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2006 Case Book

Selected Cases Provided by:

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5.1. Private Equity Portfolio Strategy

Source: A.T. Kearney 2006
Length: Medium (30 Minutes)

Problem:
Our client is a private equity firm which operates primarily in the automotive industry. They want us to investigate whether they should increase their portfolio in the sensor market? Also what criteria should be used by the client to identify target companies?

Information To Be Provided:

- **Market potential** :
  - Electronics content in automotives will keep growing and is expected to represent 17% of total purchased materials in an average vehicle by 2006.
  - Sensors will become a more and more important part of the automotive electronics content — according to a previous study conducted by us, we estimate they will represent approximately $150 on average per vehicle by the year 2005
  - Global growth potential beyond automotive e.g., aerospace, semiconductors, medical devices and consumer electronics. Automotive and Aerospace being the biggest growth areas
  - NPV analysis: To operate a company in sensor market requires an recurring investment of $10M, $11M and 12M resp. starting in year 0,1, 2. Our client has done back of the envelope cash flow analysis that show that they can expect a cash flow of $12M after the first year growing at a rate of 5%. Assume a three year outlook is sufficient to make a decision if the client should go ahead with the investment. Using this data, determine if the client should go ahead with the idea of investing in the sensor market. Assume cost of capital=10%

- **Key demand drivers:** Increasing consumer demand; government regulation for safety, environmental, and comfort in automotive.

- **Customer buying criteria:** The OEMs are the customers of sensor manufacturers and they place a high value on leading-edge technology as electronic systems are seen as a source of differentiation.

- **Competition:** The sensor market is extremely fragmented — leading sensor companies are aggressively using acquisitions and partnerships to grow by expanding their product, industry, geographic footprints and/or acquire promising technologies.

- **Cost Structure:** Being in the sensor business requires significant continuing investments in terms of infrastructure and technology. However it is high margin business and is likely to remain so for the next 4-5 years.

Solution:
The data provided in this case clearly presents a very positive picture of the sensor market. The real answer lies in articulating and structuring the decision criteria for an acquisition target for our client. The interviewee should be able to quickly highlight 2

success factors for sensor companies i.e. Profit growth potential of a company and the fit with existing portfolio

Profit/Margin Growth Potential:

- What market segments is the company playing in? What is the growth potential of these market segments?
- What geographies and product and services are being addressed by the company and the future growth potential of each?
- Does the company have strong existing customer relationships?
- Technology Leadership: What is the technology focus of the company? What are the R&D investments? How many patents are owned by the company? Etc.
- Present Value estimation using the due diligence done by the client on a representative company in the sensor market revealed a positive return at the end of three years.

Year	**0**	**1**	**2**	**3**	**PV**
Investment($M)	10	11	12	0	29.92
Cash flow ($M)		12	12.6	13.23	31.26
Net($M)					**1.34**

Assumptions	
Growth rate=	5%
Cost of capital=	10%

- **Fit with portfolio:** To what extent can we add value to this company given the companies in our portfolio

A better answer will also highlight the advantages and disadvantages of moving into this market to the client in terms of the following:

Advantages:

- Access new technologies that can be potentially used by other portfolio companies
- Expand beyond automotive industry to garner higher buy-out multiples upon exit
- Diversification of existing portfolio (currently only in automotive)
- Potential to establish industry leadership since the market is fragmented currently
- Enlarging size of entities dealing with OEM customers

Disadvantages:

- Likely expensive acquisition
- Likely significant investment required to stay competitive (continuing R&D to invent latest sensor technologies for differentiation with competitors)
- Learning curve on managing sensor business
- Higher risks (i.e., relatively long lead time from R&D to market)

5.2. Manufacturer of Ball Bearings

Source: Deloitte Consulting, LLP
Length: Short, 10-15 minutes

Case Scenario
Our client has had flat sales and declining profits for the last 3 years. The CEO believes that high margin service businesses built on existing core competencies are the answer to his problem.

Key Questions
From a Value Chain perspective, how would you assess whether or not there are opportunities to build sustainable new service businesses? Develop some potential business models based on your assessment.

Possible Recommendations / Approaches
Candidate should be able to dissect the value-chain and identify procurement as a core competency.
One core competency of the company is the procurement department with its world-class processes and personnel. It also has access to 2000 buyers that work for its parent company.
The company has strong customer relationships with large manufacturing companies such as Caterpillar, John Deere, etc.
Large manufacturing companies usually buy several hundred components (from around 500 suppliers), but build strategic relationships including electronic linkages with the top 20 suppliers.
Significant cost savings have been realized through these strategic relationships, but extending them beyond the top 20 suppliers is not cost-effective.

Case Wrap Up
In this scenario Deloitte Consulting recommended a new business model based on the client's procurement competency in which it will manage suppliers that fall below the top 20 for its major strategic customers. The client leverages its web-enabled electronic linkages to reduce costs and streamline the procurement process for components purchased from the less-than-top-20 suppliers. The business is currently in the planning phase.

5.3. Growth Strategy Case (Specialty Chemicals)

Source: Deloitte Consulting, LLP
Length: Long (30-45 minutes)

Case Scenario

The client is a $250 million Performance Chemicals division of a $7 billion Specialty Chemicals Company.
The CEO of the parent company has set a "growth agenda". He believes that his company can become the fastest growing chemical company (moving from 3-4% historical growth to 10-15% growth) and has asked the business units to develop and present growth strategies to him.
Performance Chemical's business manager, like many other managers in the company, does not believe that there is significant untapped potential in the markets served by his unit. He has approached Deloitte Consulting for strategic advice.

Key Questions

How would you go about building a case for whether or not Performance Chemicals division can grow at a 10%+ per annum rate? How will you approach this problem? Develop potential growth strategies and recommendations for the Performance Chemicals management team.

Possible Recommendations / Approaches & Key Issues That Should be Covered
Consider Market Issues (Market Size, Customers, Competitors)

What is the expected growth rate of the existing business? *All the 6 businesses have been growing at 3-4% for the last 5 years. This is the same as the average growth rate of the markets served.*
What are some of the products sold by this division? *Performance Chemicals division sells asphalt additives, sodium chemicals, paper pulp bleaching solutions etc.*
How would you describe the competitive environment? *All the products have limited intellectual property protection and are being threatened by global competition. Commoditization and pricing pressures are constraining the growth of these businesses.*
It is clear that the company has to look beyond traditional product strategy to generate the warranted growth. What are some of the trends you would look for? E.g. outsourcing, solutions vs. products, product-service bundles etc….

Understand Company Capabilities (i.e., Feasibility)

Are there any cultural impediments to growth? *The company has like any other chemical company focused solely on selling products and has not been seeking growth ideas. Quote from the Client "We make it by the ton and sell it by the carload" describes the business thinking at the client.*

Probable Growth Strategies

Develop a simple framework to explore growth opportunities. E.g. Growth Spectrum may include Product Enhancements, New Products, New Markets, New Channels, New Business Models.
Alternative growth strategies for Performance Chemicals division – e.g.,

- Sell a solution not a product
- Become indispensable to strategic customers
- Become one-stop shop for specialty chemicals
- Vendor managed inventory system as a service to customers

Case Wrap-Up

The Deloitte team performed a growth diagnostic to understand the culture and infrastructural impediments to growth. It conducted 2-day workshops with each of the niche businesses to develop alternative strategies using the Valuable Formula methodology of the strategy practice. Some of the strategies included product-service bundling, outsourcing, and new markets for the existing technological capabilities. The preliminary projections indicated the potential of quadrupling the size of Performance Chemicals group to $1 Billion in 5 years. The client agreed with Deloitte Consulting's recommendation and has implemented a subset of the strategies.

