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Casebook 2003-2004

The Student's Reference Guide to
Practicing Consulting Case Interviews

The University of Chicago GSB
Management Consulting Group 2003-2004

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Practice Cases

PROFITABILITY / PROFIT IMPROVEMENT CASES

- Profitability / Profit Improvement
- Industry Analysis / Market Sizing

MACHINE LOADING

Background

A client produces a range of synthetic materials in varying widths and lengths. Each material is used for packaging but each differs with respect to physical properties such as weight, flexibility, general performance and cost. Each material can be coated with any one of four or five types of chemical substance that make the materials more or less impervious to heat, light, water, vapor, etc.

Question

The client wonders which combination of products he should manufacture to increase his plant's profitability. How would you go about determining the optimal mix of materials that he should produce?

Additional Information

Products

Our client's machinery can produce hundreds of different products. Some have been uniquely designed to meet specific customer requirements while others are used by a wide variety of customers.

Customers

Our client's customers are primarily consumers or industrial products manufacturers who use synthetic materials in packaging their own products.

Market Share

The industry is highly fragmented. Numerous small manufacturers supply similar products to a wide range of customers. Our client estimates he has less than 1 percent of the total market. No competitor has more than 3 percent of the total market.

Cost

The cost to manufacture each product varies according to materials used and the manufacturing process.

Price

Each product has a different price dependent on the cost to manufacture as well as the market for the product.

Suppliers

Our client uses commodity products primarily in the manufacturing process. All materials can be obtained from a number of sources.

Approaches

The primary issue in the case is determining the product mix that ensures that the profit of the plant will be maximized. The candidate should discuss the following for each product in order to gauge profitability: fixed and variable manufacturing costs, selling costs, and prices. The interviewee should also address the market demand

for each product (to ensure that what is produced can be sold at an acceptable price).

If the candidate discusses issues that are not relevant to the profitability of each product line or to maximizing the profitability of the plant overall, repeat the question and ask how the issue being discussed will lead to a solution for the client.

Minimum Requirements

The candidate should, at a minimum, address the following issues:

1. Are there market limitations to the potential production of any one material?
2. Is there competition for these products?
3. Are there cost differences in the manufacturing of these materials? For example, do some coatings cost more than others? Do some materials have inherent cost differences?
4. Is there flexibility in the pricing of these products?

Better Answers

Additional questions and observations should include:

1. Are there differences in setup times and costs for various materials or coatings?
2. Do these materials move at different speeds through the machines?
3. Are the machines truly interchangeable, or are some better suited to one product or another?
4. Is there an unlimited market demand for these products?
5. Are there technological displacement or replacement products on the horizon?

Outstanding Answers

The best candidates will formulate a profit maximization algorithm. The superior algorithm would maximize the profit contribution per machine hour.

1. The formulation would be: Profit contribution (unit volume) times (unit price minus unit variable cost).
2. Machine-hour capacity is a surrogate for fixed costs per unit of volume. Fixed costs take into account depreciation and standby costs as well as those costs that are independent of the variable costs per pound or ton of material produced.

An outstanding answer would include recognition of asset costs and required capital as well as the income or profit contribution. Also, potential substantial differences in volume produced per machine-hour and/or the price obtainable in the marketplace relative to the cost must be weighed. Finally, consideration must be given to potential market demand and competitive actions.

STEAM BOILER HOSES

- Profitability / Profit Improvement

Background

A consulting firm was asked by a diversified manufacturing client to help turn around the firm's steam boiler hose division. This division provides boiler hoses for both external customers and the client's boiler division. Background information on the client and industry follows:

- Boiler hoses are sold with original equipment and as replacements on older equipment.
- There has been increasing price pressure in the industry.
- The client is third largest of eight industry participants.

Question

How would you structure an analysis aimed at restoring profitability? Where do you expect to save costs?

Additional Information

- Last year P&L showed (as a 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.

Approaches

Minimum Requirements

The candidate should avoid getting bogged down in the following areas:

1. Drop the product line (apparently not possible because hoses are necessary for boiler operations).
2. Raw material prices (they are the same as every other firm's).
3. Allocation of overhead (no savings available; little potential).
4. SG&A (standard industry fee paid for independent installers).

Better Answers

Better answers will consider:

1. Economies of Scale (client is big enough to achieve scale production).
2. Production technology (client has modern plant).
3. Labor costs (wage rate and productivity are average for industry).
4. Raw material purchasing practices (materials are purchased through long-term contracts based on the spot market price minus a discount).

Outstanding Answers

The best answers, following a logical progression, should discover the actual answer: the product has been over-designed, requiring excess raw material. The superior answer should consider the following organizational implications:

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

PLASTIC MOLDING MANUFACTURER

- Profitability / Profit Improvement

Background

Over the past seven years a plastic molding manufacturer has experienced declining profitability.

Question

What should the company do to return the company to profitability?

Additional Information

Product

The company has two primary product lines: custom and non-custom. Revenue is roughly split between the two product lines.

- The non-custom line makes plastic containers to hold food products such as salsa, etc. The containers come in a few different varieties, but each variety is standard.
- The custom line creates plastic molds for products such as TV dinners for which the mold must be customized.

The products across competitors are fairly homogeneous.

Customers

The customer base is fragmented and consists primarily of food companies. There are no apparent ways to segment the customer base. Some purchase only one product line while other buy from both product segments.

Industry

The industry is fragmented and comprises many competitors. The products they manufacture are relatively homogeneous. The client believes that many of its competitors are not experiencing their own decline in profitability. As a whole, the industry is relatively mature, basically growing along with GNP.

Financial

- Operating margins are positive for both product lines (approximately 5 and 6 percent for custom and non-custom respectively).
- Overall margins are negative for both (approximately -2 and -1 percent for custom and non-custom respectively).
- Over the past few years, profitability has been slowly changing (i.e., no sudden event has been the cause).
- Fixed costs for the company are primarily made up of sales, machinery, and administration.
- Variable costs are composed of raw material and labor. Raw materials are commodities. Labor is primarily hourly and unionized (and typical for the area and skill being provided).
- The manufacturing process currently is predominantly manual and has no real potential to become more automated.

- The machinery is 10 years old and will last another 15.
- Sales and administrative costs will remain relatively unaffected (and are very difficult to reduce) as volume increases (hence they are included among fixed costs).

Approach

A profitability framework may work best here. Focus on the equation Profit = (Price-Cost)*Quantity - Fixed Cost. Some of the key points to emphasize:

- Price: The large number of competitors manufacturing the homogeneous product make it unlikely that any of them could raise price without losing substantial volume.
- Variable Cost: Since the raw materials are commodities, there is little or no opportunity to decrease cost. Labor shows little opportunity for having its cost decreased.
- Quantity: Since operating margins are positive but overall margins are negative, the overall margins could become positive if volume were to be increased. Such an increase would allow the company to cover fixed costs more efficiently. The candidate should focus on ways to increase volume:
  - What is the market growth rate?
  - What is the market share of the client and how can it capture more?
- Fixed Costs: There is not much opportunity to reduce fixed costs.

SKI RESORT

- Profitability / Profit Improvement

Background and Question

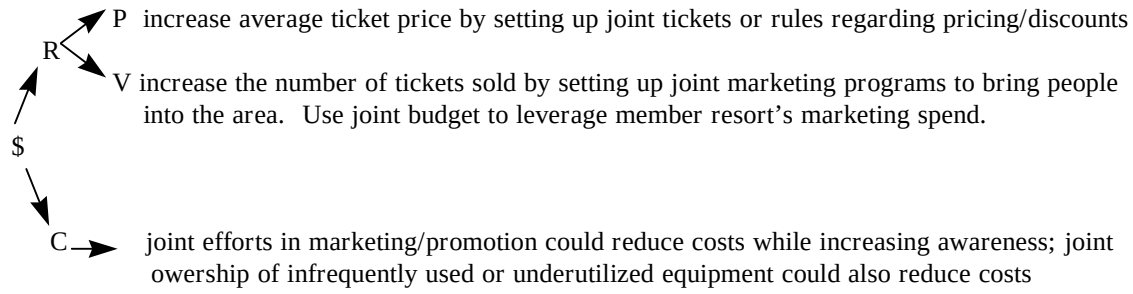
A regional association of ski resorts, SKIASSOC, wishes to increase its members' profits. How can the association do this?

Additional Information

- SKIASSOC has 15-20 members.
- All SKIASSOC members are located in the state of Colorado.
- More than 90 percent of the ski resorts in Colorado are members.

Approach

SKIASSOC member ski resorts must either increase revenues or decrease costs. A profit tree is useful in determining the opportunities.



Although SKIASSOC could set up effective price floors and joint marketing programs, it must remain conscious of antitrust concerns and competition from outside the region. If Colorado becomes too expensive, customers will go elsewhere or even choose not to ski at all. It is also important to keep in mind that there are two markets being served: local skiers and inbound travelers. Price discrimination could be effectively utilized to extract more revenue.

INDUSTRIAL WIDGETS

- Profitability / Profit Improvement

Background

IndustroCo makes and sells 300 different types of industrial widgets. Profits have been declining over the last several years.

Question

IndustroCo has hired your firm to analyze why profits have been declining and to recommend solutions to reverse this trend.

Additional Information

- IndustroCo has developed many innovative products over the years, but is best known for its first product.
- The company has two distribution channels: a company-operated, catalog-based 800 line; and a direct sales force for large companies.

IndustroCo has been losing money on over 100 of its products.

- Most of these products are sold to small to mid size OEM's and have a small average order size.
- Production costs on these items are much higher than the sales to large customers since changeover / equipment retooling costs are high relative to the number of units produced.

Approach

Use 3C/4P analyses to probe for more information. Here are a few good questions:

- Do the products fit into any segments or buckets?
- How many products are profitable and how many are losing money?
- How are costs allocated among products?
- How accurate are the cost-accounting systems?
- Have any Activity Based Costing analyses been done?
- Are historical data available from the accounting systems?
- Are there any transfer pricing issues?

Possible solutions include higher minimum-order quantities, fewer fulfillment dates per year, higher inventories, and/or product repricing to reflect actual costs incurred.

RAIL FREIGHT HAULER

Background

The client is the CEO of a larger company that is currently engaged in the business of Rail Freight Hauling. The business fundamentals continue to be strong, but recently the Company has struggled in generating the strong shareholder return that is characteristic of the Company and its peer group.

Question

What has caused the decline in shareholder return and how should the CEO address the problem?

Additional Information

- The industry is very mature.
- Companies in industry tend to generate a lot of cash – once significant fixed costs are incurred, business has relatively low variable costs (fuel is the major one, but this can't be major cause of the problem because it affects entire industry).
- There are four major companies in industry – two in the West and two in the East.
- All competitors have roughly the same national market share.
- The small number of total competitors is due to significant consolidation in industry.
- Service is non-contiguous between the East and West and transnational service is a small segment of the overall market
- Our client competes only in the West and in this segment, 75% of revenue is served by our client and the competitor (equal market share). Of the remaining 25% (mainly coal and agriculture), 10% is served by our client and 15% is served by the competitor. Revenue growth generally comes from acquisition – typically market shares remain relatively constant (nobody steals too much market share).
- Segments served are the following: Coal (35%), Agriculture (15%), Chemical (10%), Merchandise (25%), Auto (5%), and Intermodal Trailer Rigs (10%).
- Company is one of more profitable in industry. They have been able to generate cost savings of approximately 10% per year for the last five years.
- Our client recently (10 months ago) merged with another company of equal size – our client has completed 75% of the integration of the merged companies, areas which include stock yards, service centers, train sets, and track disposition

Approach

The key to this case is not getting caught up in all of the industry information that comes up throughout the case. Because this is such a mature industry, the candidate should realize that profit improvement opportunities are only going to come from acquisitions (to generate top-line growth) or cost cutting. Once it is determined that the Company made a significant acquisition, the candidate should

walk through integration issues. The candidate should eventually recognize that the merger has left considerable assets under-utilized. Significant assets could be sold off, and in particular, much of the track accumulated in the merger could be sold to mom and pop short distance railways (e.g. scenic tours, specialized hauling).

MAP AND GLOBE MANUFACTURER

- Profitability / Profit Improvement
- Industry Analysis / Market Sizing

Background

High-quality, large-format maps constitute about 3 percent of total map market demand. The vast majority of maps are low-cost, foldable items used mostly by automobile drivers. The globe market, however, is about 95 percent geared toward high-quality, educational oriented products. Almost all domestic globe manufactures also make educational quality maps.

Question

MapCo, a mid-sized manufacturer of maps and globes for schools, is losing market share and would like to increase profits. How can it do so?

Additional Information

- There are five competitors in this marketplace.
- MapCo is the third largest.
- The largest player has a 30 percent market share.

Approach

Use 3C/4P analyses to better understand the market.

- The sales model is to make as frequent contact with schools as is cost-effective.
- The items the client is selling are not a major consideration for school principals, so being in the right place at the right time is critical.
- Schools are NOT price-sensitive to these items because they don't replace many of them, and the principals don't want to spend any time or effort in shopping around.

A possible solution to the client's problems is to raise prices and increase the number of sales visits to schools. Provide the sales force with an incentive by making compensation more commission-based (currently 95 percent from salary).

AUSTRALIAN AIRLINE

- Profitability / Profit Improvement

Background

The client is an Australian airline that serves greater Australia and operates two major business units: a commercial passenger commuter service and a package delivery service within Australia. This case specifically focuses on the client's package delivery service. The client currently has the largest market share of air freight, but its business base and profitability are both eroding.

Question

Identify and discuss relevant issues in determining why the client is experiencing these problems, and develop a performance enhancement plan. If time permits explain the plan.

Additional Information

Air Freight Market:

- Growth: declining over last five years.
- Market share: 53 percent for client, down from 60 percent one year ago.
- No major competitor, small air freight delivery makes up rest of market.

Delivery Freight Market (only give if requested):

- Growth: increasing by 5-7 percent over last five years.
- Made up of air, ground, and rail segments.
- Client has 17 percent of delivery market, down from 30 percent one year ago, 60 percent five years ago.

Customer Base:

- Australian market: five cities within 400 miles of each other accounting for 80 percent of business.
- Professional and personal - mostly small packages (under 5 pounds).
- 80/20 rule: 20 percent of customers account for 80 percent of business
- Medium/large companies are major users of delivery services.

Competition:

- Trucking companies now dominate delivery market: 20 percent five years ago, 40 percent two years ago, 60 percent today.
- Truck delivery companies service the five-city radius.
- Schedule: 5PM package drop-off (no pick-up); arrival within two or three business days.
- Prices comparable for similar service.

Company:

- Fleet of 35 commercial jets traveling once or twice daily to each major city in Australia.
- Packages placed in cargo holds of plane (negligible incremental costs - additional loading time).
- 35 planes operate at 100 percent capacity.
- Two freight planes carry packages overnight (fully owned by client).
- Freight planes operate at 65 percent capacity.

Distribution:

- No efficient system - packages organized by destination and sit on dock until loaded on plane.
- Because of two or three day delivery schedule promised to customers, packages can sit on dock overnight or for a few days before being shipped.

Cost/price Analysis (only give as requested):

	Client	Truck(avg. competitor)
Price	$10 (under 5 lbs)	$10 (under 5 lbs)
Service	2-3 day delivery	2-3 day delivery
Cargo space/day	10,000 sq. ft	4,000 sq. ft
Package Size	5 pkgs./sq. ft	5 pkgs./sq. ft
VC/day	$250,000	$150,000

Approach

- All areas above should be examined for minimal answer.
- Candidate should recognize that the major competitors are truck companies.
- Recommendations should concern enhancements in client's distribution system.
- Client could also lower prices as a result of higher capacity and lower costs.
- Very Good Answer: Client is an air freighter whose major competitive advantage is efficiency over its competition (truck service). Client should promote fast delivery times and overnight or same-day service.
- Another Good Suggestion: Partner with an international company and handle domestic distribution.
- Bad Answer: Buy trucks and begin ground transport delivery service.

ITALIAN RESTAURANT

- Profitability / Profit Improvement

Background

A friend of yours owns an Italian restaurant in Lincoln Park. Historically it has been a successful restaurant. Recently, profits have dropped.

Question

Why are profits dropping?

Additional Information

- The restaurant could be characterized as a mid-priced "Italian Grill", similar to Bella Vista or Mia Francesca. It is a tried and proven restaurant concept in the Chicago area.
- Revenue has fallen, while costs have remained steady or have fallen slightly.
- There have been no changes in competitors or competitive behavior.
- There have been no changes in overall customer preferences, or customer incomes.
- There are three types of entrees served at the restaurant: pasta, fillets and seafood.
- Recently, the restaurant has been serving more pasta and less of the other entrees.
- Pasta entrees are lower margin than the other types of entrees.
- The same numbers of customers come through the restaurant in a given night.
- There have been no major changes is unit costs (i.e. the cost of products or labor have not changed significantly).

Approach

- The key to this case is to take a structured look at what drives the restaurant profitability. Intuitively, the candidate should have an understanding that there are two main product categories in a restaurant: alcohol and food.
- The candidate should also realize that there are several drivers of overall revenue: The amount of time spent in the restaurant significantly drives spending on alcohol.
- The candidate should develop the intuition that the costs of the three types of entrees differ. Pasta is much cheaper, and therefore has lower margins than the other entrees.
- A key point to the case is to realize that while overall customer preferences of the market as a whole have not changed, but the restaurant is attracting more of the pasta segment of the market.
- The candidate should realize that if the same number of customers come through the restaurant in a given night, then per customer spending must have dropped.
- The candidate should also realize that if the same number of customers come through the restaurant in less time, each customer on average spends less time in the restaurant - this impacts sales of alcohol.
- Ultimately, the analysis should identify two main issues driving profitability. Plausible explanations of the two issues are included so the interviewer can develop an interesting story.

1. Tables are being turned quicker. Previously, table turnover was much slower, which forced many people to wait in the bar and consume relatively high priced drinks.
2. The mix of customers has changed. More young couples are attending the restaurant, and are ordering more pasta at the expense of the higher priced entrees.

BUSINESS SCHOOL COFFEE SHOP

- Profitability / Profit Improvement

Background

A business school coffee shop has traditionally been profitable. Lately, profits have dropped.

Question

Why is the coffee shop losing money?

Additional Information

- The coffee shop sells two types of products: coffee and quick snacks (e.g. individually wrapped, ready to eat food).
- Product offerings have remained the same.
- Unit costs have remained constant.
- Fixed costs have remained the same.
- Revenue has increased
- Sales of Coffee, in units, have remained constant.
- Sales of Quick Snacks, in units, have increased.
- In percentage terms, Coffee used to comprise 90% of sales (it now comprises 60%), and Quick Snacks used to comprise 10% of sales (and now comprise 40% of sales)
- A nearby campus cafeteria has recently closed down
- The margin on a cup of Coffee is 20 cents, while the margin on a Quick Snack is -2 cents.

Approach

- The central issue in this case is the sales mix of the store.
- The candidate should figure out that an increase in Quick Snacks coupled with constant Coffee sales means that Quick Snacks represent a proportionately higher percentage of total sales.
- The candidate should also investigate the relative margins on each type of product.
- The candidate should go beyond the sales mix change and be able to address the big picture: With the closing of the cafeteria, the coffee shop has picked up some of the demand for food.

COOKIE MANUFACTURER

- Profitability / Profit Improvement

Background

The client is a cookie manufacturer. They have experienced a recent decline in market share and profitability.

Question

What is the problem? What recommendation(s) do you have to address the declining profitability?

