How many rollerblades in New York City?

How much does the Empire State Building weigh?

COLUMBIA BUSINESS SCHOOL

Management Consulting Association

Casebook 2004

How much does a 747 weigh?

How much wine is consumed each year in France?

How can you sell peas on the Internet?

How much salt is in the ocean?

How much tea in China?

Are there two dogs in the world with the same number of hairs?

What is the annual worldwide demand for Band-Aids?

How many beer bottles are currently in circulation in the United States?

Why are manhole covers round?

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Columbia Business School
Management Consulting Association
Casebook 2004

Introduction

The Management Consulting Association of Columbia Business School is pleased to present the MCA Casebook 2004.

The information contained in this book has been compiled from a list of various sources. In particular, the cases included have been provided by consulting firms, students and other sources. Case interviews are used primarily to assess two qualities important in consulting:
logical reasoning and business acumen. In addition, consulting firms monitor communication skills and try to gain insight into your personality (are you enjoying yourself? Are you easily frustrated?). They are also looking for you to demonstrate creativity by taking advantage of opportunities to – yes, that dreadfully overused phrase – think out of the box.

The Casebook includes a discussion of the different case types and provides possible frameworks used to answer them. The frameworks and solutions to sample cases used in this book are by no means the only right answer. Time and again recruiters will emphasize that *there is no single correct answer to cases*. We have provided one recommended option for solving the cases.

The Casebook 2004 is provided free of charge to all paid members of the Management Consulting Association. We ask that you respect the efforts of the many people who volunteered their time to put this book together by not duplicating or photocopying it or sharing the password with non-members.

The Management Consulting Association

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THE CASES

COMMON CASE TYPES

The major types of cases are:
1. Business Cases
2. Game Show Cases
3. Estimation Cases

BUSINESS CASES

In addition to testing your ability to solve business problems logically, these cases also test your general business knowledge. Core courses in microeconomics and marketing provide the basic tools and concepts to approach these cases. You are given a certain amount of information that may vary according to the interviewer's style and the type of case. Write down the pertinent facts.

The ability to ask the right questions in order to arrive at the dynamics and drivers of a business or industry is one of the most valuable consulting skills. Some interviewers open the case with only one line, and expect you to probe for more information by asking thoughtful questions. However don't spend too much time asking a lot of questions, as you may appear to be taking a hit or miss approach to the problem rather than setting up a framework of analysis.

Some issues you may wish to consider addressing:
- relevant markets and nature of growth in these markets
- nature of demand and future market potential
- relative cost positions of the competitors
- nature of competition, and competitors' reaction to new entrants and price cuts
- existence of market niches, and their relevance to the client
- effects of an increase in supply on industry price levels
- barriers to entry and exit
- existence of competitive advantages such as economies of scale, learning curve, and other external factors such as government regulations

Focus on the question and the issues on the table. With some information in hand, think about the problem you are being asked to solve. If the case is about declining sales, do not start to evaluate the company's debt to equity ratio.

"MECE" or Mutually Exclusive and Collectively Exhaustive is a favorite term of consultants. This means that the framework you use should provide a number of different options which are 'mutually exclusive' but which together account for all possible causes i.e. 'collectively exhaustive.' Applying a good framework ensures that you do not ramble or jump all over the place.

Finally, creativity, or in consultant-speak, 'out-of-the-box thinking' is also highly valued.

GAME SHOW CASES

These cases test your analytical and creative abilities. They could be anything and everything. Keep in mind that there is always method to the madness even when you are asked to explain why soda cans are cylindrical.

Again, the ability to reason and support a rational line of thinking is the key. The reasons why soda cans are cylindrical probably cover a whole plethora of issues from distribution to design. Some reasons why: cheaper and quicker to produce since you don't need to mold it into a square shape, easier for consumers to hold, easier to release from vending machines…so you see this wasn't such a ridiculous case after all.

ESTIMATION CASES

While these types of cases were once seen in most consulting interviews, it is now extremely rare that you will encounter a pure "estimation" case during the interview process. However, it will frequently be the case that you will need to make an "educated guess" of some number as part of a business case.

The ability to work with incomplete or unavailable data, and generate reasonable estimates is a crucial skill in consulting. Make plausible assumptions. Don't just pick a random number. Even if it is wrong, as long as your number is grounded in common sense or backed by a sound rationale, you are fine. For example, common sense tells you that the population of New York City cannot be over fifteen million or under three million (it's eight million).

Lay out your logic before you start making assumptions. Set up your answer in a tree diagram with the branches as various components of data that will help you arrive at a final number. For example, in estimating the number of gasoline stations two of the 'branches' you should consider are the number of cars in the city and geographical size.

Use nice round numbers to simplify the slog of dividing or multiplying. Conduct a sanity check on your final number. Even if your assumptions appear sound, you may have made a calculation or logical mistake. For example, does it make sense to have over 600 gasoline stations in Manhattan when this would probably mean a station at every street corner?

A list of estimation questions are included at the end of this book, but should not be the main focus of your case interview preparation. Remember, consulting firms want to see that you can solve entire business problems, not just estimate the size of the problem.

EXPLANATION OF THE CASES

The sample cases in this book are presented by case types. For business type cases, the only information initially given to the interviewee is provided in bold text. The remaining information was discovered throughout the course of the interview. You will see that, especially in business cases, the interviewer is expecting you to come up with appropriate questions in order to get the additional data you will need to answer the case. When practicing these cases, we recommend that you wait for the appropriate questions before supplying this information.

The following cases were submitted by students and are based on actual cases given to them during interviews. Keep in mind that the solutions are the ones used by the students and may or may not be exactly what the interviewer was looking for. Use the answers as examples as to how to set up and go about answering a case, and remember that many appropriate variations are possible.

BUSINESS CASES

Business Case I – WINE MANUFACTURING FIRM

The client is an U.S.-based wine manufacturing firm looking to expand globally. They have retained us to advise them on the valuation of a South African based wine company that they are looking to acquire. Why don't you walk me through some of the things you would consider in advising the client?

There are three broad areas:

- Client's strengths & weaknesses both financially and from a business standpoint
- Industry growth trends including a competitive assessment in the United States
- Target's strengths and weaknesses

Objective is to:

- Evaluate the vulnerabilities– need for specialized inputs or labor, power of suppliers and buyers, threat of competitive attack, need for customer service, etc.
- Evaluate the variabilities – historical sales growth, profit margins and expected growth trends in the industry

The next step would be to explain the mechanics of the valuation.

1. Identify both a realistic worst case EBIT growth
2. Identify a target capital structure for the company
3. Carry out a pro forma financial statement projection for five or ten years out.
4. Add back noncash items, changes in CapEx and working capital
5. Compute free cash flows
6. Compute WACC
7. Determine terminal value (assume stable growth at the end of projection horizon)
8. Discount the free cash flows

In order to determine the WACC for the target, you need to first identify the equivalent of the long-term Treasury bond here in the U.S. Next, look at the beta for the target and use a market risk premium of 4% or so to figure out the cost of equity. You should also add a country risk premium for South Africa and a size-based premium based on the market cap of the target.

Find the country risk premium by identify a bond of identical maturity here in the U.S. and the spread in yields between the two bonds would be the country risk premium for South Africa.

Business Case II – INDUSTRIAL CHEMICALS FIBER MARKET

The client is a division of an industrial chemicals firm. They are in the business of manufacturing fibers and have had sales of $1 billion. Their concern is that the sales have been declining steadily over the past five years. Their objective is to identify three to five new lines of business with total revenues of $300-500 million utilizing existing capacity in the fiber manufacturing facilities. They have come up with a new fiber that has very good absorbency, something like 10 times its weight, which is a breakthrough in the industry. The client is looking to enter the urban pet care market in the U.S. with this new high-absorbency fiber. They want to manufacture pet care pads, sort of diapers for pets in urban areas. The client would like us to evaluate the potential of this idea, which is where you come in.