5.4. Wealth Financial Advisory Services to Affluent Individuals

Source: Deloitte Consulting, LLP
Length: Long (30-45 minutes)

Case Scenario
The client is a provider of wealth advisory services to high-net-worth individuals. Typical wealth advisory services include: investment strategy and portfolio management, estate and trust planning, tax planning and preparation, insurance planning, family office services (e.g., bill payment services) and the like. The client started out as a professional services specialist to corporate clients, but over time, has successfully expanded into individual wealth advisory services. Over time, the revenues generated from the wealth advisory services component of the company grew to over $400M worldwide.
Traditional players in this market are high-end private banks (e.g., JP Morgan), and boutique financial planners. These players do not offer their own products, but typically have close partnerships or affiliations with those who do (e.g., mutual fund companies, insurance companies and brokerage houses).

Within the last 12 months, several disruptive events have occurred in the marketplace. Large and diversified financial services players are launching aggressive national marketing campaigns around their wealth advisory services businesses, and the results are paying off as they begin to capture an alarming share of the market in a short period of time. In addition, a new, completely different type of competitor has announced its presence and intent to enter the wealth advisory services market, offering a value proposition very similar to the client's. This new concern is well funded, and has some of the most successful venture capitalists of the day filling the seats on its board of directors. This new competitor is also causing significant problems for the client; within the past 3 months, the top five producing partners have left to join this firm, taking their clients with them, and leaving the client's geographic presence in a strategically critical growth area significantly weakened. In addition, the client is finding that its revenues are decreasing significantly in certain types wealth advisory services they offer.

The client has retained the services of Deloitte Consulting to help them understand what their strategic response options are, and to recommend the best course of action to follow.

Key Interview Questions
Assume you have just joined the Deloitte Consulting team for this project and today is the project kick-off meeting. What would be your hypothesis around the root cause of the client's issues and what information would you want to look at to determine the best recommendation for the client? What information do you need to arrive at your hypothesis? What do you feel are the strategic options facing the client?

Possible Recommendations/Approaches & Key Points/Issues Candidate Should Cover:
Suggested framework: 3 C's approach: company, customer (market) & competition
Understand the Client's capabilities and position in the marketplace: (value chain analysis)

The company differentiates itself in the wealth advisory market by offering <u>independent</u> and <u>objective</u> advice to its clients, recommending only those products and services warranted by the investment strategy and the client's particular risk profile. The client does not form formal partnerships or alliances with product suppliers (e.g., investment banks and fund managers).

The Client is known worldwide for its expertise in its legacy businesses: corporate tax preparation & advisory services, as well as audit services. About 75% of its business is in tax preparation and services, the remaining is in wealth advisory services, but both its market share and the market itself is growing. As tax preparers and auditors, independence and objectivity is not only critical, it is required and monitored by the SEC. The company offers its wealth advisory services using the same model as for tax preparation (e.g., fee per hour).

While its position as independent and objective differentiates itself vis-à-vis the product players, it limits the areas it can control in the value chain:

plan	→	advise →	execute →	reassess and modify
(determine goals)		(develop plan)		(based on performance, and chgs to risk profile)

Due to SEC restrictions, the client is not allowed to execute transactions (e.g., the purchase of securities, taking custody of funds, etc.); it must advise and recommend only. Other players, many of them competitors, such as banks, mutual fund companies, insurance companies, are the ones who are ultimately able to execute. As a result, the client cannot control who develops relationships with their customers. The key part of the value chain to control is link between "advise" and "execute" in that controlling the relationship with the customer is controlling the execution and the quality of the execution, and blocking or limiting the role of these other players who execute services.

While the client offers and sells a vast portfolio of services to its customers, the amount of revenues generated from services other than tax preparation and advice has been declining. (the customer is retreating to purchasing services that the client is branded and well-known for, seeking investment advisory services from better known names (e.g., investment banks) who have entered the market and have aggressive marketing campaigns).

Understand Competitive shifts: Which competitors are entering the market?
During the past few years, the number of players entering the wealth advisory services space has grown considerably. Investment banks, mutual fund companies and brokerage firms have all entered this realm, and many are targeting the affluent segment.

The New Economy is disrupting this market. In addition to investment banks and private banks entering the market, pure online players such as e*Trade are aligning with traditional high-end banks (e.g., Northern Trust) to offer their affluent clients online trading and account monitoring capability. Finally, a new entrant, myCFO.com is a pure internet play that competes directly with the client in the independent and objective advice category, but does so without being burdened with the restrictions of being a public accounting and audit firm (e.g., they are able to strike alliances, partnerships, and can offer its customers access to invest in venture capital funds).

<u>Why</u> are they entering the market?
Investment banks, mutual fund companies and other diversified financial institutions (Schwab, AmEx) have heavily invested in IT to support the Internet brokerage and trading business. They are now leveraging their IT capabilities by expanding into wealth advisory services, bolstered by offering online customer accounts, where customers can access their accounts and advisors 24/7. Many are entering into this area because margins for these services are higher than commissions on trades (brokerage fees), which are shrinking due to downward pressure brought about by discount online trading options such as e*Trade. Launch of these premium online customer accounts is being bolstered by aggressive national advertising campaigns.

Understand Market (and Customer) shifts:
The tremendous wealth creation occurring in the mid to late 90s has created a growing number of affluent individuals in the United States ("Affluent" = net worth exceeding $1M). While the market for wealth advisory services to affluent individuals is growing, the market for independent and objective advice is unclear, because the value placed on independence and objectivity in this space is unclear. Competitors who are clearly not objective (e.g., investment banks and mutual fund companies), are positioning its wealth advisory services as independent and objective. The major question is whether or not the customer appears to appreciate the difference between a true provider of objective advice, and those positioning themselves as "pseudo-objective". Is this critical, single differentiating factor that separates our client from its larger, better funded and more IT enabled competitors – valued enough to sustain the business?

Evaluate the Strategic Options available to the client:
Option 1: Exit the wealth advisory services portion of the business (about 25% of overall revenues, the remainder comes from tax and audit services); Option 2: stay with the current strategy of offering objective and independent advice but invest to develop an IT platform to offer an online offering to its clients; Option 3: assess the market for "independent and objective advice" (e.g., evaluate whether this attribute is strategically sound as the core differentiating attribute).

Case Wrap-Up
STRATEGIC OPTIONS: The Deloitte Consulting Team recommended several options:
- Exit the business;
- Stay in the business and invest incrementally to remain competitive (e.g., expand existing practices, bring in more experienced hires);
- Stay in the business and aggressively invest to develop an IT-based customer channel
- Spin off the business from the core business of tax and audit and pursue more aggressive alliance and JV strategies.

Choosing the option involves addressing the central key issue: what is the market for independent and objective advice? We recommended the client address this issue before making a decision on the option to pursue:

Deloitte Consulting recommended that the client initiate a conjoint analysis study to determine the relative value placed on this attribute vs. cost and other attributes.

In addition, Deloitte Consulting examined how, as a public accounting firm, is it possible to exert more control over the execution portion of the value chain.

Deloitte Consulting recommended that the client initiate a developmental program in house to mentor and develop client service professionals to become “Most Trusted Advisors” – deepening the relationship with current clients to sell the full scope of wealth advisory services (not just tax services). In doing so, the client became a more customer-centric organization, focusing on serving the specific and evolving needs of its customer base.

5.5. Technology Product Warehouser

Length: Medium (30 Minutes)

Problem:

The client is a warehouser that purchases a range of telephony technologies (simple and complicated) from original manufacturers, and then sells them to a group of resellers, who in turn sell them to end consumers.

Manufacturer → CLIENT → Reseller → End Consumer

The reseller market can be divided into Corporate (largest), Value-Added (medium), and E-tailer (smallest) segments. Our client has experienced eight quarters of declining profit. Attempt to answer why and provide recommendations to reverse this trend.

