The McKinsey CASE BOOK

Your Secret Resource for
Ultimate McKinsey Case Interview Practice

- CONTAINS **100** REAL INTERVIEW CASES FROM REAL MCKINSEY INTERVIEWS -

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1 MALDOVIAN COFFINS

Our client is a coffin maker in the Eastern European country of Maldovia. He has seen substantial change in his market in recent years and is contemplating the future of his business. Up until now, he has been in the business of building high-quality, hand- crafted coffins largely by hand with a skilled labor force. Recently, however, he has become aware of technology that would allow him to build machine-made coffins with much less labor. Should he invest in this new technology, and should he even remain in the coffin business in the first place?

What strategic alternatives should the owner consider?

Good Answer: We need to decide firstly whether to stay in business at all and if so, whether he uses the new technology:

- Option 1: Sell the business to a third party
- Option 2: Sell the assets of the company and shut it down
- Option 3: Keep operating as is
- Option 4: Keep operating and invest in the new technology

How would you figure out the current value of the business?

Market Size - a good candidate should come up with at least 4 different ways, such as:

- Calculate from population growth, total population, and birth rate
- Review of death records for a period of time
- Take sample of number of obituaries in paper serving given population base
- Calculate from population, average life expectancy

Now calculate the market size, given the following data.

- Population of Maldovia: 4 million
- Population Growth: 0%

- Avg Life Expectancy: 75 years
- Age Distribution: assume a flat age distribution (i.e. same number of people at every age)
- Burial Customs: 75% of deaths are buried in coffins.

Right answer: 40,000 coffins purchased/year. Note that you need to quickly realize that every year, 1/75th of the population will turn 76 and therefore (on average) will die.

Price – Coffins are priced at $5,000 for a hand-made coffin.

Costs – Material accounts for 10% of the direct cost, while labor accounts for the other 90%. COGS is $4,800 per coffin. Fixed costs for the business are $700,000 per year. Assume all assets are fully depreciated and ignore taxes.

Competition – Maldovian Coffins has a 10% market share and a relative market share of about 1 (if asked, you may explain that relative market share is the ratio of the company's market share to that of its nearest competitor).

Market Trends, Regulation, etc. – The market is expected to continue as it currently is.

The candidate needs to calculate the value of the business now. This is a mathematical exercise.

Correct Answer:

Contribution Margin = $200 / coffin

x 40,000 coffins

x 10% market share

= $800,000

Profit = Contribution Margin – Fixed Costs

= $800,000 - $700,000

= $100,000

Assuming a discount rate of 10% (candidate can assume anything reasonable here as long as they are consistent later) a perpetuity with cash flows of $100k / year has a PV of $100,000 / .1 = $1M. So the current business is worth $1M whether they keep it or sell it.

So now what is the value of the company if it were shut down and the assets were sold?

Assets – Since the firm has been building coffins by hand, the fixed assets are essentially only the land and improvements. These are owned outright by the company.

A good candidate should come up with at least 3 good ways to determine the value of the land, such as:

- Look for comparable real estate and determine recent selling price
- Find comparable commercial real estate and determine the rent per square foot, then discount the cash flows generated by renting the property
- Determine rate of appreciation for property in the area and then apply to book value of current land and improvements

Calculate the value of the property with the following information:

- Book Value of Land: $20,000
- Book Value of Improvements: $80,000 Years Owned: 48
- Avg. Real Estate Appreciation: 6% / year

Right Answer: Using the "rule of 72," a 6% growth rate will double the investment every 72/6 = 12 years. Since the property was held for 48 years, the current value will be $100k * (2 ^ 4) = $1.6M.

Since the assets ($1.6M) are higher than the value of the discounted cash flows ($1M), then it would make more sense to liquidate the business and sell the assets.

What would the value of the company be if he invests in the new technology?

Addition information:

- Investment – Investing in the new technology will cost the firm $1M.
- Cost Savings – Material costs remain the same, but labor costs are reduced by 50%.
- Proprietary Nature of Technology – The new coffin-making technology is being offered for sale by a machine tool company, who holds the patent. They are not offering exclusivity to any customers (i.e. they will sell to Maldovian Coffin's competitors if possible).
- Competitive Threat – It is not known whether the competitors have acquired or are planning to acquire this technology.
- Customer Preferences – While the machine-made coffins are not "hand made", the quality perceived by the customer is the same or better. It is believed that the customer will be indifferent between the quality and appearance of a hand-made and a machine-made coffin.
- Brand Impact – The candidate may argue that a machine-made coffin might negatively impact Maldovian Coffin's brand. If so, ask them how they would test this (e.g. consumer research), but tell them to assume that it would have negligible impact.

Good Answer: Since Maldovian Coffins has no proprietary control over the technology, it is likely that competitors will also acquire it, resulting in an overall lowering of the industry cost structure. If this is the case, price will also fall as competition cuts price in an attempt to gain share.

If we assume that gross margins remain the same, since the industry competitive structure has not changed we can calculate the new margin contribution as follows:

Gross Margin = $200 / $5,000 = 4%

Labor Cost = (4800 x 90%) x 50% = $2,160 Material Cost = $480

COGS = $2,160 + $480 = $2,640

Price = $2,640 / (1 - 4%) = $2,718

Contribution Margin = $2,718 - $2,640 = $78 Loss = $78 * 4,000 - $700,000 = -$388,000

So the introduction of the technology to the market might be expected to reduce industry profits, making this business completely unprofitable.

Candidates could argue other scenarios, by assuming that the industry would be able to maintain higher margins than we have assumed here, so the answer may be different.

They should recognize, however, that the introduction of this non-proprietary technology will significantly reduce industry pricing in the absence of some other form of price support (such as branding, collusion between players, etc.)

Conclusion

A star candidate will see that his/her time is nearly up and will present a recommendation for the client without prompting.

Good Answer: Given the credible threat of the industry becoming unprofitable due to the introduction of this new technology, the owner should look to sell the company as soon as possible. Taking into account the assets of the firm and the present value of the expected cash flows of the business itself, he should attempt to liquidate the business and to sell the assets for around $1.6M.

If unable to sell the business now, he can continue to operate the business as a cash cow, but should not invest in the business above what is necessary to keep it operating at its present level. He should expect the business to become less profitable as the industry moves to mechanization, and should eventually look to sell the assets of the company and close the firm.

2 H HEALTH

A US health care provider suffered a profit decline last year. You are hired to solve this problem.

Background Information

- The key revenues come from commissions.
- H Health signs contracts with patients and provides medical services.
- H Health has 300 contracted physicians.
- A "referral" is necessary if certain medical treatment/service can't be provided by H Health's contracted physicians.

How would you approach this problem?

Answer:

Profit = Revenue – Cost

= Number of patients * (unit price – variable cost) – fixed cost

The candidate can be creative to come up with possible reasons for revenue decrease and cost increase. Some examples:

Revenue declined:

- Number of patients dropped
- Unit price dropped
- Competition grew their market share

Cost increased:

- Variable Costs: number of visits increased (e.g. major flu), per person cost increased (e.g. cost of the medicine), referral cost increased

- Fixed Costs: physician's salary increased

Competitor analysis – why is our referral cost higher than the competitor?

Number of patients

H Health: 300,000

Sunshine: 500,000

Referral cost

H Health: $20 (per member, per month)

Sunshine: $15 (same)

Answer: (again, the candidate is encouraged to be creative)

- Economies of scale
- Lower administration costs
- More contracted physicians

Assuming none of the contracted physicians have the specialty of cardiology, estimate the number of referrals per year for cardiology based on the following information:

Number of patients: 300,000

20% of the total population is > 65 years old, and 30% of them need treatment

For the rest of the population, there's a 10% chance for them to require the treatment. The treatment usually requires 5 visits to the doctor per year.

Answer:

> 65 years = 300,000 * 0.2 * 0.3 = 18,000

< 65 years = 300,000 * 0.8 * 0.1 = 24,000 42,000 * 5 times/year = 210,000 (times/year)

The actual number of referrals is 300,000. Why is it higher than the estimate?

Answer:

- H Health's clients do not have the same weight between different ages as the total population
- They underestimated the number of visits per year
- More demanding patients ask to be referred even if they don't have such issues
- Physicians refer non-cardiology patients because they don't want to take the risk and are not motivated to provide services even if they are capable

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How much does the number of referrals have to decrease in order to justify following incentive plan to encourage contracted physicians to be more responsible?

Incentive plan:

- Bonus: $100,000 / year to top 10 physicians with the lowest referral rate Training: $1,000,000

- Referral cost: $200 per referral Current no. of referral: 300,000

Answer:

Total cost = 2,000,000

2,000,000/200 = 10,000

If the incentive plan can reduce the number of referrals by 5% for year one and 2% for year two, what is the total saving?

Answer:

Y1 = 300,000 * 5% = 15,000

Y2 = (300,000 – 15,000) * 2% = 5,700

Total saving = (15,000 + 5,700) * $200 - $2,000,000 * 2 = $140,000

Apart from Cardiology, how can H Health improve the number of referrals in general?

Answer:

- Increase training to improve physician's capability
- Extend the incentive program to other departments
- Improve the quality of relationship with the patients and build up the trust
- Improve/remove physicians who are outliers with extremely high referral rate
- Increase the no. of contracted physicians
- Partner with other health care provider to lower referral cost

Conclusion

According to the example of cardiology, H Health should improve its profitability by lowering the referral cost. H Health can

- reduce the number of referrals, and/or
- reduce the cost per referral

3 US COSMETICS INVENTORY

Your client is Barlly Inc., a cosmetic company based in the US. Barlly has business both in the US and globally. Currently, the client is facing a high level of inventory in the US and is hiring McKinsey to help solve the problem.

How can the client reduce its inventory in the short-term?

Note: This is a brainstorming case. Every step in the value chain can go wrong, so the interviewer can discuss any step in the value chain according to interviewee's reaction and probe deeper. The purpose of the case is to see:

- How the interviewee comes up with a structure that can cover the whole value chain.
- How the interviewee use hypothesis driven method to discuss possible reasons for the problem.
- How the interviewee ask for information and use that information to prove or disprove the hypothesis.

Additional information upon request

- The client has had the inventory problem for quite a while, so it is a structure problem other than an one-off problem.
- The client sources raw materials from all over the world.
- The client has one manufacture site near Chicago and 4 distribution centers across the US.
- The client maintains its inventory at DCs, i.e. when products are manufactured, they are directly sent to DCs.
- The client sells to all kinds of retailers across the US.
- Sales is seasonal with peaks before major holidays.

Sample answer

- Reduce production. (This is important)
- Increase sales. Some possible ways:

- Reduce price
- Use outlet
- Volume discount to buyers
- Marketing promotion
- Dump to overseas market

The candidate should come up with a value chain that describe the end-to-end supply chain of the client and analyze step by step through the value chain.

Forecast

- The client has an average forecast error of +/- 25%, which means improving forecast can improve future inventory level.
- The closer to the sales date, the more accurate the forecast is. Therefore, the client should try to use the latest possible forecast number for supply chain. However, the lead time for some of the raw material is too long. Suggest to negotiate with suppliers to shorten lead time or build stock for such raw materials.

Procurement

- Some raw materials have very high minimum order quantity (MOQ) and large purchase for such materials built up inventory. Negotiate with suppliers to lower MOQ.
- Some suppliers often miss delivery time and production window. Production is delayed and other raw materials are sitting in the inventory and waiting for the missing ingredients. Improve supplier compliance or switch suppliers.
- Procurement department is only evaluated by service level, so they tend to build up inventory to ensure material availability. Introduce inventory level into the evaluation system.

Manufacturing

- There is mechanical constrain that a large quantity has to be made in a run (large batch size). Invest in new equipment and R&D to reduce batch size.

Distribution

- Safety stocks are maintained at every DC. Centralize inventory at manufacturing site can reduce total safety stock by half. (square root of number of DC).

- The replenish cycle is currently a week. Increase replenish frequency could reduce cycle stock.

System Overall

- The client puts high emphasize on service level, so every step in the value chain increases its "safety stock" to ensure high service level. Inventories then add up. Suggest to only maintain safety stock at finished goods level and eliminate "safety stocks" at all the other steps.

- Bring inventory management mind set to clients' employees and provide proper tools for employees to manage inventory level.

Recommendation and next steps

- The client should reduce production and dump inventory in the short round.

- Systematically improve supply chain in the long round. Recommended solutions depend on what were covered during the case process.

- Employee mind set change.

4 GAS STATIONS AND CONVENIENCE STORES

Our client is major global oil company that owns the whole value chain: oil rigs, refining, distribution, and retail. Our direct contact is the CEO of the global retail operation. His operation consists of 1) gas sold at the pumps and 2) the convenience stores at the gas station. Profitability of the retail operation has declined, and the CEO would like us to help figure out why and to come up with a plan for the next five years.

Note. This case is representative of many of the prepared, McKinsey round 1 cases, in which the interviewer actively walks the interviewee through a set of qualitative and quantitative questions. The interviewer should "stick to the script" of questions. To the effect that the interviewee struggles, the interviewer can assist the interviewee to get back on track. The candidate should be structured in answering qualitative questions and crunch through any numbers thrown his or her way, always keeping in mind how they tie back to the larger issues.