**Build a framework off of the 4 C's:

- Company (value chain)
- Competitors
- Customers
- Cost

Company:

- Established industrial product manufacturer
- Fibers are specifically used in fashion apparel industry and for cigarette filters
- Sales around $1 billion
- End users don't know their brand
- No marketing in the traditional sense
- No advertising experience

Value Chain:

- Deal with distributors
- Distributors sell products to retailers (50% markup)
- Retailers handle relationship with end customers (100% markup)
- Client wants to continue using intermediaries – reluctant to enter new area of retail
- Distributors know this and exploit it

Competitors:

- Market size? Interviewee needs to estimate on their own – Sample estimation: *"I'd try to get a sense for the size of the urban pet owner market. Let's assume that of the 100 million households, 40% or 40 million households are urban households. Of these, let's assume that 40% of the households, i.e., 16 million households, own pets. I'm considering only dogs and cats as relevant pets for the product. Let's further assume that each of these households has 1.5 pets. This results in about 24 million urban pets that are potential users of the sponge in question. I don't have a good idea how often these sponges would need to be replaced. I know my niece goes through 4 to 6 diapers per day. This is probably too high. (Interviewer offers replacement of sponge every other day) OK, that would result in 24 million times about 180 sponges a year or 4.32 billion sponges annually. Wow, that seems like a pretty big number! With a 20% market share, our client should be able to sell – assuming that there is a customer need for it – about 800 million pads annually."*

- Competitive products: No major national brand. Local pet stores sell for $0.50 per pad.
- Demand is small and sales are restricted to local stores
- Client's proposed product has a higher absorbency, but that's it

Conclude on potential revenue for our client:

"At any rate, let me assess the dollar revenue potential that this product is likely to generate. If the product is priced at the current market levels of 50 cents a sponge, the 100% retailer markup means that the distributor receives 25 cents and the 50% distributor markup would leave the client with only a little over 16 cents per sponge. With an ambitious annual sales estimate of 800 million pads, the revenue potential is about $128 million."

Customers:

- Location
- Price points

Cost:

- Cost to build capacity
- Cost to manufacture
- Costs to launch product

**Thoughts to consider for conclusion:

- Client is looking for 3 to 5 product ideas with $100 million revenue potential each
- It's not even clear if there is a customer need for the product
- It's not clear that the client has the execution quotient to bring this product to market.

Business Case III – PHARMACEUTICAL COMPANY GROWTH

The client is a large pharmaceutical firm with a market cap of $85 billion. They have about 4% market share and are currently enjoying a 34 P/E ratio. The industry average P/E is about 29.

Over the next five years they are looking at a healthy growth in their EBIT margins. However, for three years thereafter, the EBIT margin growth is likely to stagnate when three of their blockbusters come off patent. Subsequently, blockbusters currently in the pipeline will hit the market and their EBIT margins are expected to healthy growth levels. The CFO of the firm us to help her figure out if the three-year plateau five years out is an issue she should be worried about and if so what external options she can pursue to fix it?

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1. Clarify client's position in the industry
2. Explore competitive developments and projected trends
3. Explore some possible external options

Client Financials:

- $10 billion in revenues
- EBIT at $3 billion
- Gross margins of 80%
- Totally debt-free

Client History:

- Typically taken the OTC approach when blockbusters have come out of a patent
- Price will drop to 20% of pre-OTC price

Competitive Developments:

- Consolidation

External Options:

- No experience with either mergers or acquisitions
- Licensing
    - Fairly common in pharma
    - License potential blockbusters that much smaller firms or firms without their clout are currently developing and that will hit the market during the three years in question. Generate sales to grow their EBIT margins.

Business Case IV – REGIONAL RETAIL BANK

The client is a regional retail bank. Recently, it has begun facing threats from Internet-based financial services firms and other non-traditional firms. Deposits are declining and the bank has approached us with a strategy to grow the bottom line. Walk me through some of the issues that you consider and work streams you would set up in coming up with some recommendations.

Possible Framework:

Profit = Price x Quantity – Cost

Price = Revenue per customer
Quantity = Number of customers
Cost = Overhead

Client:

- Well-established regional bank
- New England-based
- $100 million in profit
- 3 million customers, very loyal
- Acquisitions strategy
- Lots of products:
    - Deposits/savings accounts
    - Small investments
    - Credit cards
    - Mortgages
- Known for trust and security

Options to Grow:

1. Grow revenue per customer by increasing the number of relationships or products/services that the client has with its existing customer base – a customer loyalty enhancing strategy
2. Increase number of customers by offering a wider variety of products
3. Decrease customers that are not the high revenue generating customers – eliminate unprofitable customers from its base so that the number of customers goes down, while revenue per customer goes up
4. Increases number of customers and increase the relationships or products/services with its customers
5. Decrease costs

Each of these strategies will result in the bottom line increasing, but the choice of the strategy will be based on the client's core competencies and the competitive assessment, along with a consideration of how the industry is likely to evolve in the future.

Business Case V – PRESIDENTIAL ELECTION

I'm sure you know that the campaign for the Presidential elections is currently underway. Both Bush and Kerry have proposed instituting a change to the retirement benefits policy for all employees whereby every employee makes a contribution ranging from $500 to $2000 to a retirement account and the savings grows tax free until the employee retires. We have been approached by a client that runs a large mutual fund to help answer two questions they have: Is this a big opportunity? What are the various possibilities and challenges they would face?

Possible Framework:
1. Dynamics of the mutual fund industry,
2. Incremental savings entering the mutual fund market
3. Regulatory or exogenous factors affecting the mutual fund industry as a result of changes to existing policy

Mutual Fund Industry:
- Companies solicit investments from individuals, retirement accounts, etc.
- Invest the money to create a well-diversified portfolio (that typically minimizes risk)
- Manage the portfolio and collect a fee
- Very large industry (over $1 trillion)

Incremental Savings Entering under this new Policy:
- Last year, $170 billion entered the industry
- Estimate the additional investment based on the size of the working population
- Assume recurring annual contributions and use $1000 to make it easy

Other regulatory issues or exogenous factors
- No

Can the client make money?
- What is the management fee? 1%
- What are the expenses? $10 annually and 10 basis points (1%) per $1000 invested
- Means that for every $1000 invested then, make $10 in revenues but have $10 plus $1 or $11 in expenses
- But, in the second year when the assets grow, begin to make a profit. If the $1000 grows to, say $1200, revenues now look like $12 but expenses are only $11.20. If you estimate how long a customer keeps the investment, you can present value the cash flows to figure out a lifetime customer value to the client.
- Plus, the customer would want to invest an additional $1000 the second year

Business Case VI – WHISKEY SALES

A multi-billion dollar liquor manufacturer began operations over 100 years ago, primarily focusing on whiskey. Now whiskey accounts for less than 5% of sales.

Overall sales of whiskey were up 1% per year over last 20 years and our client's sales have tracked that. Last year, however, overall sales were up 2%, while our client's whiskey sales were down 15%.

Why? What should they do?

Possible Framework:

1. Company:
   Sales = Price x Quantity
2. Competitors
3. Customers

<u>Company</u>

Price has not changed.

Quantity:

- Have not sold as much whiskey this year

Has anything changed?

- 5 master blenders have implemented a new formula that reduces cost per bottle by $0.25 and have assured management that there is no noticeable impact on taste
- No changes to packaging
- No testing of the new formula. Did company do anything differently last year than it did in the previous 20 years?

Has anyone noticed?

- 20% of one customer segment, "the loyals" that constitutes 5% of all customers but 45% of all sales has noticed and are "extremely angry"
- 20% * 45% = 9% decrease in quantity

Also need to consider the bottom line

- Current contribution margin per bottle is $4
- Margin before must have been $3.75
- Before: 100 * $3.75 = $375
- After: 91 * $4 = $364
- Change in formula hurt sales and profits

<u>Customers</u>

The whiskey market is divided into high end, middle segment, and low end whiskies. Our client competes in the middle segment.

At new whiskey bars, people will buy high end whisky to drink straight, but are satisfied with low end whisky for mixed drinks. Last year sales in the high end and low end whisky segments grew, but sales in the middle segment declined by 4%.

Competitors
Our client's competitor lowered their price from $12 a bottle to $11 a bottle.
Our client only has one competitor in the middle segment and they split the market 50/50.

(Use 100 as a base – each player sold 50 bottles of whiskey)

Last year, our client's sales decreased by 15% and the overall market decreased by 4% in size:
15% * 50 = 7.5% decrease in our sales to 42.5
4% * 100 = 4% decrease in market sales to 96
96 – 42.5 = 53.5 current sales for our competitor
Competitor increased their sales by 7% in absolute terms.
Their market share increased by 5.7% to 55.7%.
Our client's market share dropped by 5.7% to 44.3%.

What should the client do?

Change the formula back to appease the angry loyals.

Do targeted marketing to these loyals to let them know. This might be difficult, but will be necessary in order to move the whiskey upmarket.

Also, the company could reposition their whiskey as a more premium product. They should not answer the price cut of its competitor with one of their own. Plus, cutting price to regain market share would reduce profits even further:
Now: 42.5 * 4 = 170
After: (42.5 + (.02 * 50)) * 3 = 130.5
This is intuitive: we would be cutting out margin by 25% to achieve an approximately 2% increase in sales! The key for our client going forward, then, is better marketing, which makes the brand relevant in a changing market.

