenue framework does not mention the potential for increasing price, or driving higher volume through lowering price and the cost framework does not necessarily capture all of the elements of the cost structure.

## **CASE 19: PHARMACEUTICALS II (ZS Associates – Final)**

**Our client is a pharmaceutical company with two divisions. Each division has a separate sales force. Division I manufactures a diagnostic test (like a blood sugar test) and Division II manufactures a pill or drug or treatment (say, Claritin). Does it make sense for the divisions to combine the sales forces into a single sales force?**

### **Additional Information Provided After Relevant Questions:**

- Division I requires a sales force of 75 people. Division II requires a sales force of 50 people.
- Each sales person is equally effective at selling. Each sales person makes a certain standard frequency of hospital visits each month to hospitals in their respective regions.
- The doctors and health professionals targeted by the sales forces currently in place are in totally separate parts of the hospitals and do not come into contact with one another.

### **Interviewee's Solution:**

- I structured the discussion around benefits and costs. Benefits I mentioned were mostly synergies, cost savings from being able to get rid of certain sales people, or higher sales as a result of more freedom per sales person and therefore a chance to spend longer on each visit. Costs were extra training, one-time severance pay, etc.
- It was important to realize that the education and training of each sales force member was key to their ability to add value and generate sales. Doctors saw sales people as true experts and trusted advisors. It was very difficult to actually discuss numbers in this case, because so many of the obvious differences were apparently "assumed to be the same."

### **Commentary/Recommendations:**

In assessing whether or not to combine the sales forces we need to determine whether or not doing so would increase profitability of the firm. This means that we need to look at both the cost and revenue impact of the decision.

Looking first at revenue, we would need to determine whether combining the sales force will result in generating higher sales. To assess this, I would want to know whether the two sales forces are currently serving the same customers. i.e. are they visiting the same doctors at the same hospitals? If so then there is the potential for the combined sales force to do a greater number of visits and thereby sell a greater number of products by selling both products as part of the one visit. If however the client of the two sales forces is very different, as the case facts suggest, then the potential for increased revenue is diminished. Although travel time may be reduced, the staff member is still making two visits to two different doctors in the hospital to sell the two products. In fact, revenue may fall if combining the sales forces reduces the sales reps expertise in a particular drug meaning that they are no longer perceived as a reliable and trusted expert. There would also be the loss of the benefits of a strong relationship if some sales reps are made redundant and the remaining reps have to develop relationships with a new set of doctors.

Next I would want to look at cost implications. This would include the one time implementation costs of the decision, including retraining, severance, re-organization etc. There may however be ongoing synergies leading to cost savings from servicing the same number of doctors with a smaller sales force.



## **CASE 20: HOTEL (POST 9-11) (BCG – Round 1)**

**BCG has been hired after 9/11 to look into quantifying the amount of damage to revenue streams that has occurred in the Manhattan hotel business. How would you go about determining / quantifying the impact, and how would you structure a recovery plan?**

### **Additional Information Provided After Relevant Questions:**

- Hotels use a metric called “Revpar” which is equal to the average daily room rate \* % occupancy. Revpar was \$200 before 9/11, \$125 for the remainder of 2001, \$150 for 2002, and \$175 for 2003.
- I was asked to assume that if 9/11 had not occurred that the Revpar would have been flat for the entire time period.
- I was told that there were 100,000 hotel rooms in Manhattan. I was then asked to quantify the revenue impact.

### **Interviewee’s Solution:**

- I structured my discussion by segmenting the market into US business travelers, international business travelers and leisure travelers. I also tried to make a separation between individual hotels and chain hotels, but it was clear that the case giver was only interested in looking at things on an aggregate basis.
- The key, I think, to doing well in this case is to focusing not only on quantifying the damage, but also to coming up with creative suggestions for a recovery plan.

### **Commentary/Recommendations:**

The quantification question is relatively straightforward multiplication once the candidate has extracted the relevant data by asking appropriate questions.

The question of a recovery plan is more difficult. I would approach this question using the following framework:

- What were the primary categories of hotel customers before 9/11? e.g. tourists, business etc
- How much did each category pay? i.e. how much was each category worth?
- How much has each category stopped traveling? e.g. where are the biggest losses?
- Focusing on those categories with the biggest losses what are the main reasons why they have stopped traveling? e.g. is it a perception of safety in NY for tourists? Is it a perception of airport delays for business travelers? Etc
- Once the main causes for the most important categories are identified I would try to develop solutions focused on addressing these causes. This may take the form of marketing and sales promotions or alternatively lobbying the government to take measures to make travel easier etc depending on exactly what causes are identified as being most important to the most important category of customer.

## CASE 21: CPG - BEER (Booz-Allen – Round 2)

Our client is a CPG company. Assume they make beer. They are going through a merger. Assume our client is Firm A (acquirer) and the target is Firm B. Firm A holds 20% of the market and Firm B holds 10% of the market. A major player, Firm C, holds a leading share of the market at 45%. The rest of the market is comprised of fringe players.