Over the past fifteen years, the number of gas stations worldwide has declined by six percent. What might be the causes of this?

Possible answers include

- Consolidation
- Increase in dollar volume per station
- Changing population patterns (fewer rural stations)
- More stations open 24 hours (so fewer stations needed)

Which market trends might influence gas station profitability, and what is their comparative profitability?

It turns out there have been two other changes in the market. One, the number of gas stations with convenience stores attached has increased. Two, a major new entrant has begun taking market share. Supermarkets have begun opening gas stations in their parking lots. This is not yet a major competitor in the US, where they only have ten percent of the market, but supermarkets have 30% of the gas market in the UK, and 60% in France.

The next task is to understand whether the supermarkets have a better business model than the gas stations in this market, and if so, why. We'll use the metric of return on invested capital (operating profit / invested capital).

The numbers for the UK supermarket are as follows: they sell ten million litres of gas per year at 72 cents/litre. Their cost is 20 cents/litre. They pay 45 cents/liter in tax. The convenience store's operating profit is 500,000 pounds per year. Overhead in the industry is typically ten percent of fuel sales, and that's accurate here. The capital cost is two million pounds.

We'll compare it to one of our typical gas station locations: downtown, one of our busiest locations. This location sells six million litres per year at 75 cents/litre; its cost and tax per litre are the same as the supermarket. Convenience store profit is 20% lower than the supermarket's. Overhead is still ten percent of fuel sales, and capital costs are four million pounds.

What is the ROIC of the supermarket?

24% - it also may come out here that the convenience store is responsible for all the profits.

Without running the numbers, what do you think our client's gas station's ROIC will be? Why?

Much lower – because of the cost of capital.

What do you think causes that high cost of capital? D

Downtown location – supermarkets typically in the suburbs.

So, given that, what other things that drive ROIC might we be able to affect?

Likely can't change cost or tax – could lower price to sell more gas – could move out of the city – could attempt to increase convenience store profitability.

What is your client recommendation?

The client agrees with our recommendation to focus on the convenience store, and decides to set a pilot program in 1,000 stores.

What type of new products should he introduce? How would you think about what products to introduce?

The interviewee was required to come up with eight answers – near the end he was helped along with “Think about what we’d ask if he came to us with product A and product B – what would we ask to be able to decide between those two.”

Some factors we could use to decide were:

- What does the existing customer want?
- What products have high margins?
- What can we (and the supplier) support logistically?
- What can we get from existing suppliers?
- What can we link to products that already sell well?
- What products are needed frequently / will drive visits?
- What products are durable?
- What products require little shelf space (space at a premium in these stores)?

In the end the decision was made to introduce hot and cold food – high-margin, low shelf-space, high-frequency (but low durability). McKinsey was running an implementation project in Europe at that time.

5 CONGLOMERATE ROIC INCREASE

Your client is a 5B dollar conglomerate with 50 plants nationwide. They were formed by acquisition of various small firms over the last 10 years and there are still some integration issues.

The CEO would like to increase the ROIC of the firm from 10% to 20% in 3 years. Is it possible and how would you achieve this?

Information to be given if asked:

ROIC Definition

- ROIC is Return on Invested Capital. This can be achieved by growing the profits of the firm and/or by decreasing the invested capital.
- There are firms in the industry that have 20-30% ROIC. Hence the client's target looks achievable.

Customers

- Client has 30% customers in Europe, 10% in Asia, 50% in North America and 10% in RoW (rest of world).

Products

- The client has 2 types of products – Standard (almost a commodity) and Engineered (designed specifically for the client).
- The standard products are getting commoditized, hence have significant price pressure.
- The engineered products have good margins in the 1st year and then the margins decrease in subsequent 3-4 years.
- The client has 30,000 SKUs in their product portfolio.

The industries that the client serves are as follows:

Industry	% of Revenues	Standard product	Engineered product
Automotive	55%	65%	35%
Electronics	25%	45%	55%
Construction	10%	75%	25%
Others	10%	70%	30%

Note: The candidate should recognize the following by now based on the Customer Information

- Client % revenues from Electronics industry are quite low and that industry has the highest % of Engineered products. The client should focus more closely on that industry.
- Engineered products offer much higher margins.
- 30,000 SKU seem like a lot, and should address that in the case as well. There will be interdependencies among these products.

Competitive Landscape

- This is a highly fragmented industry with 20,000 competitors.

Investment/Cost

- There are integration issues among the small companies under the client umbrella. The issues pertain to decentralized sourcing, sales staff and back office operations. These should be centralized to decrease cost (economies of scale) and improve coordination.
- The product portfolio needs to be optimized. Evaluate profitability of each product along with its interdependency, i.e. its importance in a product portfolio supplied to important clients. Evaluate profitability of each client as well. Suggest using databases for this analysis.
- Divest assets pertaining to certain non-profitable low volume standard products to decrease capital investment. If these components are still needed for a client portfolio investigate outsourcing their production and having exclusive contracts to maintain quality.
- Evaluate the capacity utilization and supply chain for the 50 plants. Decrease investment if possible.

Solution:

The client can increase the ROIC from 10% to 20% by the following initiatives:

- Optimize product mix while keeping product interdependencies in mind
- Sell more engineered products by growing business in electronics industry
- Decrease cost by improving the internal integration

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6 LONDON AIRPORT TERMINAL

There's an airport somewhere in London, which has 4 terminals and 2 runways. The airport authorities are planning to build a 5th terminal.

Does this make sense?

A candidate can start the case by laying down hypotheses on why a 5th terminal should be built:

- Reduce congestion on existing terminals by increasing capacity
- Facilitate growth of air traffic and passenger traffic
- Achieve optimization between traffic on runways and terminals

The interviewer needs to inform the candidate that the first hypothesis should be analyzed in more detail.

How can airport capacity be defined?

It can be defined by passenger flow rate and the air traffic flow rate. In simple terms, this is the maximum number of airplanes that can land or take off from the airport in a day.

When asking for more specific information the candidate needs to get the following data:

- Air traffic operates for 17 hours in a day.
- Each terminal has 50 gates

To figure out whether there is any real capacity increase the candidate needs to find out whether new capacity = MIN{ Total number of airplanes determined by total gates, Total number of airplanes that can use the runway in a day} > Current Capacity

The candidate needs to make the necessary assumptions to proceed, e.g.

1. both runways are identical and capable of serving same traffic,

2. all airplanes on average take the same amount of time while standing on gates and similarly while using the runway (take-off or landing).

The candidate needs to receive the following data:

- A plane takes 90 sec on average on the runway while landing or takeoff. This means that the runways can support a total of 17 * 2 * 3600 / 90 = 1,360 planes per day.

- Every gate can support 5 planes on an average. This means that with 5 terminals a total of 5 * 50 * 5 = 1,250 planes can be held on the gates.

This gives the new capacity = Min {1250, 1360} = 1250 > additional capacity of 250 planes. So one part of the hypothesis is verified that there would be additional capacity added by building 5th terminal.

The next step is to establish whether it would reduce congestion, starting with various sub-hypotheses that would need to be true for this to happen. The discussion can move around issues such as feasibility of movement of passengers and staff from one terminal to another, movement of infrastructure (shops, etc.) to the new terminal and so on.

Afterwards, the candidate is expected to give a short recap of the case, with a clear recommendation if the 5th terminal should be built.

7 NEWSPAPER START-UP

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.

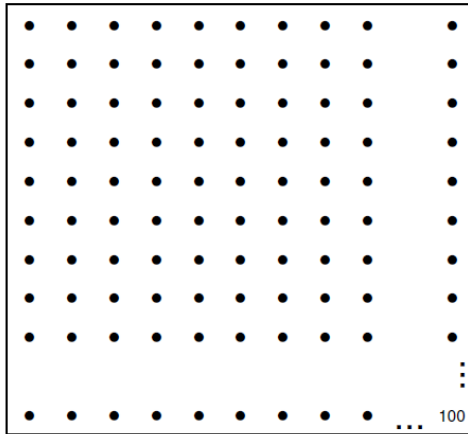
The newspaper is scheduled to be printed and ready for distribution by 4AM each morning, and must be delivered by 6AM to meet customer requirements.

* 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

8 CAR DEALERSHIP OPERATIONS

Our client is a used car dealership whose business has been stagnating in recent years. They are located in a low to middle-income area and in the past have only sold cars to customers who are willing to pay 100% of the cost up-front or can achieve bank financing. In order to boost sales, our client is considering offering loans to customers that the dealership itself will finance.

To be eligible for a loan customers must undergo a complete credit check (which we assume to be accurate). The credit check rates potential car buyers on a scale of 0 to 100, where 0 corresponds to a 0% chance of paying off the loan and 100 corresponds to a 100% chance of paying the loan in full. Each loan only lasts 1 year in which payments are made monthly and the entire loan will be paid off in 1 year. Buyers ultimately fall into two categories, those that pay off the loan entirely, and those that default.

What should be the cutoff level where we decide to give potential buyers the loan?
What issues might cause you to alter this cutoff-level?

Q: What is the average cost of each car and how much does our client sell them for?

A: The dealership's average cost per car is $6,000. We sell them for an average of $7,000.

Q: What is the minimum down payment? Do all customers default at an amount relative to their credit report (i.e. a potential buyer with an 80 credit rating will pay the down-payment and 80% of the remaining loan)? How much to we make on the loans?

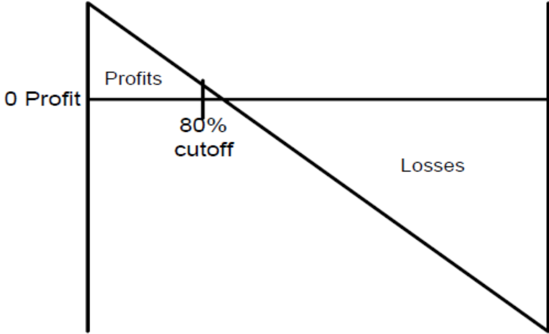
A: The minimum down payment is $1,000 regardless of credit rating. The average default is after three months. Assume we make nothing on the loans; they are only used to entice in additional customers.

At this point it turns out that we make only a profit margin of only $1,000 on each car. For this to be worthwhile we must make more on additional cars sold and paid for in full than what we lose in loan defaulters.

- Average cost of car: $6,000
- Average defaulter pays: -$1,000 (down-payment) -$1,500 (1/4 of total loan of $6,000)
- Total loss to the dealership for a default: $3,500

This means that we need to have 4 good loans for every 1 loan to turn a profit/not lose money. If 4/5 of loans must be good, then a credit rating of 80 should be our cutoff.

At this point the following graph for the interviewer can illustrate the point and helps to discuss other issues to consider:



I would probably be tempted to raise the cutoff above 80, at least in the beginning. This is for two reasons

1. We are not sure how successful our client will be with this process, so it would be better to start more conservatively and if successful, ramp up the operation.

2. At the 80 cutoff we are working very hard for diminishing profits, where at the 90 cutoff the potential rewards are much higher.

Alternatives and other possible issues to consider:

- Another possible solution would be to lower the cutoff level for higher risk loans but raise the minimum down payment required. This would change our risk profile.

- Look at the cash flow situation of the client. If a few unexpected bad loans in a row would bankrupt our client, then we may want to raise the cutoff.

- Examine expected economic conditions looking forward. If we sense that the economy will be poor in the future, we also may want to increase the cutoff point.

- The use of warranties or add-ons, paid at the time of purchase, that force customers to pay more up-front would also allow us to lower the cutoff levels. For example, it we allow a customer to purchase a two-year warranty for $1,000 that is paid for in full at the time of purchase, it reduces our overall risk exposure.

9 SMARTCAB

Private equity firm MoneyPartners has asked for your advice about acquiring a company called SmartCab. SmartCab provides radio cab services in North America. They own their own fleet of cars and employ many drivers; they are looking to grow in North America. They want to understand 3-5 year growth opportunities and what prospects you think are best.

How exactly can you help the client?

Information to be given if asked:

Customer preferences are based on:

- Time of trip
- Income
- Geography
- Substitutes for cabs (public transit, cars, bikes, walking, carpooling, etc.)
- Market penetration / brand awareness

Usage patterns of intra-city taxi service

- Frequency by travel occasion (number of trips per household per month)

Income segment	# of households	Work: Home to office	Work: other	Week day errands	Leisure: week day	Leisure: week end	Other personal
Low income	600.000	40	10	20	4	7	2
Med – low income	150.000	40	16	16	4	4	1
Med – high income	75.000	40	25	18	7	4	3
High income	37.500	40	16	14	10	3	5

- Average distance traveled per trip (miles)

Work: Home to office	Work: other	Week day errands	Leisure: week day	Leisure: week end	Other personal
12	10	4	6	4	6

- Probability of taxi usage (%)

Income segment	# of households	Work: Home to office	Work: other	Week day errands	Leisure: week day	Leisure: week end	Other personal
Low income	600.000	5,0%	25,0%	20,0%	15,0%	8,0%	3,0%
Med – low income	150.000	15,0%	35,0%	25,0%	20,0%	12,0%	25,0%
Med – high income	75.000	8,0%	35,0%	0,0%	0,0%	0,0%	10,0%
High income	37.500	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%

- Regulated fare ($/mile): 3.0

So what are your main takeaways from the usage patterns of intra-city taxi service?