Business Case VII – SHIPPING COMPANY

A client's company operates 1 passenger and 2 cargo ships in the Baltic Sea, between Finland and Germany. The ships are old and need to be replaced. The choices before him are to continue with the same configuration, 1 passenger and 2 cargo ships, or to go in for 2 hybrid ships, which can handle both cargo and passengers.

Possible Framework:

1. Current operating environment
2. Costs and benefits of each option
3. Potential showstoppers for operating the new hybrid ships

Current market

- Lucrative market
- Not much competition

Passenger ships:
Profits = $1000 per person per round trip
Leaves port every other evening at 6 pm and arrives the other port at 6 am. Heads back to the original port at 6 pm, getting back at 6 am

Cargo ships:
Profits = $2000 per trailer unit per round trip
Leaves daily, one from each port at 6 am and reaches at 6 pm

Operation of Hybrid ships:
Leave daily, one from each port at 6 pm and reach at 6 am

Potential showstoppers:

- No problems in changing the cargo loading time from 6 AM to 6 PM for the hybrid configuration
- The cargo would be in the hold, and won't harm the passengers' experience, which is mostly indoors anyway, since the Baltic is a cold, cold place and no one wants to stay outdoors

Capacities?

- Passenger: Capacity of 1000 people, though occupancy is 600
- Cargo: Capacity of 120 trailer units, with a utilization of 100
- Hybrid: Capacity of 800 passengers, occupancy of 500 and capacity of 100 trailer units, with a utilization of 90

Growth Potential?
The market's mature.

Costs for buying /building, and operating the ships?

- Same operating costs
- Hybrid ships: $250 million each to build
- Passenger ships: $200 million each to build
- Cargo ships: $100 million each to build

Consider the profits in each case over a 2-day period:

In the old situation, there would be one round trip for passengers and 2 round trips for cargo, giving total profits of $1 million.

In the new situation, there would be 2 round trips for passengers and 2 round trips for cargo, for a total profit of $1.36 million.

Thus, the new situation results in ~$65 million extra profits annually. Given that the extra cost for the new configuration is $100 million, the client can easily recover his extra investment and increase the ROI.

Business Case VIII – PUBLISHING COMPANY

A publishing company has 2 divisions, one that prints SEC disclosures and another that prints mutual funds' prospectus. In the first division, the shareholder communications are printed and sent to all the shareholders. It entered the mutual fund prospectus business 10 years back, and this has helped with revenue growth. It had revenue growth of 25% over 5 years and then 15% over the next 5 years. The CEO wants to know why the rate of growth has slowed and what he can do about it.

Possible Framework:
Revenue = Price x Quantity

Company:

The client's services are retained by Investment Banks. When a company needs to access the capital markets or make SEC disclosures, it is required by law to send the information to all its shareholders. The company uses an Investment Bank in order to access the markets, and the bank gives the information to the client, who prints it and hands it to the company, which in turn mails it to the shareholders. So the client does not produce content or maintain its own distribution lists.

Two divisions:

- Mutual Funds prospectus: $100 million in 1988, $300 million in 1993, $600 million in 1998.
- Shareholder communications: $500 million in 1988, $1 billion in 1993, $1.7 billion in 1998. (Shareholder communications are responsible for the decline in growth)

Competition:

- 3-4 firms that offer printing services
- No differentiation
- Banks only switch because of personality issues
- Prices and services are the same

Prices:

- Prices have been constant.

Quantity:

- The overall number of investors has grown.
- Market share has been constant.
- No internet effects.
- Number of booklets printed has increased.

How does the company charge it's customers?

- Per page basis.
- The number of pages in a prospectus has gone down.

Why?

- Shareholder communication standards are mandated by the SEC, so the customers have to print what is required by the SEC.

- In 1993 the SEC mandated the easy English usage rule, which forced companies to reduce all the legal jargon that was difficult to understand.

What can the client do?

- Raise prices:
    - Clients costs are much less than those of Investment Banks
    - Won't result in customer switching
    - Viable option
- Increase quantity
    - Gain market share
        - Few options to win other customers
    - Can't print more pages because of the SEC
    - New markets
        - Annual reports (similar to prospectus)
        - Textbooks, etc.

Business Case IX – CARDIOVASCULAR HEALTH PROGRAM

Your client is a major pharmaceutical company, which has been approached with the following business proposition. You have been asked to lay out how your client should evaluate the opportunity: A small hospital in West Virginia has developed a total cardiovascular health program for its outpatient population. The program has been in place 3 years and has been highly successful in improving the cardiovascular health status of the patients as measured by several parameters. The hospital would like to "sell" this program to other hospitals for a fee, but could not undertake such a task on their own. Instead, the West Virginia hospital would like to license the program to your client, and your client would market it to other hospitals.

Note: You are asked to develop a methodology for evaluating this opportunity to license a cardiovascular health program from this hospital and market it. They are not asking for a final Go/No Go answer.

Possible Framework:
Present methodology for evaluating as a series of very basic Yes/No questions.

1. Does this program actually work and can it be applied with similar success in other hospitals?
2. What is the potential NPV of this opportunity?
3. Are there other opportunities available to your client that would create a greater return on their investment?

If the answer to any of these key questions is no, then the client should not pursue this opportunity.

Does the program work and is it transferable?

- Study results are not always straightforward
- Which parameters were improved? Quality of life? Overall survival rate?
- This may not be able to be extrapolated to other patient populations in other settings

**The client is a pharmaceutical company and could internal scientists look more carefully at this one hospital's results and decide if the program could be successful if widely marketed.

What is the potential NPV?

- Look at the cash flows each year.
- Main source of revenue would be hospitals paying a fee for the rights to use this program, which conceivably could be on a subscription basis, per-patient, one-time… the possibilities are endless.
- The program calls for specific types of medications, such as ACE-inhibitors, beta-blockers that the client makes, which might present a major "cross selling" opportunity and boost market share for specific pharmaceuticals.
- The licensing fee paid to the W. Virginia hospital would be a major cost, and again, it could be structured in countless ways.
- Incur costs to market the program to hospitals.
- One additional issue is reputation.

What are other opportunities?
Discuss other areas that might have a higher return or a better fit with core business.

Business Case X – PHONES AND SATELLITES

Our client is a major provider of long-distance telephone service in the United States. It owns a subsidiary that is a communications satellite company – in the business of launching satellites and then marketing (selling or leasing) the transponders on the satellite to companies or to phone service providers. The subsidiary has proposed a $400 million expansion involving new satellites, and the client would like to know whether this is a good investment or not. The satellite subsidiary has not been making a return on capital up to the parent company's standards, and the client is not even sure if it should be in this business – they may want to sell it. What do you tell them?

Possible Framework:
Profit = Revenue - Cost

<u>Company</u>

- Last year, they had $50 million in revenues and $48 million in cost, for a profit before taxes of $2 million.
- The parent doesn't think that's a good return.
- Revenues from:
  - $40 million was from annual leases for 20 of the firm's 100 transponders; these do not include service charges
  - $10 million was from annual service charges on the 80 transponders used by customers outside the parent company, including both the 20 that are being leased out and 60 transponders that were sold before the satellite was launched (something that satellite companies frequently do to raise capital in the expensive development and launch phases of the business).
  - 20 of the company's 100 transponders are used by the parent company (the client) for their phone service, and the subsidiary receives no revenue for that.
- Revenue should be adjusted to include the value of the services provided for free to the parent company – because the parent will have to pay for them if the subsidiary is sold.
  - The parent uses 20 transponders, which apparently have an annual value from leasing of $40 million.
  - The service charge on each transponder, which is $10 million/80. So that's a total value of $42.5 million in annual revenues that the subsidiary is providing the parent.
- The subsidiary's revenues should be more like $92.5 million.
- Costs:
  - $28 million for tracking and otherwise operating the satellite
  - $20 million that the parent company is charging the subsidiary each year for 5 years to cover the cost of a satellite that was destroyed upon launch a few years ago -- Satellites are a very risky business – 1 in 7 of all new satellites fail when launched – and thus satellites are frequently insured for far less than their value because insurance is very expensive. In fact, there is a 10% chance of failure over five years for every satellite in operation.
- The subsidiary's cost should be only $28 million (other is sunk cost)
- The subsidiary's profit should be around $65 million, which is quite good.

The client is given this new number and still wants to exit. Why and what should they consider?

- Loss of future revenue
- Ability to get the same access to satellite service
- Ability to get the same price for satellite service
- Competitor might purchase the satellite company
- Capital requirements for core business
- Focus on core business

**The reason they still wanted to sell it despite its profitability was that the long-distance business is a fairly steady business – the returns are small but low-risk.

Satellites are very risky, and the parent company felt that their shareholders were too risk averse to be comfortable with it. Essentially, they saw that they had a different risk/return profile from their subsidiary, and decided that the two weren't a good match.