If Asked for Market Information:

The client is the largest company in the industry, with a number two competitor almost as large and several smaller players. There have been no new market entrants in recent years and all firms sell at industry-wide prices. The industry can be divided exclusively into three segments, for which the following data exist:

2000	Market Size ($ MM)	Client Unit Sales ($)	Industry Avg. Price ($)	2002	Market Size ($ MM)	Client Unit Sales ($)	Industry Avg. Price ($)
Corporate	20	1,000,000	5,000	Corporate	15	1,000,000	3,000
Value-Added	45	1,500,000	10,000	Value-Added	40	1,250,000	8,000
E-tailers	10	2,500,000	2,000	E-tailers	5	2,000,000	1,000

Solution:

The calculations from the above table should lead the interviewee to the following conclusions:

- The overall industry has shrunk, both on a price and volume basis ("it's a bad business to be in")
- The client's overall market share has shrunk from roughly 33% to 25%
- Value-added is the largest segment and client has lost the most market share in it

The falling prices can be interpreted to mean that a price war has begun in the industry, perhaps due to short-sighted competitive responses to new technologies. The falling volume can be interpreted to mean that the client and its competitors are getting cut out of the value chain, as manufacturers have begun to sell directly to resellers and end consumers.

Based on the available data, deteriorating metrics across the board suggest that the industry is mature and rapidly approaching obsolescence. Absent novel opportunities for differentiation, there is little that the client can do to return to profitability under these market conditions. Recommendations should recognize this reality and likely address options for exiting the industry via diversification, firm sale, and/or closure.

5.6. Bus Operator

Length: Short (15 Minutes)

Problem:
Our client is a US bus transport operator maintaining routes between cities. The company has lost money for the past several years and over-operated routes as well as recent route additions are suspected to be responsible. A new CEO has now taken charge and determined that the company needs to aggressively cut costs in order to return to profitability. How would you approach the problem?

Information To Be Provided If Requested:

1. Routes are of three types: short, medium or long. More than half of the revenue comes from long distance trips
2. The company has a substantial real estate investment in terminals
3. The prior CEO focused on top line; instituted plans like anywhere pickup
4. Cash position is tight – the company had a recent brush with bankruptcy
5. Its equipment is quite old
6. The largest cost for a bus company is fuel

Solution:
The candidate is expected to use a profitability framework, and focus more on costs than other aspects because of the nature of the problem.

Costs can be divided into Fixed and Variable Costs.

Fixed Costs: Buses, stations and other buildings, salaried employees, etc.
Variable Costs: Gas, hourly employees, maintenance (debatable whether variable)

Costs could be cut on possibly all of the above areas. Here are some specific suggestions:

- Determine which routes are profitable and cut back on the unprofitable routes – a good metric to use would be the load factor
- Change routes in a way that can improve the load factor
- Think about oil contracts to protect against oil price fluctuations
- Lease new equip. to decrease maintenance costs, downtime, and fuel efficiency
- Reconsider "anywhere pickup" and utilize more freeways to improve schedules and utilization of equipment (bonus point)

The other part of cost cutting would be to compare the services provided to customers with what they really want. For example, there may be costs involved with extra terminal services or increasing leg room on new seats that are not valued by consumers. Essentially, the offering must be realigned with customer needs.

Follow-Up Question: If the company figures out 25 new routes that may be profitable, how one would go about starting service on those routes.

Possible Response to Follow-Up Question:
The company would need to look at the operating costs per route, competition on each route, whether the company's infrastructure could support the new routes, and what potential customers on these routes want (they are likely not riders on the company's existing routes.)

5.7. Apparel Retailer

Length: Medium (30 Minutes)

Problem Statement:
Your client is a premium brand apparel retailer. In recent years it has noticed a consistent decrease in market share. How would you structure your analysis?

Information To Be Provided If Requested:
Industry and Market Share:
- Market share has fallen from 15% to 7%
- Competitors consist of premium retailers in the same business segment. There is growing competition from substitutes and mid-range brands as well
- The market size has been growing steadily
- There have been no recent major consolidations in the industry

Marketing, Sales, and Distribution:
- There have been no substantial changes in the company's marketing mix or distribution
- Prices have remained constant
- Competitor marketing / pricing / product mix has remained unchanged
- Distribution is primarily through large retail outlets that stock multiple products (70%). The balance (30%) is distributed through self-owned outlets and smaller merchants
- Distributors have recently launched their own premium product brands
- Currently there is no online sales channel

Cost: No recent changes in cost structure or profit margins

Customers
- Customers are not price sensitive
- Customer recognition of the company's brand is low

Solution:
The company is not diversified enough in terms of its distribution channels. The company's principal distribution channel has launched its own set of products in direct competition with our client's products. The distributor has control over shelf space and earns a higher margin on its own products than by selling our clients' products. Thus it has been pushing sales of its own products at the cost of our client's products. To counteract this, our client must consider diversifying its distribution channel. Possible options include:
- More self-owned stores
- Creation of an online store

In each case, the client must consider the possible impacts of these new channels on the company's brand. In addition, the company must work to strengthen customer pull through a significant branding program. This would encourage customers to demand client products through both old and new distribution channels.

5.8. Toothbrush Wars

Length: Medium (30 Minutes)

Problem:
Your client is the division of a global consumer products company that produces toothbrushes. Its product portfolio consists primarily of a "manual" toothbrush that retails for $3 and an electric "rechargeable" toothbrush that retails for $50. One year ago, a new competitor introduced a battery-powered electric "spinbrush" that retails for $5 and now controls 1% of the worldwide toothbrush market. Your client currently lacks a comparable offering and would like to know whether it should develop a similar product.

Hint: (to be provided only if interviewee struggles significantly with the initial structuring of the problem)
The client typically views the market in terms of margins and "per customer per year" metrics.

Information To Be Provided If Specifically Requested:
One year ago, the worldwide market was made up of 80% manual and 20% rechargeable toothbrushes. The spinbrush's 1% market share gain has come mostly at the expense of rechargeable toothbrush sales.

Manual:
- The client's net profit margin on sales of manual toothbrushes is 66%
- The average manual toothbrush user goes through 4 toothbrushes per year
- On average, 2 toothbrushes per year are given to manual toothbrush users free of charge by their dentists

Rechargeable:
- Rechargeable toothbrushes are sold as two separate components: a "base" that retails for $50 (with a 60% net profit margin) and an associated "head" that retails for $5 (with a 90% net profit margin)
- 1 base and 1 head are needed at all times for the device to work; no other components are compatible
- The average base last 10 years
- The average rechargeable toothbrush user goes through 2 heads per year and purchases bases as needed

Spinbrush:
- No specific cost data is known for the competitor's spinbrush offering
- Client product development believes it could produce a spinbrush "knockoff" at a cost of $3 per brush

Analysis:
The most effective approach should begin by calculating figures in terms of profit per customer per year.

Manual:
[2 toothbrushes purchased] x [$3 retail] x [66% profit margin] = [$4 profit per customer per year]

Rechargeable:

([2 heads purchased] x [$5 retail] x [90% profit margin]) + ([1/10 base] x [50 retail] x [60% profit margin])
= [$12 profit per customer per year]

Spinbrush:
Assuming production costs would be the same for the client and its competitor:
[2 toothbrushes purchased] x ([$5 retail] – [$3 cost of production]) = [$4 profit per customer per year]

Solution:
At this point the analysis becomes more qualitative in nature. While the manual and spinbrush products are similar in terms of profitability, the manual toothbrush addresses the mass market (80% market share at a $3 retail price point) and is unlikely to lose share to the spinbrush. However, the rechargeable segment is most profitable for the client and is clearly threatened by the introduction of the spinbrush. If the client were to respond with a "knockoff" spinbrush, it would likely hasten the demise of its profitable operations. Therefore, the client should consider alternative means to respond to the spinbrush "disruptive technology".

5.9. Newspaper Start-Up

Length: Short (15 Minutes)

Problem:
As an established consultant with McKinsey, you have volunteered your time to critique business plans at a local entrepreneur's forum. One plan calls for establishing door-to-door distribution of an already existing online newspaper in Cologne, the fourth-largest city in Germany. Without detailed knowledge of how the process would work in practice, how might you evaluate the feasibility of the proposed distribution plan?