Additional Information

- Unit sales have declined
- Prices have increased from $1.20 last year to $1.25 this year
- The following variable costs have increased:
  - Cost of materials has gone from $.50 last year to $.55 this year
  - Manufacturing Overhead has increased from $.15 a bag last year to $.20 this year
- The following variable cost has remained constant:
  - SG&A has stayed at $.10
- The following variable cost has decreased:
  - Labor has gone from $.15 last year to $.10 this year.
- Distribution cost has remained constant
- The market is mature
- There have been no new competitors or products to enter the market in this time period
- Industry sales have been unchanged (thus market share for the client has dropped since their sales have declined)

Approach

1. The candidate should immediately divide the case into revenues and costs. Also, including a third bucket such as industry dynamics will allow the candidate to explore industry trends.
2. Questions regarding industry trends should extract the following information:
   - The market is mature
   - Their have been no new products or competitors to enter the market
   - Industry sales have remained constant

   These questions should lead the candidate to the conclusion that the problem lies within the company
3. Questions regarding revenues should extract the following information:

- Unit sales have been declining
- Prices have been increasing
- Decline in sales offsets the increase in price in terms of average revenue

The candidate should conclude that revenue is not the cause for the decline in profitability

4. To determine if costs are the problem, the candidate should ask questions regarding variable costs versus fixed costs. Questions about variable costs should extract the following information:
    - Cost of material has increased
    - Labor has decreased
    - Manufacturing overhead has increased
    - SG&A has remained constant
    - Distribution routes and distribution costs have remained constant
    - There are no other relevant variable costs

    The fact that labor costs is the only one to decrease should clue the candidate that automation is part of the issue. Overall, variable costs have increased which is the source of the declining profitability.
5. Questions regarding fixed costs should reveal:
    - Fixed costs have increased
6. The candidate should surmise at this point that new machinery which automates labor has been purchased. The fact that the cost of material has increased should indicate to the candidate that either the size of the cookie or the amount of cookies in a bag has increased. This is the answer to the problem: Last year, a new cookie machine was purchased that bakes, bags, and seals the cookies. Previously, this was done manually. However, the new machine is placing more cookies in a bag than did the previous method, and costs have increased.
7. The recommendation should be to advertise that there are now more cookies in each bag and raise the price of the product. The fact that there are more cookies per bag was not realized previously; thus the price for cookies was not increased, and profitability declined.

GOURMET CHOCOLATE MANUFACTURER

- Profitability / Profit Improvement

Background

The client is a manufacturer of gourmet chocolates. They produce both custom designed chocolates, as well as commodity baking chocolates. They are known for their excellent service, which allows them to charge a price premium. Recently, their costs have decreased, their unit sales have increased, but their profit margin has decreased.

Question

Why has their profit margin decreased if their costs have decreased and unit sales has increased?

Additional Information:

- Profit margin was 10% 3 years ago; now it is 4%
- They have maintained their market share
- 95% of their volume sales is commodity chocolate, 5% is custom-designed chocolate
- They have the same type of customers as always: large candy stores (i.e. sales to large department stores), small candy stores (i.e. pharmacies or small candy stores), catalog sales (i.e. sales directly to end-customer)
- The proportion of their sales today is 15% to large candy stores, 80% to small candy stores, and 5% to catalogs.
- **(Note: The following points are the key to answering the case and should only be provided if the candidate asks for this information)**
- The proportion of their sales 2 years ago was 5% to large candy stores, 90% to small candy stores, and 5% to catalogs. Profit margin for large candy stores is lower than that of small candy stores
- Prices have declined
- Costs have basically been unchanged

Approach:

- The candidate should recognize this is a profitability question and should divide the case into revenues and costs. An outstanding approach will include adding a third bucket which is customers (who are the client's customers and is there a difference in revenues and costs depending on customer type)
- Good questioning concerning costs will involve dividing costs into fixed and variable costs. Questions on costs should extract the following information:
  - There has been no change with fixed or variable costs

  The candidate should then quickly realize that cost is not the issue
- Questions on revenue should extract the following information:
  - Average price has declined
  - The volume sales breakdown has changed with increased sales towards large candy stores and decreased sales towards small candy stores
- With this information, the candidate's answer should be that the reason for the declining profitability, despite increased unit sales and decreased costs, is that the profit margin for large candy stores is less, since large stores can extract

more volume discounts, and with a higher proportion of the client's sales going to large candy stores, the client's profit margin has thus decreased

RETAIL STORE

- Profitability / Profit Improvement

Background

A consulting firm was hired by a well-known manufacturer of designer men's and women's clothing. A few years ago, the client decided to open a new distribution channel – their own retail store. They opened one store in New York City, which quickly became very profitable and successful. They then decided to open 3 new stores in Chicago, Boston, and Dallas, respectively. After 5 years, they found that the Boston store was not as profitable as the one in New York City.

Question

Why is the Boston store less profitable? How would you go about assessing the source of the problem?

Additional Information

- Both stores are in very good shopping locations
- The stores are the same size
- In terms of fixed costs, they are about the same although the lease for the New York store is slightly higher
- In terms of variable costs, labor, inventory, electricity, overhead, and taxes are all the same
- They sell different merchandise. The New York store sells more upscale clothing, i.e. suits, based on the local demand. The Boston store sells more weekend or casual wear , i.e. sweaters, khakis (Note: This is key to answering the case and should only be provided if the candidate asks for this information.).
- The profit margin on the upscale clothing is higher than on weekend or casual wear (Note: This is key to answering the case and should only be provided if the candidate asks for this information.).

Approach

- The candidate should divide the case into Revenues and Costs, by store. A third bucket that would demonstrate logical thinking is Competition although this ends up having no relevance to the answer in this case
- Questions regarding costs should be split into fixed versus variable costs. The following information should be extracted:
  - Fixed costs are about the same, although the lease in New York is slightly higher
  - Variable costs for operating the store are the same

  The candidate should conclude that costs are not the issue.
- Questions regarding competition should extract the following information:
  - Competition is similar in both New York and Boston, since both stores are located in upscale shopping areas

The candidate should conclude that competition is not the issue

- Questions regarding revenue should be asked for both New York and Boston. The following information should be extracted:
  - The merchandise sold in New York versus Boston is different
  - The merchandise sold in New York extracts a higher price. The profit margin is higher.
- With this approach, the candidate should conclude that the more upscale product mix, the selection of which is driven by local demand, drives higher profitability in the New York store. Therefore, a difference in profitability is to be expected.

METAL HEAD AUTOMOTIVE PARTS

- Profitability / Profit Improvement
- Industry Analysis / Market Sizing

Background

A consulting firm was hired by the CEO of a conglomerate. All divisions of this conglomerate must have a 20% ROI. One division, Metal Head Auto Parts, has had slowly declining profitability for the last seven years, and now has an ROI below 20%.

Question

What is the cause of the decline, and what are the options?

Additional Information

- The company makes several products which are made of lead and tin alloys:
  - Stamped metal products (15%)
  - Fuel filler hoses for cars (85%)
- The old CEO is nearing retirement.
- Market entry is very difficult because of environmental restrictions on lead and tin manufacturing
- Metal Head has 44% of the market, the other two competitors have 50%
- The overall market has declined by 20% since 1986. Sales to the Big-3 have declined even more, but the transplants are now about 10% of the market, up from zero.
- The client has the lowest quality, highest prices, and worst delivery record
- Most of the sales are made to OEMs under long-term (5 year) contracts, usually for the life of the model. The OEM does not design the hoses, just gives specifications. The client does not sell to the transplants.
- Financial Information:

	Client	A	B
R&D	10	15	20
OH	10	10	10
COGS	60	55	50
Sales	20	20	20

Approach

- Exploring industry trends will reveal that the overall market has declined by 20%; thus, reduced demand is one source of the client's loss in profitability
- Next, identify the area(s) in which the client has been performing poorly (quality, cost, delivery).
- Recommend that the client needs to improve in these areas, but think through which area should be targeted first. Possible answers include:

- Change the sales structure (have dedicated representatives for each firm, change the sales representative's incentive structure)
- Expand to the transplant market
- Increase R&D. The fact that the client's R&D is low as compared to competitors' indicates that the client's equipment is below.
- Try to expand the stamped products market

INSULATION MANUFACTURER

- Profitability / Profit Improvement

Background

Your client manufactures insulation. Profits have been declining over the past 3-5 years.

Question

What are the causes of the declining profitability, and what measures should be taken to reverse the decline?

Additional Information

- Sales volumes are flat
- Profit Margin = 10%
  - 10% SG&A
  - 30% Conversion process (equipment and labor to make insulation)
  - 50% Raw Materials
- Market Share:

  55% Client

  25% Company A

  10% Company B

  10% Small, regional players
- Insulation is essentially a commodity product, with little brand differentiation. The market price is $15/lb. Most manufacturers are near capacity (say 90% of capacity).
- The insulation is used mostly for residential houses. The market is closely tied to housing starts (and therefore overall GDP, interest rates, etc.)
- Distribution:
  - 55% to insulation subcontractors (hired by builders - hundreds of them, but a lot of consolidation over the past few years)
  - 25% to retail stores (Home Depot, etc – a segment formerly comprised of many small retail stores, but which is being consolidated by Home Depot, Lowes, etc.)
  - 20% to building products stores
- Sales volume increases have been to subcontractors, at the expense of building products stores
- Pricing Levels:
  - Highest level to retail stores, but declining due to the consolidation of retail stores which is giving the retail stores more buyer power
  - Mid-range prices to building products stores

- Rebates to volume purchasers in subcontractor market. (This is the most price sensitive segment, because insulation is 95% of their COGS).

Approach

- To determine the cause of the declining profitability, explore the client's customer base. This will reveal that the shift in sales towards subcontractors, who are becoming consolidated and thus gaining more buyer power, is reducing the average price and thus eroding the profit margin
- Recommend to raise prices to all customers. Since the client is the industry leader, others will follow the price hike. Furthermore, if the competition undercuts the price, they don't have the capacity to steal away the client's market share.

DEPARTMENT STORE

- Profitability / Profit Improvement

Background

The client is the CFO of a major department store. One year ago, a major competitor opened a store down the street from one of its suburban locations. Since then, the client's store has experienced a loss in profitability.

Question

Why has the store lost profitability, and what should it do to increase profitability?

Additional Information

- The competitor services the same clientele
- Although both competitors operate nationally, we are only concerned with the local market.
- The client's sales are down by 30%.
- The clientele is comprised of 50% yuppies and 50% retirees.
- The competitor has:
  - Same size store, same product mix
  - Same prices as the client
  - Parity in all other areas
- The client's product mix consists of :
  - Clothing (no change in sales)
  - Appliances (35% decline in sales)
  - Furniture (35% decline in sales)
- The competitor bundles a service contract into their price

Approach

- The first step is to exploring the exact loss in profitability (decline in sales of appliances and furniture).
- Next, determine why there is a loss in those areas. Investigate if the competitor offers different brands or different services (services contract).
- Upon realizing that the competitor is beating out the client on service, recommend that the client make changes to its operations. Possibilities include:
  1. Motivate and/or rehire the sales staff (i.e., hire better skilled sales representatives or improve the sales incentives for sales in the poorly performing areas)
  2. Change the displays and layout in the store.
  3. Match the competitor's service policy.

TEXTILE PRODUCTS

- Profitability / Profit Improvement
- Industry Analysis / Market Sizing

Background

A diversified UK manufacturer has retained your firm because its Textile Products Group is experiencing declining revenues.

Question

Please identify why you believe revenues are declining and what recommendations you would make?

Additional Information

Industry

- Group produces finished textile products such as uniforms, jackets, rucksacks, etc.

Customer Segments

- Products are sold to a variety of segments
- The true problem lies with the Government Sales Division and sales to the US government specifically.

Competitive Environment

- Industry is relatively fragmented with tight price competition. Number of competitors decreased in early 1990's as US government purchased fewer products and less efficient producers were driven out of business. Client survived this consolidation with relatively small difficulties.
- Excess capacity exists within American manufacturers and worldwide.
- Lobbying by US manufacturers has led to increasing emphasis by US government to buy goods made in America. The end result is slight preference for US companies, but foreign manufacturers still allowed to compete.

Competitors

- Roughly 10 players at any given time with market share almost equally fragmented. Largest competitor has roughly 25% of market, but most have less than 10%
- Client formerly had 12% of market, but now has less than 5% and continues to slide.
- Largest competitors are distinguished by having better manufacturing ability (variety and delivery time) than other American competitors but roughly equal to client.
- Competitors cannot match quality of client who is ISO 9000 certified for both development and manufacturing. No US manufacturers are ISO 9000 certified.

Client's Strategic Starting Point

- In past, client was able to succeed through being relatively strong in all areas: price, time, variety, and especially quality. Regulations are tilting the field against the client.
- Client has excess UK capacity; therefore has preferred manufacturing only in UK.
- Client has recently partnered with a Malaysian manufacturer in order to pursue bidding opportunities in Far East, where low prices are paramount. Client offered manufacturing and quality expertise in exchange for equal split of production and profits.

Economics of Business Decision

- Labor is 70% of costs and is therefore low labor rates are critical to overall price.
- Client's cost structure differs slightly from that of American competitors. UK has lower labor rates than US, but transportation costs are obviously higher to ship finished goods from overseas.
- Customer segments: US government segment is only problem – all other segments are achieving forecasted positions.
- Achieving ISO 9000 certification is time-consuming and expensive process due to high learning cost for management to develop proper procedures. Once procedures are developed for a specific type of manufacturing process, they are easily transferred to other facilities.

Approach

Bad answers

- Exit industry.
- Continue competing on same basis.

Good answers:

- Start up an American manufacturing division from scratch. Will allow client to compete, but exacerbates problem of excess capacity in addition to entry costs (which are relatively low).
- Buy a current American manufacturer to circumvent regulations, while not adding to capacity. Client could obtain funds for purchase but is not thrilled with prospect.
- Lobby US to change "Buy American" regulations or encourage UK to match US regulations until policy is changed (time-consuming process).

Best answer:

- Copy client's Malaysian strategy by having client partner with an American firm. Offer to bring partner's standards up to ISO 9000 level in return for share of production and profits. Client's profits from US market will decrease compared to historical level, but this is a given due to the current market environment.

CONSUMER GOODS MANUFACTURER

- Profitability / Profit Improvement
- Pricing

Background

A consumer goods manufacturer has retained your firm because its snack foods division is not performing as well as the competition.

- Frito Lay is the dominant player with 42% of the market, revenues of $5 billion, and operating profits of $1 billion or 20%.
- Client has 8% of the market, revenues of $850 million, and operating profits of -$25 million or –3%.

Question

The data above shows a 23% difference in operating profit margins. What is the cause of this 23% gap?

Additional Information

- Division produces snack foods – primarily chips (potato, tortilla, etc.) but also items such as cookies and cakes.
- Price: Frito Lay and client charge roughly the same prices for 80% of the product range. However, for tortilla chips, Frito Lay charges $2.99/bag, while the client only charges $1.99. Tortilla chips account for 20% of client revenues.
- Client's costs break down as follows: COGS 45%, Shipping 5%, Local Market Distribution 31%, Promotion 7%, Overhead 12%
- Client's local delivery trucks deliver $3500 worth of goods each week, while Frito Lay's deliver $6000.

Approach

- Price: Tortilla chips are 20% of client revenues = $170 million. Frito Lay is receiving $1 more per bag of chips. $1 is 50% of client's price. 50% of $170 million = $85 million. $85 million is 10% of $850 million. Price accounts for 10% of the 23% gap.
- Cost: Candidate must recognize that Local Market Distribution accounting for 31% of costs sounds high. Frito Lay is receiving $2500 per week more than client, which is 42% of the $6000 total. 42% multiplied by 31% = 13%. Local Market Distribution costs accounts for the remaining 13% of the 23% gap.

REGIONAL ASIAN BANK

- Profitability / Profit Improvement

Background:

The processing division of a large regional Asian bank wants to improve its cost-to-revenue ratio (CRR). Present calculations reveal that the current CRR is 0.60. The client wants to improve this to the industry standard of 0.40.

Question:

What strategies can the client pursue to lower its CRR to 0.40?

Case Information:

The client provides back-office services for the bank's three other divisions: Retail Banking, Corporate Banking, and Regional Banking. These services include: credit processing, payment processing, customer service processing, call center services, and credit card processing.

The client receives $100M in annual revenues. In the past, revenues have always grown or diminished in accordance with industry trends; costs increase and decrease in proportion to revenue. This trend is expected to continue in the future. An analysis of the revenue/cost distribution will show that revenue and costs are distributed evenly among the three customers. *[The candidate can calculate that costs are approximately $60M]*

The client is organized into three highly independent groups, with each group servicing one customer. Analyzing the individual groups will reveal that none of them stand out as being particularly inefficient, and they all have CRR's of about 0.60. However, there are many similarities and overlaps in the processes they perform (all processes are handled internally). *[There is no need for the candidate to explore the specific processes or overlaps.]*

A cost analysis will reveal two types of costs: labor and systems. Labor costs stem from the organization's workforce of 1,000 employees, with an average annual salary of $40,000 to $45,000; salaries are in accordance with industry standards. *[Salary cuts are not advisable.]* Systems costs are primarily IT related and comprise the remainder of costs.

A study of the client's IT systems will reveal that they are below industry level in sophistication.

A competitive analysis will reveal that the average industry cost distribution is 60% labor, 40% systems. No other information is available about competition.

The client has no control over the volume of revenue it receives from its three internal customers. Furthermore, the client believes that strategies to boost revenue by fine-tuning the operations of its customers are beyond the scope of the engagement.

The client's pricing for its internal customers is consistent with the industry standard. The client is aware that it can increase revenues by increasing internal pricing, but would like to hear other recommendations.

Analysis of Case:

The case can be approached by looking at ways to reduce costs and increase revenues in order to hit the target.

The client's labor/systems cost mix is 70/30%, compared with an industry standard of 60/40%. Upgrading IT systems may allow it to decrease its workforce, and reduce overall costs.

The client can integrate its three groups, and look for synergies. Possible synergies include integrating common processes and transferring best practices. This can result in reduced manpower requirements and further cost savings. (The candidate should list possible synergies that can occur from integration.)

Retail	BO
Corporate	BO
Regional	BO

→

Retail	BO	
Corporate		
Regional		

Reducing costs may not be enough to achieve the target CRR. There are no options to increase revenues from the internal customers; however, the client can explore *insourcing*, where they can offer processing services to external banks for services for which they have high competencies. This can increase revenues substantially while bringing economies of scale.

The client can combine the *insourcing* strategy with *outsourcing* the processes for which it does not have competencies and which are **not highly sensitive**. The client can determine its strategy to maintain, develop, *insource*, or *outsource* the different processes as follows:

		Competency	
		High	Low
Sensitivity	High	Maintain Internally	Develop Competency
	Low	Insource	Outsource

FAMILY RUN PIPE COMPANY

- Profitability / Profit Improvement

Background

The client is a family-run steel mill that sells pipes. Recently, revenues have been going up, but profits have been decreasing.

Question

How can the client increase profitability?

Additional Information

- The pipe market is highly fragmented
- The company has a single plant that runs 24/365 and sells everything it makes
- The company sells two grades of pipes – thick and thin
- Both grades are commodity products, but thin is a higher grade
- Labor costs, steel prices, and SG&A have all been constant; recently, more has been spent on manufacturing
- Profitability breaks down as follows

Pipe type	Price / foot	Man. Cost / foot	Profit / foot
Thick	$2	$1	$1
Thin	$10	$8	$2

- The company sells the same length of pipe regardless of grade in any given time period
- Sales have recently been shifting toward thick pipes

Approach

- Should ask about product breakdown early on; this should lead to a discussion about price and cost for each product.
- Once it is determined that the thin grade is more profitable than the thick grade, realize that there might be a shift in sales across products.
- Issues to address in shifting sales back to thin pipes:
  - Is there demand?
  - Do customers prefer one-stop shopping (need to keep both lines)?
  - Is there equal wear and tear on the plant?