Business Case XI – OSTEOPOROSIS OPTIONS

The client is a major pharmaceutical company. It has two new drugs in development, both of which are prescription treatment-type drugs (as opposed to preventative drugs) for osteoporosis, a disease that affects older women. The development period for new drugs is ten years, but the last three years – which involve testing – consume more than half of the cost. Thus, the client wants you to decide whether to test the two drugs, test one of the drugs, or to abandon the drugs altogether.

First, however, I'd like to ask you to think through two problems for me. One is, what is the size of the potential market for osteoporosis, and two, how do you think the markets for preventative drugs and treatment drugs differ?

1. Estimate the size of the market for osteoporosis drugs
   Assume that we're only looking at the United States. The population of the U.S. is about 270 million, slightly more than half of which is women. So say there are 135 million women in the U.S. I think osteoporosis begins to be a concern in women over 50, so we need to figure out how many women are over fifty.

   Okay, well, my guess is that about 25% of the population is over 50, so that's about 35 million potential customers – and we should remember that as the population ages, more people will fall into this category, so potential customers will increase. Naturally, for a treatment drug, we would then need to get the rates of incidence (to find out what percentage of women in the correct age group actually develop osteoporosis) and whether that is trending up or down.

   The number of people willing to take a preventative drug would depend on several things. The randomness of the disease – I don't know much about osteoporosis, but if there's a clear high-risk group, and few others get the disease, then those people are likely to be customers but people outside the group are not. On the other hand, if the disease is really random in whom it strikes, then more people are at risk, but with a lower risk for each person.

   Thus, people would make their decisions based on the cost of preventing the disease balanced against the consequences of getting it. So, if there's a treatment available that minimizes the problems associated with getting the disease, then few people will take the prevention. On the other hand, if the disease is not treatable and has severe consequences, many people will want to take preventative measures. Then, it'll come down to very pragmatic factors:
   - Is the drug easy to take
   - Is it a simple pill every morning or is it several pills a day with restrictions on diet, etc?
   - Will it be covered by insurance?
   - Are there side effects?

2. Detail differences between treatment and preventative drugs.
   **Marketing
   - Patients already suffering from a disease will go to a doctor, so doctors will be the ones making choices among competing drugs.
   - For a preventative drug, however, the patient will likely have more influence,

because even if it's a prescription drug, they may or may not choose to take it, and they may find one drug more convenient than another and thus make a choice (while patients suffering a disease are likely to put up with inconvenience to make themselves feel better).

- Doctors will respond most to effectiveness because they will likely be more scientific and have done more of their own research (even if it's just talking to colleagues) about a drug than patients. So that's the most important thing to stress.
- Patients, however, will be less attuned to the science behind the medicine, and will also be very conscious of side effects, convenience, etc.
- So a treatment drug would be mainly advertised in medical publications and similar areas, with a stress on the effectiveness of the medication.
- A preventative drug, however, would likely be advertised more broadly, targeting the group that might be at risk for the disease, and stressing the awful consequences of getting the disease and how easy and safe it is to take the prevention.

Should the client come out with preventative or treatment drugs?

At the moment they're treatment drugs, although they could be preventative drugs in the future. The normal pattern is for drugs to come out as treatments, because longer testing is required to prove value as a preventative. So the drug will be released as a treatment and then the company would continue testing to see if it has value as a preventative. But consider the shorter-term possibilities as a treatment drug.

(At this point, an "issue" or "probability" tree would be useful to diagram.)

First, look at the consequences of the two choices – to test or not to test. For the decision to test, consider the likelihood of success, to find out whether success was likely in general and whether the two drugs had different chances of being successful. (Etc., etc. for the whole tree).

Other issues to consider:

- Are the likelihoods of success different for the two drugs?
- Should you test one or both?
- Is the cost of the 2 tests the same?
- Decision delivery convenience (pill/shot etc)
- Potential Market side effects
- Revenue frequency (how sold per treatment)
- Competition
- Potential to lose share or position in market

Priority could be given to finding out about competition –

- Is the client the first company to develop a treatment for osteoporosis? NO
- If not, is this treatment significantly different? NO
- Will the clients drugs be generic or compete on price? NO
- Does anything else distinguish the client's drugs? More effective? Fewer side effects? NO
- How well have the existing drugs done? WELL

- This will simply be duplicating the existing drugs to enter the market? YES

In order to be successful, you must differentiate the product somehow.
- Advertising
- Distribution channel advantages

During the course of the project, it was discovered that a small start-up company on the West Coast was developing a new type of treatment that would essentially make the existing treatment obsolete?
- Fairly certain it will work
- The firm must get financing to undertake the expensive last three years of development

Recommendations?
1. Cancel testing of the existing drugs immediately
2. Buy the small start-up

Business Case XII – BOOK OF THE MONTH CLUB

Your client is a book club, the type of club where you get 4 books free and are committed to buying 5 more books at retail price, which is usually less than at a bookstore. Also, there is a book of the month you get unless you return the monthly card. Their profits are going down. What do you recommend?

Possible Framework:
Profits = Revenue – Cost
Revenue = Price x Quantity

1. Price
   Remained stable

2. Quantity
   Demand hasn't decreased in the market, but the client's sales have.
   Demand has gone to: internet based companies, traditional bookstores, books on tape, libraries, and BIG BOX RETAILERS.

3. Costs
   - Actual cost of books
   - Acquisition cost of customer
   - Cost of keeping a customer
   - Shipping Costs

   How do book clubs acquire customers?
   Ads for these types of clubs are found in magazines and newspapers. The actual price of the ads has not changed.
   However, the prices have changed because of fewer customers, so the acquisition cost per customer has gone up.

   As a side note, how would you estimate the size of the book market in the US?

   There are 250 million people in the US. Taking out infants and illiterates I would narrow that number to 200 million. I would say on average each person buys 4 books per year. That would be 800 million books at say, $20 a piece, for a grand total of 16 billion per year.

Business Case XIII – PARTYING PLANNING COMPANY

Your client is an American party-plan selling company, which sells power tools through hosted parties. Tupperware is the classic example of this type of selling. The company has a small core of full-time corporate marketing staff that recruits consultants, who are independent contractors.

The consultants recruit hosts, who hold the parties. The hosts invite purchasers to their parties to buy the power tools. The hosts are compensated with a free gift and discounts on their purchases.

The consultants get a percentage of their hosts' sales. In addition, the consultants can recruit up to four layers of other consultants and get a portion of their revenues. The company started eight years ago and has had explosive revenue growth. Recently the rate of growth has started to slow.

The client has asked you two questions: what is the factor slowing growth, and how can they improve the situation?

Possible Framework:
Consider the layers of the company --

1. Purchasers
2. Hosts
3. Consultants
4. Central Marketing

<u>Purchasers</u>
The purchaser behavior has not changed—on average they buy as much and as frequently as before.

<u>Hosts</u>
Nothing has changed here.

<u>Consultants</u>

- Nothing has changed there.
- However, the number of consultants being recruited has dropped, both with corporate marketing and via other consultants.
- The incentive arrangement hasn't changed.

**It turns out that they have basically used up all the raw material in their area. What can they do?

- New locations
- Direct corporate marketing efforts
- Extra incentives for consultants
- International expansion

Business Case XIV – SOYBEAN SHIPMENTS

Soybeans are a commodity. 70% of all soybeans are used for chicken and pig food. It is a very efficient source of energy. Another use for soybeans is splitting it up into soybean meal and soybean oil. 80% becomes the meal and 20% the oil. Many soybeans are grown in South America, but demand for the meal and oil is growing in Asia. I am trying to decide if I should process the soybeans into meal and oil in South America and ship to Asia, or if I should ship to Asia and do the processing there. What should I consider?

Consider the cost differences between processing in the two places.
Major costs would be:
1. Labor
2. Overhead
3. Distribution
4. Transportation

Labor
Both areas have relatively cheap labor and much of the process is automated.

Overhead
Similar in the two areas

Distribution
Once the product is there, the distribution to the rest of the area would be the same.

Transportation
Call a shipper and get a quote.
$10/ton to ship whole beans from South America to Asia
$20/ton to ship oil to Asia
$10/ton to ship meal to Asia

Since 80% is meal and 20% is oil, the shipping cost would be $8.00 for the meal and $4.00 for the oil, for a total of $12.00 per ton.

To know if this matters, you would have to find out what the margin is. If the profit on one ton of soybeans is $10.00, then the $2.00 savings is significant. If the profit is $1,000.00 then the $2.00 is probably not that important of a savings and the intangible or other costs would determine where you would want to process.