- Higher income has more “work: other” trips – probably leisure-related
- Total trips per month by income:
    - Low: 83 (sum of row)
    - Med-low: 81
    - Med-high: 97
    - High: 88
- Work trips are the farthest, while leisure ones are shorter
- Segment to focus on: low income
    - Largest (600 thousand households)
    - Highest probability of taking taxi
- Same fare no matter the time or day of week (maybe opportunity to vary fare?)

More information to be given about usage of taxi services

- Intra-City
    - Number of households: 0.9 million
    - Average number of trips per month per household: 11

    - Average distance travelled per trip: 8 miles

- To and from airport
    - Number of airport travelers per month: 5 million
    - Taxi usage for travel to/from airport vs. other modes (i.e. bus, own car..): 40%
    - Current average distance to / from airport per trip: 10 miles
- Out of town
    - Average out of town travelers population size: 25% of resident households
    - Average number of trips per month: 5 per household
    - Average distance travelled per trip: 15 miles
- Regulated taxi fare per mile: 3.0

The interviewer can be expected to ask follow-up questions like the following:

What is the total annual dollar opportunity if SmartCab wants to focus just on the airport segment?

What if round trip increased from 10 miles to 40 miles, what is the corresponding usage rate needed to meet the same revenue opportunity?

- # of households * usage rate * average round-trip distance * $ / mile * 12 months = total annual revenue opportunity
- For airport: 5mm travelers * 40% usage rate * 10 miles * $3 / mile * 12 months = $720mm
- If round-trip increases to 40 miles, then corresponding reduction in usage rate to maintain $720mm opportunity is 10% (distance rose by 4x, so usage rate falls by 4x)

What is your final recommendation (without having all the necessary data available)?

Acquire rationale:

- Market is large
- Opportunity to change fares by time or day
- Opportunity to focus on more than just airport segment
- Opportunity to brand / market to appeal to other segments

Don't acquire rationale:

- Low usage rates among higher income travelers (those with more $ to spend)
- Risk: what if new public transit is created?
- How will competitors react?
- Taxi use is probably highly cyclical with economy

Note: The market is decently large, but there are risks to entering. This is a "numbers" case that requires the interviewee to size-up the market quickly and make recommendations with little data available.

10 HEARTCORP

Heartcorp is a medical devices company. They produce cardiovascular stents. They have developed a revolutionary product that is positioned to replace the current products in the market. The product, called Device X, is the first of its kind.

Heartcorp wants to launch Device X in Europe in the near future and then bring it to the U.S. in 6 months. They are 1 year ahead of its competition (with regard to R&D of the product).

Recommended approach:

This case is representative of many of the prepared, McKinsey round 1 cases, in which the interviewer actively walks the interviewee through a set of qualitative and quantitative questions. The interviewer should "stick to the script" of questions. To the effect that the interviewee struggles, the interviewer can assist the interviewee to get back on track.

The interviewee should be structured in answering qualitative questions and crunch through any numbers thrown his or her way, always keeping in mind how they tie back to the larger issues.

How do you determine what price to charge for Device X? What are the issues that need to be considered?

Three areas should be explored to determine the price:

- Current price and rationale for current price (value-based or cost-based)
- Benefits of new drug vs. old drug in terms of decreased side effects or repeat procedures
- Buyer's willingness to pay

Additional items that could be considered:

- Cost of Device X
- Total R&D cost (if not considered sunk)
- Any customer acquisition cost
- Cost of overhead and sales force

What is the "cost neutral point"- the point at which the cost of the new product equals that of the old product- given the following data.
Hospital Cost of an operation = $2500 per patient.
Old product cost = $500/unit.
Number of units needed per operation = 2.
Frequency of repeat procedure (using existing product) = 50%.
Frequency of severe complication resulting in open heart surgery = 30%.

Is there any more information that you would need to calculate this?

More information which is needed:

- What is the cost of open heart surgery operation? $15,000
- What is the frequency of repeat procedure using Device X? 0%
- What is the frequency of severe complication using Device X? 5%
- How many units of Device X will be necessary per operation? 2

To determine how much is the new device is worth:

Item	Old	New
Hospital cost	$2500	$2500
Product cost per operation	$500*2=$1000	2***X**
Subtotal	*$3500*	*$2500+2X*
Repeat procedures	50%*$3500=$1750	*$0*
Severe complication	30%*$15K=$4500	5%*$15K=$750
Total	$9750	$3250 + 2X

Value of Device X = ($9750 - $3250) / 2 = $3250 (cost neutral point)

What factors might allow Heartcorp to price the new product above cost neutral point? What needs to be considered?

- Risk / malpractice insurance costs
- Value of reduction in pain (to patients)
- Higher success ratio (without repeat procedure and/or severe complication)

- Cost savings of keeping fewer Device X's in inventory, etc.

These and other factors might allow us to price Device X above the cost neutral point.

The company has decided that it wants to sell Device X at a premium above the cost neutral point, but a survey of potential customers (hospital purchasing departments) showed that they are only willing to pay $2000/unit. Now what would you recommend?

Is the $2000/unit figure a single data point or an average? It is average across many customers surveyed.

One of two things:

- Manage Heartcorp's expectations that they should really expect something close to $2000/unit
- Increase potential customers' "willingness to pay"

How can we increase "willingness to pay"?

Two thoughts:

- Communicate the benefits – both "soft" (e.g., decreased pain or frequency of re-operation) and "hard" (financial) to the additional stakeholders (i.e. patient advocate groups and insurance payers) in the decision. Work with them to "pressure" the potential buyers of Device X to spend the additional money to realize the added benefits of the new hardware.
- Publish articles about the efficacy of the new device in reputable journals (e.g., JAMA, New England Journal of Medicine, etc.) and use those to convince doctors to pressure hospital administration to increase "willingness to pay" for Device X.

11 BANK'S ATM USERS

A bank is worried because the number of ATM users among its customers is not growing. What could be the possible reasons for this?

Also, the bank wants to open a new ATM. How many customers should serve so that it is justified by cost concerns?

Possible factors that could be affecting this case could fall in 3 possible broad reasons:

- Product – What is the ATM service design? How the interface is and what are the facilities provided? How do these compare with the competitor ATMs? Is the ATM service given at a fee? Is the fee too much? How does the fee compare with the competitors?
- Supply/Sales – Are the ATM locations in general strategic? Are the competitor ATMs better located? Is the ATM facility well publicized?
- Customers – Who are the customers? Does a major fraction of them fall in classes which don't usually use ATMs? Do the bank customers have ATM cards at all?

In addition, the candidate might want to mention other reasons like the bank's internal logistics, cost to the bank etc. but they were either irrelevant in this specific case or covered under the above three heads.

The interviewer might come back to the third broad area - do the bank customers have ATM cards at all? Why? It could so happen that the ATM card procurement process is expensive/complicated/lengthy and the costumers do not have ATM cards in the first place.

The next part of the question is a quantitative part. Opening a new ATM will be justified if the cost to the bank is less than the cost to the bank if all the customers expected to use the ATM go to the bank and are served by operators.

Cost of ATM = Cost of premises + Salary of Guard + Cost of electricity + Other Small Costs =

Rs. 15000pm + Rs. 10000pm + Rs. 5000 pm = Rs. 30000pm.

Similarly, find the cost, if all the people using ATMs have to be served manually. The candidate is asked to assume the same fixed costs of the bank in both cases. Hence, the cost in this case was the sum of salaries paid to employees for the time they serve customers plus some other costs. The employee salaries could be calculated by finding out the average time taken to serve a customer, and

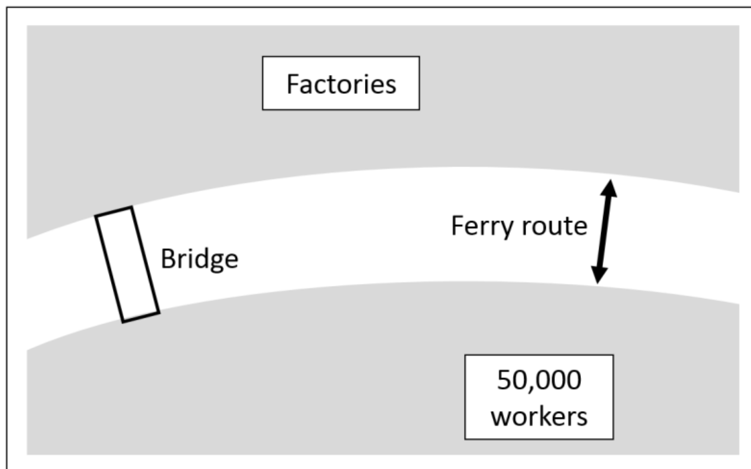
dividing the monthly salary into this proportion. Also, don't forget that all the bank customers would not come to the bank daily; assume say once a week. Finally by equating these two costs, the number of ATM users came out to be around 20 each day.

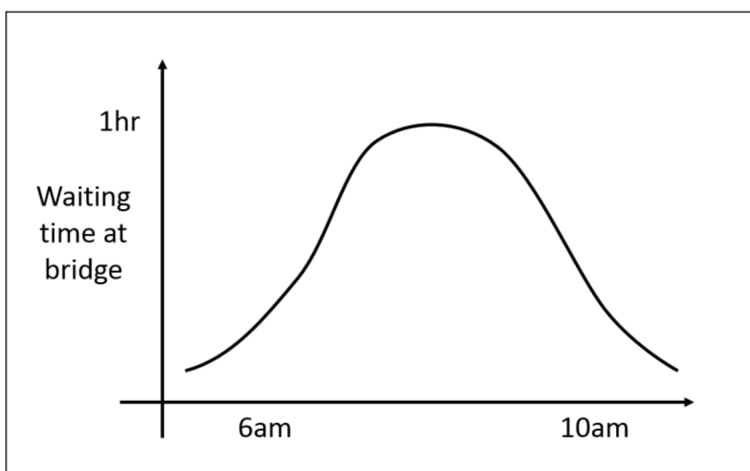
12 FERRYBOAT COMPANY

Your client is a ferryboat company that has been approached by a city major to bid on a 50 year exclusivity right to service commuters who wish to cross the river (see map below). So far there is only one bridge crossing the river and traffic during peak hours is just horrible. Therefore the mayor sees this bid as an easy and cheap way to improve commuter's journey.

What would be your approach to determine how much your client should bid for it?

Additional information provided after relevant questions





- The factories are in fact steel mills
- 3 ferry competitors on the market
- Traffic jam only during weekdays

- Population is stable

Sample solution

A possibility to approach this question is to go over NPV calculation and say that this is the maximum amount the client could bid for this project.

- Revenue
    - If we gain market share the traffic condition will improve on the bridge so there is a limit to our potential market
    - willingness to pay
    - Price elasticity
    - Seasonality
- Cost
    - Fixed cost (mostly determined by our peak capacity)
        - Boat investments
        - Parking slot
        - Cashier
    - Variable cost
        - Gas
        - Labor
- Discount rate: rate of the transportation industry?

The second part of the discussion was about the other competitors / game strategy:

- Do we have strategic advantage? > No
- How can we build one? > Marketing, financing

Finally, the discussion was about the what is the appropriate discount rate:

- Could be a major source of difference with the competitors evaluation

- Need to estimate the risk related to the steel mill industry (this industry is declining, however the major is planning to attract new IT business in the area)

- Need to assess housing development near the factories

13 CHEMICALS MERGER CANDIDATE EVALUATION

A major chemical producer has hired our consulting firm to evaluate another large player in the chemicals industry as a possible merger candidate. Both our client and the other company are bulk commodity chemical producers. Our consulting firm's main job is to analyze the future prospects of the target company's main product line: a bulk chemical that is used in the production of plastics.

Initial data has revealed the following facts

- Production of this chemical has been declining slowly for several years.
- Prices have declined rapidly.
- There are 8 major producers of this chemical with market share divided the following way: the largest producer has a 30% share, the second largest has a 20% share, and our target company has a 15% share. The rest is divided among the remaining 5 competitors.
- Profitability in the industry is relatively low. The two largest competitors earn small returns, our target company is breaking even, and the remaining competitors are operating at a small loss.
- The largest competitor has just announced plans to substantially increase capacity.

Our consulting firm has to analyze the target company's future prospects in the product line. As manager of this case assignment, what information do you need to know and how would you structure the analysis to determine if this merger is a good idea?

Note: At this stage in the project, our consulting firm is not in a position to make a recommendation, but is more interested in gathering the appropriate data. (This is different from most consulting case interviews in which the purpose is to come to a recommendation)

This is an industry analysis case in which Porter's Five Forces might be useful, but it is really an exercise in how to uncover the underlying drivers of the facts given in the case. In general, the interviewer was more interested to see if I could ask the right data collection questions.