Information To Be Provided If Requested:
No external capital has been provided, and resources only allow for the hiring of 6 newspaper carriers on bicycles, each of whom will be responsible for one square kilometer within the downtown area of the city.

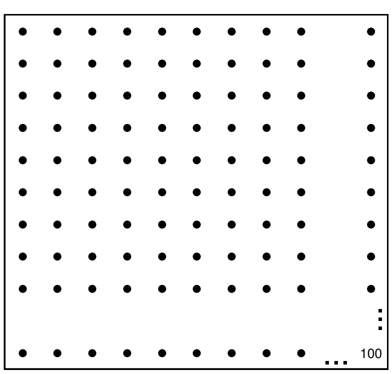
You should use simplifying assumption that the city is in the shape of a square and the population is evenly distributed in homes that are an equal distance apart from each other. Also ignore non-residential areas and assume no "stacking" of homes.

The newspaper is scheduled to be printed and ready for distribution by 4AM each morning, and must be delivered by 6AM to meet customer requirements.

* Key assumption the interviewee must make (reorient them if they assume something far from this figure): subscriber homes within the proposed distribution area are on average 10 meters apart from each other.

Analysis:
One way to assess the feasibility of the plan is to calculate how quickly the newspaper carrier must deliver a single newspaper, and evaluate whether that sounds like a reasonable figure.

If the interviewee has difficulty conceptualizing the problem, sketch a rough estimation of this graph to guide his/her thinking:



By assuming that homes are 10 meters apart from each other on average, each side of the square must contain 100 homes ([1,000 meters] / [10 meters between each home]). Therefore, a square kilometer contains 10,000 “stops” for the newspaper carrier ([100 “stops” per row] x [100 rows of homes]. Given only 7,200 seconds to complete the job ([2 hours] x [60 minutes per hour] x [60 seconds per minute]), the newspaper carrier would need to deliver more than one newspaper per second, which is likely impossible.

Solution:
Due to the budget constraints of the business plan, hiring more newspaper carriers is not a valid option. Two potential solutions include the following:
1) Reduce distribution area – Pare back distribution to reach only the most profitable potential subscribers
2) Change distribution method – Co-distribute with other publications and/or locate alternative channels

5.10. CD Stockouts

Length: Medium (30 Minutes)

Problem:

Your client is a large music company that developed via a merger several years ago between an American and a European business. It is currently the #2 player in the market with 25% market share and $75 billion in revenue. During the last holiday season, the company suffered an abnormally large degree of stockouts, causing its retailers to be unable to replenish the CDs on its shelves. What went wrong and what should the company do to prevent this in the future?

Information To Be Provided If Requested:

The "music industry supply chain" can be structured as follows:
Artists & Content → Physical Production → Distribution → Retailers

Time, communication, and transportation costs must be factored into each "handoff" in the supply chain.

Supply chain phase descriptions:
- Artists & Content: Typically the longest phase, with a wide range of variability in length
- Physical Production: Typically the shortest phase, often a few seconds, managed in-house by the client
- Distribution: Storage and transportation via distribution centers between manufacture and retail locations
- Retailers: Store shelves, hot-selling items have lead times that are short, but not unreasonable

Supply chain relations:
- Artists & Content: No standard operating procedures in place to deal with music content providers
- Physical Production: In-house
- Distribution: Good relations and variability management mechanisms with 150-200 distributor network
- Retailers: Strong relations, good communications, and information sharing with end retailers

Artists & Content Process Detail (if requested):
- Content relationships are often contractual arrangements with recording studios and independent artists
- There are no guidelines to manage "the creative process", which rarely conforms to set timetables
- There are no standardized decision-making procedures for how and when contacts come up for review
- The above factors contribute to the extremely high rate of variability in this phase of the supply chain

Analysis:

Detailed probing of the "music industry supply chain" should reveal bottlenecks in the Artist & Content phase and resulting handoff, even when the rest of process is generally marked by best-in-class procedures. The interviewee should demonstrate understanding that high process variability and front end delays can lead to supply chain disruptions and ultimately product stockouts. These factors are particularly likely to cause problems during periods of high demand, such as the retail holiday season. A detailed supply chain management process needs to address the unusual circumstances and variability of "the creative process."

5.11. Test Equipment Manufacturer

Length: Long (30-45 Minutes)

Problem:

Your client is a manufacturer of test equipment for electronics companies. This is a high complexity, low volume business, where products range from $10,000 to $1 million. Products are built from sets of standard subassemblies, which the manufacturer holds in stock. When customers order a product, the Sales department determines customer requirements and configures the product using these subassemblies.

Currently, the client holds 183 days worth of inventory on average. Best-in-class companies hold 39 days. The client would like you to help reduce inventories to 85 days or less. How would you go about achieving this?

Guidelines for Building the Supply Chain:

The candidate should begin by trying to understand the supply chain. The following information can be provided as the candidate works through the supply chain model:

1. After the order is received, the client assembles the product out of subassemblies and base units
2. Subassemblies are essentially circuit boards, which are designed by the client. Manufacturing of these circuit boards is outsourced, with a cycle time of approximately 1-2 weeks
3. Components used to manufacture subassemblies are purchased and maintained by the client, and sent to the outsourced manufacturer for assembly. These components fall in two categories of approximately equal dollar value:
    a. A large number of "standard" off-the-shelf components are purchased from distributors as needed. Lead times for standard components are approximately 1-2 weeks
    b. A smaller number of "custom" components are designed by the client and manufactured in low volumes by large semiconductor manufacturers. Lead times for custom components are approximately 9 months, with little opportunity for improvement
4. For a typical subassembly, 33% of the cost is made up of standard components, 33% of the cost is made up of custom components, and 33% of the cost is assembly at the outsourced location

Additional Information:

1. The client currently guarantees 4 weeks delivery time to the customers upon order receipt
2. Inventory is comprised mainly of base units (little dollar value) and subassemblies (high dollar value). Although there are only a few base units in the final offering, the total number of product configurations with different features and subassemblies is as high as 26,000
3. Some subassemblies move very fast, while some others move slowly, and occasionally have to be scrapped because a new version of the product is offered

Solution:

There is no "aha" to this case, however, the candidate is to be tested on developing an understanding of the supply chain, and asking the right questions to extract all the above information. A few key points:

- Has the client looked into reducing the number of subassemblies? One way to do this could be making subassemblies that do a large set of functions, but enabling only a smaller set requested and paid for by the customer. This would allow for pooling of the demand and reduce its variation, which would in turn lead to lower inventories
- Standard components can be procured by the outsourced manufacturer if they have demand for these components for their other customers. This would reduce the inventory being carried by the client, again because of pooling
- Given that the client promises 4-week delivery, it might be possible to hold inventory in raw components rather than subassemblies and have it manufactured on demand. If feasible, this could reduce the cost of inventory by one third

5.12. Disaster Remediation

Length: Medium (30 Minutes)

Problem:

Your client is a US-based provider of fire and water remediation services, which primarily provide extensive cleaning in the aftermath of damages related to burning and flooding. The company is typically hired by insurance companies on behalf of consumers and businesses. While this existing business is quite profitable, your client has asked for counsel on whether to enter the US residential cleaning market (traditional housecleaning, which typically takes place 2-4 times per month.)

Pre-Case (Market Sizing Exercise):

How would you go about estimating the size of the residential cleaning market?

Potential Answer to Pre-Case:

- The population of the United States is roughly 300 million people, or about 100 million households
- These households can be roughly split in half according to whether they earn more than $75,000 per year
- Estimate the willingness to pay for housecleaning services at 40% of households making more than $75,000 per year and 10% of households making less than $75,000 per year (interviewer to confirm)
- [50 million households] x [40%] + [50 million households] x [10%] = [25 million purchases per year]
- Assumed annual housecleaning fees of $2,000 (interviewer to confirm) = market size of $50 billion

Information To Be Provided If Requested:

The US market for housecleaning services is roughly $50 billion (see pre-case), with stable growth of 4%.