Can you find the cost synergies in the merger, and can you discuss their relative importance?

### Additional Information Provided After Relevant Questions:

- The companies (Firms A, B, C) each have only one major manufacturing facility.
- Each company has one major brand in each of 3 areas:
  - (a) Flagship brands which are highly profitable
  - (b) Maintenance brands which are marginally profitable and
  - (c) Cash cows / “milk” brands which are non-growth but provide a steady source of revenue to the companies.

### Interviewee’s Solution:

- I discussed synergies, segmenting them into marketing synergies, distribution synergies, raw material sourcing synergies, and then possible brand synergies (i.e. do we use the merger as a chance to reposition brands, shut brands down, start new brands, etc.?).
- It was clear that the interviewer wanted me to spend much of my time discussing the issue of brands and their impact.
- I then suggested 3 categories of strategic alternatives for Firm A, our client:
  - (a) Keep flagship brands of both Firm A and Firm B after the merger
  - (b) Shut one of the two brands down after the merger
  - (c) Keep one, but reposition the second instead of shutting it down completely, and
  - (d) Combine the brands into a totally new brand.
- Of my four options described above, I assessed each one in terms of the revenues and in terms of the costs. I then was able to come to a logical conclusion about the relative level of risk – risk of market share loss, risk of profit loss, risk of customer rejection, etc.
- The issue of Firm C stealing market share while the new (Firm A + Firm B) merged company repositioned itself was important to recognize.

### Recommendations:

The initial question relates to the identification of synergies. I would structure my approach to this by working through the value chain:

- Raw Materials purchasing – there may be some small economies of scale here in the acquisition of ingredients (e.g. hops) but given these two companies are already major players they are probably both already operating at scale so the cost savings here would probably be minimal
- Production – the potential for savings here depends on how the companies currently operate. I would want to know whether either company has excess capacity that could be

utilized/eliminated post merger and whether there is the potential for consolidating the existing manufacturing facilities. Depending on the answer to these questions the potential for savings could be significant.

- Distribution – again this depends on how the companies currently operate. Are both distribution networks currently at full capacity? Do they both distribute in different regions, creating complementarities and the potential to expand distribution for the products of both? Do they both have in house distribution? Or is distribution outsourced? Depending on the answer to these questions the potential savings could be anywhere from zero to extremely significant.
- Sales and Marketing – from the interviewee's comments, it appears that this is the area that the interviewer wanted to focus on. There may be the potential for some basic savings through the elimination of duplication in head office marketing roles and perhaps the consolidation of external agencies used for marketing work. There are also the more significant potential synergies through the streamlining of branding. It is here that you could get in to discussing what to do with each of the various brands and clearly the most important decisions relate to what to do with the flagship brands. Depending on where the interviewer wants to focus, I would probably recommend approaching this by saying that for each of the brands you have three alternatives: keep the brand as is, reposition the brand, or terminate the brand entirely. In making this decision for each brand you would need to consider the incremental revenue impact for that brand, the incremental revenue impact for our other brands, and the costs of the repositioning or closing down (if that is the decision). This is a relatively loose sub-framework for this issue but you would expect that where you go will really be driven by the information that you get from the interviewer.

## **CASE 22: BENJAMIN CARPETS (McKinsey – Rd 2)**

**Our client is a carpet manufacturing company, Benjamin Carpets. They produce a range of commercial and residential carpets which they sell through various distribution channels, mainly wholesalers although they do a small amount of direct sales to large accounts. They operate a single factory, 5 days a week with 2 8-hour shifts.**

**They are considering the purchase of a new piece of equipment, a yarn printer that will enable them to print (patterns and) colors directly onto carpet. They have asked you to assess whether this is a good decision. What do you think?**

### **Additional Information Provided After Relevant Questions:**

1. The carpet manufacturing process:
  - (a) Current process: purchased pre-dye yarn, which is loaded onto spools in the order that carpets are to be produced. These are then loaded onto the weaver, which weaves the carpet, and then it is attached to the backing. This is then cut, rolled, and stored until shipment.
  - (b) New process: purchase undyed yarn, which is loaded onto spools and then onto the weaver. As this is happening, the printer prints color onto the carpet, and then the backing is attached. The product is cut, rolled, and stored until shipment.
2. The machine costs \$25M.
3. They produce 10M yards of carpet per year.
4. The machine has two primary benefits: cost savings and increased revenue opportunities:
  - (a) Savings include:
    - I. Inventory \$.50/yd due to reduced stock of yarns needed
    - II. Labor \$.25/yd due to reduced changeovers
    - III. Purchasing undyed yarn costs \$.50/yd less
    - IV. The machine adds \$1.00/yd in cost due to dyes, maintenance, etc.
    - V. Reduced obsolescence risk (not quantified)
    - VI. Increased just-in-time potential (quantified under inventory i.e. reduced finished goods)
    - VII. Possible reduced overhead allocation due to volume increase
  - (b) Revenue opportunities include:
    - I. 5% of a 70M yard high-end carpet market (can be set up as an estimation exercise or provided)
    - II. 30% of their current customers will “trade up”
    - III. They are not production constrained
5. They sell carpet now for \$16/yard
6. The carpet costs \$10/yard (after these cost savings)
7. The high end carpet sells for \$20/yard
8. Cost of capital is 10%