Business Case XV – INTERNET GROCERY SHOPPING

A grocery chain in New England is considering offering an Internet delivery service (i.e., groceries can be ordered via the Internet and delivered directly to your home). Including the client, there are three main grocery chains in the area. One of them has already entered the Internet market. The only other grocery store currently offering Internet delivery service in the U.S. is a Midwest store. Should the client enter this market? If so, what issues would they face? If not, how should they protect their market share?

Possible Framework:
1. Competitors
2. Customers
3. Cost

Competitors
Regional competitor:
- They began about 6 months ago and approximately 1% of their sales are from the Internet. They are forecast growth.
- Prices have been mixed with no noticeable trend.

Customers
- Appears to be a small market (competitor is at 1% of sales)
- Conduct a current customer survey to measure interest
- Conduct a new customer survey to determine new additions
    - Obtain a listing of residents in proximity to each of our stores and cross reference them to credit cards used, "Price Club" membership, checks received, etc.
    - Determine who is not shopping at our stores and find out if they would use the Internet service.
    - Determine if consumers are willing to pay a premium for items purchased through the Internet to help with the pricing strategy.
    - Determine the potential market size figuring in cannibalization and pricing.

Costs
- Cost of server and maintenance of it
- Delivery and "order processing" personnel
- Insurance for the delivery people
- Inventory warehousing costs

Where can they store?
Three options: The client could store inventory at each retail store
Use the current warehouse distribution centers
Build a warehouse specifically for the Internet service

The answer depends on the time frame and risk

Recommendations
In sum, the client needs to determine the market potential, cannibalization and the cost of running the service. If there seems to be at least some demand and there is extra capacity in the distribution centers, the client should at least try the service for a little while. It won't

be too costly for them and this way, if the trend does begin to pick up, the client is ready for it.

If the demand seems low or the client decides to not pursue the opportunity, they do need to be careful about protecting their market share. Perhaps they can do that by emphasizing the shopping experience at a retail store. They can run commercials showing that it is more pleasant to roam the aisles in search of your favorite foods, rather than trying to recall what you like by staring at a computer screen. They can also use the surveys to determine if there is anything about their current retail stores that can be improved to keep the customer in the store, such as music, cleanliness, staff, etc. In this way, the client can meet the consumer's needs in the retail store and entice them to stay.

Business Case XVI – CANCER DRUGS

Our client is a major pharmaceutical company based in the U.S. with international reach. They are known in the industry for their cancer drugs. Recently, the company has experienced a decline in sales growth and is considering a new business opportunity. The U.S. market has many private companies that focus solely on cancer care. The client wants to own and operate a chain of private cancer care centers in China. These would be "out patient" type centers where patients could come in for treatments; long and short-term stays are possible. How would you evaluate the attractiveness of this opportunity?

Possible Framework:
1. Customers
2. Competition and Regulation
3. Cost and revenue
4. Company capabilities

Customers
To assess the demand for the cancer care center, we would need to determine the number of people in China with cancer.
We can look at the number of people currently being treated through cancer care units of hospitals, private care, etc. Alternatively, we could estimate the percentage of the population with cancer by looking at affliction rates across various countries and then multiply by the total population of China.

Competitors
There are no cancer care centers like this currently in China; it would be a new concept. Hospitals, nursing homes, private nurses will be competitors. Also, China has a history of treating ailments through herbs and other natural substances; these old world physicians are a major competitor.

Cost and Revenue
Revenues are comprised of the number of treatments and the price per treatment. Since the center would focus strictly on cancer, the quality of the service would be better than the competition. In China the government pays for all healthcares. In fact, the government has predetermined fees that it will pay for all kinds of treatments. They will not pay for more than that amount.
Since our client is providing premium service, their costs are higher than those of hospitals, etc. The client may not even be able to cover the cost of the care they want to provide through the predetermined rates.

The client needs to assess if there is sufficient demand amongst the wealthier segments of the Chinese population for a cancer care center. First, segment the population of China based upon income and focus on the top income levels. Apply the percentage of cancer incident to this number to estimate the number of potential cancer patients in the selected segments. Calculate the cost of serving each patient and fixed costs to determine a breakeven number of patients. Compare this breakeven number with the total potential cancer patients to determine the market share the client needs before they can turn a profit.

Business Case XVII – TRANSPORTER MACHINE

Your client has developed a revolutionary product. It is a transporter machine that can take anyone (or anything) placed in it from NYC to London in 10 minutes. (This machine is similar to the contraption on Star Trek where the person is "beamed" to the location desired) How would you price one trip?

Possible Framework:
1. Demand
2. Price and Cost
3. Alternatives available

Demand
- Primarily for humans and small packages
- Narrow focus to business travelers/top executives or very wealthy individuals
  (To estimate this number, determine the number of top executives at all publicly traded companies and add to that executives at larger, privately held companies. For the wealthy, take the U.S. population and estimate the number of people in the top income brackets.)

Price and Cost
1. Estimate the costs and then include a markup or
2. Price an alternative product and determine the value of the extra benefits our client's machine offers.

**Of course with either method recognize the tradeoff between price and the number of trips demanded, as well from an economics perspective the marginal cost and revenues.

Use Option #2: The time savings is the most valuable attribute.
Look at the total compensation vs. total hours worked to determine an "hourly" wage.
Or, link the revenues of the business to the executive to determine how much revenue is generated by one hour of his/her time.
Or, consider the closest alternative and potential mark-up for this benefit

Alternatives
- Email and fax for data
- Flights (regular or Concorde)

Business Case XVIII – BICYCLE SALES

Your client designs, manufactures, and markets a full line of bicycles. The company's sales and profits had been growing until three years ago when its profitability flattened and began declining. Why did this happen and how can the client fix the problem?

Possible Framework:
Profit = (Price x Quantity) – Costs

Revenues
Growing roughly at the same rate as before the downturn.

Costs
Expenses are increasing disproportionately.
Costs are broken down between administrative and operating costs.
Operating costs appear to account for the bulk of increased expenses.
Fixed costs are growing but variable costs appear to account for the bulk of increased expenses.

- Both components of variable cost – direct and indirect – have been increasing.
- Bicycles have become more sophisticated, with better materials and components. However, the increasing cost per bike has been comparable to the growing price/revenue per bike. Indirect costs are increasing disproportionately.
- Allocation of indirect materials is about the same (usage per bike has stayed flat)
- Allocation of indirect labor costs are responsible

Work-in-process inventory has been increasing.

- Capacity is not an issue
- Time spent in setup-resetting paint booths, welding jigs, dies and presses, etc. has increased
- Time per setup has decreased
- Number of setups has increased, which makes senses make sense since the bikes have been getting more sophisticated with better materials. There are probably more material options for bike buyers to choose from, forcing manufacturers to produce a greater of bike varieties. This would cause an increase in the number of manufacturing setups that were required.

Business Case XIX – DIESEL SHIP ENGINES

There is a $250 million German company that makes diesel ship engines. They make 27 engines per year. They have 90% of the German market share. This past year they posted a loss of $30 million. The two questions I would like you to answer are: 1) what are the causes of the loss and 2) what are the options for this company.

Possible Framework:
Profit = Revenues – Costs

General Company Information
- Operating at capacity
- Engines are used to power ships and are made based on blueprints supplied by a design house that the company pays a licensing cost to.
- The engines are not going to be replaced anytime soon and are commodities.

Revenues
- Number sold has not decreased
- Price has not gone down substantially

Costs
- Costs have not gone up
- The company has just built a new modern factory taking advantage of all the cost savings of better production processes and automation
- Labor costs have gone down as well
- Cost structure of the company
    - 60% materials
    - 20% labor
    - 10% overhead
    - 5% licensing
    - 5% other

Competition
- Market share has declined from 100%
- Cost structure of competitor:
    - 55% materials
    - 5% less labor costs

What's going on?
- Labor is in a union and the company just negotiated a better deal for themselves.
- The competitor's material costs are lower because of volume discounts.
- The competitor makes 150 engines per year.
- The competitor is located in Korea.

What should the client do?
- Build more capacity and sell engines outside of Germany
- Make another product
- Form a "buying consortium" with other companies that use the same materials in order to get the volume discount
- Sell the company to a competitor.

Business Case XX – POST MERGER INTEGRATION

We just finished a post merger integration project between two mid-sized pharmaceutical companies. Each of them has broad product portfolios consisting of only branded or patented prescription drugs; neither company sells OTC drugs. The combined company's sales are the largest in the world, comprising 10% of the pharmaceutical drug market. All organizational aspects of the merger are complete (new positions have been assigned and assumed).

The new Head of Development comes to us and asks if we can analyze the combined Development Portfolio. He is certain that some of the projects in Development can be eliminated; others he feels are blockbusters and should be fast tracked; others are middle of the road type products that may be successful and can continue through the normal development process. He wants our team to identify the appropriate product portfolio.