Competition:

- National Players (10% of market) – Includes national housecleaning companies such as "Dial-A-Maid"
- Regional Players (20% of market) – Includes regional services such as "Joe's Chicago Cleaning Service"
- Individuals (60-70% of market) – Includes individuals who are often not part of a formal organization

Customers:

- Customer purchase criteria generally range along a spectrum with "price" and "quality" on each end
- Buyers from National Players typically rate "quality" as most important, buyers from Individuals typically rate "price" as most important, and buyers from Regional Players consider a mix of both

Profitability:

- The average price for a 5-hour housecleaning job is $75 (based on data from National Players)
- Client labor costs are roughly $10 per hour and one job consumes roughly $5 worth of cleaning supplies

Synergy Considerations:

- While significantly "lower impact", the household cleaning process is similar to the remediation process
- The client could leverage its client contacts and customer service ratings in the cleaning market
- However, the sales process for cleaning services is quite different (no sales via insurance companies)

Solution:

The US market for housecleaning services is large and attractive, and the client has transferable skills, client contacts, and customer service capabilities that would facilitate a relatively smooth market entry.

A preliminary margin analysis suggests that the client could operate profitably against the National Players for the quality-conscious customer segment:
([$75 price] – [5 hours x $10 hourly labor costs] – [$5 cleaning costs]) / [$75 price] = 27% profit margin

Despite these favorable indications, the client will need to develop a tailored value proposition to quality-conscious customers and anticipate likely competitor reactions before proceeding with full market entry.

5.13. Bicycle Manufacturer

Length: Long (45 Minutes)

Problem:

- Your client is a manufacturer of bicycles
- They have been in business for 25 years
- They manufacturer and sell three categories of bicycles:
  - Racing bikes: High end, high performance bikes for sophisticated cyclists
  - Mainstream bikes: Durable, but not overly complicated bikes for everyday riders
  - Children's bikes: Smaller, simpler versions of their mainstream bikes for children
- Profits at your client have decreased over the past five years

Question:

- What is driving the decline in overall profits?
- What recommendations might correct the situation?

Analysis:

The first question is to determine what has caused overall profits to decrease. To accomplish this, the candidate must first understand what has transpired in each of the three product categories over the past five years during which profitability has slipped. The following are questions and answers that would be provided in an interview scenario.

- What are the client's margins for a bicycle in each of the three segments?
  - Racing: Cost = $600/unit, Profit=$300/unit
  - Mainstream: Cost = $250/unit, Profit = $75/unit
  - Children's: Cost = $ 200/unit, Profit = $50/unit

- What has happened to the market size of each of the three segments over the past five years?
  - Racing: Has remained constant at its present size of $300MM
  - Mainstream: Has increased at 2% growth rate per year to its present size of $1.0B
  - Children's: Has increased at 3% growth rate per year to its present size of $400MM

- What has happened to our client's market share in each of these segments?
  - Racing: Market share has decreased from 60% to 30%
  - Mainstream: Market share has increased from 0% to 5%
  - Children's: Market share has increased from 0% to 3%

- Who are the client's major competitor's in each market segment? What has happened to their market share in each segment over the past five years?
  - Racing: There is one main competitor and a host of small firms. Your main competitor has increased market share from 30% to 50%

- Mainstream: There exist many, large competitors, none of which holds more than 10% of the market
- Children's: As in the mainstream segment, there are many competitors, none with more than 10% of the market

The above information provides enough information to put together a picture of why profits have decreased over the past five years : Your client, with a commanding position in a flat market segment (racing), expanded into new segments (mainstream and children's). As this occurred, market share decreased dramatically in the most lucrative segment (racing), creating an unfavorable mix.
The extent to which profits have decreased can be deduced from some quick math : profits have slipped from $60MM five years ago (=60% x $300MM x 33% racing margin) to $44MM today (= (30% x $300MM x 33% racing margin) + (5% x $1B x 23% mainstream margin) + (3% x $400MM x 20% children's margin)).

The dramatic decrease in market share in the racing segment is at this point still unexplained. Questions that would help formulate an explanation include:

- Have there been any major changes in product quality in your client's racing product? Or in its main competitor's racing product?
    - No

- Have there been any major price changes in your client's racing product? Or in its main competitor's racing product?
    - No

- Have there been any major changes in distribution outlets for your client's racing product? Or for its main competitor's racing product?
    - Yes
    - Previously your client and its main competitor in the racing segment sold exclusively through small, specialty dealers. This remains unchanged for the competition.
    - Your client, however, began to sell its racing bikes through mass distributors and discount stores (the distribution outlets for mainstream and children's bikes) as it entered the mainstream and children's segment.

- How do the mass distributors and discount stores price the racing bikes relative to the specialty stores?
    - Prices at these stores tend to be 15 to 20% less.

- What percent of your client's racing sales occur in mass distributors and discount stores?
    - Effectively none. This attempt to sell through these distributors has failed

- How has the decision to sell through mass distributor's and discount stores affected the image of the client's racing product?

    - No studies have been done.

- How has the decision to sell through mass distributor's and discount stores affected your client's relationship with the specialty outlets?
    - Again, no formal analysis has been performed.

Although some analysis and/or survey should be performed to answer more conclusively the last two questions, a possible story can be put together. There has been no appreciable change in either quality or price (or any other tangible factor) of your client's racing product relative to its competition. It is not the product that is the problem, but rather its image. As your client came out with lower end, mainstream, and children's products and began to push their racing segment through mass distributors and discount outlets, their reputation was compromised. Additionally, the presence of the racing products in the discount outlets has put your historic racing distributor (the specialty shops) in a precarious position. The specialty shops must now lower price to compete, thereby cutting their own profits. Instead, they are likely to push the competition's product. Remember, your client has no direct sales force at the retail outlets. The specialty shops essentially serve as your client's sales force.

The above analysis offers an explanation of what has affected the top side of the profitability problem. Still to be examined is the cost, or bottom side, of the profitability issue. Questions to uncover cost issues would include:

- How does the client account for its costs?
    - The client has a single manufacturing and assembly plant. They have separate lines in this facility to produce racing, mainstream and children's products. They divide their costs into the following categories: labor, material and overhead. Overall costs have been increasing at a fairly hefty rate of 10% per year.

- What is the current breakdown of costs along these categories for each product segment?
    - Racing: Labor = 30%, Material = 40%, Overhead = 30%
    - Mainstream: Labor = 25%, Material = 40%, Overhead = 35%
    - Children's: Labor = 25%, Material = 40%, Overhead = 35%

- How has this mix of expenses changed over the past five years?
    - In all segments, labor is an increasing percentage of the costs.

- Does the basic approach to manufacturing (i.e. the mix of labor and technology) reflect that of its competition?
    - Your client tells you that there is a continuing movement to automate and utilize technology to improve efficiency throughout the industry, but it is his/her opinion that their approach, maintaining the "human touch", is what differentiates them from the competition. (Unfortunately, he's right!!)

- Is the workforce unionized?
    - Yes

- What is the average age of the workforce?
    - 52 and climbing. There is very little turnover in the workforce.

- What is the present throughput rating? How has it changed over the past five years?
    - Presently the plant is producing at about 80% of capacity. This has been decreasing steadily over the last several years.

- What is the typical reason for equipment shutdown?
    - Emergency repair

- Describe the preventive maintenance program in effect at the client's facility?
    - Preventive maintenance is performed informally based on the knowledge of senior technicians.

- How often has equipment been replaced? Is this consistent with the original equipment manufacturer's recommendations?
    - The client feels that most OEM recommendations are very conservative. They have followed a philosophy of maximizing the life of their equipment and have generally doubled OEM recommendations.

The above information is sufficient to add some understanding to the cost side of the equation. Your client has an aging workforce and plant that is behind the times in terms of technology and innovation. This has contributed to excessive breakdowns, decreased throughput, increased labor rates (wages increase with seniority) and greater labor hours (overtime to fix broken machines).