Common Pitfall

Getting stuck on evaluating “pipes” together and not breaking out the two grades

CASINO PROFITABILITY

- Profitability / Profit Improvement

Background

The client owns 30 casinos across the US.

Question

How can the client increase profitability?

Additional Information

- The major US casino markets are currently saturated in terms of numbers of casinos.
- Several competitors exist in each market.
- Profit margins break down as follows

Game	Profit margin	Profit/game (candidate should calculate)
25 cent slots	20%	5 cents
1 dollar slots	10%	10 cents
Blackjack	5%	
Craps	2%	

Approach

- Realize that the client needs to grow store for store. This implies increasing the number of visitors or increasing the level of gambling/visitor.
- List possible ways to do each:
  - Increase number of visitors:
    1. Get frequent gamblers to visit more often / stay longer
    2. Attract new gamblers
    3. Extend geography

  -- Increase level of gambling/visitor
    1. Make it more fun
    2. Push higher margin games
    3. Stay longer on boat
    4. Provide easier access to funds
    5. No waiting lines
- Focus on “pushing higher margin games” – should ask for data on profit margins (see above)
- Based on this information, slots are the big opportunity
- This should lead to a discussion of how to maximize usage of $1 slots. Use quarter slots as a hook, switch quarter slot machines over to $1 slots during periods where there may be a wait for $1 slot machines, etc.

WIDGETS MANUFACTURER

Background

A machine tool manufacturer produces widgets. The Company's profitability has been stagnant over the last five years and as a result, your firm has been approached to resolve this profitability issue.

Question

How would you go about improving the profitability of the widget?

Additional Information

- Widget has no substitutes and no other applications.
- Company feels it is impossible to increase market share.
- Company only produces this type of widget and it is not possible to produce other widgets.
- Market for these widgets is stable and is not growing.
- There are 3 major players in the market with the following pricing and cost structure:

	Market Share	Price	Variable Cost	Fixed Cost
Client	30%	$10	$2.50	$0.50
Competitor A	60%	$10.50	$2.50	$0.25
Competitor B	10%	$9.75	$2.50	$0.75

- There is no room to lower marginal cost.
- Fixed costs cannot be lowered either.
- Customer feels it is essential that widget works because of safety reasons.
- Relationships with customers are based on trust and are long-term.
- Cost of widget is small compared to total cost of final product for client.

Approach

- Can either use Revenue/Cost approach or 3Cs
- Market has three main players that all utilize large markups
- Candidate should concur with Company view that stealing market share will be difficult since this is a relationship business, and it could cause a price war which would destroy the oligopoly profits currently being made in industry.
- Assume market is small, hard to break into, and other major players have no interest in diversifying into this product.
- Because customer is very price inelastic, only way to increase revenues for client is to raise price.

OIL AND GAS COMPANY

- Profitability / Profit Improvement

Background

An oil and gas company has been experiencing a decline in profits.

Question

What is the root cause, and what would you recommend?

Additional Information

- The company is fully vertically integrated; its value chain includes exploration, drilling, distribution, refining, and gas stations
- The industry as a whole has not experienced any significant changes in profitability
- There have been no changes in profitability in the exploration, drilling, distribution, or refining segments of the value chain (do not give up this information too easily – let the candidate dissect the value chain)
- The company has recently opened up several new gas stations and located them in wealthy suburbs; fixed costs have gone up
- The dembvand for gas is the same in wealthy suburbs as in other areas; the company has not been losing money on gas
- The demand for fast, cheap, microwave, “gas station” food is much lower in wealthy suburbs than in other areas; the company has been losing money on food/drinks

Approach

- Begin with the 3C’s in order to determine what the company actually does; this leads to a value chain discussion
- Dissect each segment of the value chain in terms of profitability
- Once it is realized that gas stations are the problem, inquire about the sources of revenue from gas stations
- Realize that the root cause of the problem is that the company has been losing money on food/drinks due to a mismatched product offering; recommend that the company cater to its new customer base and adjust its product offering accordingly

SOAP PRICING

- Profitability / Profit Improvement
- Pricing

Background

A company that makes one soap product has noticed that it is losing market share and suspects that its pricing is to blame. The company currently charges $1.20/bar as opposed to $1.00/bar charged by competitors.

Question

Should the company lower price?

Additional Information

Market

- Currently selling 15 million bars/year; were selling 20 million bars/year before the firm started losing market share.
- The soap market is a mature industry (not growing rapidly).
- The company believes that lowering its price to $1.00/bar would boost volume back to 20 million bars/year. (How would you test this? Consider a demand analysis using demand instruments.)

Industry

- The company has a reputation of producing the highest-quality product on the market.
- The industry is dominated by four main competitors. Currently the firm's market share is 12 percent. The competitors have market shares of 30, 20, 17 and 10 percent respectively.
- Currently, the client has the capacity to handle virtually any increase in demand.

Cost Structure

The company cannot specify the overall cost of a unit (except that it is less than $1.00 and greater than $0.80), but it does know the cost structure to be the following:

- 30 percent labor
- 20 percent inputs
- 20 percent general and administrative
- 20 percent overhead
- 10 percent other

The company is unsure if it has any cost advantage over other competitors, but it clearly enjoys a reputation for the highest-quality products.

Approach

A profitability framework would probably work best here. Focus on incremental revenue and cost numbers since total revenue and total cost numbers are not available.

- Competitive Response: Reducing price would probably lead to a price war. Since it is improbable that the company has a cost advantage, it would lose a price war.
    - Incremental Revenue: Using the assumption that demand would go from 15 million units to 20 million units with a $0.20 price decrease, the incremental revenue would be 5 (1) = $5 million. But the firm would lose $0.20 on the 15 million units for a $3 million decrease in revenue; so the price decrease would lead to a net revenue increase of $2 million.
    - Incremental Cost: Since the company has the additional capacity, assume that labor and inputs rise linearly with volume and that everything else is fixed (the candidate ought to suggest this assumption).

        Sample Cost Numbers:

        $1.00 leads to $0.50/unit, giving rise to $2.5 million.

        $0.80 leads to 0.40/unit, giving rise to $2.0 million.
    - Incremental Profit: The numbers above give an incremental profit ranging from (0.5) to 0.

The incremental profit numbers, combined with the probability of a price war, make reducing the price to $1.00 a bad idea. The company should focus instead on quality, brand image, or segmenting the customer base.

DIGITAL CAMERAS

- Profitability/Profit Improvements

Background

Client is a consumer good / consumer electronics company. One of its products, Digital Cameras has never made a profit since its inception although the division has enjoyed double digit growth the last 4 years. Investors are getting impatient with the negative earnings.

Questions

1. What is a good target profit margin for the client (can be zero)?
2. Should the client exit the business?
3. What recommendation would you make to the CEO regarding the digital camera division?

Additional Information

- Client sells digital camera through various retail channels: Wal-Mart, on-line, photo shops, etc.
- Client does have different segments of camera, but for the purpose of this case assume an average camera, priced at $200.00
- Quantity sold has been increasing, but client has been losing share across all segments
- 4 major competitors:

Firm	% Share	Price
A	40%	$220.00
B	15%	$300.00
C	10%	$260.00
D	10%	$250.00

- 3 factors affect customer buying decision: brand image, good resolution and good lenses
- Client has brand equity because of its presence in related markets (camcorder, etc) and also use similar lenses to its competitors
- Client is not involved in any auxiliary product or services.
- Client's cost per camera is the same as A - $205 per camera
- Cost structure

Cost Description	A	Client
Direct material	60%	40%
Direct labor	15%	40%
SG & A	10%	15%
R & D	10%	7%

Margin (to be calculated by candidate)	5%	-2%

- Client's assembly is done in the U.S, A's assembly is done in a plant in Beijing

Approaches

1. Use a REVENUE/COST or similar framework to structure your analysis
2. Do not try to probe the 'average' camera issue – this is a simplification, but the other issues are more important in this case.
3. Conclude that client is losing share because of its poor resolution problem and determine by comparing costs that this is most likely due to inferior material
4. Use the numbers and table to quickly determine that the client is making a loss due to the expensive labor – assembly in U.S. This is also why the client is forced to buy inferior materials.
5. Determine that by outsourcing client can upgrade its direct material quality to be competitive with A and make a 3% margin (R&D structure is fixed for client)

Outstanding Answer

1. Note that closing plant will have union issues and outsourcing will have an initial investment so a 3% margin may not be worth the effort
2. A low cost player (with inferior parts and outsourced assembly) may fetch high margins but margins are not likely to last
3. Probe marketing synergies with other units – Does a presence in digital camera help the camcorder division?
4. Do not be afraid to suggest exiting the business if your analysis does not find any 'nuggets'.
5. If you do recommend staying in the business make sure you outline why staying in a commodity type business will help the client.

INK-JET PRINTERS

- Profitability
- Price Discrimination

Background

Our client is a world leader in printers – they manufacture different kind of printers and have had a dominant market share in all categories of printers. However, the CEO is worried that they might be losing share to competition.

Question

1. Is this true?
2. If so, how do we rectify the situation?

Background Information

- Five categories of printer: Category 1 being the slowest and Category 5 being the fastest. Faster printers are used by commercial and slower by home consumers.
- Competition and market share data as follows:

Printer – type	Category 1	Category 2	Category 3	Category 4	Category 5
A (Sales)	4MM	1MM	-	-	-
B (Sales)	-	-	2MM	5MM	20MM
Client	5MM	2MM	4MM	4MM	50MM

Printer – type	Category 1	Category 2	Category 3	Category 4	Category 5
Industry ave growth	20%	10%	5%	5%	4%
Client growth	-5%	10%	5%	5%	3%

- Category 1 customers are home consumers and care only about price
- Category 5 (candidate should deduce from above) is mature and does not offer too much room for growth
- A's printer is far inferior to client's printer
- Price: client: $89.00, A: $49.00
- Client has 2% margin. Cost of printer to A is $69.00
- All manufacturers also supply cartridges – consumers buy $200.00 worth of cartridges over the life of the printer.
- Consumers have to buy cartridges from the same manufacturer
- Firm A has a margin of $100.00 on the cartridges
- Client has a long-term, non-negotiable agreement with a Japanese company for their category 1 printers. Margin is $20.00 on the cartridges

- Difference between category 1 & 2 is only in speed – (2 is faster) manufacturing cost is the same. Agreement with Japanese player only for category 1 printers

Approaches

To structure an analysis, first understand a bit about the company, the products (mix) and see if there has been any price/quantity drops. Next, understand the customer segment we serve, the benefits they seek and see if the competition is gaining share because of a better product or better price. The 3-C framework works best for this case, but one could also just look at it as a REVENUE/COST framework.

1. Client is growing at industry average in 3 of the 5 segments and slower than industry average in 2, so conclude that the client must be losing share.
2. Category 1 clearly has higher potential because of high growth rates and the fact that it also only has one competitor.
3. Firm A is pricing lower than the client does and customers are very price sensitive – this is the cause of our poor performance.
4. Printer margins: Firm A = 49 – 69 = Loss of $20.00. Client, with a 2% margin, makes ~$2.00 per printer.
5. However Firm A makes a profit of $80.00 on the printer + cartridges (100 – 20), while client makes only $22.00. In fact Firm A can give away the printer for free and still make $11.00 in profits because of the cost advantage with cartridges.
6. Do not be distracted by 'loss-leader' strategies or by harping on the quality issue – these are possible answers but clearly it's a price discrimination (razor-blade) issue here.

Outstanding Answer

1. Client should start selling category 2 printers with a re-negotiated contract. If our price is in the same range as Firm A, customers will prefer a better quality / faster printer and we can easily dominate the high-growth market.

FREQUENT-EATER PROGRAM

- Profitability
- Cost-Benefit Analysis

Background

The CEO of a fast food chain wants to introduce a 'frequent eater' program.

Question

1. Is this a good idea?
2. What are the risks/issues that one must consider?

Additional Information

- For every $1.00 a customer spends, they get 1 point. The plan is to give away a sandwich once a customer accumulates 20 points
- Candidate can start working assuming an average store and fine-tune later.
- An average store has around 8,000 'heavy' eaters and 12,000 'light eaters' – segmentation beyond 'heavy' and 'light' not very relevant for this case
- Market survey indicates that heavy eaters will increase the frequency of visits from 30 to 36 times a year; light users will increase frequency of visits from 9 to 12 times a year.
- Customers spend an average of $4.00 for every visit – this is the same for heavy / light. (Heavy users just come more often, as explained in point 1).
- Around 20% of the heavy users are expected to participate in the program.
- Around 5% of the light users are expected to participate in the program.
- The "give-away" sandwiches cost $1.00 to make and there is a 50% gross margin on the average items sold.
- Only 50% of the consumers who participate ever redeem / use the coupons.

Approaches

A revenue / cost approach works best for this case. The goal is to determine if this program is profitable for the average store. Structure your analysis to determine the revenue and cost drivers, thereby getting the information listed above. It is ok to make some calculation errors, but it is important to identify all the revenue and cost drivers and the participation %'s.

- Heavy user participants = 20% * 8000 = 1600
- Increase in revenue for heavy users = 1600 * (36 – 30) * $4.00 = $38,400. Gross increase in earnings (50% margin) = $19,200.
- Light user participants = 5% * 12000 = 600
- Increase in revenue for light users = 600 * (12 – 9) * $4.00 = $7200. Gross increase in earnings = $3600.
- Net increase in gross earnings = $22,800.
- Cost of providing free sandwich to heavy users = 1600 * (36 * 4 / 20) = $11,520. At 50% redemption, the cost is $5,760.00

- Cost of providing free sandwich to light users = 600 * (12 * 4/20) = $1,440. At 50% redemption the cost is $720.
- Net value to average store is (phew) = $22,800 – $6,480 = $16,320.
- So conclude that program will be profitable to the average store.

Outstanding Answer

- Structure all your calculations so that they are easy to follow – this way, if you make a mistake, the interviewer can correct your numbers. Also, it is OK to approximate / ball-park, but you should state your approximations loudly.
- Once you prove the program is valuable for the average store, think about problems associated with different kinds of stores: highway stores may not benefit as much as stores in suburbia for example!
- What if competition comes up with a similar program? Will there be any increase in visits?

CREDIT CARD – MILES & MORE PROGRAM

- Profitability
- Product feature enhancement

Background

The CEO of a major credit card company is interested in having an airline frequent flyer program. The program would give the customer one frequent flyer mile for every dollar charged. Customers can redeem the miles for one round-trip ticket (within US) for every 5000 miles. The program is intended for a new card that the company is planning.

Question

- Is this a good idea ?

This case does not have any specific information – the candidate must be tested for structure, organization and creativity in his analysis. The candidate is also expected to make estimates of market size.

Additional Information

- Company gets 1% for every transaction from merchants
- Average customer is expected to have balance of $2000 on the card and have transactions worth $5000 a year. The interest rate is 20%
- Cost of the redeemed ticket - $200.00
- No new investment is required – existing systems/personnel can be used.

Analysis

The issues are best discussed in a REVENUE/COST framework as below:

Revenue:

- Program would be attractive to people who fly frequently. Do a back of the envelope calculation to estimate the target segment. For example: 100 million families in the US, 50% have credit cards – 50MM size of base segment. 25% travel more than once a year – so a potential 12.5MM cardholders will consider the program favorably. Conclude that there is an attractive target segment
- Next estimate the revenue per customer: 2000 * 0.2 + 5000 * 0.01 = 450.00

Cost:

- Cost of infrastructure/support for new program – negligible as we already have an infrastructure in place.
- Cost of ticket $200.00
- Need to think about acquisition cost (promotion): ~$50.00

Strategic Issues:

- Sticky customers (good), blackout problems with tickets (bad)
- Will all credit cards provide this – is it a competitive advantage in the long-term?

AUTO PART MANUFACTURER

- Profitability
- Operations / Supply Chain

Background

Your client is a manufacturer of an auto part. It is a relatively simple part to manufacture, yet it is essential to operate a car.

Question

How can the company experience growth across its distribution channels?

Additional Information

- Part goes under the hood
- Market: slow growth (mirrors inflation rate)
- Competitors: 3 other main competitors
  - Client has 30% share, Biggest competitor 30% share, others split the rest
- Repair: part can be replaced by customer (do-it-yourself) or by a mechanic
- Current Channels (after-market) – 1) Small mechanics (70%) 2) Large full-service mechanics (10%) 3) Auto Parts Chain Stores (10%) 4) Mass Merchandisers (10%)
- Market Mix – 1) Small mechanics (40%) 2) Large full-service mechanics (20%) 3) Auto Parts Chain Stores (20%) 4) Mass Merchandisers (20%)
- Prices client charge – 1) Small mechanics ($85) 2) Large full-service mechanics ($70) 3) Auto Parts Chain Stores ($60) 4) Mass Merchandisers ($50)
- Client manufactures 30 Million units
- Market Demand: 100 Million units
- Client Costs: Mfg. Cost ($45/unit), Transportation ($10/unit to small mechanics, $5/unit to others); all other costs are negligible

Approach

Determine the most profitable channels and the ones with the most potential. The key is making sure you have asked for/received the relevant information and then making the necessary calculations. The following tables give way to a potential method for cracking the case:

(continued on next page)

Channels	Client Product Mix	Market Mix	Client Price	Mfg Costs	Trans. Costs	Margin
(1)	70%	40%	$85	$45	$10	$30
(2)	10%	20%	$70	$45	$5	$20
(3)	10%	20%	$60	$45	$5	$10
(4)	10%	20%	$50	$45	$5	$0

Channels	Our Units	Market Units	Opportunity (units)
(1)	21 MM	40 MM	19 MM
(2)	3 MM	20 MM	17 MM
(3)	3 MM	20 MM	17 MM
(4)	3 MM	20 MM	17 MM
Total	30 MM	100 MM	

Channels	Opportunity (units)	Price	margin
(1)	19 MM	$85	$30
(2)	17 MM	$70	$20
(3)	17 MM	$60	$10
(4)	17 MM	$50	$0

Since the small mechanics channel has the most potential as well as the greatest margin/unit, it is clear that a good strategy would be to devote additional resources to growing this segment which already represents 70% of their business.

WHITEWAY ELECTRONICS

- Profitability
- Competitive Analysis

Background

Our client is the second largest manufacturer of white electronics (micro-waves ovens, dish-washers, refrigerators, washing machines, etc.) in the US. The client's profitability has declined over the last few years (no specific decline given).

Question

How would you approach / analyze the situation? Make a recommendation.

Additional Information

- There are 7 competitors in the US market. The leader and our client lose money while the third largest competitor is profitable.
- The industry is growing at a very slow rate, primarily driven by demographics, and margins are increasingly under pressure due to domestic and foreign competitors. We assume, however, that manufacturing and R&D of all foreign competitors is done in the US.

Approach

The usual approach revenues lest can be used.

- There is limited information available on the revenue side. Given the broad range of products, there is no average price. All we know is that our client is second in the industry in terms of revenues. We can also assume that pricing strategies are comparable to our competitors with low- and high-end products.
- In terms of cost, the following information is provided [in percent of revenues]:
    - Labor 30%
    - Material (including components) 60%
    - Overhead 15%

  HINT: The sum is >100%. The company's financial loses equal to 5% of the revenues.

- As mentioned before, player #3 is the only profitable competitor. Its costs [in percent of revenues] are:
    - Labor 30%
    - Material (including components) 50%
    - Overhead 15%
- Several possible ways can be explored to identify why our client has higher material costs:
    - Raw material: most of the raw material is steal and plastic => commodities. Our client has a large volume of sales => economies of scale => purchase of raw material represents an advantage over its competitors.

- Components: Our client has the same suppliers as its competitors. There is, therefore, no difference in terms of quality and price per unit.
- Design. The R&D people claim that products are modified in order to improve quality and functionality, and to meet any new market demand. It appears, however, that a product with the exact same functionality, price, and comparable quality has 30% more components than competitor no. 3. This explains the difference in material cost between our client and competitor no. 3.