A satisfactory response would include addressing the following issues:

- What buyers/markets make final use of this chemical? What is the nature of the growth and profitability of these end markets? The chemical was used primarily in the automotive related industries.

- How much production capacity exists in the industry compared to the demand today? To the estimated demand in the future? Much more capacity than necessary.

- What is the current capacity utilization in the industry? Of our target firm? Both the industry and our target firm are operating at approximately 70% capacity.

- What is the relative cost position or our target company compared to the rest of the competitors? Our target company has a reasonably good position compared to the rest of the industry in terms of size, age and efficiency of equipment, and financing.

A good response would also include addressing the following issues:

- Are there additional niche or value-added uses for this chemical or its by-products that are as-yet untapped? Nothing really significant.

- How rational or volatile is pricing between firms? The industry players often engage in price cuts to temporarily increase market share, but usually suffer falling profitability as a result.

- Are entry or exit costs prohibitive? Has the number of competitors or their market share changed significantly in recent years? Entry is expensive due to the unique fixed costs of producing this chemical, but competitors have been in this industry for a long time and many plants are fully depreciated, making exit inexpensive. Market share has not changed significantly in recent years.

- How diversified is this company and does this product represent a significant source of revenue?

- It is a significant source of revenue but most competitive producers are adequately diversified.

An outstanding answer would also include the following issues:

- Is this industry or product regulated in any way that affects cost, pricing, or profitability? Environmental and pollution regulation apply in the normal way to the chemical production process, but nothing out of the ordinary.

- Are there operational improvements that the target company could make to enable it to be more efficient or other management expertise that our client's company could bring into the merger? Yes, on both accounts.

- Do we know the reason for the largest competitor announcing capacity increases? Are they trying to introduce a credible threat to deter future entry or expedite exit from the industry? We are not sure but it could be possible.

- Are there scale economies in production or distribution? Yes, economies of scale exist in marketing and transport, but are much smaller in production.

- Are there other synergies between our client's company and the target company such as product mix, cross-selling opportunities, raw material purchase, etc.? Not significant at this point.

There are countless paths that the analysis could flow down but these are some of the most obvious to consider.

14 GLOBAL RETAIL BANK IN INDIA

A global retail bank is in the process of expansion. However it is facing declining profits.

What would you do to analyze the issue and advise what the bank should do?

Sample dialogue

Candidate: I would like to clarify a few things before I start analyzing the case.

Interviewer: Sure.

Candidate: Can I assume that the global retail bank is operating in India where it is facing the aforesaid issues?

Interviewer: Yes. You can assume India.

Candidate: I follow that the bank is in the process of expansion. Have the revenues of the bank also been decreasing?

Interviewer: The revenues have been increasing but the profits have been declining.

Candidate: What is the state of banking industry when this is taking place, normal or is it changing? Is the industry facing some issues?

Interviewer: You can assume that it is same as before.

Candidate: Ok. Is it fine if I analyze the revenue first and then the costs?

Interviewer: Fine, go ahead.

Candidate: Retail banks have three principle sources of revenue:

- net interest income (the value of the balances),
- debit card interchange, and
- ees that the bank charges on various services.

I am assuming that the major source of revenue is loans.

Interviewer: Fine. I would like you to look at loans.

Candidate: A bank generates a profit from the difference between the level of interest it pays for deposits and other sources of funds, and the level of interest it charges in its lending activities. Profitability from lending activities has been dependent on the needs and strengths of loan customers. Are there any changes in the loan structure or the type of customers to whom loans are given out? Is the bank giving loans to high credit rating customers or customers with low credit rating?

Interviewer: The bank has been giving out more loans to the low income customers.

Candidate: Giving out more loans to low income customers might have increased the bad debts. Has this been the case?

Interviewer: Yes, these customers do have a higher percentage of not paying back.

Candidate: Now let's look at the cost structure. There are fixed charges as well as variable charges. The fixed charges will more or less be constant while the variable costs might be increasing.

Interviewer: Go on.

Candidate: With the increasing number of low income or customers with poor credit rating, there are increasing charges as variable costs will increase. Moreover with the high percentage of bad debts, the bank is also facing non repayment of loans. This is leading to declining profits.

Interviewer: Good. Now let's go in some numbers.

Candidate: Sure.

Interviewer: Suppose the bank is currently giving loans to 10 million customers and charging interest at the rate of 10%. Calculate the profit of the bank from loans. The percentage of bad debt from high income and low income customers is 2% and 4% respectively.

Candidate: Can I assume that the number of high income customers and low income customers is equal, i.e. 5 million each?

Interviewer: Ok.

Candidate: I am assuming that the average loan amount given to the high income and the low income customers is Rs. 10,000 and Rs. 2,000 respectively.

	High-income customers	**Low-income customers**
Interest received	10,000 x 0.1 = 1,000	2,000 x 0.1
Interest for all customers	5,000m	1,000m
Costs		
Fixed costs	100m	100m
Variable costs	500m	500m
Bad debts	1,000m	400m
Profit before tax	3,400m	0m

Interviewer: Good

Candidate: According to the assumed figures, the bank is not making any profit on the loans credited to low income customers. Moreover there will be extra charges as well as we have accounted for only minimal heads.

Interviewer: So what would you suggest to the bank?

Candidate: The bank, in trying to expand, is lending to the low income customers irrationally. The bank has to focus more on the high income customers. It would reap more interest and lesser variable costs. The bank could increase its minimum loan amount to filter low credit rating customers. The collection mechanism in the bank should be improved to reduce the bad debts.

Interviewer: Sounds good to me.

15 GROCERY CHAIN LOW PERFORMANCE

Our client is a grocery chain having 200 stores spread all over US. They have been enjoying good profits and great results, though in the last 2 years they have seen a slowdown in the growth of the market share and the profits and same store sales have gone down.

As a matter of fact, Wal-Mart has opened a store exactly 2 years ago and 3 more in the past two years in the client geography.

Our client also started, 5 years ago, to open smaller stores closer to where there is a high density of people.

We have the task to help them overcome their current issues.

What can be the reasons behind their low performance lately?

Elements to be discussed in the brainstorming session: Market share decrease can be coming from several reasons:

- Decrease in revenues due to customers spending less in our store and more in other stores
- Customers moving from our stores to another stores
- Increase in the market size that is not captured by our client

Profit decrease can come either from revenue decrease or from cost increase Decreased revenues due to:

- Competition: need to assess the entry of new competitors of significant investments from the existing ones that might have stolen the consumers from our stores
- Change in consumer needs that were not spotted by our client and have affected the traffic in the store (e.g. focus on organic products, need for additional services to be provided by the store, etc.)
- Change in pricing (specifically increase) that might have decrease the spending of the consumers or determined them to go to another competitor
- Change in the assortment of the store that might have determined some loyal customers to look for those products in another place

- Change in the promotions that the client used to have(e.g. reduction of promotions, elimination of loyalty programs, etc)

Increased costs due to

- Opening of new smaller stores have a lot bigger costs per unit sold than the old stores
- A reduction in prices that provides lower profitability
- A change in the mix of products sold (e.g. now the customer is selling more low margin products)

How can they address the threat of Wal-Mart and the other competitors?

Information to be provided upon request

- Wal-Mart carries 75% of the grocery items our client has at much lower prices
- Studies have showed that consumers perceive the prices in our client store as being higher than both the ones in Wal-Mart and the ones in another close competitor
- The reality is that they are 20% higher than the ones in Wal-Mart and equal to the ones in the other competitor

Sample answer

I do not think the Wal-Mart is a real threat based on the number of stores that they have yet (3 as opposed to 200 of our client). But Wal-Mart can become a real threat once they expand.

Then it is very important to differentiate versus Wal-Mart. Our client will not be able to compete on low prices with Wal-Mart but they can perform a market research and identify other needs that customers have and Wal-Mart cannot provide and work on those attributes.

As for the other competitors, our client has to work on building its pricing image. There is clearly a problem coming from the fact that they are perceived more expensive than the next competitor. Maybe their prices are not following a good pricing strategy. They should probably conduct a price sensitiveness analysis in order to properly identify the products that should have low prices and the ones that can carry higher margins.

As a strategy to overcome their problems they decided to reduce the prices by 15%. Based on the information below how many new stores should they open in the next 2 years to break even?

- Sales / store: $40m
- Stores older than 5 years: 160
- Stores opened in the last 5 years: 40
- Profit margin per store: 30%

The sales/store for the stores opened in the last 5 years is lower than the sales from the older stores. For the simplicity of the calculation we consider the stores equal. (This information should help the candidate assess the validity of the price reduction.)

Sample answer

- Sales / store after the price decrease = 85% * $40m = $34m
- Profit / store
  - Before price decrease: $12m
  - After the price decrease: $10.2m
  - Profit loss = $1.8m
  - Total profit loss = $1.8m * 200 stores = $360m
  - Number of stores to open = $360m / $10.2 = ~ 35

(The number is not feasible as they only opened 40 stores in the last 5 years and these stores are supposed to have fewer revenues than an average store)

They have performed another study to see the customer perception over a series of factors. What do you think they should do?

A good candidate will recognize that the closeness to home is the factor that they can work on as our client is a better performer than its competitors.

It looks like on the fresh/organic assortment it has an advantage but a good candidate will recognize that this advantage is easy to be copied by competitors.

This should constitute a base for a recommendation for the client.

Example recommendation

Based on the findings so far, I think that for our client is critical to start concentrating on the attributes where it has an advantage versus competition and that are also important to consumers (closeness to home) and build its marketing campaign and future communication strategy on those identified strengths. Another current advantage is the fresh/organic assortment but because it can be easily copied, it will be difficult for the client to differentiate here.

The risk is in the short term as building a new brand image is not something that can be achieved very quickly but it will be critical to help them recover the lost market share.

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16 CIGARETTE MARKET IN INDIA

What is the total cigarette market in India?

First the candidate clarified whether the bidis should be included or not. In this case, only the cigarette market should be calculated.

The candidate started from the demand side and structured the market dividing the Indian population according to age, income and lifestyle. Then estimated the average consumption in each sector (making some gross assumptions).

Furthermore the candidate should clarify whether to calculate the market in terms of number of units sold or the in terms of sales (which was asked in this case).

Next the candidate considered the general habits of people in each sector (the price of the cigarettes they consume) and then add them up. If you start your calculation in rupees, you should also be able to convert the numbers into million dollars (instant response is expected).

Given the following numbers from ITC's sales and its market share, how accurate was your demand-side calculation?

The calculation to do here should be easy – the candidate should be prepared to discuss those issues with the greatest leverage/sensitivity to the market size calculation and how to make better estimates given more time/resources.

17 STEEL COMPANY ORGANIZATIONAL STRUCTURE

The client is a large steel company dong business in Japan, Europe, US and Middle East. The product range includes flats and bars.

Could you design an organization structure for global operations?

The candidate should start by asking about the objective behind restructuring, which is to lead to a discussion about what actually should be the objective, given the kind of industry.

As steel is basically a commodity (or at least very close to it), the general idea about the organization structure should be cost effectiveness while being responsive if necessary/possible.

The following kinds of structures will be discussed with the interviewer, for each lining out pros and cons for the client:

- Functional,
- Product based,
- Matrix organization,
- Geographical, customer based,
- Project-oriented structure.

Finally, a matrix structure with functional and geographical elements was found to be best during the discussion.

18 AFRICAN CALL CENTER

Your client is a large retail bank in the U.S. looking to move its current outsourced call center from India to Africa and is currently evaluating 3 possible countries as a target location How would you evaluate each of these sites?

Additional information upon request

- Call center is focused on two types of calls:
    - Customer Service Calls (typical ones like Account locked, password reset, etc.)
    - Sales Calls (pushing new services to new and existing clients e.g. credit cards)
- This is the Bank's first time in Africa
- Candidate should recognize that this is a cost reduction case primarily
- Bonus: Candidate should identify inherent upfront risks of moving call center to brand new market and should question rationale of the African market given availability of infrastructure, political stability, etc.

What elements would you consider when evaluating the 3 countries?

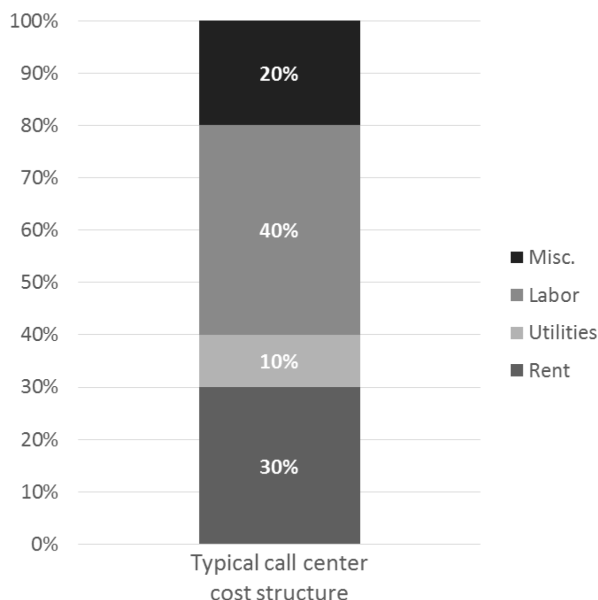
Sample solution

- Financial
    - All of the following should be focused on isolating the change from current to future to isolate the costs savings
    - Operating costs (Labor, Rent, Utilities, Transport for employees, Overhead)
    - Investment Cost (Important that this can be recovered over a reasonable amount of time)
- Other Considerations
    - Firm
        - Alignment with firm strategy
        - Experience in Africa

        - Opportunity Cost
        - Risk to customers (quality)
    - Market (Africa)
        - Availability of Labor (English speaking, Banking knowledge)
        - Political stability
        - Availability of Infrastructure (Internet, Electricity, other basic needs)
    - Competitors – have they already done this?