In proposing recommendations to improve the client's situation, there is no single correct approach. There are a number of approaches that might be explored and recommended. The following are some possibilities:

- Abandon the mainstream and children's segment to recover leadership in the racing segment

Issues to consider in this approach:

- How much of the racing segment is "recoverable"?
- What are the expected growth rates of each segment?
- How badly damaged is the relationship with the specialty outlets?
- Are there alternative outlets to the specialty shops such as internet sales?
- How will this move affect overall utilization of the operating facilities?

- Maintain the mainstream and children's segment, but sell under a different name

Issues to consider in this approach:

- Is there demand among the mass and discount distributors for bicycles under their name?

- What additional advertising and promotions costs might be incurred?
- What are the expected growth rates of each segment?
- What is driving the buying habits of the mainstream and children's market?

- Reduce costs through automation and innovation

Issues to be considered:

- What technological improvements are to be made?
- What are the required investments?
- What are the expected returns on those investments?
- How will these investments affect throughput?
- To which lines are these investments appropriate?
- Are the mainstream and children's segments potentially "over-engineered"?
- What impact will this have on the required workforce levels?
- If layoffs are required to achieve the benefits, what impact will this have on labor relations?

- Reduce costs through establishing a formal preventive maintenance program

Issues to be considered:

- What organizational changes will be required?
- What analysis will be performed to determine the appropriate amount of PM?
- What training is required of the workforce?
- What technical or system changes are required?
- How will the unionized workforce respond?

Key Takeaways:

This case can prove to be lengthy and very involved. It is not expected that a candidate would cover all of the above topics, but rather work through selected topics in a logical fashion. It is important that the candidate pursue a solution that considers both revenue and cost issues to impact profit. Additionally, a candidate's ability to work comfortably with the quantitative side of this case is important. The above recommendations for improving profitability are just a few among many. The candidate may come with his/her own ideas.

5.14. Private-Label Cookies

Length: Long (45 Minutes)

Problem:

- Your client is a US-based manufacturer of branded cookies (cookies that carry the name of the manufacturer)
- Recently private label cookies (those carrying the name of the retailer) have emerged and threatened branded cookies
- Private label cookies emerged five years ago
- Two and one-half years ago they made up 10% of the overall cookie market (brand being the other 90%)
- Today they make up approximately 20% of the overall cookie market (i.e., there has been a steady, linear increase of private label portion of the overall cookie market during the past five years)
- The overall cookie market has been relatively flat over the past five years
- Private label cookies are made by the same manufacturers who make branded cookies, they are just sold under the name of the retailer
- There are essentially three major competitors to consider:
    - Your client, who makes only branded cookies
    - A second major player, that makes both branded cookies and supplies cookies for private labelers
    - A collection of small outfits, that make both branded cookies and supply private labelers
- Distribution occurs primarily through one of two types of outlets:
- Grocery outlets: all grocers sell branded cookies, most also carry their own private label cookies. This represents approximately 90% of total cookie sales
- Mass merchandisers (ex. Walmart, Sam's, etc.): sell only branded cookies

Question:

- How large would you estimate the overall U.S. cookie market to be in terms of $?
- How large of a threat do you believe the trend in private label cookie sales to be to your client?
- Based on your assessment, what is an appropriate strategy for your client to follow?

Solution:

The first question, estimating the size of the U.S. cookie market, has no right or wrong answer. It is a test of a candidate's ability to make reasonable assumptions and work quickly with numbers on an "order of magnitude" level. One acceptable response would be to estimate the number of U.S. households, estimate household consumption over some period of time, estimate the average cost of a bag of cookies, and project out for one year. In this case, after an estimate has been made, the candidate would be told to assume the market size is $1Billion to simplify any future calculations. As stated in the upfront information, the market is assumed to have been flat for the past five years.

The second question is more involved. It involves determining to what extent your client is threatened by the increasing percent of the overall cookie market represented by private label sales. To better answer this question information should be gathered pertaining to what is driving the demand for private label cookies, to what extent this has already affected your client's sales, and what the likelihood is for the trend to continue. The following are questions and answers that would be provided in an interview scenario.

What are the sales trends for the client over the past five years?
Your client's sales have been flat at $600M for the time frame of five to two and one-half years ago. Over the past two and one-half years, sales have decreased steadily down to a present level of $560MM.

How has market share of the private label segment been split over the past five years between your client's main competitor and the other smaller players?
The smaller players combined had 100% of the private label sub segment five years ago. Two and one-half years ago your client's main competitor began supplying private labelers. Today, this main competitor owns 40% of the private label sub segment, the smaller players own the remaining 60%

How has market share of the branded segment been split over the past five years?
Your client held 60% of this segment five years ago, 67% two and one-half years ago and 70% today. Its main competitor held 30% five years ago, 25% two and one-half years ago and 23% today. The combined smaller players owned 10% five years ago, 8% two and one-half years ago and 7% today.

Analysis of the above information tells a very important story. The private label segment was launched five years ago by the smaller players. As private label first cut into the branded segment, it came at the expense of your client's main competitor and the smaller players, not your client. In response to this, your client's main competitor entered into the private label segment two and one-half years ago. This further hurt their own sales and those of the smaller players, but also began to hurt your client's sales. Additional information is required to understand what is driving the demand for private label cookies

How does the quality of a private label cookie compare to that of a branded cookie?
Consumer studies have shown that there is a noticeable difference in taste, texture and quality in favor of the branded cookies

At the manufacturing level, what is the difference in cost of production and price between branded and private label products?
It costs approximately $1.50 to manufacture a bag of private label cookies which will sell for $2.00 to retailers. It costs approximately $2.00 to manufacture a bag of branded cookies which will sell for $2.75.

How do the same numbers translate at the retail level?
A retailer, paying $2.00 for private label cookies can sell that product for $2.50. The $2.75 bag of branded cookies can be sold for $3.50.

The key finding is that from a cost-price-margin perspective it is advantageous for both the manufacturers and the retailers, with all else equal, to sell a bag of branded cookies. Other factors must be contributing to the demand for private label cookies. Think about the incentives at each level in the chain (manufacturer, retailer, consumer). The following questions can help fill in details

Have any of the manufacturers been able to gain additional shelf space for branded products by supplying grocers with private label products?
No

Has their been excess capacity at your client, its main competitor or the smaller competitors that has been used up through the manufacturing of private label products?
There was some excess capacity at the smaller competitors and your client's main competitor (your client is unsure as to how much).. There is little excess capacity anywhere in the industry today.

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Has your client's relationship with its retailers suffered as a result of it not supplying private label products?
Not noticeably

Are grocery stores using private labels in other food categories?
Yes, there has been a major push by grocery stores to populate shelves with private labels

Is competition increasing or decreasing among grocers?
Generally increasing. Grocer chains are expanding and the number of grocers to be found serving a given area has generally increased over the past five years

What general macroeconomic trends have occurred over the past five years?
The economy has been slowing over the past five years. There is concern about recession

The above information begins to expose a clearer story. A number of factors have contributed to the emergence of the private label segment: manufacturer's interest in utilizing excess capacity, grocer's desire to sell products with their name on it (they may believe this creates return customers in an increasing competitive environment), consumers concerns about a troubled economy (price vs. quality tradeoffs).

At this point the candidate would be encouraged to state what they believe the magnitude of the private label threat to be to the client. There is no right answer. One can argue either way.