## Commentary/Recommendations:

- Possible structures should realize that there are a few components to be considered here:
  - (a) Revenue increases or new customer possibilities
  - (b) Cost savings
  - (c) Necessity (e.g. due to competitive actions)
  - (d) Practicality (can this be done in our plant)
- This case focuses primarily on the cost savings and revenue increase possibility.

### ***Key Points That Candidates Should Identify Through the Case:***

1. Need to better understand what this machine does (carpet manufacturing process)
2. Realize what issues are key (i.e. factory size, most of the process is actually irrelevant)
3. Most or all of the possible areas of savings (inventory, labor, purchasing at a minimum)
4. The cost savings are marginal and can be simply multiplied by the yearly output
5. The relationship between cost of capital, machine price, and savings. Realizing that a finite life will only make this worse
6. The possible areas of revenue growth (new customers, existing customer upsell)
7. The different contribution increase for new customers vs. upsell customers; the fact that we should be assessing contribution, not revenue

### ***The Math That Needs to be Done:***

1. Cost savings:
  - (a) Sum of savings is \$.25/yard
  - (b) Across 10M yards, this is \$2.5M/year
  - (c) Ignoring depreciation, if the cost of capital is 10% this is breakeven. If there is a finite life to the machine, this has a negative present value
2. Revenue increases:
  - (a) New high end is  $5\% * 70\text{M yards} = 3.5\text{M yards}$   
New contribution is  $(20 - 16) * 3.5\text{M} = \$35\text{M/year}$
  - (b) Trade up is  $30\% * 10\text{M yards} = 3\text{M yards}$ . Here, the new contribution is =  $(20 - 16) * 3\text{M yards} = \$12\text{M/year}$
  - (c) Total revenue increase = \$47M/year, so this is a good investment

## Other Sample Questions:

### (Booz Allen – Round 1)

**Your client is the Department of Defense. Our client's goal is to have as many of their helicopters in "operational readiness" as possible, but there is always some percentage of them that are in repair for either serious or routine maintenance. Think about the issues that contribute to getting the helicopters ready for operational readiness.**

### (Booz-Allen – Round 1)

**Our client is a media company. They make a very specific type of product called a "Cardon Binder" which is essentially a direct-mail / direct marketing / direct-to-consumer subscription model product in which the customer:**

- (a) Receives marketing material**
- (b) Subscribes, and**
- (c) Subsequently receives a binder and a pack of new recipe cards every 3 weeks for a year.**

**The ideal customer is someone who is not necessarily into cooking, but more someone who is into collecting. The problem the company faces is that the market for collectibles is shrinking.**

**How can we break out of this market and find growth opportunities?**

### (LEK – Round 1)

**A Biotech company is commercializing a drug – how should they go about launching it?**

### (LEK – Final)

**Our client is a heavy manufacturing company with six divisions, each of which makes a different piece of equipment used in the welding industry. One division, which makes "welding bits" (tips that are used on welding guns – a typical welder uses 100 of these per day) is showing drops in its profitability. Why?**

*Additional Information Provided After Relevant Questions:*

- The other welding equipment made by the other divisions is driven mainly by brand marketing while the "welding bits" are basically a commodity product.
- Up until this point we have kept our sales high and our market share stable by trying to convince customers that our welding bits work best with our welding machines (or generally, the other welding equipment sold by the other 5 divisions).
- We sell to a distributor, who then sells to the customer.

### (LEK – Final)

**Our client is a private equity fund. They are looking to make an acquisition of a major furniture company for their portfolio. How would you go about assessing whether this acquisition will make sense for them?**

**(McKinsey – Round 1)**

**Our client is a global oil company – similar to BP Amoco, Shell, Exxon Mobil, etc. They are looking to increase their profits in their retail business (i.e. gas stations) in the United States. How can you help them?**

**(McKinsey – Round 2)**

**Our client is a networking equipment company called Ingenious Tech. In 2001 they purchased a new 100 acre corporate campus for \$100 million, which had previously been owned by a competitor. At the same time (2001), Ingenious Tech was trying to expand its R&D efforts. The new campus was less than 10 miles from IT's corporate HQ – far closer than the 25 satellite facilities in which R&D was currently being conducted. The satellite buildings also include manufacturing, administration, etc. The newly acquired facility cannot be renovated until 2004 because of union issues (no clarification was given here).**

**How would you go about figuring out the best way for the company to use the new facility?**