Conclusion: Our client is an R&D driven company (the value added chain can also be part of the analysis). The products were of good quality, yet more expensive and more complicated to assemble than those of competitor no. 3.

How would you prove to your client that their products are more complex?
One possible answer is to take two products (from our client and competitor no. 3) and compare the number of components.

- Product mix is not an issue. It has remained the same for several years and margins are about the same for all product-lines.
- Fixed and variable costs are not an issue and do not explain the difference in profitability.

CHICAGO GSB

Practice Cases

INDUSTRY ANALYSIS / MARKET SIZING CASES

- Industry Analysis / Market Sizing

VIDEO GAMES

Background

The CEO of a large, diversified entertainment corporation has asked a McKinsey 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.

Question

You are a member of the McKinsey 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 remains an attractive one in which the CEO can profitably continue to invest and why?

Additional Information

The following information may be given if requested by the candidates, though you should focus on having the candidate identify issues, not obtain more information.

Market Share

- Division is third-largest manufacturer of hardware in the industry with 10 percent market share.
- Top two producers have 40 and 35 percent market shares. Remainder is divided among small producers.
- Division sells to broad range of consumers.

Sales

- Division sales have increased rapidly over last year from a relatively small base. Current estimate is annual sales of 500,000 units.
- Current estimate of industry hardware sales is 5,000,000 units annually. Industry growth has been strong overall, though sales growth has slowed over last few months.
- Division's current sales price for the basic unit is $45.
- Division accounts for less than 20 percent of parent company sales.
- Top two competitors also develop, manufacture, and sell software/games, although division sells only licensed software.
- Growth of software continues within the industry.

Costs

- Division estimates current cost per unit is $30 fully loaded. Requested expansion should reduce the cost by 5 to 7 percent and triple production of the hardware units.
- Top two competitors are currently estimated to have a 10 to 15 percent cost advantage.

- Main costs are for assembly components and labor.

Customers

- Division estimates much of initial target market (young families) has now purchased the video game hardware.
- No large new user segments have been identified.

Distribution

Primary outlets of distribution are toy and electronics stores.

Profitability

Division currently exceeds corporate return requirements; however, margins have recently been falling.

Product

- The industry leaders have established hardware standards.
- Product features are constantly being developed (e.g., new type of remote joy stick) to appeal to different segments.

Approaches

The primary issue in the case is to determine if the industry remains attractive and, especially, if our client's position within that industry is sustainable. The candidate should identify issues that are necessary for assessing both the industry and the client's position, but should not be expected to solve the problem.

If the candidate begins to discuss a specific issue too deeply, before having covered the key issues overall, bring him/her back to discuss the industry more broadly by asking, "What other issues must be examined?"

If the candidate is discussing issues that seem irrelevant to the attractiveness of the industry, ask, "How will that analysis help to assess the attractiveness of the industry or the client's position?" Then, ask the candidate to identify other issues that must be examined.

Minimum Requirements

The following issues would need to be covered for the candidate to have done an acceptable job:

1. What is the future market potential? Candidate needs to question the continuation of overall industry growth. S/he might ask about the saturation of markets, competitive products (home computers), and declining "per capita" usage.
2. What is the competitive outlook? Candidate must at least recognize the need to examine competitive dynamics. Issue areas might include: concentration of market shares; control of retail channels; and R&D capabilities (rate of new product introductions, etc.).
3. What will be the price/volume relationships in the future? Issues of price setting need to be considered.

Better/Outstanding Answers

No bounds on creativity, but better answers would address:

Market Potential

- Recognize that there is a relationship between market penetration and growth in new users which, when combined, yield an industry volume estimate.
- Address the shifting mix of product purchases, in this case from hardware (player unit) to software (video cassettes).
- Seek to look at buyer behavior in key segments; i.e., determine "fad" potential of product.

Software

- Recognize that the industry leaders set technology standards. In this situation, the division, as a secondary player, will have to follow these standards.
- Recognize that different distribution needs may exist for different products (in this case software versus hardware).

Price/Volume Relationships

- Discuss the effect capacity additions can have on overall industry price/volume relationships and on industry price levels.

Competitive Ability of Firm

- Ask what the capacity expansion is designed to do.
- Explore the cost position of the client division relative to that of other competitors.
- Seek to understand reasons for the poor profit performance of the division.

ELECTRICAL EQUIPMENT

- Industry Analysis / Market Sizing
- Profitability / Profit Improvement

Background

An electrical equipment manufacturer has been losing market share.

Question

What should the company do?

Additional Information

Product

The company only has one product line, industrial circuit breakers. The circuit breakers currently on the market are undifferentiated from a quality standpoint, and are also completely interchangeable.

Competition

There are two competitors.

	Competitor A	Competitor B	Client
Market share two years ago	25	35	40
Market share today	38	35	27
Price/breaker	$9.00	$8.10	$9.50

There have been no price changes over the past two years. Market share was fairly constant prior to that period. The market is mature. Competitor A has stolen market share from the client.

(Do not give this point away too easily): About two years ago, Competitor A began delivering circuit breakers via overnight air freight instead of regular U.S. mail. Competitor B has always used second-day air. The client relies on regular U.S. mail shipments.

Customers

The circuit breakers are generally purchased in large quantities by large manufacturing plants. Since the circuit breakers are used on large, very expensive machines, the price per unit is much less important than reliability. There is a large downside risk if a circuit breaker proves faulty, and substantial financial implications if a customer runs out of circuit breakers (machines cannot be operated).

The customer base is very fragmented, representing most manufacturing companies.

Approach

The key point in this case is to uncover the fact that Competitor A has stolen some of the client's market share by increasing the level of service. The criticality of the product to a customer's business makes price a secondary purchase criterion. Competitor A has been targeting the client's customers and convincing them to switch to superior service. To remedy this problem the client should consider adding overnight delivery service. However, this maybe insufficient since the client asks a higher price and the enhanced service will only match that of Competitor A (customers will still have little incentive to switch).

GUMMY SUBSTANCE PATENT

- Industry Analysis / Market Sizing

Background

The client makes a gummy substance used in foods and oil wells. The firm holds a patent on the substance but suspects that a substitute will be invented in approximately one year.

Question

Is this new substitute a threat?

Additional Information

Product

The substance is used in foods like gelatin, gummy bears, etc. In oil wells it is used to keep the head on. All of the inputs to the product are commodities.

Market

The food market uses 200,000 lbs/yr and the oil market uses 50,000 lbs/yr. The industry is mature with relatively little growth. The client has many customers, especially in the food segment.

In the oil well segment, the product represents a very small percentage of the total cost of production, but the product's failure has large downside risk implications. If the gummy substance fails, causing the head to pop off, it can create large losses for the oil company. Hence, the oil company purchasing decision is primarily based on quality and reliability.

In the food segment, the gummy substance represents about 50 percent of the total costs.

Company

Due to the monopoly the client enjoys, margins are very high. The firm currently charges the same price in both segments. The client has a strong reputation for both quality and reliability.

Approach

The candidate should discuss the following:

- Segmenting the market is critical. If there is a way to avoid arbitrage the client firm may want to consider price-discriminating in some way between the two segments.
- In the oil segment the company enjoys a much more stable position. The focus on quality and reliability combined with already insignificant cost will make it difficult for any competitor to gain market share.
- In the food segment the client is more threatened by the substitute.
- In both segments the firm should try to build a brand image, after the pattern of “nutrasweet”, for example.
- In both segments, the client might pursue long-term contracts with some customers to preclude entry by a manufacturer of the substitute, but this strategy might prove difficult, give the number of buyers.

THEME PARK MARKET SHARE

- Industry Analysis / Market Sizing
- Profitability / Profit Improvement

Background

ThemeCo is an operator of a theme park in Florida. Recently, although revenues have increased, market share has been dropping.

Question

What is causing this disturbing trend and what can be done to reverse it?

Additional Information

- ThemeCo is one of several theme park operators in southern Florida.
- Most of the theme parks are within a 1½ hour drive of each other.
- About one-half of total revenues for each park come from admission fees.

Approach

A profit tree could be used both to isolate the problem and to consider possible solutions:

- Increase the number of people coming to Florida.
- Increase the number of visitors.
- Increase the % of people coming to your theme park that are already in Florida.
- Increase the number of days people visit ThemeCo.
- Increase the frequency of use.
- Increase the "length" of the ThemeCo day (to increase revenue from food, etc.).

ThemeCo's underlying problem stems from the fact that DisneyWorld has increased the "length" of an average visit from ½ day to ¾ day, thereby reducing the time visitors spend at other attractions in Florida. Although Disney's new attractions have increased the size of the total market, they have also increased Disney's share of that market.

SUPERMARKET COMPETITOR ANALYSIS

- Industry Analysis / Market Sizing

Background

ShopCo, a large supermarket chain in the southeast has have never used strategy consultants before, but is concerned about the changing competitive dynamics in its market and has approached your firm for assistance.

Question

Should ShopCo feel threatened by entry of Wal-Mart Supercenters into its market?

Additional Information

- ShopCo is the largest seller of groceries in the market with a 25 percent share.
- There are two other large chains with shares of 20 percent and 15 percent, respectively. The rest of the market is highly fragmented.
- Wal-Mart Supercenters are basically regular Wal-Marts with large grocery shops attached that operate on a 24-hour schedule.

Approach

Use 3C/4P analyses.

- Wal-Mart can exploit economies of scale in many areas (labor, distribution, etc.) to reduce costs and possibly achieve greater margins than supermarkets. This is important because the supermarket business is traditionally thin-margin.
- The cost economies for Wal-Mart are on a logarithmic experience curve, so, with greater traffic through their stores, their margins on both food AND their traditional product lines will actually grow.
- The supermarket should be really worried. Wal-Mart can LOSE money on its supermarket items and still earn a lot from increased margins on its traditional Wal-Mart goods.

FOOD DISTRIBUTOR

- Industry Analysis / Market Sizing
- Profitability / Profit Improvement

Background

Your client is a large food distributor. The CEO is thinking of exiting the business. He is basing his decision on his profitability - he has a 2.5% margin, while a competitor has a 4% margin.

Question

Is the CEO in a 2.5% business or a 4% business?

Additional Information

- There are 4 major players in the industry, our client is #2. The players are:
  - #1 $6B in revenue, 4% margin
  - #2 (Client) $6B in revenue, 2.5% margin
  - #3 $5B in revenue, 2.4% margin
  - #4 $5B in revenue, 2.2% margin
- The client has a reputation for good operations: Its fleet is well maintained, it has excellent routing, and almost always ships full trucks.
- The #1 firm has a similar mix of customers, also ships full trucks, and has fewer trucks than the client.
- Our warehouse is located across the street from #1's warehouse.
- Drivers for all firms are union employees.
- Food makes up 70% of costs, while distribution makes up 25% of costs.
- Customers vary from white tablecloth restaurants to low end diners, and the mix is the same across all four firms.
- #1's customers are physically closer together.

Approach

- The candidate should deduce that the food distribution is a near perfectly competitive industry, where prices are set by the market and margins are low. Therefore if revenue is the same for #1 and #2, then price and quantity are the same for both firms.
- The candidate should recognize that food purchased by the distributors is a commodity, and that food costs for all competitors are the same. They should focus on the distribution costs, and not the food costs.
- The candidate should ultimately conclude that if sales are the same for both firms, operations are similar, number of customers are the same, and the #1 firm has fewer trucks, then the delivery time must be shorter for #1 and the physical distance between customers is shorter. Thus, *the #2 player is in a 2.5% business, unless they can steal customers from #1, which is unlikely in an industry of this nature.*

US/CANADIAN DRUG SALES

- Industry Analysis / Market Sizing

Background

An international pharmaceutical firm sells an ethical (prescription) drug for nasal infections. Per Capita sales in the US are much higher than sales in Canada.

Question

Why are per capita sales different between the two countries?

Addital Information

- A nasal infection is an ailment with symptoms much like a cold. People cannot self diagnose a nasal infection.
- The competitors are the same in the US as they are in Canada.
- This is a prescription drug - it is not sold over the counter. Given a prescription, patients in both countries will have it filled. Insurance will pay for it.
- Americans are no more or less likely to contract a nasal infection, or show symptoms than Canadians.
- Canadians with nasal infection symptoms are will visit the doctor 60% of the time, while Americans will visit the doctor 30% of the time
- Canadian doctors are twice as likely to misdiagnose a nasal infection. In other words, Canadian doctors diagnose a cold or flu, when the patent indeed has a nasal infection (the candidate should ask for the magnitude of misdiagnosis - 10% in the US and 20% in Canada).
- For a diagnosis of nasal infection, American doctors prescribe the client's drug 70% of the time versus 33% of the time in Canada
- The price of the drug in the US is 25% higher than the price in Canada.
- Canadian patients receive no refills for their prescription on average, while Americans receive 1 refill on their prescription

Approach

The key to this case is to identify the process by which a person receives the drug. Since all comparisons are made in per capita terms, the candidate should not focus on market or population size differences between the two countries.

There are several steps in the process. The approach should identify the relevant steps in the process, in order, and compare US and Canadian revenues at each step. A good answer will identify four of the five steps in the process, a very good answer will identify all 5 steps, and an excellent answer will identify all five steps and be able to calculate the relative difference in sales between the two markets.

A good way to approach this case is to start with 100 patients, compare revenues through each step in the process. The five steps in the process are:

- Of 100 people with undiagnosed nasal infections 60 Canadians will go to the doctor versus 30 Americans
- Of the 60 (Can.)/ 30 (US) people that visit the doctor 80% (Can.)/90 %(US) will be correctly diagnosed 48 (Can.)/27(U.S.).
- Of the 48 (Can) / 27 (US) people that are diagnosed, 33% (Can.)/70%(US) receive a prescription for our drug: 16 (Can)/19(US).
- Of the 16 (Can)/19(US) people that are prescribed the drug, the US revenues are 25% higher than the Canadian revenues. This is equivalent to having 25% more people receive the drug. The 19 US people are 24 revenue equivalent Canadian patients.
- Of the 16 (Can)/27.5 (US) equivalent patients, Canadians, on average, receive no refill, while Americans, on average, receive 1 refill. Again, each US patient is 2 revenue equivalent Canadian patients. The 24 American patients are 48 revenue equivalent Canadians.
- Overall, US revenues are three times higher than Canadian revenues - 48 revenue equivalent US patients versus 16 revenue equivalent Canadian patients.

CONTROL SYSTEMS

- Industry Analysis / Market Sizing
- Market Expansion / New Product

Background

A large firm has a division which makes control systems. The client, the control division makes timers, both electrical and mechanical. The timers are used to turn circuits on and off (lights, photosensors, temperature gauges, etc). The division's growth is flat, but profitable.

Question

What should they do in order to double growth in five years?

Additional Information

- There are 3000 domestic distributors for the control systems
- The distributors cover all geographic regions in the U.S.
- The case is limited to the U.S. domestic market
- Market and Competitors
  - The client has 25-30%
  - Company A has 30%
  - Company B has 35%
  - Others have 10%
- The control systems are pretty much commodities, although there are minor differences in look, price, and features
- The substitutes are basically any type of manual switch. For example, the lights in a parking lot could either be mechanical, or turned on and off according to a pre-set pattern.

Approach

- One key idea is understand who the customer really is. Who makes the purchasing decisions?
  - 30% Electrical subcontractors: not price sensitive (Why?)
  - 30% Architects and design engineers: not too price sensitive (Why?)
  - 40% Building managers (of existing buildings) More price sensitive (Why?)
- Growth Options:
  - Expand geographically (not the answer - client is already national)
  - Expand the current market – see below
  - Explore new applications (segments) for the product
  - Develop new products using the client's expertise at control systems
- Expanding the Current Market: Target owners of multiple buildings, i.e. hotels, restaurants, Federal Government, states and municipalities, schools
- How do you reach them?
  - Advertise in trade publications
  - Use sales representatives to call on hotel operators

UTILITY DEREGULATION

- Industry Analysis / Market Sizing

Background

Bain was hired by a large utility whose market is being deregulated. Although the utility produces both gas and electricity, we will only concentrate on electricity. Regulations are changing so that customers can purchase electricity from any producer. The regulations also dictate that the transmission and generation sides of the utility will be run separately. That means that the client must provide equal access to all generators of electricity who wish to transmit their electricity in the local market.

Question

What does the utility have to do to prepare for a competitive environment?

Additional Information

- There are 2 million customers:
  - 300 large firms (30% revenues)
  - 170,000 small firms (30% revenues)
  - Remainder are residential

Approach

- The key idea here is business transformation. To transition from being a publicly regulated utility to a profit-oriented competitor will require organizational changes, job/skill changes, new procedures, and a new mindset. Some possible ideas are below.
- Move to Activity Based Costing (ABC), which helps a large bureaucracy organize into profit and loss centers; helps identify where costs are going
- Create metrics for sales, customer service, and installation. The new organization will need to develop a customer service orientation. In order to do this well, the utility must set up ways of measuring customer service. One good way would be to associate a specific profit (price revenue) with each customer, thereby segmenting the customers.
- Marketing and Sales:
  - Have dedicated sales representatives for large customers
  - Use separate marketing campaigns
  - Focus on quality for large firms, lumpy orders
  - For regular customers, use team bonuses for meeting customer sales metrics
  - Retrain staff, hire new staff with customer service skills
- Try to expand geographically (since the client is an equal or lower cost producer.

COMPUTER MANUFACTURER

- Industry Analysis / Market Sizing

Background
Our client is the industry leader among computer manufacturers, but is losing market share dramatically.

Question
We have been brought in to figure out why and how to resolve the issue?

Additional Information
- Client manufacturers desktops, laptops and servers.
- Client manufactures both high-end and lower priced computers and is technologically very competent.
- Client is only losing market share in laptops and desktops.
- Client has an extensive distribution system through retailers like Best Buy, Circuit City etc.
- Client offers good servicing arrangements through the retailers' service personnel, however they do not have in-depth knowledge of the client's products since they service other competitors' products too.
- Evolving industry with numerous players
- One new player has been stealing market share and is growing rapidly.
- The new player sells directly to customers through its own salespeople and does not have a distribution network
- The new player offers service through its own sales-force, which is very knowledgeable. It also has a help line for computer problems which need immediate servicing.
- Consumers want customized equipment.
- They are leaning towards more repair services, free installation etc.

Approach
- This is essentially the Compaq-Dell scenario. The case looks to judge how well the interviewee buckets the problem into various segments before he/she looks for clues. Structure is very important here and the interviewer must decide how to reveal information. Reducing the problem into the following buckets and then drilling down could be one option.
- Company/Products
- Distribution
- Competition

- Technology
- Customers
- Essentially, the case involves identifying the advent of a new player with a direct distribution system. In addition, the interviewee should identify the change in consumer preferences. Finally, the interviewer can lead the discussion towards a recommendation i.e., the pros and cons of the client changing to a direct distribution and how it would impact current relationships/sales.

- Merger/Acquisition
- Industry Analysis

AUTO DASHBOARDS

Background

The client is an original equipment manufacturer (OEM) of auto-dashboards to auto manufacturers in the U.S and Europe. “Auto-dashboard” refers to the display panel, and all the gadgets within, that is directly behind the steering wheel, and is a modular product. One of the client’s leading competitors in Europe has approached the client with a possible contract / agreement to jointly supply dashboards in Europe

Questions

1. Analyze the pros and cons of a partnership with the competitor
2. What’s the motive behind the competitor’s request?
3. Should we partner?