If the threat is seen as high, the likely recommendation is for your client to begin supplying private label products. The candidate should recognize that in competing in the private label segment, the basis of competition is primarily cost. At the same time, the client's branded product should be protected. The following tactics might prove appropriate:

- Seek to wring costs out of all phases of the operation
- Utilize all existing excess capacity
- Gain maximum product knowledge as quickly as possible
- Understand low cost positions on product ingredients and mix
- Review process improvement/ manufacturing efficiency opportunities
- Undertake overhead reduction efforts (Any of these points could be discussed in great detail)
- Ensure there is no customer confusion between private label offering and branded product
- Seek partnering agreements with retailers
- Joint advertising and promotions
- Explore deals with mass merchandisers to enter private labels (remember, mass merchandisers presently sell no private label)

If the threat is seen as low, the likely recommendation is for your client to stay with branded cookies only. The candidate should recognize that in competing in the branded segment the basis of competition is one of differentiation. Additionally, your client should do all it can to halt or reverse the momentum of the private label segment. The following tactics might prove useful:

- Pursue a maximum differentiation strategy
- Invest in brand image to support premium price
- Make it difficult to copy product: innovate wisely through product advances, smart product line extensions, frequent changes to the product
- Manage price gap: explore price increases where appropriate (Again, any of these points could be discussed in great detail)
- Explore exclusive partnering with mass merchandisers
- Consider alternative distribution channels
- Seek partnering agreements with grocers regarding branded products
- Educate grocers as available
- Customers who buy private labels are the most price sensitive. They also tend to be the least loyal customers and spend less per store visit.
- Grocers' financial stake in private label products extends beyond the product margins. There is lost profit from branded products that could occupy the same shelf space, advertising costs of the private label products, etc.

Key Takeaways:

This case has no right or wrong answer. It forces the candidate to take a stand in a "grey" situation and defend it. It also provides a large amount of data upfront which the candidate must quickly sort through and determine what is important and what is not. The key is to understand the story behind the data. How did the private label segment emerge? What is driving it? How has it affected manufacturers, retailers and consumers?

5.15. Water Utility Company

Length: Medium (30 Minutes)

Problem:

Your client is a German owned water utility that is headquartered in the Northeast United States. The water utility serves the majority of the northeast area and is the exclusive provider or water in the region. Internally, the client measures its performance using a version of the EVA (economic value added) financial valuation technique. This technique emphasizes the corporate return as a function of profits and a capital charge (essentially the return that capital assets produce). The EVA function can be written as:

EVA = Net Operating Profits – (WACC*Capital Asset Base); which essentially is "un-levered" operating income (after tax) less the fair return on invested capital.

Currently the client is operating at a negative EVA level. How would you go about getting EVA to the value of zero and eventually turning it positive? What are the various ideas you would explore:

Solution:

When I first got this case, I was only vaguely familiar with EVA based on some work in corporate finance, and I made sure to ask a couple of questions about the formula to ensure I understood it. It was not critical to the case to be an EVA expert, but you needed to understand what the equation was saying. The key part was recognizing that the weight of the equation resides with the first term (meaning Operating Profits have a larger effect on EVA because the other component of the equation is the WACC (a percentage figure multiplied by the capital assets of the firm). A candidate should come to this conclusion on his/her own. If not, then the interviewer should point it out if the candidate struggles.

Once you understand that Operating Profits drive a large portion of EVA, you need to explore what effects operating profits, but don't completely ignore the capital asset base as you want to be comprehensive in your analysis. A good place to start would be exploring top line revenue implications, and then to explore the cost elements (or vice versa). The candidate should also explore what assets are driving the capital asset base. Lastly, a solid candidate cannot ignore regulatory issues in this case, and should mention them in the course of the discussion.

The case had no real answer per say, but was more about exhaustively testing ideas. A good interviewer should be creative in challenging the candidate to go in multiple directions beyond the information provided below.

Information To Be Provided If Requested:

- Revenues have been relatively flat over the past 12 to 18 months. Majority of revenue comes from residential and commercial water usage (billed on a consumption basis per month)

- Pricing is based on usage, and is not really capable of being altered significantly due to regulations
- There have not been significant changes to the capital base, which is primarily made up of machinery and equipment for water filtration and delivery
- Costs have been relatively stable on the whole.
- The water utility has the capacity to serve more customers

Essentially, what you have is a situation where the company needs to grow to increase its revenue base. An ability to add additional customers would be a good idea, as the company effectively has additional capacity. The candidate should explore potential growth scenarios and should rebound when he/she hits a dead end. Some potential growth ideas might include:

- What about providing bottled water (e.g. a different channel?)
    - Good idea, but likely difficult to implement without incurring additional costs for distribution, packaging, branding, etc
- What about expanding into other regions?
    - Possible barriers could be regulatory concerns and other competitors
    - Past history dictates local people and businesses are not supportive of expansion by this company
        - Candidate should ask why?
        - Recall it is a German company, and there has been a bit of resentment on the socio-political front for this company to expand based on its history of acquiring other local US companies in the past.
- Based on past history, merging with another entity and dropping the German name might be a good idea

5.16. Airline Company

Length: Medium (30 Minutes)

Problem:

Our client is a major airline company and the CEO contacts you (a BCG partner) and said that he wanted to put one more passenger on each of his company's flights. We will go to a meeting with him now and we need to prepare two things:

- The financial return of one more passenger per flight. Is it worthwhile to do so?
- The marketing strategy to attract these new passengers.

Solution:

First element of the solution: The financial return

To calculate the financial return, the candidate should look that the revenue and cost side of bringing one more passenger per flight.
One the revenue side, we need:

- Average cost of a ticket;
- Number of new passengers.

The candidate should also briefly ask about if he can assume that there is enough capacity to put one more passenger onboard.

Second element of the solution: The average cost of a ticket

The candidate should ask about the kind of routes, the market share, and then price of each of them.

In this case, we were talking about the Brazilian market and this airline has only domestic flights. The interviewer simplified the numbers a lot the make the calculations easier. You should adapt the numbers to US domestic airline market or any other you would like. For Brazil, the interviewer gave the following information:

- 60% of the flights are between two major cities (Sao Paulo and Rio de Janeiro), which are 45 minutes apart and the ticket costs US$100.00;
- 20% between other major capitals which are 1 hour and a half apart from each other and the ticket also costs US100.00;
- 20% between other cities which are 3 hours apart and cost US$ 300.00.

So the average ticket price is: (80% * 100 + 20% * 300) / 100 = $ 140.00

Third Element of Solution: Number of new passengers

There are several ways to come up with the number of new passengers. I proposed two:

1. Calculate the number of flights: estimate the number of airplanes that the company owns and then estimate the number of flights each airplane does.
2. Calculate the number of cities (average) in which the company makes flights and the average number of flights per city.

The interviewer said that I should use the first approach since he had looked at the company's website and he found out that they have 100 airplanes.

I asked if I could assume that 80% of the planes were used for the 1 hour flights and 20% for 3 hour flights. He answered that this was not 100% true in practice because depending on the city, we could have more frequent flights than others, but he agreed that I could do this approximation. The interviewee can come up with other reasonable assumptions.

The candidate should also notice that normally the company spends a lot of money and time performing maintenance on its airplanes. If the candidate forgets to mention this and starts using all 110 airplanes, you should ask what assumptions he made to use the all the planes at once. For this company, the interviewer mentioned that this company had a little less than 10% of its airplane in maintenance.

So, assuming 100 airplanes available, we have:

- 100 × 80% = 80 airplanes doing 1 hour flights
- 100 × 20% = 20 airplanes doing 3 hours flights

To estimate the number of flights per airplane per day, we need the range of hours of flights during a day and the interval of time in which an airplane stays on the ground.
What the interviewer wants to hear is not the right number, but what are your assumptions to get to the numbers, for example:

Fourth Element of Solution: Flight time

- The first airplane departs at 6:00 am because the executives must arrive at its client's at 8:00 am, for example.
- There will be no flights after 10:00 pm, so we will assume that the last flight will arrive at midnight.

So, there is no flight between midnight and 6:00 am.

Fifth Element of Solution: On the ground time:

- Taxing – 10 minutes
- Passengers going out – 15 minutes
- Cleaning / food supply – 10 minutes
- Passenger going in – 15 minutes
- Taxing – 10 minutes

Total: 60 minutes ➔ 1 hour.