What are some typical costs associated with running a call center? Which of these would be lower in Africa?

Note: Successful candidate will leverage key operational costs from structure. Key insight is to identify (push candidate to drive towards the typical call center cost structure exhibit) that labor will be the key savings from the initiative (all other costs will remain the same). Share with candidate that existing cost is $60M per year



Sample solution

- Candidate should move towards recognizing the number of calls that are made by the call center per day and use that to determine the number of employees required and use the new labor costs to isolate the differences

- In order to be just as effective, the same number of calls, must be made by each call center (i.e. Utilization)

- Strong candidate will recognize that new call centers will not be effective but interviewer should push candidate in that direction and share the following information:

Call Demand	**Current**	**Country A**	**Country B**	**Country C**
Utilization Rate	75%	50%	50%	25%
Labor Rate	$25/hr	$10/hr	$8/hr	$6/hr
Avg. Call Duration (min/call)	4	4	4	4
Total Working time (hrs)	8	8	8	8
Employees	400			
Working days / year	300	300	300	300

- Candidate should work through solution to determine that financially, Country B is the best option. A strong candidate will note this immediately, as the effectiveness of A and B are the same, but the cost is lower by $2/hr

- Strong candidate will recognize that Utilization should increase over time (ignore during calculations)

- Bonus: Security may be an added cost given political environment in some countries – acknowledge but inform candidate it is included

- Bonus: Cost of infrastructure may be higher – acknowledge but inform candidate it is included

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If the investment in each country is $36M, what is the payback period for the country the candidate selected?

Sample solution

This question will test basic finance concepts of payback period; a strong candidate will mention discount rate (candidate can ignore it in calculations).

Are there ways the Call Center can generate revenue? Candidate should brainstorm possibilities for revenue generation from the call center:

- Cafeteria that sells food to employees

- Day Care facilities for working parents

- Alternate use of facilities as a training center
- Advertising revenue from posters, etc.
- Internet café (leverage infrastructure)
- On-site bank/ATM
- Vending machines
- Gym

Math solution:

Call Demand	**Current**	**Country A**	**Country B**	**Country C**
Employees	400	600	600	1200
Avg. Call Duration (min/call)	4	4	4	4
Total Working time (hrs)	8	8	8	8
Utilization	75%	50%	50%	25%
Total Calls	36000	36000	36000	36000
Employee Cost	$ 24,000,000	$ 14,400,000	$ 11,520,000	$ 17,280,000
Savings		$ 9,600,000	$ 12,480,000	$ 6,720,000
Cost/employee	$ 60,000	$ 24,000	$ 19,200	$ 14,400
Employee Cost/hour	$25	$10	$8	$6

- Investment cost: $36,000,000
- Savings per year: $ 12,480,000
- Payback period: 2.88

What would you recomment to the client?

Client should move it's call center to Country B as it is the most cost effective based on employee rate and productivity

Risks:

- Political Stability in the region
- Quality of Service – will it remain the same?
- No experience in Country B
- Long term ability to ensure low hourly rates

Next steps:

- Work with local governments to gain support for investment
- Consider pilot/phased approach to address service quality
- Work towards identifying other revenue opportunities and cost savings initiatives to offset any rise in labor costs
- Implement measures to increase utilization of Country B employees

19 VIDEO GAMES CAPITAL REQUEST

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.

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 is an attractive one for continued investment and why?

The following information may be given if requested by the candidates though the focus should be on having the candidate identifying the 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 share. Remainder is divided by 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 though over last few months, sales growth has slowed.
- Division’s current sales price for the basic unit is $45 per unit.
- Division remains less than 20 percent of parent company sales.
- Top two competitors also develop, manufacture and sell software/games though division sells only licensed, software.
- Industry growth of software continues to increase.

Costs

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

- Primarily outlets of distribution are top end electronics stores.

Profitability

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

Product

- Hardware standards have been established by the industry leaders.
- Product features constantly developed (e.g., new remote joy stick), to appeal to market segments.

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

If the candidate begins to discuss too deeply a specific issue, before having covered the key issues overall he should be brought back to discuss the industry more broadly.

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

- What is future market potential? Candidate needs to question the continuation of overall industry growth. She/he might ask about the saturation of markets, competitive products (home computers), and declining "per capita" usage.

- What is the competitive outlook? Should 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.).

- What will be the price/volume relationship in the future? Issues of prices need to be considered.

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, yields 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 buyer segments, i.e., "fad" potential of product.

Software

- Recognize technology standards are set by industry leaders. 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, hardware versus software).

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

Company's Ability to Compete

- Should 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 reason for poor profit performance of division.

20 CREDIT/DEBIT CARD PROCESSOR

Pierce Processing is a credit/debit card processor. It provides outsourced services to credit/debit card issuers. The issuer pays a percentage of transaction fees to Pierce for providing the following services:

- Credit authorization
- Fraud detection
- Accounting and reporting

Issuers outsource this function to companies like Pierce because of the high cost of maintaining their own IT systems to perform this function. Pierce has hired us to find ways to sustain its double digit growth that the company has enjoyed for the past 20 years.

This case is representative of many of the prepared, McKinsey round 1 cases, in which the interviewer actively walks the interviewee through a set of qualitative and quantitative questions. The interviewer should "stick to the script" of questions. To the effect that the interviewee struggles, the interviewer can assist the interviewee to get back on track.

The interviewee should be structured in answering qualitative questions and crunch through any numbers thrown his or her way, always keeping in mind how they tie back to the larger issues.

What steps could Pierce take to keep a high growth rate?

What is Pierce's current market position in the credit card market?

> Pierce currently serves the 10 of the top 20 issuers of the country. The 20 top issuers comprise 90% of the credit card market. The 10 of the top 20 that are not Pierce's customers either use Pierce's competition or perform the function in-house.

How fast is the credit card market growing?

> The number of credit card transactions is growing at 3% annually.

How does Pierce price currently in the credit card market?

> Pierce earns a percentage of the transaction fee of each transaction.

Is there any other revenue stream?

> Someone has suggested that Pierce could license its software as another business model, in addition to being the outsourced processor. In this case, the issuer would license Pierce software and process the transactions in-house. Pierce would get an upfront license fee and ongoing maintenance fee.

What should Pierce consider in evaluating the software license model?

Possible answers:

- Danger of cannibalization
- Impact of new revenue source- upfront cash and recurring revenue stream
- Added cost of maintenance and support of this business model

Assume that if Pierce offered the software license model, 50% of its existing customers will switch to this model. 50% of the remaining 10 issues that are not currently Pierce customer will sign with Pierce. The revenue of providing outsourced processing is $1m/year. The upfront fee of license model is $3m and $300k in annual maintenance fee. Calculate the impact on revenue for the next 5 years if Pierce offers this new licensing model (ignoring time value of money).

Revenue is $70m under new plan for the next 5 years, compared with $50m if the software license model is not adopted.

What else would you like to know in order to reach a recommendation?

What is Pierce's current market position in the debit card market?

> Pierce has 5% market share.

Who are Pierce's main competitors in the debit card market? How much market share do they have?

> The market is very fragmented. No player has more than 10% market share.

What can Pierce do to gain more market share in the debit card segment?

Possible answers

- Acquire competitors
- Set up a partnership with a competitor
- Use innovate marketing schemes (e.g. incentives)

There is another segment of the market, store value segment, where Pierce currently has no offerings. This is the market of store-specific gift cards, i.e. Starbucks card or GAP gift cards. This market is projected to grow at 50% annually over the next 10 years. What are some of the issues to consider in determining whether Pierce should enter this market?

- Cost of offering this new service vs. potential revenue
- Difficulty in setting up partnerships and Pierce's experience with this
- Complexity of a revenue-sharing scheme
- "Stickiness" of store-aligned cards vs. regular cards
- Potential cannibalization of regular cards

Suppose we know that the total market of store value is $1b today. The transaction fee is 1% of the total value. Processing firms, like Pierce, would earn about 10% of the transaction fees. What is expected revenue from this new segment this year?

(Note: see if the interviewee asks for a market share number; if asked, Pierce expects 30% market share.)

So Pierce would expect revenue of $300k ($1b * 1% = $10m total transaction fees, X 30% market share = $3m Pierce-related transaction fees, X 10% = $300k Pierce take of the transaction fees).

Suppose it costs $1m to build the system required to process store cards. Assume 5-year useful life, what's Pierce's expected profit (accounting profit) in the first year?

Answer: $300k – ($1m/5) = $100k

21 EASYNAV

EasyNAV is a multi-national third-party fund accounting company based in New York. Asset managers, such as Fidelity or other smaller investment shops, often outsource the calculation of their daily fund prices to third-parties such as EasyNAV. These fund prices, called Net Asset Values, or "NAVs," represent the per-share price of the fund, which then becomes published to the general public, e.g., in the Wall Street Journal. Given the high financial stakes, asset managers require EasyNAV to be both highly accurate and timely in their NAV calculations. This is still a highly manual process due to the number of data sources required to collect this information and inconsistency in data formats delivered to EasyNAV. Although business growth has been strong over the last five years, EasyNAV has seen its costs rising more quickly than its revenues. At the current trajectory, costs will exceed revenues within the next decade, and something must be done.

What are the causes of EasyNAV's rising costs, and what can be done to reduce them?

Information to be provided upon request

Steps EasyNav uses to calculate NAVs:

1. Verify the number of shares of each security that is held within the fund
2. Verify the number of outstanding shares of the fund itself
3. Receive and confirm the market-close prices of each security in the fund (must wait) for the equity markets to close; 4pm EST)
4. Use all available data to calculate NAV and send to requisite publishers – Wall Street Journal, Financial Times, etc. (must submit by 6pm EST)

Company

How does EasyNAV operate?

- Workflow process - bottleneck of waiting for market-close prices will cause EasyNAV to have to staff to this peak period of capacity demand, leaving periods of time earlier in the day that are left with slack capacity.
- Balance of labor - dedicated fund accountants who process each account from start to finish are more costly than functionalizing roles along the value chain.

Customer

Who are they?

- Influx of small asset managers - smaller asset managers have simpler systems leading to ad hoc/manual methods of delivering data to EasyNAV, which increases labor & cost

- Shift in customer mix - greater business from new customers vs. existing customers requires greater expense in initial account setup.

Industry

What are the industry trends & norms?

- Shift to wider range (and complex) investment products - shift from typical mutual funds to derivatives add to complexity and are more difficult to price.

- Technology adoption rates - few third-party fund accounting companies relying on technology to calculate NAVs resulting in high labor costs.

What are some possible ways for EasyNAV to improve their workflow and reduce costs?

EasyNAV has 125 fund accountants today (the FTEs who calculate NAVs) who typically are assigned 3-6 funds each, which they work with from morning until end of business. These fund accountants tend to be very busy during the end of the day in order to meet submission deadlines. Separately, EasyNAV also has a staff of 25 fund administrators who deal mainly with the publishing of quarterly and annual prospectuses (i.e. a report of fund performance). In addition to its operations in upstate New York, EasyNAV has fund accounting operations in Melbourne, Australia, which handles some internationally domiciled funds.

Possible solutions:

- Functionalize pieces of the value chain to properly align resources with work load. For example, instead of one fund accountant following a fund from beginning to end, break up the steps to calculating a NAV.

- Rebalance funds across different fund accountants to ensure that the most complex funds are handled by the best fund accountants (load balancing).

- Utilize the fund administrators group to help process funds during the peak end-of-day period. Since their work output is on a quarterly basis, they may have capacity to assist the fund accountants during crunch time.

- Utilize all locations (U.S., London, India) to better load balance work through time zone arbitrage. For example, end-of-day activities for London would take place during quieter morning/noon times for the U.S., so excess capacity in the U.S. could be used to help London during peak times.

- Utilize potential low-cost regions of the globe for additional offshoring.

- Increase use of technology to reduce manual processes

Using the following data and any other data you might deem necessary, what is the percentage drop in productivity over the past five years, where "productivity" can be expressed as complexity points per FTE?

Information to be provided

Due to market changes, the team believes that productivity per FTE has dropped over the past five years. Because more complex funds take more manpower to process, EasyNAV normalizes the difficulty of each fund by assigning funds a "complexity point score," which allows a fair fund-to-fund comparison (e.g., a fund with complexity score 15 takes three times as long to process as a fund with complexity score 5). The team needs to determine the level of severity of this productivity drop. To do this, data in the exhibit has been collected.