Additional Information

- Client designs and manufactures instrument (dashboard) clusters
- Client presence in North America, Europe and Asia. Competitor is present only in Europe and any partnership would be restricted to European region only
- Customers are primarily auto manufacturers – Contracts are long-term in nature. For example BMW typically would work with the supplier for cars to be rolled out 3 years in the future
- Product mix: 3 types of dashboards – high end, middle and low end dashboards. Maps to high-end, middle and low end autos – but car manufacturers may offer upgraded instrument panel on any car
- The customer base in Europe can be categorized as 20% low end, 50% middle and 30% high end. Margins across these segments are low: ~0%, middle: 1-2% and high: 12-15%
- The high end segment has the fastest growth
- Competitor has 50% of the high end market and no presence in low and middle end market. Client is primarily a player in the low end and middle market segments with 5% presence in the high end market
- No big difference in quality, features and functionality between competitor and client
- Industry trend to have same modular dashboard across different segments to have economies of scale. Low end BMW and High end BMW will have the same basic box, with the only difference being in some bells and whistles.

Approaches

1. Structure the analysis using a 3-C or similar framework to methodically get all the required information
2. Understand that low end is a commodity and client really is not making too much profits right now, while the competitor is – hypothesize that there must be a strong motive behind the sudden urge to ‘share’ profits!

3. Analyze the given facts and figure out that auto manufacturers have substantial bargaining power – and may be looking for same supplier for all 3 of their segments
4. Competitor makes a pre-emptive move to partner with client to avoid auto manufacturers switching their high-end dashboard supplier to someone who can supply dashboards for all 3 segments, like our client.

Better Answers

Additional questions and observations should include a clear discussion of the pros and cons of the partnership beyond the motive:

1. Pros: Economies of scale for client, but since this is an "arms-length" contract both parties may not merge operations.
2. Pros: End customer relationship may be better streamlined – one team per auto manufacturer instead of one team per segment
3. Pros: Research & Design costs can be shared.
4. Cons: Lose opportunity to be a big player in the profitable high-end market
5. Cons: Agency costs – competitor may not share its high end segment with us in a fair manner

Outstanding Answers

1. Candidate should recognize that a lot of operational synergies are not possible in an "arms-length" contract such as this one. So pros should be based on practical synergies in a partnership situation
2. Recommendation can be either to partner or not, but should be based on candidate's estimate of the advantages versus the disadvantages
3. A nice way to understand the issue is to go through the value chain from design to manufacture to assembly to customer relationship and articulate what a contract will mean in each of these stages
4. It is very important to understand the macro issue – auto manufacturers are moving to integration of the segments – before getting into the details of the case.

- Industry Analysis
- Industry Shocks

FREE OIL

Background

You are the CEO of American Airlines. You have just learned that tomorrow the price of oil will drop to zero. Obviously, this has significant ramifications for your business.

Question

What three people would you want to talk to regarding this development and why?

Additional Information

- Price of oil, including transportation and refining costs, is zero
- Cost of jet fuel is zero
- Assume that oil companies make oil at zero profits
- Ignore geo-political issues
- No other specific information – Candidate must decide on the critical issues

Approaches

The interviewer should seek to conduct a conversation, where the interviewee creates a structure and works through questions such as the following:

- How does this change impact the business – revenue drivers?
- What is the cost structure of the airline?
  Fuels costs are a significant portion of the operating costs of an airplane. Thus, it is likely that prices could be reduced. This will result in an increase of primary demand. People who might have taken the bus, train, or car might now be willing to fly at the lower cost.
- What effects will increased demand have on utilization rates?
- Do you need more planes? Is there going to be a first mover advantage?
- Are Boeing and Airbus going to be able to make enough planes to meet the new demand? Will the prices of planes go up? Can airports handle more planes?
- Will planes travel farther now since they have no fuel costs?
- How will competitors react to this news?

So, who might you talk to (not an exhaustive list by any means; there are many, many others):

- CFO or Accounting Officer who knows about the internal cost structure will be able to tell you what new items will be driving cost and constraining operations.
- Market Researcher – how does one sell the new airline to the public?
- Labor Unions – labor will be a bigger factor in the cost structure
- Airbus/Boeing - can you get more planes if demand increases? Can you get planes that fly longer (more fuel capacity)
- Airport Authority – can you reserve more landing slots before others?

- Competitors – without discussing prices and avoiding collusion, are there other things you can learn from your competitors?
- Once again, there are no right answers here – the question is did you discuss the strange issue intelligently? Did you pick three reasonable people and does your logic support the three you picked?

FROM BEER TO WINE

- Industry Analysis
- Value Chain

Background

A relatively small time beer company is looking for opportunities to generate more revenue. It is facing a very competitive market in the beer industry and wants some diversification in its product portfolio. They do not have too much cash at hand and are open to the idea of financing projects through debt. After a vacation in California one of the VPs of the company suggests that they should consider venturing into the wine business. According to him, its still in the alcoholic beverage industry, there seems to be evidence that wine drinkers is a growing demographic and they thus might be able to make some money through that business.

Question

- Is this a good idea ?

This case does not have any specific information – the candidate must be tested for structure, organization and creativity in his/her analysis.

Analysis

The candidate should perform an industry analysis to determine what to do.
One of the suggested approaches is to:

- Determine the current landscape - How is wine made, what does one need? Vineyards→Grapes→processing→bottling→aging→distribution
- How much expertise is involved? Are there any similarities between beer brewing and wine making?
  A lot of expertise is involved since there are no similarities between beer brewing and wine making i.e. negligible techniques from the beer industry can be utilized.

The candidate at this point should realize that wine making is a very different beast, and in addition the aging process implies storage costs and capital investment lockup. These two points should be considered the main barriers to entry

- How many winemakers are currently in the market place
- What is the capacity utilization of the current wine makers
- What is the current profit margin in the business
- Perform a market analysis/assessment - is the wine market really growing?
- How loyal are the customers, are they price sensitive, brand sensitive?
- Are there economies of scale involved
- Advertisement costs, distribution channels, preexisting alliances.
- Are there economies of scope possible (Most probably not, but can be broached if a interesting option is thought of)
- Touch on financial requirements

Based on the above answers the candidate should suggest that this will not be a viable option due to: Lack of expertise required to make wine, excessive cash required due to storage costs. No significant economies of scale except maybe distribution channels, but don't have to enter the wine business for that.

CHICAGO GSB

Practice Cases

MARKET EXPANSION / NEW PRODUCT INTRODUCTION CASES

- Market Expansion / New Product
- Profitability / Profit Improvement
- Industry Analysis / Market Sizing

DIVERSIFICATION STRATEGY

Background

An English company has hired you to evaluate its recent diversification into a new market. This firm has manufactured car batteries domestically for over thirty years and is the quality leader in the U.K. market. Two years ago, the product line was expanded to provide batteries for forklift trucks. Soon after a successful introduction, however, sales in this segment began dropping steadily.

Question

What recommendations would you have for this company? Also, briefly describe how each recommendation should be presented to the owner.

Additional Information

- The forklift business was added to utilize idle capacity during periods of inactivity.
- This is a mature industry (1% annual growth in the last two years).
- There are:
  - 4 domestic producers (declining market share)
  - 1 German producer (stagnant market share)
  - 1 Spanish producer (increasing market share).
- The Spanish firm offers low-priced batteries of inferior quality.
- Captive salespeople sell the firm's forklift batteries to industrial dealers.
- Free maintenance service is included with every sale.
- Consumer battery purchases in the automobile market are highly seasonal.
- Large customers are sophisticated and buy on the basis of price and quality. Smaller customers are less sophisticated and buy solely on price.
- An "old school" manager/owner has been in charge since the firm was founded.

Approaches

Establish an Off-Brand

1. Protect firm's quality image in the automobile industry.
2. Attempt to achieve potential cost savings:
    - Sell factory-direct to dealers (i.e., no sales force)
    - Redesign product (cheaper chemicals, less reliable housing and contacts, fewer manufacturing processes, etc.)
    - Eliminate free maintenance service; instead, provide brochures illustrating how to top-off fluid levels, clean electrical contacts, etc.
3. Adjust prices to compete with Spanish producer.

Educate the Consumer Market

1. Develop product positioning. Some examples may include reliability testing, relative cost savings, lifetime warranties, etc.
2. Leverage quality leadership position in the car market.
3. Set higher prices than other competitors to extract surplus from these advantages.

Exit the Forklift Battery Business

1. Producing for this segment does not fit with the company's quality image.
2. Other opportunities may offer superior profit potential:
    - Exclusive contracts with other market segments or OEMs (Original Equipment Manufacturers).
    - Forward integration into golf carts, industrial equipment, etc.
    - Backward integration into specialty chemicals, plastic injection molding, etc.

Do Nothing

1. Wait to see how the market reacts to your product in the long run.
2. Boost owner's ego by supporting his earlier decisions.

This approach may be a hard sell given the owner's investment in consulting.

OFFICE SUPPLY DISTRIBUTOR

- Market Expansion / New Product
- Profitability / Profit Improvement
- Industry Analysis / Market Sizing

Background

The client is the largest office supply distributor in the United States and sells directly to large corporations. Revenue and profit were going up linearly but then turned around. Market share was increasing but is now flat. The client is willing to spend lots of money but demands high growth.

Question

What should the firm do?

Additional Information

- The client currently serves 90 percent of large corporations (i.e., no potential for high growth in this segment alone)
- Currently the client is the only national distributor. In the 1980's there were thousands of mom and pop distributors, but they are mostly gone now, replaced with regional retailers.
- The client has the best contracts with suppliers due to large volume.
- The client also has the best quality of service. The service provided is unmatched in the industry.
- The company has been losing customers to competitors. In fact, it invested a lot of money and implemented a large new purchasing system that keeps detailed purchasing information. Customer feedback indicates that all customers are ecstatic with the firm's service, but find that it is often more expensive than its competitors.

Approach

There are several keys to this case that the candidate should reveal.

- To experience high growth, the company cannot remain only in the large corporate segment. It must instead focus on two strategies: 1) protect its dominance in large accounts and 2) attach new segments.
- There are two meaningful ways to segment the market: size and willingness to pay for service. In fact, willingness to pay for service turns out to be the more important.
- One important recommendation would be to offer differing levels of service. The client currently has a lot of information concerning which customers are willing to pay for which levels of service. The firm should use this information and offer different prices for different levels of service. The segment offers the greatest opportunity for growth is the segment not willing to pay for extra services.
- Should the client consider buying regional retailers? Not really; where are the synergies? Since the client already generally obtains the best discounts possible, there would be few synergies in purchasing regional retailers.

- Providing the salesforce with incentives is also an issue. Currently the salesforce has a number of incentives to pursue large corporate accounts. How could that be changed to create the proper incentives?

CONSUMER PRODUCT INNOVATION

- Market Expansion / New Product

Background

A consumer products company with stagnant market share is quickly losing its innovative reputation as it is more frequently merely adding line extensions rather than new products. This loss of innovation is well documented.

Question

What are the drivers of this trend? What would you do to fix it?

Additional Information

Customers

Market research has shown that customers do value innovation.

Competitors

Other companies are still being innovative. In fact some of the innovations of other companies are similar to new products which the client worked on, but discontinued.

Company

- The company has over 10,000 products, about 50 percent of which have an unchanging market share. Forty percent have declining market share (largely due to offbrands) and 10% have increasing market share. Some of the products, but not all, are in mature product lines. It has been well documented that mature product lines seldom result in innovations.
- The company has the reputation for producing the highest-quality products.
- The firm spends a great deal on R&D. There has been no decrease in the percentage of sales spent on R&D, but is now much more fragmented. R&D used to all be co-located, and a study showed that scientists spent 30 percent of their time on research. The directors desire to be in the middle of everything has resulted in scientists spending a lot of their time preparing reports about what they are doing.
- The company has become much more risk-averse over the past few decades. Failures are penalized much more heavily than they used to be. Great disincentives exist to share information.
- The firm has no formal process in place for developing new product, and is largely driven by the gut instincts of directors of the division. There is no focus on product potential or the development paths to pursue for promising candidates.

Approach

The candidate should discuss the following areas:

- Address the need for new product development. Create processes for assessing which products to pursue and which not to not pursue. These processes may include analysis of cost structure, market dynamics, revenue stream, cannibalism, etc. Also ensure that any new processes are monitored to maintain accuracy.
- Create a more innovative and friendly environment. The culture has created disincentives to be innovative and take risks, a trend that needs to be reversed. Investigate ways to create incentives to share information and take educated risks.
- Investigate ways to get more bang for the research buck. One possibility is finding ways to focus more scientist time on conducting research instead of writing reports.
- Focus product development efforts on non-mature product lines. Suggest doing more investigation on which product lines have the highest probability for successful innovation.

NEW CHEMICAL MARKET PENETRATION

- Market Expansion / New Product

Background

A new chemical, a substitute for sulfites, has been discovered and patented. Sulfites are used to preserve packaged foods such as fruits and vegetables. They can increase the shelf-life by 10-14 days. Two percent of the population is allergic to sulfites, some to the point where they could die from consuming them. The FDA has been leaning towards eliminating sulfites, and they have in fact been banned in some countries. The new substance has been tested only on fruits and vegetables, and there are no side effects.

Question

How can this new substance be commercialized?

Additional Information

Customers

The primary buyers of sulfites are produce companies, who in turn sell their products to grocery stores and restaurants. Grocery stores sell sulfite products such as bagged vegetables, such as carrots, and/or prepackaged salads. Restaurants use sulfite products to help preserve vegetables which they purchase prepackaged.

Product

- Sulfites are basically used for keeping fruits or vegetables like lettuce fresh when they are packaged.
- Sulfites extend the shelf-life of some foods by 10-14 days is priced at $1.50/ pound.
- Substitutes extend shelf-life by 3-5 days and are priced at $1.50/pound.
- Without using sulfites or other substitutes the shelf-life is less than 24 hours.
- The new substance extends shelf-life by 10-14 days and costs $6.00/pound ($5.00 raw materials only).
- Reliable research indicates that the patent is not imitatable.
- One pound of sulfites is required to treat 20,000 pounds of vegetables or fruits. Takes 1 pound to do 20,000 pounds of vegetable or fruits. One pound of fruits or vegetables costs approximately $1.00.

Distribution

- Grocery stores have a turn rate of 200 to 300 (per year). This means that they hold fruit or vegetables for about 2 days before they are purchased by customers.
- Restaurants have a turn rate of 100 (per year). This indicates that they hold the fruits or vegetables for about 3.5 days.

- Produce companies take one day to get from the produce company to the restaurant/grocer.

Approach

Computations show that it costs less than one cent per bag of product to use the new substance. The bottom line, the cost to the produce company, is insignificant compared to the cost of the fruits or vegetables.

- Grocery stores do not receive the produce until it is already 3 days old, which means that the substitutes for sulfites give the produce a shelf-life at the grocery store of 0-2 days. This does not give ample time for consumers to store and use the product after purchase. The substitutes for sulfites are not a viable option.
- Restaurants do not receive the produce until its already about 4.5 days old which means that the substitutes for sulfites are not a viable option

Thus, the sulfite substitutes are not a good option for the new drug or sulfites. The new drugs primary competition will be sulfites. A three-pronged approach may work best:

- Enter markets where sulfites are already banned. Can charge very high prices there due to the lack of alternatives and small amount of sulfites needed for large amount of product.
- In other markets, highlight the lack of side-effects to win over market share from sulfites.
- Explore the ethical and logistical issues of getting sulfites banned in other markets. This might be accomplished through petitions and/or getting new regulations imposed. If sulfites are banned, the new chemical would enjoy a very lucrative monopoly.

Other issues the candidate might want to consider are manufacturing and distribution.

HIGH-TECH MARKET POSITION

- Market Expansion / New Product
- Industry Analysis / Market Sizing

Background

A fast growing data storage company that grew at over 100% during the past year is worried about establishing and maintaining its position in the market.

Question

What should the firm do to continue to grow its market position?

Additional Information

Product

The company offers two primary products. The first is a new disk drive with capacities of 7,000% of existing floppy disks. The other is an even larger drive with disk capacities of 70,000% of existing floppy disks. The company owns patent on both the disk drive and the disks.

Customers

- Household use: There are three primary uses for the product in homes: 1) data backup, 2) augmenting an existing hard drive, and 3) enabling manipulation of large files (replacing floppy disks).
- Industrial and specialty use: Can be used by large offices and companies for storing images and backing up large systems .
- OEM suppliers: Computer manufacturers purchase the drive to include as built-in options in their products.

The market is estimated to total one billion dollars with a current penetration of 5 percent.

Competitors

The company has two main competitors.

	Mkt. Share	Price	$/disk (size)	Seek(ms)	Transfer
Low Capacity					
Client:	60%	199	$14(100mb)	29ms	1.4mb/sec
A:	10%	359	$10 (230mb)	17ms	2.4mb/sec
B:	25%	243	$25 (230mb)	13.5ms	2.4mb/sec
High Capacity					
Client:	50%	500	$100 (1gb)	12ms	5.4mb/sec
A:	n/a	n/a	n/a	n/a	n/a
B:	50%	500	$104(1.5gb)	12ms	2.4mb/sec

Substitutes

	Price	$/disk (size)	Seek(ms)	Transfer
Floppy:	4	1.44mb	150ms	slow
CD ROM:	200	10gb	150ms	600mb/sec
HardDrive	Varies	Varies	10ms	10mb/sec

Suppliers

The firm single-sources almost all of its components.

Complements

Computers and software are both considered complementary products.

Distribution

The company has effective distribution channels in the United States but lacks similar networks abroad.

Promotion

The company currently spends slightly more than the average on advertising and promoting the products.

Approach

The candidate should touch upon a few different topics. How easily copiable are the drive and disks (the company has a patent, but how easy is it to sidestep)? He/she should also conclude that this is a razor/razorblade situation; the company should focus on ways to increase market penetration. Once a market leader is established, the high switching costs and network externalities will make this leader harder to overcome. The hardware and software distribution channels will not support two standards. This will be a winner take all market eventually. The company could try to increase market penetration and share by:

- Going after software distributors
- Going after hardware distributors
- Marketing aggressively to increase market share
- Pricing drives at or perhaps even below costs

HEALTHCARE NEW PRODUCT

- Market Expansion / New Product
- Industry Analysis / Market Sizing

Background

HealthCo, an integrated healthcare solution provider, is thinking about introducing a new product for its medical supplies division. The product is a pre-packaged, custom-made sterile procedure kit.

Question

Determine whether HealthCo should launch this product or not.

Additional Information

- The procedure kit would contain sterilized apparatus used in operating rooms (e.g., gloves, sutures, swabs, etc.).
- The kit would be sold for approximately 10 percent more than if the items were purchased individually.
- The kit contains all the equipment needed for particular kinds of basic medical and/or surgical procedures (i.e., removal of an appendix).

Approach

The interviewee should determine three things: (1) market size, (2) the economics of the business, (3) value proposition.

- The maximum market size can be determined by the sum of the market sizes of all the individual components (~300MM/yr). Realizable sales are dependent on the individual market segments and their economics in adopting pre-packaged kits.
- Hospitals could save on labor costs (nurses currently have to prepare the sterilized components in the operating room), ordering costs (each component is ordered and tracked separately), and administrative costs (pre-packaged kits allow for consolidation of suppliers). Pre-packaged kits should also be easier to monitor and manage, thereby reducing stockouts. Since each kit would set up for a certain type of operation, the economics of purchasing each kit would vary by the complexity of the operation.
- The kits would most likely be sold to institutions that perform certain medical procedures on a regular basis. Seventy percent of individual component sales are made to large hospitals, with the balance going to smaller institutions. The large hospitals will realize potentially larger savings than smaller institutions, since they tend to perform the same procedures often. Thus, kit sales are likely to represent some percentage of sales of individual components to large hospitals.
- Consider cost to provide kits: Inventory, Marketing, Distribution, etc.
- Consider cost savings to hospitals: reduced administration & increased productivity

PHARMACEUTICAL SALES FORCE

- Market Expansion / New Product

Background

PharmCo, a UK-based pharmaceutical company, has an existing sales force and a well respected product line. However, new products in the pipeline have failed at the Research and Development (R&D) stage. Hence, PharmCo's sales force is currently underutilized.