FYI, here is what the development process looks like: R&D $ Pre-clinical $ Clinical $ FDA Approval $ Launch Each step in this process can take months or years to complete. Additionally, the number of products in each stage also decreases. For example, there may be 200 products in R&D, 75 in Pre-Clinical, 50 in Clinical, 20 in FDA approval and 5 in Launch.

Possible Framework:

1. Consumer demand
2. Competition
3. Expected profits and risk of each product in development

Consumer Demand

- Identify what ailment the product is for
- Determine the total number of people facing this illness
- Determine the current market size for the illness
- Project it out to the appropriate number of year(s) the product requires before it can be launched

Competition

- Look at what the competition is doing
- First mover advantage
- Concentrate on what the client's competitors have in their development pipeline and their timeline of release relative to ours
- Understand the potential reactions of competitors to our client's portfolio decisions

Profit Potential and Risk

- Determine the market share our client could expect for each product
- Make pricing assumptions based upon the costs incurred and competitors' prices to forecast revenue streams for each product
- Costs:
    - Research, development and testing costs incurred prior to launch
    - Manufacturing Costs
    - Sales & Marketing Expenses
    - Distribution $ Customer service
- Costs for each product can then be subtracted from the revenue to determine profits

for each year.

- Take the present value of the profit streams to determine the total profit potential, using an appropriate rate that considers the risk of the product.

Evaluation

- Consider level of risk -- speak with the scientists working on each product to determine the probability of the product actually being launched
- Calculate the expected profit: (Probability of success) * (Profit Potential) + (Probability of Failure) * (Potential Loss)
- The potential loss is the total of the costs incurred prior to launching the product
- Then select the top expected profit products, considering competitive positioning and timelines

[The interviewee actually drew a decision tree here showing the two branches of failure or success.]

Business Case XXI – TOY MANUFACTURING

Your client is the third largest toy manufacturer in Europe and has come to you because their sales have been stagnant or even declining during the last few years. Sales had been rising before. Why are sales like this? How can the client improve the situation? Which elements would you like to analyze?

Possible Framework:

1. Company
2. Competition
3. Customers
4. Channels

Company

- Currently in the top 3 leaders in traditional toys aimed at pre-school children (0 to 6 years), girls and boys.
- Highest volume products are: plastic toys, dolls, vehicles, action figures and games
- Manufacturing is done in Asia
- Profit margin is about 10-15%

Competition

- Flat growth for the industry
- Estimate the size of the market in Europe:

  Consider the market of 0-14 year old children. There are 800 million people in Europe, which translates into about 200 million households if you take an average of 4 people per household. Not all households have children, and some have more than one, and so I guessed that there would be about 1 child on average in this age category per household, so 200 million children.

  Enumerate important occasions children at that age get presents from their parents: birthday, Christmas, and maybe two other occasions, which gives 4 in total. Each time the parents would spend $20 on average. So this means that each child receives toys for an amount of about $80. Multiply the $80 with the 200 million children to find estimate for the toy market in Europe of about $1.6 billion.

Customers

- Electronic game business has been the fastest growing segment over the last decade in the toy industry

Channels

- Subsidiaries in the main European markets, responsible for sales in these markets
- The sales force visits the distributors of the toys, which are mainly supermarkets and department stores on the one hand and toy shops on the other hand
- The client has a good brand image in its markets

Recommendations

- Three options:
  - Grow their electronics business themselves
  - Buy a company that already is specialized in electronic games
  - Form a partnership with such a firm

Business Case XXII – SKI RESORTS

Our client is the association of New England ski resorts. The profitability of member resorts has been going down for two years. The association has hired us (1) to find out why and (2) to recommend what to do about it.

Possible Framework:
Profit = Revenue – Costs
Revenue = Price x Quantity

Revenue
- Price per lift ticket has not gone down
- Number of skiers has gone down dramatically
  - Is this demand or supply-based?
  - Demand: Are people going other places to vacation?
    - Look at lift ticket sales in other skiing locations (in and out of New England)
    - Customer survey to find out why
      - Turns out that more people are going skiing out West instead of in New England – Why?
        - Costs: Equipment, transportation, lodging and lift tickets – transportation is more expensive it the West, so skiers are paying a premium
  - Supply: Has the weather been warmer in the past 2 years? NO

Costs
- Fixed costs have not changed
- Variable costs have not changed
- Cost structure:
  - The mountain, lifts, ski patrol, snowmaking, etc. are fixed costs
  - Variable costs will be a very small portion of the total

Recommendations
- Increase number of skiers
  - Reduce prices
  - Offering regional passes
  - Offering additional services
- Increase revenue per skier
  - Increase prices
  - Adding on lodging
  - Increase equipment sales
- Drive costs down
- Spread fixed costs over the entire year, instead of only three or four months, by building golf courses, water slides, etc to generate revenue during the summer

Business Case XXIII – THE BIG APPLE

A large food conglomerate has a small plant in Maine that produces apple juice from one specific type of apple which is grown locally. The apple juice is premium priced and positioned. The company bought the plant from a local farmer cooperative a few years back with the hopes that the company could increase the plant's capacity through better management. The plant is currently operating at full capacity.

There was an accident at the plant recently where a worker broke his leg. This incident prompted a review by OSHA (the government review agency in charge of occupational safety). OSHA has informed the company that an additional $2 million investment is needed to bring the plant up to current safety standards. You have been hired by the company to help it decide what it should do. Specifically, you need to provide your client with a list of options and then identify the one that you recommend.

Additional information provided (if interviewee asks probing questions):

- *The apple juice product is breaking even for the company.*
- *There are several other premium apple juice brands. The competition is stiff.*
- *There is a raw material constraint (there is a limited number of this specific kind of apple which is grown each year).*
- *The demand for the apple juice is strong. Consumer demand is only limited by the availability of supply. The strength of the demand stems from the uniqueness of the product (that special kind of apple).*
- *Producing a concentrate for the juice will not work for this plant (too costly to convert machinery and this specific kind of apple does not lend well to such a use). In other words, you cannot grow more apples or stretch more out of the current supply.*
- *The company's competitive advantage is its marketing expertise and distribution system.*

<u>The Official Approach:</u>
There are three main options:
1) Walk away (shut down the plant or sell it)
2) Invest more money into the plant
3) Arrange a partnership agreement with the local farmer's cooperative who originally sold the plant to your client, which would place the plant operations in the hands of the farmers while the company would market and distribute the apple juice. *[This is the approach that should be recommended to the client.]*

Business Case XXIV – STEAM BOILER HOSES

We were asked by a diversified manufacturing client to help turn around the steam boiler hose division. This boiler hose division provides boiler hoses for both external customers and the client's boiler division. How would you structure an analysis at restoring profitability? Where do you expect to save costs?

Additional information provided (if interviewee asks probing questions):

- *Boiler hoses are sold both with original equipment and as replacements.*
- *There has been increasing price pressure in the industry.*
- *The client is third of eight industry participants.*
- *Last year P & L showed (as percent of sales): Raw Material 70% Labor 20% Distributed Overhead 10% SG&A 15% Profit (15%)*
- *Raw material is a commodity petrochemical.*
- *At least two of the other companies in the industry are making moderate profits.*

The Best Approach:

The product has been over-designed, requiring excess raw material. The answer should consider the following organizational implications:

- How is our product engineering operation wired into the marketplace? (There is little contact between the engineering and marketing/sales organizations).
- What kind of feedback are we receiving from our sales force? (Customers are delighted with our hoses, but don't require all of the product features).
- Are there other areas in the company where similar problems exist?

Business Case XXV – WIDGETS

Two companies are the only competitors in an industry and produce exactly the same product. Your client was the pioneer in the industry and has controlled 70% of the market for many years. Their competitor has always followed price changes initiated by your client. Recently though, the competitor has aggressively lowered prices 15% and has cut into your client's market share reducing it to 60%. Your client's profit margins are only 14%, so they are hesitant to match the price cut, but they are afraid that they will continue to lose share if they don't.

Assume that there is no threat of new competitors entering the market and that there are no substitute products. All inputs are commodities and are readily available. The end-users are sophisticated and make their purchasing decisions based mostly on price. How has the competitor managed to cut prices so dramatically and still make money and what would you advise your client to do?