	5 years ago	Today
# large funds	100	
# small funds	200	
# FTEs	50	
Complexity points / FTE		

This means that:

- Large funds have an average of 10 complexity points each

- Small funds have an average of 20 complexity points each

- Number of large funds has grown 25% over the last five years

- Number of small funds has grown 120% over the last five years

- Number of fund accountant FTEs has grown 150% the past five year

Solution

There is a ~20% drop in productivity.

Column1	5 years ago	Today
# large funds	100	125 (= 100 x (1 + 25%))
# small funds	200	440 (= 200 x (1 + 120%))
# FTEs	50	125 (= 50 x (1 + 150%))
Complexity points for large funds	1.000 (= 100 x 10)	1.250 (= 125 x 10)
Complexity points for small funds	4.000 (= 200 x 20)	8.800 (= 440 x 20)
Total complexity points	5.000 (= 1.000 + 4.000)	10.050 (= 1.250 + 8.800)
Complexity points / FTE	100 (= 5.000 / 50)	80,4 (= 10.050 / 125)

If all available slack capacity in Australia could be diverted to help work on New York-processed funds during their peak activity period of 4-6pm, how much could be saved in labor expense by reducing the New York staffing requirement?

Information to be provided

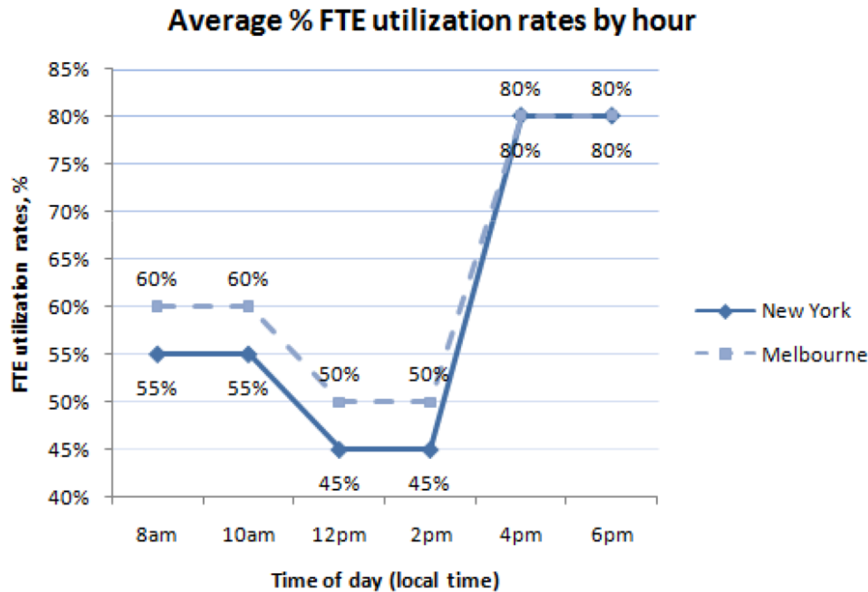
After meeting with EasyNAV management, the team is asked to explore potential savings by utilizing fund accountant downtime in one geography to assist another geography during their peak time between 4-6pm. Specifically, they would like us to examine how the Melbourne location could assist the New York location.

Utilization is a measure of how much of a location's total available FTE resources are being used (demanded) at any given time, e.g., if a location has 5 FTEs on hand, and the utilization is 60% at noon, then the demand for work is 3 FTEs at that time.

Additional information uncovered:

- Melbourne is 16 hours ahead of New York
- FTEs are paid an equivalent of USD $50,000 per year
- New York has 100 FTEs staffed throughout the day, Melbourne has 60 FTEs
- Utilization of FTEs varies throughout the day based on the amount of work required at that time of day. Average utilization can be found in exhibit below.

- Due to natural variances in workload per day, a location's average utilization cannot exceed 80% of the total available FTEs. That is, an average safety cushion of 20% FTEs is required all times of the day to allow for very busy days. Both location's full-staffing levels reflect the necessary staffing to meet this requirement (e.g. 100 employees in New York to meet the average need of 80 employees in peak hours).



- Time zone conversion: 4-6pm peak period in NY is 8-10am in Melbourne

- Available resources in Melbourne:

    - From the exhibit, average utilization in Melbourne from 8-10am is 60%, therefore there is 20% capacity before reaching the 80% threshold (average utilization cannot exceed 80% during any period of the day)

    - Therefore, 20%*60 FTE = 12 FTEs available to assist NY

- New resource requirement in NY by utilizing Melbourne:

    - During the peak time of 4-6pm, NY has an average of 80% FTE utilization, meaning that 80%*100 FTEs = 80 FTEs needed/working during this time

    - By utilizing Melbourne, EasyNAV can reduce the 80 FTE demand by 12: 80-12 = 68 FTEs required in New York

- Savings due to reduction of FTE requirements in NY:

    - EasyNAV can reduce staff in NY so that the 68 FTEs required during the peak time represent 80% staffing requirements

    - Therefore, 68 FTEs/80% = 85 FTEs

- FTE savings of 100-85 = 15 FTEs
- Dollar savings of 15 FTEs*$50,000 = $750,0000

Solution

EasyNAV will save $750,000/yr, or about 15% of total New York FTE spend

Recommendation

EasyNav's primary cost driver is the mismatch between FTE resources and demand. The client can reduce these costs by utilizing slack capacities between New York and Melbourne. Such an arrangement will allow EasyNAV to reduce its labor by 6 FTE, a savings of $300,000/year.

Risks

Trade-offs to maximum efficiency (e.g. potential loss of quality or less-skilled labor in offshore agreements, loss of ownership, etc.)

Next Steps

EasyNAV may benefit from greater automation of manual processes and, in addition, can work with its clients to mandate standardized data submissions to streamline NAV calculations.

22 COMMODITY MANUFACTURER

Your client is a commodity manufacturer (pork bellies for instance). They have the largest market share and the lowest cost producer. The CEO wants to increase profits in the next 3 months.

What would you tell the CEO about how to increase profits in 3 months?

Information to be given if asked:

Profits

= Revenues – Cost. This means that profits can be increased by increasing revenues and/or decreasing cost.

Costs

- We have already established that the client is the lowest cost producer, hence the costs cannot be lowered any further.

Revenues

- Focus on increasing revenues. Revenues consist of price x quantity.
- The firm is running at maximum capacity utilization. Hence quantity cannot be increased.
- The only solution is to increase price.

Note: The candidate should draw the supply curve (as shown below).

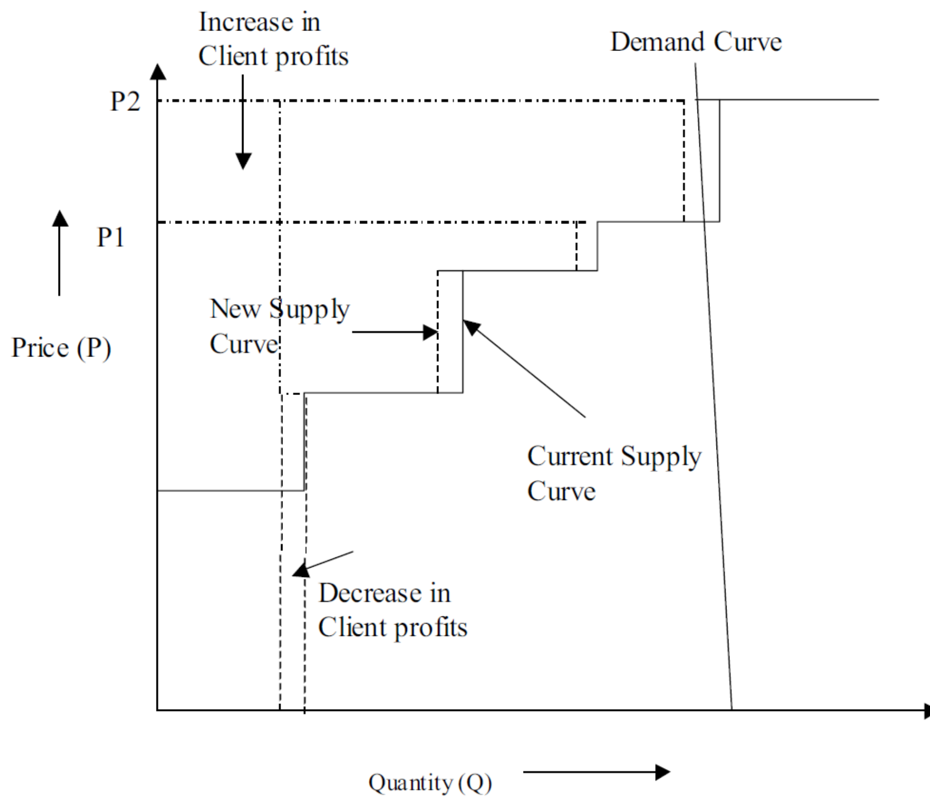
Solution:

Commodity Demand Supply Analysis

- The demand is highly inelastic. The two ways to increase price are to increase demand or to decrease supply. Due to the commodity nature of the product, it is unlikely that the demand can be increased sufficiently in the short run (3 months). Hence focus on supply.

- The client should decrease its capacity utilization, which will cause the industry demand curve to shift towards the left. This will increase the market clearing price from P1 to P2.

- The interviewee should point out the 2 boxes showing increase (due to increased price) and decrease (due to decreased supply) in client profits. The increase in profits outweighs the decrease here.



23 CHICKENS’ EGGS BRAINTEASER

Interviewer’s statement: 1.5 chickens lay 1.5 eggs in 1.5 days.

How many eggs do 4 chickens lay in 9 days?

24 eggs.

Here is how you arrive at the solution:

If 1.5 chickens lay 1.5 eggs in 1.5 days, and now the 4 chickens have 9 days, then the present 4 chickens have 6 times as much time to lay eggs. Since 4 chickens would lay 4 eggs in the base case, we multiply 4 by this factor of 6, and get 24.

(9/1.5=6; 6*4=24)

24 PAINT MANUFACTURER PROFITABILITY

Your client is the CEO of a paint manufacturing company. One McKinsey team has previously worked on optimizing their cost structure. The CEO wants to further improve their profitability.

How would you analyze the situation?

Information to be given if asked:

Industry Structure

- The industry growth rate is same as GDP growth.
- Client has 30% market share.
- 2nd competitor has 35% market share. There are number of small regional and local paint manufacturers as well which serve the rest of the market.

Customers

- The customers are of 2 types: Professionals (contractors) and private consumers.
- The customers are not very loyal (recognize this as an issue to be addressed later if time permits).
- They have multiple brands and have good basic quality paint.

Client's Economics

- The total revenues are 1B.
- There are 3 sales channels as follows:
    - Company owned stores: 600M in sales. Focuses on contractors (professionals).
    - Consumer division: 300M in sales. Sold through mass merchandises.
    - Independent dealers: 100M in sales. Sold to local mom & pop stores. The client maintains a separate set of warehouses to serve this channel.
- The target for the firm is $80M.

Profitability can be calculated with the following numbers:

Channel	Revenues	Return on Sales	Profitability
1. Company owned stores 600M 5% 30M	600m	5%	30m
2. Consumer division 300M 3% 9M	300m	3%	9m
3. Independent dealers 100M 1% 1M	100m	1%	1m

Competition

- The competitors also have 3 distribution channels.
- There is no data on competitor's profitability.

Solution:

- The candidate should recognize that company store channel, which focuses on contractors (professionals) have the highest return on sales. The company needs to focus on this segment.
- The independent dealer channel has the lowest return on sales. The company needs to re-evaluate their strategy/presence in that channel.
- The client needs to focus on their sales force and strengthen their relationship with the contractors. Since loyalty is an issue, introduce switching costs. Some techniques are order automation by establishing web presence, which will allow the contractors to quickly and easily re-order.
- Re-evaluate the sales force compensation and their commission structure.

25 SUGAR MAGNOLIA HOSPITAL

Your client is the CEO of the Sugar Magnolia Hospital. The hospital is a large hospital providing a full range of services, in a large, urban area. In the last five years, the hospital's profitability has decreased to the point that they are almost out of money and will not be able to meet their financial and social mission.

What do you recommend?

The revenue scheme of the hospital's different services falls into the following three categories:

1. Fixed fee for service (e.g. broken leg = $150 to fix)
2. Cost plus (cost of providing the product/service plus a percentage)
3. Per diem fees (fee per day of hospital stay)

The hospital gains patients through physician referral. In other words, the physicians within the hospital see patients and after diagnosing those patients will refer the patients for care, treatment, surgery, testing, etc. to other places within the hospital.

The CEO comes to you to ask the following:

1. Why has profitability gone down?
2. How should they turn it around?

Recommended approach:

This is a profitability problem, so plan to drill down on revenues (price and quantity of patients or patients/ services at the hospital) and costs (fixed and variable costs per patient).

Ask about the economics of the case:

- How does the hospital make money? (Paid in the revenues structures given by HMO, insurers, and state agencies above. This is given upfront in the case description and is a bit of a red herring in the case.)
- Who pays the costs? (Again, the costs are paid by the HMOs, insurers, and state agencies)

- How do patients come into the hospital? (Patients come in through referral from the doctors that work in the hospital or through emergency services. This is helpful information to get in solving what is going on with revenues in the case. When one segments the products/services in the hospital, one should think about patient/ service segments, or patient/ doctor segments).