Question One

PharmCo has advertised in trade journals, offering to sell other companies' products. The response has been excellent and PharmCo wishes to narrow down fifteen possible new products to the two most viable candidates. How can it do this?

Additional Information

- PharmCo's traveling sales force visits customers (doctors and pharmacists) at their place of business.
- PharmCo is known for its high-quality, moderately priced line of pharmaceuticals.
- PharmCo may have other competing products in development or may be moving away from some market segments.

Approach

The basic approach is to determine which products are the best fit with the existing distribution channel and PharmCo's strategy.

- A 2x2 matrix analyzing what PharmCo currently desires to sell and what it wishes to sell in the future would provide one solution to this case. The matrix should have a high / low value proposition.
- The fifteen potential products must be analyzed for their match potential with PharmCo's current and future pharmaceutical product lines.
- The recommendation must also consider whether PharmCo will have sufficient sales force capacity when its new drugs are launched.
- Different price points: Premium, Moderate, Discount or Branded verse Generic

Question Two

The product development process consists of three phases.

Phase	Cost per Product	Success Rate
R&D	$2 million	10%
Testing	$10 million	20%
Product Rollout	$50 million	80%

How many products do we need to undertake in order to generate two successful ones?

What is the total cost associated with developing two successful products?

Additional Information

Phase	# Products	Cost per Product	Total cost	Success Rate	# Leaving Phase
R&D	150	$2 million	$300 m	10%	15
Testing	15	$10 million	$150 m	20%	3
Product Rollout	3	$50 million	$150 m	80%	2
Total			$600 million		

Approach

Thus, 150 products require development in order to generate two successful ones. The total cost associated with developing two successful products is $600 million.

NEW DRUG

- Market Expansion / New Product
- Pricing

Background

A start-up drug manufacturer has invented a preventative medicine for heart attacks that took two years to develop and that will be ready to market in six months. The drug is a tablet with no side effects and it significantly reduces the chances of a heart attack.

Question

The drug manufacturer has decided to price the new entrant at $300 per year. What is likely to happen at this price?

Additional Information

Product

- Must be taken every day.
- FDA-approved.
- Unlimited manufacturing capacity.
- Prescribed through cardiologists.

Customers

- Potential customers are Americans aged 50+ that are high risk for heart attacks.
- Of Americans aged 50+, 40 percent are considered high-risk.
- Of high-risk Americans, 25 percent will have a heart attack by age 70.
- 40 million Americans are over 50. (Ask candidate to estimate this figure)
- It costs an insurance company $50,000 to cover every heart attack.
- There are no viable substitutes for this product.

Approach

Calculate potential market:

- 16 million are at high risk for heart attack.
- 4 million will have a heart attack by age 70.

If interviewee does not calculate the market size, interviewer should ask how insurance companies will decide whether or not they will cover this product.

The candidate may attempt to determine if it is cheaper to cover the product or let people have heart attacks:

As we assume above, there are 16 million Americans age 50 or older who are considered high-risk for heart attacks. One quarter of these (4 million) of them will have a heart attack by age 70.

If an insurance company were to cover their prescriptions for this medication for 20 years:

16 million * $300/yr * 20 years = $96 billion. Assuming a 10% discount rate, the present value of this amount is about $40 billion.

If the insurance company were to let people have heart attacks and then treat them afterwards:

4 million * 50,000 = 200 billion. The present value of this amount is about $30 billion.

Given this price, the insurance company might not be willing to provide coverage for this medication.

BLOOD FILTRATION SYSTEM

- Market Expansion / New Product
- Pricing

Background

The client is a medical start-up company. It was founded by an engineer, who developed a device that filters blood.

Question

The client wants to know the market potential and optimal price for this device.

Additional Information

- The only substitute for this device is bagged blood
- Approximately 30 million pints of bagged blood in the U.S. was used last year
- The filtration system is superior to bagged blood, for the increased assurance that the blood has been appropriately filtered
- The price of using bagged blood in an operation is $2 per pint (equivalent to 1 bag), plus the cost for the attendant - $10
- The cost of the filtration system is the fixed cost for the machine, the cost for each filter (one used per operation), and $10 for an attendant
- Operations can be segmented into 3 categories: Type 1 using 1-2 bags per operation (50%), Type 2 using 3-5 bags per operation (25%), and Type 3 using more than 5 bags per operation (25%). Type 2 and 3 operations use 90% of total bagged blood used

Approach

- To identify the market potential, the candidate should inquire what substitute products are on the market (only bagged blood), and what the sales of that substitute product are each year (30 million pints)
- To determine what should be the price charged for the device, the candidate should inquire about the price for bagged blood:
  - For Type 1 operations, the average cost is $13 (1.5 bags of blood at $2 per bag plus $10 for the attendant),
  - For Type 2 operations, the average cost is $18 (4 bags of blood at $2 per bag plus $10 for the attendant)
  - For Type 3 operations, the average cost is $20 (5 bags of blood at $2 per bag plus $10 for the attendant)
- The candidate should explore what the costs of the filtration system are:
  - The cost of the machine
  - The cost for filters (1 used per operation)
  - The cost for the attendant (same as for bagged blood - $10)
- The conclusion should be that the client should charge a minimal price for the cost of the machine so that hospitals will be willing to switch, and then charge a price for filters that is comparable to the cost of bagged blood. Since 90% of the blood is used in operations of 3 bags or more, which would cost a minimum of $6 for bagged blood, the client could charge $7 or more for each filter
- The use of a chart or table, summarizing the above information would make for an excellent answer.

ANIMAL PHARMACEUTICALS

- Market Expansion / New Product

Background

A client of McKinsey makes pharmaceuticals for animals (vaccines, antibiotics, etc.) The products are used on cattle, chicken, horses, and pigs. Over the past few years, the firm has spent $20 million per year on developing a new biotech product for pigs. If the investment continues, it will be ready to market in three years.

Question

Should the client continue with this development?

Additional Information

- The client is the largest firm in the industry, with sales of $1 billion. There are several other competitors, the next largest has sales of $700 million
- The biotech product is a swine growth hormone. It produces faster growth, and reduced fat in the meat. The product has to be injected daily for the 100 days prior to sale
- Savings to farmers if the growth hormone is as follows:
  - 20% less fat ($10/head)
  - 20% less time to adulthood ($20/head)
- The competitors have their own research programs underway. In three years, it is expected that one competitor will have a similar product which only has to be injected every four days, and the second competitor will have a product which only has to be injected once every two weeks
- 100 million pigs are raised each year

Approach

- Determine customer interest? (Perform a telephone survey on current clients)
  - 20% of the clients like it (small farms)
  - 60% are neutral (medium farms)
  - 20% hate it (big farms)
- Conclusion is that sales will be low, and will be surpassed by the competitors in a couple of years who have a superior product

- Market Expansion / New Product
- Profitability / Profit Improvement
- Industry Analysis / Market Sizing

FARM EQUIPMENT MANUFACTURER

Background

A farm equipment manufacturing company operates a diesel engine manufacturing line, which currently has excess capacity. The client is considering manufacturing truck engines but does not want to make additional capital investments.

Question

Should the client pursue this idea? (please see chart on next page)

Additional Information

- The company manufactures three diesel lines: 4L, 8L, and 12L
- The diesel engine market breaks down as follows:

Producer	Current production	Capacity
Large player (non-farm-equipment)	80 000	110 000
Other players (non-farm-equipment)	10 000	25 000
Client	5 000	20 000
Other farm equipment manufacturers	30 000	40 000

- Current variable cost profile (indexed to client's total variable costs):

Variable cost	Client	Main competitor
Labor	20	20
Parts	60	54
Other variable costs	20	12
Total variable costs	100	86

- Variable cost profile at a volume of 20,000 engines

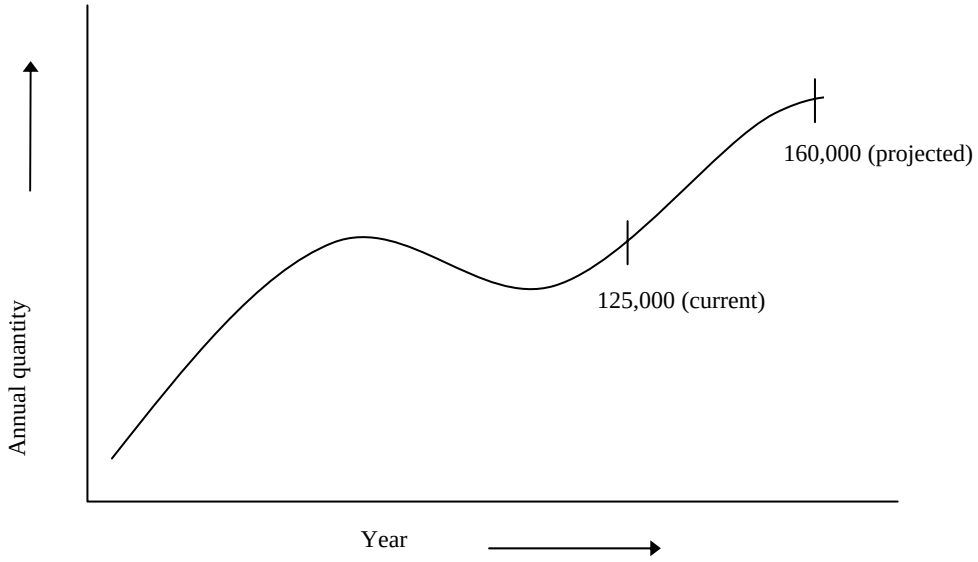
Variable cost	Client
Labor	20
Parts	57
Other variable costs	16
Total variable costs	93

- The demand profile for the last couple of years is depicted in the graph below, with demand expected to increase to 160,000 engines

Approach

- The case should be approached through a combination of the 3Cs and profitability
- The demand graph shows the characteristics of an economic cycle; the high point is likely temporary
- Realize that the client can only compete if the marginal cost of production is equal or lower than that of its competitor
- Based on the information provided, the total cost will still be above the marginal cost of the main competitor; therefore, the client cannot compete in this market

SHOW TO INTERVIEWEE IF QUESTION IS ASKED



- Market Expansion / New Product
- Profitability / Profit Improvement
- Industry Analysis / Market Sizing

PRINTING INK COMPANY

Background

A German maker of printing inks currently sells only in the European market (2/3 of sales are in Germany). The company is a small, niche, family-owned firm known for high quality and good technical support. The company has noticed that prices are higher in North America and is considering expanding into this market?

Questions

Why are prices so high in N.A.? Will this trend continue so that the company can earn a profitable margin in the new market? If the company decides to enter the N.A. market, how should it go about doing so?

Additional Information

Customers

The company currently sells to 10,000+ printing shops; larger shops are more demanding in terms of technical service, etc.

Competitors (North America)

Two national competitors provide more limited service; many regional competitors provide better service; all are U.S. based

The use of a 2x2 matrix with Customers and Competitors is effective here.

Costs

Labor: 10% (higher in U.S.) Transportation: 5% (10% if shipping to N.A.) Raw materials (mostly commodities): 45% (higher in U.S. due to exchange rates, but all companies in N.A. get their materials from the U.S.)

Product

There are several quality levels of printing ink. The client sells high quality ink in four base colors that are used by magazines, etc. There is no difference in product quality requirements between Europe and N.A. The client provides technical support for 1-2 days to new users of its products and ongoing support for specific needs.

Promotion

Direct sales and relationships are key, the candidate may suggest potential partnerships or target add-on acquisitions.

Placement

Distribution is done through a logistics company in Europe

Approach

- The answer to the first question is that the higher costs (especially the raw material costs due to exchange rates) are driving the higher prices in the N.A. market. Most likely, the N.A. companies are not enjoying higher profit margins but are just passing along the higher costs.
- Given the company's strengths in quality and service, it still may want to enter this large market. The problem is that direct sales and relationships are key to selling this product, and the company would probably find it difficult to develop these contacts as a new player in the N.A. market. The company should probably consider partnering with a supplier of a complimentary product (i.e. adhesives, varnishes) who could provide the company with a direct sales force and help it develop its brand in the N.A. market.

ENCYCLOPEDIA COMPANY

- Market Expansion / New Product
- Industry Analysis / Market Sizing

Background

An enigmatic Swiss trader has just bought an old and respected encyclopedia company. He now wants to enter the Internet field. You have been hired as a consultant to help him put a plan together.

Question

How would you advise him?

Additional Information

- ♦ No prior expertise in web-related services.
- ♦ Best brand name in the world for encyclopedia.
- ♦ Current product line – Print edition of encyclopedia, CD ROM version
- ♦ Capital is not a constraint.

In this case, the Swiss trader has no idea what the final "web" product looks like. The candidate should first narrow down the possibilities, for example:

- ➢ Search engine – (free/pay for use)
- ➢ Web-site that peddles information (free/pay for use).

The trader wants a new search engine/site.

Approach

1. First determine the purpose of entering web-services – to design a product that is much better than existing products, and to capitalize on the brand name at the same time.
2. What is the value proposition? - To provide a search engine that provides accurate information without hassles, quickly and efficiently.
3. Areas for discussion:
   a. Competition
      - There are two dimensions to choose from:
        - Compete on quality
          → Google! main competitor
          → Requirements: human input to rate quality of content on websites
        - Compete on powerful search engines, with no human intervention
          → Alta Vista, Excite, HotBot main competitors
          → Technology is the key competence.

- Choose the metric to measure performance against competition, and to measure progress.
  - Number of hits
  - Ratings by internet magazines, and other raters on the Web
  - Number of web-sites accessed or "listed"

b. Revenue sources
   - Possible alternatives:
     - Advertisers:
       → Advantage: Revenue stream more certain, need a smaller number of payers to support operations
       → Disadvantage: Hassle of loading pages with ads to users
     - Customers: (Pay per use / periodic subscription)
       → Advantages: Users can be assured of ad-free operation, greater credibility.
       → Disadvantage: Need a much higher customer base quickly to support operations. Also future revenue stream is uncertain as it depends on future usage.

c. Customers
   - Who are your customers?
     - Advertisers
     - Visitors to web-site
       → Current audience– based on current usage data and current profiles, e.g., age, income groups, types of sites visited, and main purpose of using the Internet.
       → Future audience – will depend on trends in the industry, and emerging major uses of the Internet.

       (Note: The resolution of this issue needs to be done simultaneously with the issue of revenue sources in (b) above. Since client is still only exploring options, lay down the issues anyway)
   - What does your target market want?
     - Client doesn't have any data. Need to find out. Methods: Online surveys, etc. Be prepared to discuss what exact questions you will put on this survey, what information you are trying to elicit, and how you will use that information.
   - How best to give customers what they want?
     - This will revolve around web design, and selection of most appropriate technologies to implement the site.

d. Core Competencies:

1. What core competencies are required?
   - Depends on whether client wants to compete on “quality” or “quantity”
   - Competing on quality makes more sense given their known expertise in information, and their respected brand name.
   - If competing on quality, key competencies required are:
     - Access to current, accurate information.
     - Brand name.
     - Ability to constantly update information and new websites. This is especially important if customers are paying for service.
2. What core competencies does the client possess?
   - Brand name
   - Expertise in the information business.
   - Key take away from this analysis is that client lacks the technological capability to maintain *current* information at the speed required in an Internet-based business.
3. How is the gap between the two going to be bridged?
   - Acquire the technology.
   - Acquire skilled programmers.
   - Issues to consider here are the cost of such acquisition versus the benefit, and the time it will take to execute.

FINAL NOTE: THIS CASE HAS NO REAL “SOLUTION” AS IT IS OPEN ENDED. THE CLIENT IS JUST LOOKING TO YOU TO LAY DOWN THE ISSUES IN ENTERING A NEW BUSINESS.

AN EXCEPTIONAL ANSWER WILL SUMMARIZE THE KEY POINTS IN A VISUAL MANNER VIA A CHART OR TABLE.

DESKTOP APPLICATION SOFTWARE

- Market expansion
- Distribution strategy

Background

The client makes a software product that manages desktop applications across different machines. There are 2 broad categories – large organization (with 1000 + computers) and small organizations (100 – 1000 computers) that use the software. Client has a strong presence in the small segment but has not been able to penetrate the large segment.

Question

1. Why is the client not able to have a footprint in the large segment?
2. What recommendations would you have – stay / exit the large segment? What tactics would you use if you decide to stay?

Additional Information

(Note to case giver: This is a numbers case – so guide the candidate appropriately)

- Desktop application software reduces crashes and calls to systems administrator. It is a background application so the end-user does not even know that it exists on his / her computer
- The client sells the software through computer retail stores that sell software products. There are over 2,000 such retail stores across the country
- Large segments are more profitable than small segments, and currently the small segment market is almost saturated. So from the client's perspective, they clearly need to sell more to large segment.
- Question is: How do we sell more?
- No other player operates in this niche – however an open source application manager is in the cards
- Client software is extremely stable and has clear benefits because of reduced system outage. These benefits are more for large companies than for small companies
- Client sells the software, retail stores sell support services at time of sale.
- Retail stores sell using a direct sales force that visits the large / small companies.
- The average license price for small firm is $2,000. Stores sell 100 licenses a year and get a 10% margin. In addition retail stores sell support services 100% of the time for each license, each of which produces another $2,000 in revenue with a total margin of 10%.
- The average license price for large firm is $20,000. Stores sell 12 licenses to get a 25% margin. In addition retail stores sell support services 20% of the time for each license, each of which produces another $20,000 in revenue with a total margin of 25%.
- The actual sale is made by sales reps who get 1% of every $1 in revenue they bring in to the store
- A sales rep can either make 8 small company sales or 2 large company sales in a given month.

Approaches

While a 3-C approach works, a faster approach is to contrast the large versus small company and look at the client's product, competition and features in these 2 segments. You should quickly determine that the problem is in the channel, the open source application is a distraction. Candidate should realize large companies will not go in for open source until the product matures.

- Small company:
    - Revenue = 2000 * 100 = 200,000
    - Profit to store = 200,000 * 0.1 = 20,000
    - Profit from support services = 200,000 * 0.1 * 100% = 20,000
    - Net profit to store / store = 40,000
- Large company:
    - Revenue = 20000 * 12 = 240,000
    - Profit to store = 240,000 * 0.25 = 60,000
    - Profit from support services = 240,000 * 0.25 * 20% = 12,000
    - Net profit to store / company = 72,000
- Retail stores *also* get more profits if they sell to large companies.
- Sales rep incentive:
    - Small firm = 8 * 40,000 * 0.01 = 3,200
    - Large firm = 2 * 72,000 * 0.01 = 1,440
- Sales reps therefore tend to favor searching for small firms – which is okay if they can make 8 sales a month, but this market is maturing so they are potentially going on fruitless searches.
- The sales rep incentives should reflect the margin per sale and not just the net margin.

Outstanding Answer

After you get the numbers an outstanding answer will just have to be creative:

- Merits / demerits of moving away from channel partner towards having a dedicated direct sales force.
- Piggyback on another software vendor's direct sales force.
- Partner with computer vendors (Dell, etc) to have software installed in OEM fashion, etc.

RESIDENTIAL CENTRAL AIR CONDITIONS

- Market Expansion
- New Product Development

Background

Our client is a Residential Central Air Conditioning Systems manufacturer. A Market leader in the US with 40% market share. The company is profitable with 10% EBIT.

Question

This company has a large R&D department that has just designed a new technology that is much more energy efficient. It cuts electricity requirements (and hence costs) by 50% to produce the same cooling effect.

Should you introduce the technology now? If so, how would you introduce the new product?