Therefore, based on the above we have:

- 18h / 2h = 9 short flights per day
- 18/h / 4h ~ 4 long flights per day
- 80 × 9 short flights per day = 720 flights
- 20 × 4 long flights per day = 80 flight
- Total = 800 flights per day

So, the extra revenue in one month is 800 flights / day * 30 days * $140 = $ 3,360,000

On the cost side, the candidate should realize that the cost of one extra passenger is only the marginal cost, which can be ignored. Therefore, the extra profit is the extra revenue.

The interviewer asked why was it important to have this row estimation about the extra profit before going to meet the client. I said that it was important to have a sense of the size of the clients' issue and the interviewer agreed.

5.17. Military Aircraft Industry

Length: Medium (20-30 minutes)

Problem:

A military aircraft client is worried that their stock price is falling. How would you go about investigating the cause of the decline and help them improve their share price.

Suggested Approach:

Recognize that share price is based on expectations of future profits. This insight will lead directly to a profitability (revenue/cost) framework. You should mention both the revenue side and the cost side as potential reasons why profits (and share price) might be falling. Good questions to hone in on a particular area are: Have prices been falling? Has the client been selling fewer planes? Have component costs risen? Have there been significant capital expenditures or maintenance expenditures? There are many similar questions one could ask

The interviewer should mention that the military aircraft industry has been contracting due to cutbacks in military spending. This environment would limit prospects for improving revenue and focus discussion on costs.

There are a variety of ways to cut costs: cutting fixed costs by closing plants, automating more of the operation, using more common parts among plane models, managing inventory better, training operators to be more efficient. The main point here is to think broadly. Remember that costs are not only a function of the materials and equipment, but also of the work practices, available technology, and skill of the workers.

In this particular case, the recommendation to the client was to try to merge with a weaker player to realize some economies of scale. When told that there were five players in the market, it was easy to see that not all would survive a market contraction. The client acquired a smaller player and six months after the acquisition, the share price started rising again.

5.18. Fast Food Restaurant Chain

Length: Medium (20-30 minutes)

Problem:

A fast food chain was experiencing rapid growth. They had acquired several new locations and reapplied their business model in those new stores. They were disappointed that some of the stores seemed to do well, while others were barely breaking even. How would you go about investigating this problem?

Information to be divulged if asked:

- The firm's older stores were in predominantly lower income neighborhoods.
- The underperforming stores were actually selling more product per customer, but were attracting far fewer customers.

Suggested Approach:

First try to understand the specific nature of the problem at the poor performing stores. Specifically, compared with other stores are revenues lower or costs higher?

Revenue

- Fewer customers
- Lower sales per customer (i.e. less or cheaper food purchased)

Costs

- Labor
- Real estate and facilities
- Food inputs and other variable costs

Then focus on why the new stores are attracting fewer customers.

Price: Are prices too high? Too low?

Customers

- How are they segmented?
- Are the different stores serving different segments?
- What are the demands of the different segments?

Location

- Where are the old/new stores located? Part of town? In malls, drive-thrus or freestanding shops?

Product

- Do the stores all serve the same food?
- Are different products selling better in the new/old stores?

Competition: Is the firm facing the same competitors in both locations?

Analysis should reveal that location as a key

The firm's old stores were in predominantly low-income areas where the firm faced few competitors. The new stores were primarily in upscale malls where the firm faced more competition and suffered from its image as a low-price brand.

This ultimately was the reason

5.19. Airlines and the Channel Tunnel

Length: Medium (30 minutes)

Problem:

A few years ago, the Channel Tunnel opened connecting Britain and France by train. The airlines covering the London to Paris route then faced a competitive threat from a train service covering the same route. How should the airlines have reacted to this threat, specifically the threat to business passengers who had been their most lucrative market? How would you see the competitive situation sorting itself out —specifically, would trains or planes win or will there continue to be a market for both?

Suggested Approach:

A good answer will cover the following points:

- Service differentiation
  - Time taken overall from point to point
  - Comfort at any stage from point to point
  - Frequency of planes/trains
- Convenience (ease of reaching stations/airports, boarding, etc.)
  - Ease of working on board
  - Customer segmentation: e.g., commuters, transit passengers from other routes
- Price
  - Price sensitivity of business travelers
  - Price advantage/premium of one form over the other
- Cost structure of both industries
  - Both industries have high fixed costs
  - Implication of a price/fare war
- Capacity/operations
  - Change in capacity
  - Relative capacity
  - Ease of changing capacity (i.e. different size planes)
- A strong answer might also include one or more of the following:
  - Changes in the regulatory structure in Europe and effects the rail and airline industries
  - How individual airlines might react based on fare structure, route system, financial situation or size.
  - How the relative mix of leisure and business passengers (and the ease with which that mix can be changed) might effect competition.
  - Game theory and/or macroeconomic discussion
  - Effects of passenger loyalty
  - Effect of possible future events (air or tram. accident, changes in. fuel prices)
  - Changes in business purchasing habits

5.20. Law Firm Economics

Length: Short (15 minutes)

Problem:
Consider a law firm. They hire in associates right out of law school at $100,000 a year. Is this a good deal?

Suggested Approach:
This is a good case for a basic profit = revenue - costs analysis.

First, step through marginal revenue associated with adding a new lawyer. Start simple - does the firm have work for the new lawyers to do? Assuming the answer is "yes," then assume an hourly rate for the new associate's work, the number of hours billed per day and the number of days worked per year to get an estimated revenue figure for the year.

Now look at additional costs. In addition to salary, you should estimate taxes, overhead, training and benefits and any other expenses you can think of. Don't forget recruiting costs (amortize these over the average gm. e a new associate will stay with the firm.)

Once you have this basic framework, it can be expanded with other details (time permitting.) Other possible factors include the quality of lawyers you get for $100K (is this above or below market?), the need to give raises in subsequent years, the option of hiring experienced lawyers or cheaper legal assistants instead, etc....

5.21. Brain Teasers

1. Calendar Cube
You have two cubes with 6 sides each (total 12 sides). You want to be able to show all the days of the month with these two cubes (i.e. from 01, 02, 03, ... to 31). What digits would you put on each cube?

Sample Answer:
0,1,2,3, 4 and 5 go on the one 0, 1, 2, 6, 7 and 8 go on the other. You will notice, that 9 is missing...oh the suspense...the six can be flipped over to act as a nine as well.

2. Chopped Cube
You have a large cube made up of small cubes. Each side of the large cube is 10 small cubes wide. How many small cubes make up the outside of the large cube?

Sample Answer:
Each side of the large cube has 100 small cubes. Remove two opposing sides of the large cube, and you are left with four identical 9 x 8 sides. This gives you 288 small cubes. Now add the small cubes from the two removed sides: 288 + 200 = 488 small cubes.

3. Exporting ping-pong balls:
How many ping pong balls can you fit in a Boeing 747 airplane?

Sample Answer:
First, approximate the size of the 747 as a large cylinder; let's say it is 200 feet long and 20 feet in diameter. Calculate the volume of this cylinder – $\pi r^2 \times l$. Then estimate the volume of a ping pong ball (1 inch sphere, for example) and calculate it's volume ($1.33\times\pi r^3$). A division should give an answer. In addition, one could estimate the air space left when ping pong balls are packed in a cylinder and correct the answer (let's say 25% space is wasted). To get to more accuracy you could also ask if there are seats in the plane or if the wings could also be filled with ping pong balls. Don't stop here – you can always question why we are trying to fit ping pong balls in a 747 in the first place. Or: Is it possible to pack a ping pong ball machine and lots and plastic raw materials so that many more balls can be made at the destination?

4. How many people fly in and out of JFK everyday?

Sample Answer: To answer the above question, you might say there are 5 runways at JFK, a plane leaves/arrives every 15 minutes per runway and planes don't fly out and land between 11:00 P.M and 5:00 A.M. So you get 5*18 *4=360 planes per day. Assuming there are approximately 200 passengers per flight, we get 72000 passengers per day or 26 million passengers per year. Note how the analysis used assumptions and kept the numbers simple.

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