After receiving this information, focus in on the following:

- How many more people would you be able to see if you reduced patient stays on average by 1 day?
- What would the effect on costs be for reducing patient/ days by one day on average? How would that affect profitability?

Key facts:

There are several patient/ service segments in the hospital. The following are a few examples:

- Women in Labor / Giving Birth - Low profitability, High referral rates / word of mouth, volume declining, fixed fee rate with high variability in length of stay
- Pediatrics- Low profitability, high referral rates/ word of mouth, volume declining, fixed fee rates
- Males (age 25-50)-Medium profitability, medium referral rates, volume stable, Per diem and cost+ rates
- Elderly (65+)-High profitability, low referral rates, volume increasing, fixed fee rates

Quantitative work in terms of cost:

- Fixed costs: $1000 / patient
- Variable costs: $500 / patient / day
- Average length of patient stay: 10 days
- Patients seen per year: 1000

Example dialogue

Interviewee: This is a profitability case, and profitability is composed of revenues and costs. In terms of which side of the hospital's profitability I'd like to start with, unless costs have changed in some significant way because of a recent capital expenditure….?

Interviewer: No, they've had no new costs.

Interviewee: Right, then I'd like to start with revenues and see if there have been any recent changes on the revenue side.

Interviewer: Sure, that sounds like a good place to start.

Interviewee: So, revenues are composed of two things: price times quantity. Have the prices that the hospital charges for services that it provides changed recently?

Interviewer: No, prices haven't increased or decreased in any considerable way—other than general increases along with inflation.

Interviewee: Okay, so, it's a problem with the number of patients, or number of patient/ services, along different segments then.

Interviewer: Yes, you're right. What do you hypothesize is happening?

Interviewee: I imagine that there are several patient, or patient/ service, segments within the hospital.

Interviewer: That's right.

Interviewee: Is the hospital a full-service provider, or do they specialize in some sort of area, or service?

Interviewer: Nope, the hospital is a full-service provider.

Interviewee: So, I hypothesize that more profitable and/ or higher revenue generating patient/ service segments are decreasing.

Interviewer: Interesting. There are 4 principal segments:

1. Women in Labor/ Giving Birth- Low profitability, High referral rates/ word of mouth, volume declining, fixed fee rate with high variability in length of stay

2. Pediatrics- Low profitability, high referral rates/ word of mouth, volume declining, fixed fee rates

3. Males (age 25-50)-Medium profitability, medium referral rates, volume stable, Per diem and cost+ rates

4. Elderly (65+)-High profitability, low referral rates, volume increasing, fixed fee rates What do you think this data tells you?

Interviewee: Well, first, I would prioritize the segments in terms of how important they seem to our current inquiry: I would put the third segment aside because the volume has stayed stable, and I would

concentrate on the first two segments for two reasons: 1) Their volume has been declining, and 2) These segments reflect high word of mouth and long-term patient segments that are likely to keep coming back to the hospital for other services for a long time if they like the service that they get there (as opposed to the elderly segment, which represents a diminishing group of patient/ services because of their age).

Interviewer: Good, good. And what would you want to do in order to reverse the decline of those segments?

Interviewee: I would probably want to do some research into why those segments' volume is declining. Has service quality declined? Have the number or quality of pediatricians or obstetricians at the hospital declined? Has another hospital in the area begun to specialize in pediatrics and obstetrics that is making this patient and patient/service volume decrease in these specialties?

Interviewer: Good, good. One last question: would you abandon the fourth segment (elderly) patients completely. They are a highly profitable segment. How would you deal with them?

Interviewee: They are a highly profitable segment, which is a bit strange, as they have a fixed fee rate revenue structure and their length of stay can vary tremendously. I would try to segment them further into patient/ service segments that were a little more predictable along the dimension of how long they stay—this might yield a much more profitable and predictable patient/ service type than what they currently have.

Interviewer: Right, so there might be some 20% of those patients that are staying longer and driving down profitability for the rest?

Interviewee: Yes, and a more detailed segmentation might show that. So they'd be able to target and get the more profitable of those patients.

Interviewer: Good, good. So, that pretty much covers the revenues side. Now, suppose that I told you that you told you that we went to the CEO with all of this interesting info about revenues and revenue generation by targeting different segments, but the CEO said that they really thought it was about the number of patients that the hospital can see and the costs and cost controls. How would you think about costs?

Interviewee: Well, there are two components to costs: fixed costs and variable costs. Do we know fixed costs and variable costs by patient, or by patient/ service type?

Interviewer: Well, actually, we don't have cost data by patient or by patient/ service type, like we did in the revenues discussion. But we do have cost data per patient on average at the hospital.

Interviewee: So, aggregate data on a per patient level?

Interviewer: Yes. We know that on average the fixed cost for admitting a patient is $1000. And the cost per patient day is $500. The average length of a patient's stay is 10 days. And the hospital sees 1000 patients each year. The CEO is curious about how many more patients the hospital could see if they reduced the length of an average patient day by one day.

Interviewee: Well, currently they are seeing 1000 patients annually. Each patient stays 10 days on average; so, the hospital has the capacity for 10,000 patient days annually (1000 patientsX 10 days= 10,000 patient days). If you reduced the stay to 9 days on average for each patient, then there would be an excess of 1000 patient-days of capacity (10,000 patient-days minus 9000 patient-days). If each patient stays 9 days on average, then the hospital could see about 111 more patients each year (1000 excess patient-days/ 9 days= 111 patients).

Interviewer: That's right. Now, how much would costs decrease if they did this?

Interviewee: Well, currently, they see 1000 patients per year for an average of 10 days each. Fixed costs for these patients are $1000 X 1000 patients, which equals $1,000,000. Variable costs are 10,000 patient days X $500/ day, which equals $5,000,000. So, their current costs are $6,000,000. If they reduced the average patient stay by 1 day, then their variable costs change. They still have the same fixed costs of $1,000,000. But their variable costs have changed: they now have 9,000 patient days X $500/ day, which equals $4,500,000 in variable costs. That's a cost savings of $500,000 each year.

Interviewer: That's right. So, how would you summarize these findings to the CEO and what recommendations would you make?

Interviewee: On the revenues side, Sugar Magnolia is losing patients in a few segments that provide revenues long-term. For these segments, they need to target and bring in more doctors who "own" these patients and improve their brand in these service areas through promotions, thought leader excellence, or community activities that would raise their profile. And they should further segment other patient/ service types (the elderly) in order to realize more profitable patient/ service types within current segments. On the costs side, the hospital could realize significant decreases in variable costs by trimming down patient days, by even a slight amount on a per patient basis. While this is where the numbers and quantitative analysis is more telling, Sugar Magnolia has a social mission to be concerned with, as well as the financial mission that we've already discussed at length. Because the hospital needs to provide the best service and healthcare to its patients, it may not be able to cut down on patient/ days per patient (the costs side) while maintaining its social goal/mission. And for this reason, several quality of care analyses should be done before initiating some of the cost-cutting initiatives that have been discussed here.

26 BIG POWER COMPANY

Our client is a large global power company. Currently they are in 25 countries around the globe and have expanded rapidly. The power industry has been declining rapidly over the past couple of years, and now the company finds itself in a liquidity crisis and needs to generate cash.

Question 1 - What would you need to know in order to help determine which assets to sell?

Question 2 - What is the total annual coal usage per plant (in dollars)?

Information to be given if asked:

- Industry has been declining rapidly over the past couple of years Average plant burns 300 days/year and 20 hours/day
- Coal costs average $10/ton for up to first 400,000 tons and $8/ton after that
- 50% of coal used is standard coal which uses 100 tons/hour 30% of coal used is superior coal which uses 80 tons/hour 20% of coal used is premium coal which uses 40 tons/hour

Solution:

Question 1:

Most of the assets are the plants, so the question is to determine which plant to lose. Discuss the different geographic regions, whether the markets are expanding or declining, where their competitive strengths are and which plants are making the most money.

Question 2:

Average plant burns 300 days/year and 20 hours/day = 6000 hours/year

50% 100 tons/hour = 50 tons/hour

30% 80 tons/hour = 24 tons/hour

20% 40 tons/hour = 8 tons/hour

= 82 tons/hour

82 tons/hour * 6000 tons/year = 492,000 tons/year

$10 * 400,000 + $8 * 92,000 = $4,736,000 per year

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27 AGRI-TECHNOLOGY PATENT PRICING

Your client is an agri-technology company that has come up with a patent. This is a technology never seen before.

How much should the company price the patent at?

The candidate is expected to ask a few clarifying questions to gain a general understanding of the company and its context. The interviewer might give you some answers straight away, for other answers the candidate first might need to explain why exactly the very question would be relevant to achieve the final objective.

Basically, the patent in question is for cotton farming and increases the yield of cotton growth for a certain variety of seeds. In general terms, pricing can be based on the following approaches:

- Value-based pricing
- Competition-based pricing
- Cost-based pricing (cost plus mark-up)

To determine the price, a triangulation / cross-check of those 3 approaches makes sense.

For value-based pricing, the decisive factor is the willingness to pay on the part of the customer (the customers are cotton formers). The willingness to pay depends on the value of the patent to them, which can be separated into a revenue and cost benefit.

In order to get some concrete numbers out of this discussion for the revenue side, the candidate needs to make reasonable assumptions concerning the annual turnover of cotton in a given geographic region and the average price per ton. From this, the value of the higher yield that all farmers could get can be calculated.

Apart from increasing revenue farmers can benefit as well in reducing costs. Main costs in the cotton farming business include land, water for irrigation and energy costs, as well as risk costs for force majeure.

The value comprises both the increase in revenue and decrease in costs, which is the upper limit for the farmer’s willingness to pay.

For competition-based pricing, first the competition has to be defined in terms of which products could potentially substitute or have similar effects (as it is a completely new technology, there is no direct competition involved). The candidate is expected to ask for some numbers about competitor's product and come up with a cross-check of the price from the value-based pricing.

For cost-based pricing, the discussion might first move around research and development costs of our client, as well as cost-to-market, before focusing on direct production costs for the seeds. Again, this is another benchmark to cross-check the price from the value-based pricing and competition-based pricing.

Finally, the candidate should come up with a recommendation whether or not the client should proceed with bringing the patent to market, also specifying a possible pricing range and giving a rough estimation about our client's profit on the patent.

28 POWER GENERATOR MANUFACTURER

The client is manufacturer of power generators for recreational vehicles. They are the dominant player with close to 90% market share. They attribute their market share to their high quality products. Recently, the smaller players, who have between them close to 10% of the market share, have improved their quality over the years. This is posing a strong threat to the client. Our client has a strong brand and is a trusted name in the market.

Our client sells only to OEMs (Original Equipment Manufacturers). There are two types of OEM suppliers: sole source and the dual source. The dual source implies that the customer makes the choice of the generator.

Of the markets they service, close to 95% of their sales comes from the North American region and the rest from Europe.

The client is worried about profitability in the coming years – how do you address the profitability?

Additional information provided by the interviewer upon request

- Current revenues: $200m
- Current gross margin: 15%
- The candidate can assume 2 scenarios
  - Best case scenario: elasticity is 0 and price goes up by 5%; costs remain the same.
  - Worst case scenario: gross margin remains the same but there is a 25% drop in revenues; quantity remains same

Sample Solution

The candidate needs to describe a framework for analyzing the case first – no further information is provided by the interviewer during this stage of the case.

A good structure includes the profitability equation, the product itself as well as external issues like competitive response, market development and customers.

- Revenues side: analyzing the price, quantity, gross margins, different channels

- Cost side: analyzing both fixed and variable to see if there is any optimization possible

By analyzing the basis financial data, the candidate can develop the following table:

	Current	**Best case**	**Worst Case**
Revenues (m $)	200	210	150
Costs (m $)	170	170	120
Gross margin (m $)	30	40	30
Gross margin (%)	15	~20	20%

- Competition: analyzing how they could evolve over time
- Product: analyzing any ways of differentiating the product
- Product drivers: analyzing what determines a customer purchase and choice of product
- Market: analyzing growth rates, alternate uses, new markets

29 RETAILER GROWTH STRATEGY

Your client is a big retail chain in United States, which owns the entire distribution and retail supply chain. The client has seen sustained profits for last several years and is now looking for several growth alternatives in terms of cost reduction and increasing market share.

How would you prioritize the various alternatives and decide the order of execution?

Background and precise objectives (provided only if asked)

The retail stores sell drugs for normal usage such as cough and cold medicines etc. (non-prescription based). Industry has seen some shift towards being green and client has not yet done that.

Objectives:

- Present a rough timeline for execution
- Identify risk and impact of executing these strategies

Potential strategies that should be thought of:

1. Implement lean manufacturing processes
2. Reorganizing Sales force(Incentives for sales force)
3. Change packaging of products in retail stores(recyclable material)
4. Launch new products in market
5. Change Sales Floor layout

The candidate should come up with a tree structure to analyze the various growth strategy options and then create a table with all the 5 growth strategies and the factors that should be considered for evaluation.