Additional Information

1. Company is the market leader in new technology inventions
2. The durability of this technology is 3 years (i.e. the closest competitor will take 3 years to copy the unit)
3. Revenue/Cost of old unit
   - Revenue $2000
   - Parts and Labor $1000
   - R&D, Sales etc $400
   - Fee to external distributor $400
   - Profit $200
4. Revenue/Cost of new unit
   - Revenue $???
   - Parts and Labor $3000
   - R&D, Sales etc $400
   - Fee to external distributor $400
   - Profit $???
5. There are certain economies of scale expected as manufacturing produces more of the new units, as the volume increases to over 100,000 units, costs will decrease by 20%.
6. Case recipient should notice that some costs are fixed and some are variable. Also that the external distributor is currently receiving $400 or 20% of the unit cost, will the company be able to keep the distributor at a fixed fee of $400 or will they argue for an increase to 20% of resale value?
7. The lifespan of the unit is 10 years.
8. The US is split into 4 regions for air conditioning usage. NE, NW, SE, SW. Average expenditure for electricity running air conditioning per year
   - NE - $700 per year
   - NW - $300
   - SE - $1500
   - SW $ 1200
9. How do people choose air conditioning units?

- 80% of sales are made on 'price' of the unit
- 20% of sales are made on the 'lifetime value' of the unit.

10. Company sales are 40% of total market, 30% to the price segment and 10% to the lifetime value segment. (Notice our old product appeals more to the lifetime value segment…the client has 50% of the lifetime value market)

11. There is only 1 other large player with a 40% market share and 6 regional players share the remaining 20% of the market.

Approach

To answer the question whether to introduce or not, answer the question 'Is the new product going to be profitable? Will it make the overall business more profitable?'

Look at Revenue/Cost plus building or stealing more market share.

Get the cost information for the old and new product, try to decide if it will be possible to gain a 10% EBIT on the new product, What price do you think you can sell the new product for?

To decide this look at the lifetime savings customers get from using the new product, the SE region customers will save $7500 over 10 years. If this is worth say $5000 today, could argue how many people are willing to invest today for savings over the next 10 years and knock this down lower. Even if this is only worth $3000 to them we could sell the unit for $5000. This creates an EBIT of $1200 or 23%. This would lead you to believe that yes you should introduce the new product.

Now consider how to launch the new product. Target 'Heavy' user areas? Think about how and why people buy air conditioning; get information as to product/unit choice. Now see that company needs to target consumers who buy according to 'lifetime value'. A good answer would consider other issues such as marketing strategy, market to people with environment concerns as well as costs?

A very good answer would finally consider cannibalization of the company's old product. Will the company continue to sell only its old product in the more cost conscious regions of the NE and NW. How much of our market for the new product will be lost sales of our old product? How much can we expect to steal from competitors?

Wireless License Bid

- Market Expansion
- New Market Entry

Background

The Singapore government is rewarding an additional wireless license via a bid process. Vodafone, your client is considering whether it should attend the bidding for this license.

First Question

Vodafone would like for to analyze the market opportunity and provide a recommendation.

Additional Information

Market Size: Mobile use in Singapore is expected to increase 20% in 2004, 30% in 2005, 40% in 2006 and 30% in 2007. There are now 2.4 million mobile users in Singapore. The average mobile user spends $60 a month for a mobile phone.

Customer Acquisition: To enter the market the company projects that it will have to invest an incremental $100 million to acquire the first 200 thousand customers, known as the minimum threshold to enter a new market. Each additional 10 thousand customers will require $1 million in advertising.

Competition: There are three players in the Singapore wireless telecom market who have 60%, 30% and 10% of market share respectively.

Industry Economics: Industry EBITDA is 60%. The new is expected to cost $100 million.

Approach

The candidate should do following:

- **Market Analysis** – the size and growth of the market, profitability of the industry, etc.
- **Consumers analysis –** Discuss what consumers value (i.e. features) and the types of services they use. (there is no hard data on this point, rather the candidate should speak about consumers)
- **Competitor analysis** – The candidate should recognize that the existing competition will react to Vodafone's market entry by offering more services, better features, better coverage, lowering prices, etc. In addition, the candidate should mention the importance of fully understanding the realm of possible strategies that will circumvent competitor reactions. This does not need to be specific, but this is analysis that will require further work.
- **Client analysis** – The candidate should mention that cost structure, core competencies, and competitive advantages should be completely analyzed.

- **Economics of the bid** – cost benefit analysis to see whether the client should attend the bid.

First consider the threshold investment. If the bid is profitable at threshold, then assume that it is also profitable at added-in investment stage. If it is not profitable at threshold stage, then consider added-in investment stage to see whether it would be profitable (it is good to start with threshold investment only because you do not need to consider the growth rate of the business for your NPV calculation – especially if you have not learned corporate finance yet at this stage, this will save you a lot of trouble).

Up-front investment: total $200 million (license $100 million + threshold investment $100 million). Cash inflow = $60.00 * 200,000 * 60% * 12 = $86.4 million (every mobile user spends $ 60*12 each year for mobile bills. Assume that you client is able to get 200 thousand customers. EBITDA is 60%). Assume that the project could go on for ever, and that the competitors' discount rate is 20%. NPV = $86.4M / 20% - $200M = $232M, which is positive, based on this; we should look deeper into this project.

Second Question: Based on your NPV analysis what assumptions are at risk and why?

1) 200 thousand customers – competitors will probably respond. However, as the current mobile-user market is growing at 40% and the current market has 2.4M customers. If our client focuses on new customers, which is 2.4M*40% = 960 thousand it should be able to get 200 thousand customers.
2) 60% EBITDA won't change. This is not necessarily true either as with new entrants into the market, the current players might cut price to maintain their market share. This could drive down EBITDA.
3) We assumed that the project would go on forever – there might be country risk – e,g, Singapore government decided to nationalize the mobile telecom market – though this risk is small, but we should also consider
4) We used the industry discount rate – which does not necessarily represents the risk of the project.

Third Question: If the current market share were not 60%, 30% and 10%, but 40%, 40% and 20%, which market is better for a new entrant? There is not an absolute answer to this, rather the candidate should pick a market and defend his / her position.

Below is a possible answer:

The 40-40-20 market is better for entrant as it is a more even market. In the 60-30-10 market, there is an obvious industry leader and a small player (10%). The industry leader would want to maintain its leadership position, while the small player does not want to be squeezed out of the market. Thus the competition in this market would be stronger than the 40-40-20 market. Since the mobile telecom market is a high fixed investment market, the small player in the market would most likely cut prices to gain market share or keep new entrants out. So, in a 60-30-10 market, the competitors should be expected to respond stronger.

CHICAGO GSB **Practice Cases**

INVESTMENT / STRATEGIC ACQUISITION CASES

CHEMICAL INDUSTRY MERGER CANDIDATE

- Investment / Strategic Acquisition
- Industry Analysis / Market Sizing

Background

One major chemical producer has retained McKinsey to evaluate another major participant in the industry. Both companies are bulk commodity chemical producers. We have been asked to begin our work by analyzing the future prospects of the target company's main product line, a bulk chemical used in the production of plastics.

Question

How would you structure an analysis of the target company's future prospects in this product line?

Additional Information

- Production of this chemical has slowly declined over the last five years.
- Prices have declined rapidly.
- There are 7 to 8 major producers; the largest producer has a 30 percent share; number two has 20 percent; our target company has 15 percent; the rest is divided among other competitors.
- The two largest competitors earn a small return; Target Company is probably at break-even; the rest are operating at break-even or a loss.
- The largest competitor has just announced construction plans for a major new plant.

Approaches

Minimum Requirements

The candidate should, at a minimum, address the following issues:

1. What markets use this chemical, and what has been the nature of growth in these markets? (End-use markets are largely automotive-related.)
2. How much overall capacity exists now? (Far too much.)
3. What has been the relative capacity utilization of competitors in the industry? (60 to 70 percent during the last 3 years.)
4. What are the relative cost positions of competitors? (Related to size/efficiency/age of plant; target company has reasonably "good" position.)

Better Answers

Better answers will move beyond the previous answers to consider:

1. How rational is pricing? (Pricing is prone to self-destructive cuts to gain temporary share points.)
2. Are there niche or value-added uses for the chemical? (Not really.)
3. Does the chemical have a major by-product or is it a by-product? (Not significant.)

4. How often have company's entered/exited, and how expensive is entry/exit? (Entry is expensive; exit is cheap for most because older plants are fully depreciated.)
5. How important is this product line to each of the competitors? (Most producers are diversified.)

Outstanding Answers

The best answers could address:

1. Reasons for announced capacity expansion. (It is a bluff to get smaller competitors to shut down.)
2. Is regulation important? (Yes: all competitors have installed pollution control equipment.)
3. What operational improvements could the target company make? (Lots.)
4. How is the product sold and distributed? (Economies of scale in marketing and transport are critical.)
5. Is there synergy between our client and the target? (Not really.)

FREQUENT FLYER PROGRAM

Background

Your firm has been asked to advise on the purchase of a Korean airline. There is some controversy on the frequent flyer program of the airline being acquired. The airline claims that the program is an asset, while the multinational firm making the purchase believes the program will be a liability.

Question

How would you assess the asset or liability value of this program?

Additional Information

- All airlines have introduced a frequent flyer program, so it is no longer a competitive advantage
- Majority of miles given by airline have been accumulated by business class customers flying on popular routes between Korea and the USA

Approach

- Case needs to be split into the asset side and the liability side
- Asset value of frequent flyer program mainly lies in locking in business class customers who will have accumulated a high switching cost because they have built up so many miles. As a result, they have access to additional perks such as free upgrades, access to lounges, etc. that they do not want to give up. Candidate should make a decision on how much value business customers attach to these privileges.
- Liability of program depends on cost of redemption of miles and lost opportunity cost
- Redemption cost depends on incremental cost of fuel, handling, and checking, as well as the cost of running the program and the opportunity cost of the seats
- Opportunity cost can be minimized by managing the lock-out dates and the number of seats available for frequent flyers
- Cost of running program (which candidate should identify as most costly part of program) is IT infrastructure, marketing costs, and the cost of operating a phone-in line. These costs can be lowered by using the service for other tasks of the acquiring firm (credit card, insurance, etc.)
- An exceptional answer will use a chart to summarize the above points.

NATURAL GAS INVESTMENT

- Investment / Strategic Acquisition

Background

Natural gas is a large domestic industry. Natural gas can be used for automobile fuel but is primarily used for heating and industrial purposes.

Question

The client produces natural gas and needs to decide whether to drill/build a new sourcing point, which would involve a major capital investment. Should the client pursue this venture?

Additional Information

- The investment would cost $250, have a 10-year useful life, and would produce 3 units a year.
- It is drilled for and then removed by means of pipes and extracting equipment.
- Natural gas is a relatively plentiful but finite natural resource that cannot be easily replaced.

Approach

The candidate must consider the costs and benefits of the suggested action. Oftentimes valuation questions or quantitative calculations will be involved with this type of "Go/No Go" question.

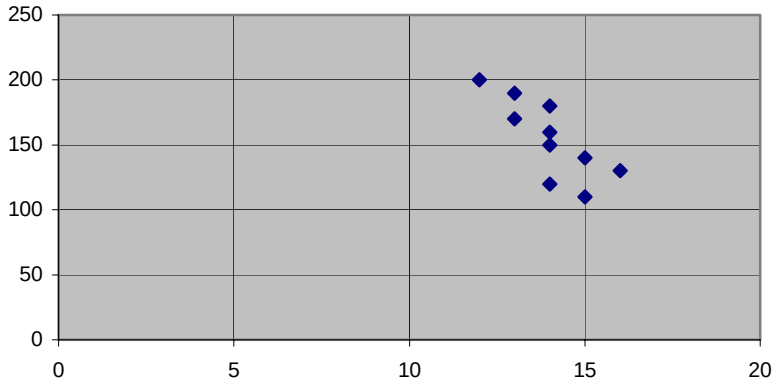
The candidate ought to suggest plotting the demand curve for natural gas for 10 years: Price vs. Quantity (P x Q) for the given data.

Using the set of data points on the next page, the candidate should advise against the investment because the average price has been declining and would not justify the capital outlay required.

SHOW THIS PAGE TO THE INTERVIEWE IF THE APPROPRIATE QUESTIONS ARE ASKED.

Sample data

YEAR	PRICE ($)	QUANITY (in units)
1	15	110
2	14	120
3	16	130
4	15	140
5	14	150
6	14	160
7	13	170
8	14	180
9	13	190
10	12	200



UGLY AIRPLANES

- Investment / Strategic Acquisition

Background

The domestic airline industry is extremely competitive and airline companies frequently sustain large losses. Consequently, decisions that involve even small outlays of cash are carefully considered.

Question One

The airline in question has ugly planes. Should it paint them?

Additional Information

- Most airlines paint their planes to match their corporate logo or as part of a brand image campaign.
- This airline has updated its brand image/marketing materials, but has not yet painted its planes.
- The client's planes are currently painted with a logo/image dating from the mid-1980's in colors currently considered passé.
- The airline industry is a fixed-cost business.
- Adding passengers does not increase costs very much.
- Thus, the client should do whatever is required to fill the planes. If customers think the planes are ugly, they will fly an airline with better-looking planes.
- The customer segment that cares about plane appearance is the vacation traveler who travels out of non-hub cities.
- Painting planes costs $50,000 per plane, the expected revenue increase due to painting planes is 1%.
- The client has 100 planes and total Revenues of $4 billion

Approach

Attempt to discover the costs and benefits of the action before recommending a solution.

Increase revenue by 1% will lead to a $4 million increase in Revenue, compared to the $5 million cost, the painting expenditure will be recovered in less then two years.

Answer: Paint the planes

Question #2

Since the client is going to paint its planes how can the job be accomplished without idling aircraft?

Additional Information

- Grounding an airplane reduces its utilization, thereby reducing its potential revenue.

- Airlines don't like grounding planes even if few flights are scheduled, since they are more likely to incur uncompensated costs if problems occur.

Approach

The candidate ought to point out that planes routinely are grounded for two weeks per year for D-check major maintenance. It so happens that it would take 12-14 days to paint one plane: 2 days to paint and 10-12 days for the drying/curing cycle. Therefore, the lanes ought to be painted during the regular maintenance cycle.

- Investment / Strategic Acquisition
- Industry Analysis / Market Sizing
- Pricing

STEEL MILL CAPACITY EXPANSION

Background

Your client is a steel mill, who is considering whether or not to add capacity.

Question

Should the client add capacity? If so, how much?

Additional information

- Buyers consist of wholesalers for large manufacturing firms such as auto plants, etc.
- Product offerings include slab, pig, and I-beams, which are commodity products
- No further economies of scale are possible
- Market Price: $3.50
- New capacity cost: Average Total Cost is $2.50
- Market demand is 100 million tons
- Market Share and Price:

Name	Percent	Cost
Company A	40%	$2.00
Company B	25%	$2.25
Client	20%	$2.50
Company D	10%	$3.00
Company E	5%	$3.50

- Everyone is at capacity, but no one other than the client can expand

Approach

- Determine Industry capacity then determine cost
- Explore what the demand curve looks like. Find out that:
  - The demand curve is not continuous, but stepped. Since you are the only seller who can expand, you can act like a monopolist on the residual demand (i.e. you can set the market price). However, as you lower price you will both expand market share and reduce the margin on all of your product.
- Determine what price you would charge:
  1. If you price at $3.49 you will take the 5% share from Company E. Total profits (Revenue – cost) will be:

     (20M + 5M)($3.50) – (20M + 5M)($2.50) = $25M

     This is an **increase** from the current profit of $20 million, so adding 5% capacity would be a profitable move

2. If you price at $2.99 you will take the 15% share from companies D and E. Total profits will be:

   (20M + 15M)($3.00) – (20M +15M)($2.50) = $17.5M

   This is a **decrease** from the current profit of $20M so adding 15% capacity would be an unprofitable move

CHEMICAL MANUFACTURER

- Investment / Strategic Acquisition

Background

Your client is a large national manufacturer of basic chemicals facing stagnant growth and profits. They are considering the acquisition of rechargeable battery manufacturer to stimulate growth and profits.

Question

What are the issues they should consider in making this decision?

Additional Information

- Client is the largest national manufacturer in their product line.
- Rechargeable batteries: (Do not give this information unless specifically asked – this is the key to solving the case)
    - A high-growth industry.
    - Growth is being fueled by advances in communications technology, especially the explosive growth in the use of cellular phones and other devices that need to be powered by batteries.
    - Industry is dominated by Japanese low-cost manufacturers with high volumes.
    - Main customer base will be OEMs of cellular phones and similar equipment.
    - Key success factors in this industry are:
    - Ability to bring product to market quickly.
    - Constant innovation.
    - Ability to draw a price premium for innovation before imitators and low-cost producers enter the market.

Approach

Two key issues to be considered:

1. Internal Issues
    a. Fit with long-term objectives:
        - Long-term objective of client is entry into high-growth markets.
    b. Fit with core competencies:
        - Required core competencies:
            - Product innovation.
            - Ability to bring to market quickly.

- Ability to meet strict customer requirements relating to product quality, delivery and reliability.

- Current core competencies:
  - National distribution channels.
  - Low cost chemicals manufacturing.
  - Commodity products, low service level.
- Competencies that need to be acquired:
  - R&D ability
  - Bringing product to market quickly.
  - Servicing a small number of key customers.

2. External Issues
   a. Competitors:
      - Who are current competitors?– Low cost Japanese manufacturers
      - Likely response to client's entry into the market – Further price cutting or innovation? Talk about game theory.

   b. Customers and market growth:
      - Who are the customers?
        - OEMs (main market)
        - Replacement market (insignificant share)
      - What do they want?
        - Availability (reliable delivery schedules synchronized with their production schedules)
        - Reliable product (Brand name manufacturers of electronic equipment)
        - Constant innovation in products (miniaturization, longer battery life)
      - What does market growth look like in the long term?
        - Current and future profit margins? – Get information
        - Attractive growth prospects due to growth in communications industry

BIOTECH FIRM

- Investment / Strategic Acquisition
- Market Expansion / New Product

Background

You have been retained by the VP-Sales of a biotech firm. The firm has just obtained FDA approval for a new product that will take between 6 and 9 months to bring to market.

Question

Your task is to advise the VP on the following questions:

1. Should he hire a sales force?
2. If so, how many salespeople should he hire?

Additional Information

- This product is an adjunct to chemotherapy.
- The target market will be oncologists (cancer specialists)
- The company currently has no sales force.
- The product currently has no competitors.
- The company has a lead-time of 1-2 years before competitors enter the market.

Approach

To make the decision on whether to hire a sales force:

1. Estimate sales revenues without a sales force. In this case, the company plans to rely on an advertising campaign that will educate the target market of oncologists, as well as eventual consumers (cancer patients undergoing chemotherapy) about the product and its benefits.
2. Estimate sales revenue with a sales force. In this case, the company plans to use the sales force, but will continue with the same level of advertising as in the previous option. The difference between the two gives an estimate of incremental revenues with the sales force.
3. Compare the margin on the incremental revenues (benefit) with the costs of hiring the sales force (cost).
4. Determine the costs of hiring a sales force. Key points that candidate should keep in mind in detailing the methodology:
    a. There is a minimum efficient size for a sales force. Hiring a lower number may mean that the benefits of the sales force will not be fully realized.
    b. There are fixed costs and variable costs in hiring the sales force.
    c. In determining costs, consider
        - number of oncologists that one salesperson can cover
        - time per sales visit per oncologist

- frequency of visits to each oncologist
- geographical spread of oncologists (more widely dispersed oncologists imply that sales force will spend a greater percentage of time on the road)
- growth in compensation over time for sales force.

5. After estimating costs and benefits on a per annum basis, project net benefits into the future, keeping in mind the entry of new competition.
6. Discount the net cash flows at company's WACC or other appropriate discount rate to arrive at the decision.

LOAN APPROVAL SYSTEM

- Investment / Strategic Acquisition

Background

The CEO of a major bank is trying to decide whether or not to implement a new loan approval process.