Additional information provided (if interviewee asks probing questions):

- *Industry growth has historically been 5% per year, but flattened out in the last year.*
- *There are many buyers and the price of this product is a negligible input cost.*
- *Your client and its competitor both are financially strong divisions of larger unrelated companies.*
- *Raw materials make up 50% of the total cost of producing this product. All other costs are fixed.*
- *Both competitors use essentially the same process and have very similar cost structures.*
- *Capacity can only be modified in large increments and the competitor brought on a new line 6 months ago.*

<u>One Approach:</u>

- Market size is constant and market share for your client fell from 70% to 60%, so output fell by about 14%.
- Since 50% of the total cost is variable, 50% must be fixed.
- A 14% drop in volume would therefore equate to a (14% x 50%) = 7% increase in average unit cost for your client.
- When the competitor increased market share from 30% to 40%, his volume increased by 33%.
- If the competitor has a similar variable cost component of 50%, then their average unit costs would have gone down by approximately (33% x 50%) =16.5% as they spread their fixed costs over a larger volume.
- The competitor had an overcapacity problem and could make more money with higher volume by cutting prices. The 16.5% cost reduction offset the 15% price cut they incurred and their volume increased 33% so they came out way ahead.

<u>Recommendation:</u>

1. Match the competitor's price and follow their price changes.
2. Aggressively try to regain customers who were recently lost by offering extra inducements to try to get back lost market share.
3. The client is larger, they have a slight cost advantage and can fare better in a price war.
4. Advise your client to incrementally raise prices and make sure the competitor follows.

Business Case XXVI – CREDIT CARD COMPANY

A major credit card company has faced strong competition from new credit cards entering the market. They are considering dropping the $50 annual fee. What are the "economics" of such a decision and should they drop the fee or not?

Additional Information (Assumed)

- *$50 annual fee multiplied by the number of members.*
- *To overcome this loss, they have to increase the revenues from consumer purchases (1% from the retailer).*
- *Is it likely that current cardholders will spend more per year if the annual fee is dropped No.*
- *They'd still have to pay off their balance every month.*
- *Therefore, the only way to increase revenues from consumer purchases is to increase the number of AMEX holders.*

Possible Framework:

1. Determine how American Express makes money.
2. Evaluate the pro's and con's of dropping the annual fee.
3. Make a recommendation.

Estimations/Assumptions
Number of current cardholders = 4% of the U.S. population
250MM x 4% = 10MM current cardholders
$50 x 10MM = $500MM annual loss by dropping the fee

Current percentage revenue: 10MM members x $1,000 annual purchase (average)
[10MM x (1,000 x 1%)] = $100MM (Estimate of current percentage revenue)

Can AMEX attract enough new members (without a fee) to offset a $500MM loss?
Each new member contributes $10 (1% of $1,000 annual purchase)
(500MM / $10) = 50MM new members are needed
50MM new members is equivalent to 20% of the population (gut check)

Recommendation
Based on these assumptions, increased membership equivalent to 20% of the population is probably not likely. Don't drop the fee.

May want to consider varying the fee (sensitivity vs. new members).

Business Case XXVII – HEALTHCARE COMPANY

A large Healthcare company has decided it is interested in substantially increasing the scale of its operations. Its goal is to double total sales and profits in less than two years. As a consultant brought in to assist them, what would you do?

Additional Information (Needed):

- *What are the specific objective (quantifiable) advantages to pursuing and achieving this goal?*
- *What is the current scope of operations?*
- *In what areas of healthcare does the company do business? What is the current market share in these areas?*
- *What plans has the company already considered / is already considering?*
- *What is the competitive nature of the industry?*
- *What would be the effect on sales and profits of reducing prices/margins?*
- *What potential is there for expansion by acquisition? Do they have the financial capability? Do potential targets exist? Can they get financing?*
- *What will be the reaction of the competitors to this expansion?*
- *What is their financial condition?*
- *What will be the reaction of the customers?*
- *What are the relevant current and anticipated government regulations?*

Possible Framework:
Profits = Revenue – Costs
Revenue = Price x Quantity

Revenue increases are achieved by:

- Selling more of the current products to current customers
- Selling new products to the current customers
- Selling current products to new customers
- Selling new products to new customers

**The suitability of each of these options depends on the particular environment.

In the particular example of this case, it turned out that the company could achieve its goals only by selling new products to new customers via some form of diversification.

Next, you should consider the potential for increasing sales by means of diversification through acquisition or joint venture. The relative benefits of each will depend on financial resources as well as the existence of suitable targets or partners.

Business Case XXVIII – SPORTING GOODS STORES

Your client runs a national chain of mall-based stores that specialize in athletic shoes and also carries sporting apparel (hats, t-shirts, etc.). There are two other mall-based athletic shoe retailers who are very similar to your client in terms of size, product mix and strategy. Your client informs you that profits are declining and wants you to determine why and recommend a strategy to deal with it.

Additional information provided (if interviewee asks probing questions):

- *Sales are down at all three mall-based retailers, but industry sales are up overall*
- *Costs have increased, but all increases have been passed along to consumers to maintain margins.*
- *Non-traditional competitors have emerged who offer lower prices but no service.*
- *Customers fit into two segments, "users" and "fashionites." "Users" represent 40% of sales and seek out durable products and knowledgeable salespeople. "Fashionites" comprise the remaining 60% and want to look good in the hottest new sneakers, but are more price conscious than the "users."*

Possible Framework:

1. Customers
2. Competition
3. Costs and Revenues

Customers

- "Users" depend on variety and quality service and have remained loyal to the mall-based stores
- "Price conscious Fashionites" don't care about service and go to discount stores
- "Fashionites" are in the malls for other needs, so shop at mall-based stores

Competition

- Sneaker sales are up overall, but have decreased in the malls
- Discount Stores:
    - o Discount stores offer lower prices, but little variety and no service
    - o Discounters stock the hottest shoes at lower prices, so they must be stealing market share among the more "price conscious"

Costs

- Costs have gone up, but so has price, so margins are relatively unchanged
- Profits have decreased, so quantity must have decreased also

Recommendations

- Since the mall-based retailer depends on both segments to survive, it cannot cut back on service for the users.
- It can manage its inventory more effectively to offer discounts on the fastest moving "hot" shoes. Losses due to the discounts on these shoes can be offset by increased volume, rapid turnover and complementary sales on t-shirts and accessories once these customers are in the store.
- The prices do not need to match the discounters since the mall-based store benefits inherently from mall based traffic and can charge a slight premium for the convenience of location.

Business Case XXIX – IN-STORE PHARMACIES

A major discount retailer has over 1300 pharmacies. Pharmacy operations have had flat sales in a growing industry. The profitability is very poor relative to the industry. The retailer has a history of decentralized pricing and promotion for pharmaceuticals, leading to strong autonomy in field operations, as well as wildly inconsistent pricing. Customer pricing complaints and customer attrition is chronic. The new head of pharmacy operations has engaged us to "solve" the pricing issue. How should we proceed?

Possible Framework:

1. Who are the customers?
    a. How do they select a pharmacy?
    b. How important is price?
2. How do we price?
3. Who is the competition?

Customers

- Customers are generally older, repeat, discount-sensitive shoppers
- Customers may initially select a pharmacy on referral, location, or price and tend to build strong loyalty to pharmacy sue to personal relation with pharmacist and high switching costs (transfer of records, etc.…).
- Price tends to be a major factor. Particularly given nature of customer (usually pay in cash from fixed income) and trust relationship (Price fluctuations tend to be very bad).
- Inconsistent pricing on a given item may lead to price shipping, exposing all purchases to scrutiny and losing a customer.

Pricing

- Recommend a standard mark-up from cost, with price matching to be determined by the pharmacist at the store.
- As mentioned before, this leads to wildly different pricing from store to store, as different pharmacists are vigilant to different degrees regarding optimal pricing strategies.

Competitors

- Competitors come in three distinct groups: chain drug stores (Walgreen's, Duane Reed, etc.), independent pharmacies, and discount chains with pharmacy operations (Wal-Mart, Kmart).
- Client is in the "discount" group, but competition is fierce between groups.

Recommendation

Test a pricing program where prices are set centrally for a number of stores in different markets. In this test, set prices very aggressively for items identified as key items, and try to make up margins on non-key items. Monitor results, adapt and roll out if volume and profits warrant.

Business Case XXX – VIDEO GAMES

The CEO of a large, diversified entertainment corporation has asked our team to examine the operations of a subsidiary of his corporation that manufactures video games. Specifically, he needs to know if he should approve a $200 million capital request for tripling the division's capacity. You are a member of the team assigned to this project. Assume you and I are at the first team meeting. What are the critical issues we should plan to examine to determine if the industry is an attractive one for the CEO to continue to invest and why?

Additional information provided (if interviewee asks probing questions):

- *The division is the third largest manufacturer of hardware in the industry with ten percent market share. The top two producers have 40 and 35 percent market share. The remainder of the market is shared by small producers. The division sells to a broad range of consumers.*
- *The division's sales have increased rapidly over last year from a relatively small base. The current estimate is annual sales of 500,000 units. The current estimate of industry hardware sales is 5 million units annually. Industry growth has been strong over the last few months, although sales growth has slowed.*
- *The current sales price for the basic unit is $45. The division remains less than 20 percent of the parent company sales. The two top competitors develop, manufacture, and sell both hardware and -software. While our client makes and sells its own hardware, it only sells licensed software. The industry growth of software continues to increase.*
- *The division estimates that the current fully loaded cost is $30 per unit. Requested expansion should reduce the cost by 5 to 7 percent and triple production of the hardware units. The two top competitors are estimated to have a 10 to 15 percent cost advantage currently. The main costs are assembly, parts and labor.*
- *The division estimates much of initial target market (young families) has now purchased the video game hardware. No large new user segments have been identified Primary outlets of distribution are toy and electronics stores.*
- *The division currently exceeds corporate return requirements, however, margins have recently been falling.*
- *The hardware standards have been established by the industry leaders. The product features are constantly developed (e.g. new type of remote joystick) to appeal to segments of the market.*

Possible Framework:

1. What is the future market potential?
   a. Question the continuation of the growth of the industry overall.
   b. Ask about the saturation of markets, competitive products (e.g. home computers), and declining "per capita" usage.
2. What is the competitive outlook?
   a. Examine competitive dynamics.
   b. Issue areas might include concentration of market shams, control of retail channels, and the R&D capabilities (rate of new product introductions, etc.)
3. What will the price/volume relationships in the future? Issues of prices might need to be considered.

<u>Market Potential</u>

- Relationship between market penetration and growth in new users which, when

combined, yields an industry volume estimate.
- Shifting mix of product purchases, in this case from hardware (player unit) to software (video cassettes).
- Investigate buyer behavior in key segments, i.e., “fad” potential of product.

<u>Software</u>
- Technology standards are set by the industry leaders.
- The division, as a secondary player, will have to follow these standards.
- Different distribution needs may exist for different products (in this case hardware versus software).

<u>Price/Volume Relationships</u>
- Discuss the effect capacity additions can have on overall industry price/volume relationships and on industry price levels.

<u>The Company’s Ability to Compete</u>
- Ask what the expansion is designed to do.
- Explore the cost position of the client division relative to that of the other competitors.
- Seek to understand the reasons for poor profit performance of the division.

Business Case XXXI – HARDWARE STORES

Hammerjack is a regional chain of "local hardware stores" located in numerous neighborhood strip malls and shopping centers. They had enjoyed excellent performance for the past 15 years but have experienced declining profits in the past two years. They are concerned about their profitability and have hired you to explain their situation and provide recommendations to get them back on track.

Additional information provided (if interviewee asks probing questions):

- *Cost of Goods Sold – no change*
- *Overall sales – down*
- *Lease of space – no change*
- *Number of customers – down slightly*
- *SG&A, Overhead – no change*
- *Dollar amount of purchases – down heavily*
- *Franchise costs – no change*
- *All other drivers – no change*

Possible Framework:
Profit = Revenue – Costs
Competitive issues

Costs
No change

Revenue

- Customers are declining
- Based on the heavy decrease in dollar amount purchased, we are losing high spending customers.
- Losing customers and dollar revenue because Home Depot and other huge "warehouse" hardware stores have entered Hammerjack regional locations.
- Lower prices due to buying power (economies of scale).
- Provide additional services such as training courses, information, tips.
- Stealing contractors due to substantially lower costs and stealing DIYs due to price and help.

Derive the following 3 target segments:

1. Maintenance People $10 billion
2. Do It Yourselfers $100 billion
3. Contractors $10 billion

**Determine which segments are most valuable to Hammerjack.

Maintenance segment is still loyal because they only shop once a year and for a lower dollar amount. We probably can't keep the contractor due to price. How do you keep the DIYs?

Recommendations

- Offer the training courses with an emphasis on the local knowledge of the neighborhood.
- Anticipate the products needed by DIYs and offer competitive prices on those items.
- Acquire or align with other local chains to gain buying power.

GAME SHOW AND CREATIVITY CASES

There are two rooms: The Switch Room and the Bulb Room. In the Switch Room are three switches (1, 2, 3), all the switches are marked On and Off, and are originally in Off position. In the Bulb Room there are three light bulbs (A, B, C). You have to match the switches that turn on each light bulb. To do it, you start first in the Switch Room and do what ever you want with the three switches. Then you step into the Bulb Room and without going back to the Switch Room you have to figure out which switch controls which light bulb.

The solution is to turn on two lights, and turn one of them off after some time (let's say three minutes), and leave the third switch off, then you walk into the Bulb Room. There will be one light on which is controlled by the switch you left on. There will be two light bulbs off, but one of them will be warm (the extra input!), which is controlled by the switch left on for three minutes. The last light bulb, which will be cold, is controlled by the switch that you always left off.

You are in a room with two identical closed boxes. The boxes have identical tags that read "NPV of the contents of this box is one million dollars." What questions would you like to ask before you select one?

- What is the discount rate of each calculation?
- What is the time frame (and period length) of the two calculations?
- What is the range of possible outcomes of the two packages?
- What is the liquidity of each of the two packages?

Why are manholes round?

- So that the covers can't fall in the hole under any circumstances.
- So that the covers can be moved by rolling and no lifting is required.
- To provide the greatest opening area for the cost- and weight-limited material used.

Why are soft drink beverage cans cylindrical?

- So that consumers won't cut their hands on the sharp edges. The shape is more comfortable and ergonomical. To maximize the ratio of the container's volume to its surface area short of using a sphere. This delivers more liquid per ounce of aluminum (thus, more per $).
- A sphere would be impractical because it would not stack or stand up after it was opened.
- Spheres would also require more air space between cans if they were in a box, vending machine or truck - a fact that could increase shipping and packaging costs.
- So that they will roll predictably and in control on assembly lines and vending machines.
- Because this container shape requires the least machining, joining, and finishing steps in manufacturing and is therefore the least expensive to manufacture.
- Circular structures distribute internal pressure. Further, structures with comers could develop fractures due to high stress at the edges.

ESTIMATION CASES

1. What are annual revenues from personal automobile gasoline sales in the U.S. (excluding commercial trucks, boats, etc.)?
2. How many beer bottles are currently in circulation in the US?
3. Estimate the size of the hand knitting yarn market.
4. How many people fly in and out of LaGuardia every day?
5. How many gallons of ice cream are sold in the U.S. each year?
6. Are there two dogs in the world with the same number of hairs?
7. How many people have you interacted with over the last year?
8. How big is the U.S. market for Band-Aids? (the brand)
9. How many pairs of skis do you expect to sell in the U.S. market as an up-market new entrant?

USEFUL FACTS & CONVERSIONS

You do not need to memorize all of these, but you should know the more basic ones such as the population of the United States (or wherever you will be applying for jobs) and how many feet in a mile.

POPULATIONS
- World 6.2 Billion
- Europe 750 Million
- Asia 3,700 Million
- United States 285 Million
- Canada 31 Million
- China 1,300 Million
- Select U.S. Cities:
  - New York City 8 Million
  - Los Angeles 3.8 Million
  - Chicago 2.9 Million

MEASUREMENTS
- **Distances**
  2.54 cm = 1 Inch
  12 inches = 1 Foot
  3 Feet = 1 Yard
  1 Mile = 5280 Feet = 1.61 Kilometers
- **Volume/Weight**
  1 cup = 8 ounces
  2 cups = 16 ounces = 1 pint (or 1 pound)
  4 cups = 2 pints = 1 quart
  4 quarts = 1 gallon
  2,000 pounds = 1 ton
- **Height/Depth**
  Sears Tower, built 1974 = 1,454 ft
  Empire State, built 1931 = 1,250 ft
  Mt. Everest = 29,028 feet.
  Greatest known depth = Pacific Ocean, Mariana Trench = 35,810 feet
  Ocean depth at deepest point is about 7 miles (remember 5,280 ft/mile)
- **Length**
  Earth's diameter = 8,000 miles
  The Nile is the longest river in the world at 4,145 miles
  The Great Wall of China stretches over 1,400 miles

FACTS AND FIGURES
- **World's busiest airport - Passengers**
  1. ATLANTA - 80 Million
  2. CHICAGO - 72 Million
  3. LOS ANGELES - 68 Million
  4. LONDON - 64 Million
  5. DALLAS/FT WORTH - 60 Million
  20. NEW YORK -32 Million

- **Wall Street Journal average daily circulation = 1,795,448**
  USA Today = 1,418,477
  NY Times = 1,110,562

- **Worldwide auto production = 48 Million**
  U.S. auto production = 20% = 10 Million
  Japanese auto production = 14 Million
  Europe auto production = 18 Million

- **75% of Earth is covered in water**
  97% of that water is salt water