Question

Should they implement the new loan approval process?

Additional Information

- Loan application is generated at the branch.
- Complete applicant background check is conducted at the branch.
- The branch sends the completed application and background check to the loan underwriting center.
- The underwriting center updates and rechecks the background check (takes much less time than the original check).
- Loan decision is made (approved or denied).
- The bank is considering getting rid of the first background check and relying on solely on the loan processor's check to speed their service for customers. If the loan processor does the whole check with a new software system, the check takes one additional hour at the processor's office per application.

	"Good Loan" – Repay as agreed	"***Bad Loan" - Default***
Profit Margin	$0.20	($0.50)

	Old System	***New System***
Acceptance Rate	1st Round 50%, 2nd Round 90% = 45%	40%
Default Rate	10%	5%
Branch Check	$100/Loan includes rep time (will be eliminated)	---
Processor's Labor Cost	$60	$60
Additional Costs	---	$50/Loan

- Average Loan size is $10,000.
- Number of loan applications per year is a little over 1000.
- Cost of new system $500,000.

- Cost to train loan processors $20,000.
- Expected new loan volume increase 10%.

Approach

- *Old System:*

(applications per year [1,000]) * (acceptance rate [50%*90%=45%]) * ({good loans [90%] * average profit margin for good loan [$0.20 per dollar for good loan]} - {bad loans [90%] * average profit margin for bad loan [($0.50) per dollar for bad loan]} * (average loan size [$10,000] = (450 loans) * ($0.13 expected average profit per loan dollar) * ($10,000 average loan size) = $585,000 expected profit.

When compared to the new method there is an additional cost of $100 to process the loan at the branch.

$585,000 – (1,000 applications) * ($100 per application) = $485,000 comparative profit.

- *Proposed System:*

1,000 Applications

(applications per year [1,000]) * (acceptance rate [40%]) * ({good loans [95%] * average profit margin for good loan [$0.20 per dollar for good loan]} - {bad loans [5%] * average profit margin for bad loan [($0.50) per dollar for bad loan]} * (average loan size [$10,000] = (400 loans) * ($0.165 expected average profit per loan dollar) * ($10,000 average loan size) = $660,000 expected profit.

When compared with old system there is the additional cost of one hour of labor.

$660,000 – ({labor cost per hour [$60] * hours to process [1] * number of applications [1,000] = $600,000.

Additionally, the new program costs $50 more per application.

$600,000 – (cost per application [$50]) * (number of applications [1,000] = $550,000 of total comparative profit.

1,100 Applications

(applications per year [1,100]) * (acceptance rate [40%]) * ({good loans [95%] * average profit margin for good loan [$0.20 per dollar for good loan]} - {bad loans [5%] * average profit margin for bad loan [($0.50) per dollar for bad loan]} * (average loan size [$10,000] = (440 loans) * ($0.165 expected average profit per loan dollar) * ($10,000 average loan size) = $726,000 expected profit.

When compared with old system there is the additional cost of one hour of labor.

$726,000 – ({labor cost per hour [$60] * hours to process [1] * number of applications [1,100] = $660,000.

Additionally, the new program costs $50 more per application.

$660,000 – (cost per application [$50]) * (number of applications [1,100] = $605,000 of total comparative profit.

- Other issues to consider:
- Can the bank make the change?
- What training costs will be needed?

New system will free up branch representative's sales time.

CHICAGO GSB **Practice Cases**

GUESSTIMATE / VALUATION CASES

DOLLAR BILL ESTIMATION

- Guesstimate / Valuation

Background

You are a new associate on an engagement involving Wrigley Field. It is vitally important that you are able to determine the number of one dollar bills in the stadium at the end of the seventh inning stretch during a Saturday afternoon Cubs/Mets game.

Question

How would you determine this number?

Approach

There is no right answer to this case, nor is it necessary to generate a number. The interviewer will likely pay attention to the following questions:

- How do you define the problem?
- How do you structure the problem?
- How would you estimate the numbers you need?
- How would/could you check those numbers?

One Possible Solution

Define the Problem:

Define all "one dollars bills in the stadium" to mean all one dollar bills inside the confines of the stadium and not any in the parking lot.

Structure the Problem:

The places dollar bills will be can be divided into four categories:

- In people's pockets or personal containers;
- In walk-around vendors hands or pockets;
- In concession cash-registers; or
- In miscellaneous locations (players, back-offices, umpire, etc.).

Estimate the Numbers You Need and Check Them:

When estimating numbers, there are always at least three methods to consider:

- Estimations based on simple facts (e.g., the stadium probably holds 50,000 fans and is 95 percent full).
- Direct gathering of the data (e.g., contacting the stadium to ask the average attendance).
- Empirical ways to test, either exhaustively or through sampling (e.g., posting counters at points of entry/exit).

First, we need to know how many people are at the game. The candidate ought to consider the fact that this is a Saturday game against the Mets and that it's the seventh inning stretch. Several methods may be used to derive this number:

- Call the stadium, Major League Baseball or the Cubs organization for attendance on Saturday games and also perhaps games against the Mets.
- Either estimate what percentage of the attendance remains after the seventh inning stretch and/or ask stadium officials if they can help to provide this number.

Second, we need to know how many one dollar bills are in peoples pockets' and/or personal carrying units.

- Estimate: How many one dollar bills do people carry on average?
- Empirical Tests: Hire someone to sample people and ask how many one dollar bills they are carrying (how would you obtain a representative sample?).

Third, we need to know how many one dollar bills are in cash registers in the various concession stands. How many concession stands? How many registers per concession stands? How many one dollar bills per register?

- Estimate: Estimate the number of concession stands and registers per concession stand (Should they be segmented into large and small concession stands?)
- Direct gathering: Call stadium for the number of concessions stands?. Call concessions stands for number of registers .
- Empirical tests: Sample the concession stands requesting how many one dollar bills they have at the end of the seventh inning stretch.

Use similar techniques to determine the other categories.

TELEPORTER VALUATION

- Guesstimate / Valuation

Background

TeleportCo has developed a "teleporter" - two booths connected with a hardwire over a long distance. You step into one booth and, when the devise is activated, are teleported instantaneously to the other booth.

Question

How much is this invention/capability worth? Value it.

Additional Information

- This is a made-up problem with a real answer.
- Remember, a value is a measure that demonstrates what something is worth. Intangible objects can have great value.

Approach

What the interviewer is looking for: a) structure the problem, b) demonstrate ability to hypothesize, c) show that you know how to direct the discussion, d) minimal number-crunching proficiency, and e) pitch a reasonable conclusion.

Step A: Look at the demand and supply issues in this question.

- Who would use this capability?
    1. Segment the consumers; some will be willing to pay more than others. Who are these and hypothesize heavily on who the more profitable ones will be (e.g., business travelers are more profitable than leisure travelers, as evidenced by 747 vs. Concorde travel between New York and London)
    2. Show your directional ability by saying "In order to simplify this problem for now, I'd like to look primarily at NY-London Concorde travel. Time permitting, we'll come back to assess other routes/options."
    3. Demonstrate numeral literacy by extrapolating how much you think "instantaneous" travel would be worth. If the business traveler pays $1000 for a 10hr 747 flight and $3000 for a 2 hour Concorde flight, then linear extrapolation predicts a 1sec transfer would be worth $???.
    4. Demonstrate business-sense by recognizing that this number is too large to be credible and propose a non-linear relationship to derive a lower number (e.g. marginal benefit of going from 2 minutes to 1 second travel < going from 2 hours to 2 minute travel). Provide a hard final number that you mutually agree upon to show conclusiveness.
- How much would it cost to implement this technology (very important to demonstrate sensitivity to fixed vs. variable costs)?
    1. Each pair of booths costs $20M and laying the required hardwire line costs $200M from New York-London. Operational costs are negligible (i.e. ignore marketing, upkeep, and electrical costs).

2. Numerical literacy question: how quickly will this investment be recouped based on price assumptions made on the demand side where you assume: a) a "skimming" approach by which you target only the high-end business users, and b) a "full-entry" approach by which you target all types of travelers (assume that individual traveler pays ~$500 for a 10-hour 747 flight and does not use the Concorde).
3. Show business acumen by recognizing that competitive response will be different with these two entry approaches, but show directional ability by postponing for later discussion (don't forget to come back to this issue!).
4. Demonstrate the good sense to conclude that "supply costs are not going to be the killer in this project. High revenues/demand would swamp out all questions about profitability." The interviewer may ask to discover under what financial conditions this would not hold true (see Step B for further discussion).

Step B: Analyze the competitive responses to your entry

Demonstrate directional ability by remembering to study what kinds of responses might occur under your two entry approaches. Note that the marginal cost of airline service is still higher than with the teleporter, which was assumed to be zero. In the "skimming" approach, we steal a fraction of the high-profit business customer, which would irritate the airlines. The lower our prices, the larger the fraction of stolen high-profitability customers. Therefore, we might seriously consider setting our prices really high only to take away the truly price-insensitive/time-sensitive flyer and irritate the airlines only a little. On the other hand, a "full-entry" approach might undermine the fundamental purpose of air travel. The airlines would be really upset!

An alternative solution might be to "sell" the technology to the airlines instead of building the booths and connections ourselves. There are two reasons why this might be a viable strategy: 1) if you threaten the life of the airlines, they will definitely fight you with every resource they possess (e.g., lobbying for government regulations against teleporters); 2) the value of getting money today from the airlines is worth more than if you extracted it yourself over several years, given that the two sums are equivalent. As with all valuation cases, the candidate ought to be ready to calculate a NPV. In this example, the equivalent purchase price could be something like the NPV of $10 billion spread over 10 years evenly.

CENTRAL PARK

- Guesstimate / Valuation
- Market Expansion / New Product

Background:

NYC Mayor Giuliani wants to lease central park to raise some revenue. The lease is for 99 years. The client has retained you to advise them on controlling and operating central park. Giuliani will accept sealed bids – the highest bidder will win, as long as the use meets expectations.

Question:

What should we do with Central Park and what should our bid be?

Case Information:

- Expectations are that the buyer can build on no more than 20% of the park. Building sites can be roughly 2-5 stories in height, though no high rises. The buyer can put these facilities to any purpose.
- The client has other New York assets/facilities.
- The client is Disney (this information should only be given out if requested).
- Giuliani will take the highest bid no matter what the highest bid is.
- If the person taking the case comes up with a figure, tell them the client is the only bidder. What should they bid?

Analysis of case:

First, the person should determine who the client is. This information is vital to how to structure what to do with the park. Regardless, the case taker should come up with a rough format of how to value the park. Setting up this format will drive out potential uses, the value of each use to a particular person or persons, the amount the client can charge for such a use, and some assumptions about the aggregate fees per day and per year for each use. The case taker should also consider multiple uses for different parts of the park. Sample uses include leave as a regular park but charge for usage, make a theme park or amusement park, create a permanent concert venue and charge admission, install housing, put up other commercial or retail space. Although the case taker need not explore each one, he/she should choose one and get an idea of how much the value would be.

After the case taker puts some assumptions around value and what to charge, the daily and yearly usage figures should be estimated. These estimates are back of the envelope; the giver is simply trying to see if the taker can think on his/her feet and come up with reasonable assumptions for the value of the park. For instance, as a regular park, the buyer could charge admission. If the users currently get $8 of utility from a free park, it might be reasonable to assume that the client could charge each user $4 a visit. If we assume that 5000 people visit the park daily after the admission fee is instituted, then the park generates $20,000 a day. Multiply times 360 to get

that the park is making 7.2 Million per year. Since the lease is essentially forever, pick an acceptable discount rate, say 10%, and the park is worth $72 Million.

Obviously the taker should use simple numbers to help out the math. Also, the taker should mention that no costs are factored in, and that the utility would need to be measured for feasibility. Other uses of the park would clearly bring in other cash flows, including up front capital expenditures.

Finally, if the case taker suggests a figure, mention that NY will take the highest bid no matter what – and that your client has is the only bidder. The bid should be something like $1.

PAINT OR LAMINATE

- Guesstimate / Valuation
- Market Expansion / New Product
- Industry Analysis / Market Sizing

Background:

A client has come to you with a new technolgy which will label bottles in a way that makes them look like they have been painted.

Question:

How valuable is the technology?

Case Information:

- There is a limited set of companies which make bottles and apply labels. When a bottle is to be painted, a different company will generally do the painting, but will not necessarily create the bottle: 10% of the painting is done at the glass manufacturer. (There are actually only 4 players in the market and it is mature; the case taker should realize that margins are low and glass bottles are a commodity)
- The market size of the paint and label business today is $50 billion. 10% of all bottles get paint.
- Current paint technology provides crude images. The new laminate would create sharp bright images.
- Each color painting today adds additional expense; the new laminate would not necessarily be so.
- The laminate is more expensive than paper, but cannot be scratched off.
- The cost per bottle is $0.20 for paint, $0.15 for the laminate, $0.05 for paper labels.
- An un-labeled bottle costs $0.05.

Potential Questions:

- Who wins and who loses with this technology?
- Who really needs it?

Analysis of case:

This case involves a little math and some reasonable assumptions on the part of the case taker.

The case taker could move down the path right away of who might need this technology. The case taker should instead focus on the numbers, and then come back to that discussion at the end.

- Realizing that the market is $5 billion a year and the cost is still high for your product, you could really only charge no higher than $0.19 per bottle for the laminate. In fact, you may only be able to realize a couple cents per bottle, since the bottlers need some incentive to move to your product. Thus the actual value of the technology would be some $0.035 per bottle. Assuming that each bottle costs a nickel by itself, then the number of bottles with paint would be 5 B/0.25 = 20 B bottles. So the technology would be worth about 700 Million.
- The case taker should then discuss who might use this technology and discuss why they might switch. Companies dependent on marketing may be best suited for this technology, such as Coca-Cola. The candidate should feel free to suggest other ways to expand the business. However, the candidate should realize that most bottled products are as much a commodity as the bottle themselves. If a drink producer made $0.25 for every drink sold using paper labels, then raising costs by $0.13 per bottle for laminated labels would seriously erode profits. They would have to sell twice as many bottles of soda than they did before switching. In an industry like the software industry such increases are unlikely.
- Finally, the case taker should realize that not all painted labels will convert to laminate; the technology is therefore worth somewhat less than the $700 million figure from above.

MILK LIVES LONGER

- Guesstimate / Valuation
- Market Expansion / New Product
- Industry Analysis / Market Sizing

Background:

An entrepreneur chemist with a dairy bent has developed a serum for extending the shelf life for milk.

Question:

How valuable is the serum?

Case Information:

- The inventor has an unlimited supply of the serum (not really important).
- The formula is patented.
- Milk costs $2 per gallon.
- The current shelf life of milk is about a week after purchase; the formula will extend this shelf life to 6 or 7 weeks.
- When a gallon of milk is purchased, 20% goes bad before it gets used on average.
- The following information can be given, but can also be worked out as assumptions by the case taker (the latter is preferred, but if he/she needs help, give the info in pieces below):
    - 100 Million households in the US
    - Each household uses about 1 gallon of milk per week

Potential Questions:

- Who wins and who loses with this formula?
- Does the retail grocer now have to supply more or less shelf space to milk?

Analysis of case:

- This case involves quite a bit math. The case taker should realize that the average household only uses .8 gallon; the other .2 goes bad before they use it.
- The case taker should also figure out what the total size of the milk market is. We can get this number by multiplying 50 (number of weeks per year) * 1 gallons used per week * 100 M (number of households) * $2 = 10 Billion.
- Now to get the value of the formula, we need to plug for the price. We know that the households will now use only .8 gallon per week so we can use that figure in our formula from above. Multiply 50 (number of weeks per year) * .8 gallons used per week * 100 M (number of households) * $X = 10 Billion. Solving for X we get 4000 M * X = 10 B => 4 B * X = 10 B => X = $2.5.

- The case taker should realize that total consumption of the market is .8 * 50 * 100 M = 4 B gallons. At $0.50 per gallon, the formula would be worth $2 Billion.
- Now this answer is partially acceptable. The case taker should realize that some people in the supply chain will be affected by the consumption reduction of 1 Billion gallons. The dairy farmers and the retailers may want some cut of this profit. If we assume that the dairy farmers were receiving $1 for every gallon sold, then they are out $1 Billion. They will be sorely upset to lose this revenue. To get around this potential obstacle, the inventor should partner with some dairy farmers and share the benefit, and slowly force all dairy farmers to accept the new formula. The case taker should make some assumption about this cost in order to fully crack the case (something like paying them 500 M to 1 B).
- The retailers should be handled differently. The inventor must show that the retailers now sell less milk, and although their margins are the same, they can now sell other goods in place of milk. Since customers need 1 billion less gallons, the grocers can use that retail space for selling other goods. Although the inventor may need to share some of the $2 B value of the formula with the retailers, explaining to them the value of selling other goods will mitigate their loss.
- After assumptions for retailers and dairy farmers, the formula should still be worth about $1 B.

OIL TANKER VALUATION

- Guesstimate / Valuation

Background

Your client is a wealthy individual investor. He has inherited an oil tanker from a distant relative. He would like to sell the tanker, but knowing nothing of the oil transportation business, he needs a better understanding of what it is worth.

Question

How would you help him value the tanker?

Additional Information

- There are 3 sizes of ship in the market: Large, Medium, and Small. Ships are otherwise identical.

SIZE	CAPACITY	COST (of one trip)	NUMBER
Small	50,000bbl	$50,000	35
Medium	100,000bbl	$75,000	15
Large	200,000bbl	$100,000	10

- Your client's ship is medium-sized.

- Demand in the industry is flat, at 3,000,000bbl per year.

- Assume that ships last forever (no depreciation). A used ship costs exactly the same as a new ship.

- Each ship is independently owned and operated. Each ship is capable of exactly one trip per year.

Approach

- The key is to recognize that this is an industry with excess capacity. Demand supports all 10 large ships, 10 of the 15 medium ships, and none of the 35 small ships. Market clearing price will be set at $0.75 per barrel, the marginal cost of the medium ship. That makes yearly profits for the client's medium ship 75,000 – 75,000 = 0.
- How can the client fix this? If a medium ship is truly worth $0 (or at least close to $0), the best move would be to buy out the excess capacity: i.e. buy 5 MORE

MEDIUM SHIPS. In this scenario, the client could scrap the extra five ships, and having removed excess capacity could raise prices to ~ $0.99 per barrel—or any amount less than the $1.00 per barrel offered by the small ships! What's the ship worth now? This would make profits 99,000 – 75,000 = $24,000. Assuming stable demand (which this question does), this cash flow could be discounted as a perpetuity, assuming a reasonable interest rate (say 5%). In that case the value could be estimated at 24,000 / 0.05 = $480,000.

- This case is less about deriving a numerical answer than it is about showing that you can think broadly about the interplay between market conditions and value.
- Consultants tell us that DCF tends to be the only method Chicago MBAs use in valuation cases. Therefore, it is important to point out that you have thought broadly about the question before launching into the numbers: "There are 3 or 4 different ways to value the ship. One would be to discount the expected future cash flows. Another would be to attach an established industry multiple to sales or earnings. Another would be to use comparable deals—e.g. cargo ships in another industry—to establish such a multiple. Another would be to take the price of a new tanker and depreciate it to the proper degree. Depending on what we find, one method may be more useful than the others."
- Recognize the cyclical nature of the oil & gas industry. CAPACITY is the central issue to consider. The client's purchase of excess capacity is essentially a call option on the industry, a bet that demand will remain constant or perhaps increase. Know the risks and rewards of this strategy.
- In a commodity market where there is excess capacity and where competitors have varying marginal cost, the market clearing price will likely be set at MC of the middle cost competitor, such that capacity matches demand as closely as possible. Removing excess capacity raises the market clearing price (assuming demand is constant).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