Once candidate has covered most basic attributes for evaluation, he should rate the various attributes in a rank scale order.

A tree structure and evaluation criteria could look like this:

Strategies	Risk	Top line	Bottom line	Long term vision / brand strategy	Competitive edge
Lean manufacturing	Medium	None	High	Low	Medium
Sales force realignment	Medium	Low	Low	Low	Low
Packaging	Low	Low	Medium	High	High
New products	High	High	Medium	Medium	Medium
Sales floor change	Low	Medium	Low	Low	Low

Once the candidate has sufficiently addressed the various evaluation criteria, he should then next plot the various growth strategies in a 2 * 2 matrix with the 2 dimensions of risk and impact.

The key focus area in the 2 * 2 matrix is the fine balance between risk and impact. This is where the candidate should ask questions about the current state of the market, company and competition. The interviewer should mention that some green initiatives in industry has been causing some trouble with some packaging for the drugs.

A 2 * 2 matrix could look like this:

High
Packaging
New products
Lean Manfacturing
Impact
Sales floor change
Sales force realignment
Low
Low
Risk
High

Additional questions which might be asked by the interviewer:

What are some of the risks with execution order strategy?

Is this a long term sustainable solution?

How can the retail store leverage its dominance in the supply chain?

What if the competition also copies green initiative?

Possible solution:

The main purpose of this case is to understand the thought process of a candidate when an ambiguous business problem is encountered. The overarching issue with the company right now is the focus on green initiative by the industry, and that is why the impact of the packaging change to recyclable material is a medium impact strategy.

A sample order of execution is as follows:

1. Packaging Change: Start “Go Green” initiative
2. Sales Floor change: Reorganize the drug products to emphasize new packaging
3. Sales Force realignment: Focus on the new green brand
4. Lean Manufacturing: Long term sustainable cost advantage
5. New Products: Product differentiation

30 SOFT DRINK BOTTLER MARKET ENTRY

Your client is a large international soft drink bottler. The client wants to enter the Indian market. What are the concerns in doing this, and should you do it?

What are the profit margins in the soft drink industry?

Upon inquiry you find that margins are particularly high in the soft drink industry (30%). I mentioned potential cultural issues (flag burning, and hatred of Western commercialism in India). This point was duly noted, but the interviewer directed me towards focusing on the economics. In the end you should only do it if it is profitable to do so.

The first “C”: Costs

What are the upfront costs? What is the selling and distribution system? What is the account structure? Can we get access to all of the channels or do we need to partner with someone who has a distribution network set up already?

We discussed upfront cost to enter the market in terms of infrastructure of plants, bottling lines, warehouses, delivery trucks and coolers. An analysis of the cost structure resulted in a reasonable operating cost structure but the level of investment required to become a significant player might be prohibitive, despite the attractive 30% operating margins of soft drinks.

Another “C”: Customers

What is customer demand like?

An analysis of the customer led to the discovery that there probably was a latent consumer demand for cold drinks especially in the summer, highlighting the importance of visi-coolers (i.e., refrigerators with glass doors so the consumer can see the product). In addition the seasonality seemed too severe and would force our bottling costs way up in the winter, with idle capacity sitting around.

Wrap-up / Recommendations for client:

Do not enter the market due to high initial costs and high seasonality of consumer demand.

31 CANNED JUICE MANUFACTURER PROFITABILITY DROP

A canned juice manufacturing company recently diversified into different types/more variety of juices. Their profitability has gone down in comparison to their competitors.

What would you recommend to the client?

The candidate might want to discuss some initial questions like the following:

- How big is the client?
- How long has the client been in business?
- When has its business strategy changed?
- Who are the major competitors?
- What are the various revenue streams (different type of juices etc.)?

The interviewer will usually give some answers as context information, but might ask to assume one standard fruit juice for the analysis to keep things simple.

As this is a classical profitability case, a solid basis structure is profit = revenue – cost.

So the client might have an issue in either of the two factors, i.e. revenue or cost. If in doubt, the candidate might want to ask if he should being with either revenue or cost first.

As the main issues will be in the cost section in this case, the interviewer might want to keep the revenue side completely out of discussion and ask the candidate to jump directly into the cost analysis, with a starting question like what are the various cost heads in such a business.

A simple, yet effective structure for further analysis is looking at the value chain step-by-step, beginning at sourcing and moving on the other topics.

Some potential, not-so-obvious issues could be

- Sourcing: competitors being able to backward integrate and establish a symbiotic relationship with the farmers which allows them to remove the middle-men and thus get cheaper and good quality fruits, whereas our client has not done that.
- In-bound logistics: juicy fruits being mostly hygroscopic are prone to damage in transit, so the quality of infrastructure en-route to their plants and quality of logistics partner is also worth looking at

- Processing/manufacturing: looking at infrastructure, capacity and cost/unit produced

As the main issue in this case is in processing/manufacturing, the interviewer might want to discuss this in more detail and asking for possibilities to bring these costs down. The discussion can move around issues like company assets utilization, economies of scale, etc., leading to options like launching other related products as well or expanding to different markets.

32 HOSPITAL CHAIN LEGISLATION CHANGES

Your client is a large hospital chain, K. Grace. There have been proposed legislation changes to Medicare that will affect your client. For example, some surgeries will no longer be reimbursable at the same rate. As a result, this has caused the hospital to consider a strategy that would shift its focus toward less profitable surgeries by using alternative therapies. However, the client is concerned about the decreased revenue potential from this proposed shiftin strategy.

Currently the client has a $4 billion top line. Surgeries represent half of this total. Half of the hospitals in the chain perform all of these surgeries. For this case, let‘s say that all patients are on Medicare (private insurance is not a factor).

Should we close part of the chain? All of the chain? None of the chain?

What drivers will help us arrive at a close / no close decision?

Some issues to discuss could be the profitability (revenues and costs) of the surgeries. Start with a basic framework that includes a revenue breakdown into prices and quantities and a simple cost structure with fixed and variable costs.

Here, the percentage of surgeries that is actually impacted needs to be considered.

In addition, it should be explored whether the hospital chain has any capabilities in providing alternative therapies - could the client make money there?

For external issues, the ability to influence the regulatory environment and the needs/preferences of our end users (would they pay out-of-pocket?) need to be considered.

Lastly, the strategies that competitors are adopting should be addressed.

Starting with the profitability analysis (meaningful assumptions need to be made along the way), a typical impacted hospital is analyzed (on an annual basis):

- Patients: 1,000
- Price (revenue) per patient: $1,000
- Cost per patient: $800
- Fixed Cost of facility: $100,000

Simple breakeven calculations should be made - the hospital must serve at least 500 patients to remain open. Each patient delivers a $200 contribution margin.

How many patients would you have to lose below breakeven (500) to close the hospital?

The candidate needs information on the cost of exiting the business. Once the candidate requests the information, the following information can be given: The exit cost is $50,000.

The profitability over time, discounted back to today, minus the PV of the exit costs, should equal zero to breakeven:

Q*$200 –$100,000 = -$50,000.

Q = 25

Another way to look at this is the value of lost customers to the business over time, taken as a perpetuity. Or, loss / hurdle rate = exit cost. Assume a discount rate of 10%.

Loss / .10 = 50,000. Loss = $5,000, which equals 25 patients that you would have to lose below breakeven to close the hospital. 500 -25 = 475 patients to remain open

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If fixed costs change to $150,000, how many patients will you need to break even? How many patients would you have to lose to close the hospital?

$150,000 / $200 = 750 patients to stay open

Loss / .10 = $50,000. The loss of future value that one gives up by incurring the exit costs equals 25 patients. Below 725 patients, the facility should close.

The hospital does some research and finds that 3/8 of its surgeries will not be reimbursable. A government report says it will save 6-9% by passing the new legislation. You know that someone has botched the research. How is the information contradictory?

The candidate should ask for the national market share of the company. Otherwise, the data above is like comparing apples to oranges.

The market share for your client is 20%.

This means that, according to your client, 7.5% (.375 * .20 = .075) of the government savings will come from its surgeries, which represent only 20% of the total national market.

33 MEXICO CITY AIRPORT TAXI SERVICES

The authorities of the Mexico City airport have decided to issue 2,500 new taxi permits for $1,000 each. These permits authorize a taxi to service arriving passengers. Your client has a taxi fleet in the city but does not service the airport. He has excess capacity (meaning he has cars and drivers available).

He has asked you to determine if he should buy those new permits. If so, how many should he buy?

Information to be provided by the interviewer after the candidate has presented an initial framework:

- Airport handles 42 million passengers yearly
- There are 5,500 taxis operating in the airport
- On average a taxi takes 60 minutes to drive passenger and return to airport for next pick up.
- On average a passenger pays $200 cab fare via regulated rates
- On average 40% of domestic flights passengers and 80% of international flights passengers use taxis.
- 30% of daily demand occurs between 6:00 a.m. and 10:00 a.m., 40% occurs between 6:00 p.m. and 10:00 p.m.
- Assume each passenger uses one cab
- On average each taxi requires $8,000 yearly on maintenance
- Taxi drivers keep 50% of the fare

Assumptions:

- Assume that passenger volume is equally distributed through the year / week / day.
- Assume that 50% of passengers are from domestic flights and 50% international flights.
- Assume all existing taxis can run during peak hours and that maintenance is a minimal time commitment.

This is a profitability case, so the formula P = R-C should be brought up by soon in the discussion and guide any framework proposed by the candidate. The discussion should lead towards determining the possible revenue to be made and to talk about costs to determine profitability.

Issues to discuss

- Daily demand for taxi: estimate the number of passengers arriving each day, estimate passengers that will require taxis; is this demand being met?
  - Number of passengers arriving each day
    - 42million/12 months = 3.5 million passengers monthly
    - 3.5 million passengers / 4 weeks = 875,000 passengers weekly
    - 875,000 passengers / 7 days = 125,000 passengers daily
  - Estimate passengers that will require taxis
    - 62,500 domestic passengers x 40% of domestic use taxis = 25,000
    - 62,500 international passengers x 80% of international use taxis = 50,000
    - Total passengers demanding taxis daily = 75,000
    - 6am – 10am = 22,500 passengers need a taxi (= 75,000 x 30%)
    - 6pm – 10pm = 30,000 passengers need a taxi (=75,000 x 40%)
    - Non-peak hours = 22,500 passengers need a taxi (=75,000 x 30%)
  - Is this demand being met?
    - From 6 to 10am, each taxi makes 4 trips (average trip takes 60min). If we have 5,500 taxis operating then capacity serves 22,000 passengers. Excess demand = 500 passengers. 250 domestic x 40% = 100 passengers + 250 international x 80% = 200 passengers for a total of 300 passengers needing a taxi / 4 rides per hour = 125 taxis needed to meet excess demand.
    - From 6 to 10pm, using the same logic capacity meets 22,000 passengers: 5,500 taxis operating thus excess demand = 8,000 passengers (need 2,000 taxis).
    - During non-peak hours (16 hours) 22,500 passengers will need a taxi. With 5,500 taxis in operation there is capacity to serve 88,000 passengers during that time. In that time period there is excess capacity.
  - To service demand not being met in the morning and night periods 2,000 taxis are required!

- Possible revenue (demand not being met daily): 500 passengers in the morning + 8,000 passengers in the evening = 8,500 passengers needing service x $200 = $1,700,000 daily revenue (yearly revenue = $571,200,000)

- Possible profits: List possible costs as permits, car maintenance, drivers salary, gas, car repairs, etc.

  Profit = Revenue – maintenance repairs – driver commissions – permit cost

  P = 571,200,000 – ($8,000 x 2,000 taxis – 285,600,000 – ($1,000 x 2,000 taxis) = 267,600,000

Recommendation:

Client should buy2,000 permits based on the potential yearly profit of $267,600,000 from excess demand at the airport.

Risks:

Possible retaliation from other tax companies, such as entering other markets where the client operates and stealing clients. There is no guarantee airport will not allow additional permits in the future which could increase the number of taxis at the airport.

There is no guarantee that all excess demand will be serviced by client cars, especially because if he is buying only 2,000 permits, another taxi company can buy the remaining 500 permits and compete for the excess demand that isn't being currently served. An option would be to buy all 2,500 permits, and using only 2,000 taxis (blocking another tax company from buying 500 permits) that would reduce profits to $267,100,000 (just subtract from profits the cost of buying the additional 500 permits).

34 OIL COMPANY LOYALTY PROGRAM

Your client is an oil company (retail fuel distribution) having fuel stations at various places all over a specific geographic region. They have introduced a loyalty program but customer do not value the same.

Which possible remedial actions can you suggest?

First, the candidate should push to drill the initial problem statement down to a specific question, as the problem is very vague. The problem is basically about a loyalty program where customers can redeem the points earned for small gifts. But customers are not satisfied with the loyalty program and do not value it much.

Before thinking about actions, the candidate first has to understand why the customers don't value it or are not satisfied.

- Is it problem with execution of the program (how the points are earned, how they are redeemed, is the whole process customer friendly or is there a service problem in between?
- Or is it because of the structure of the program itself where the number of points earned and kind of gifts received through redemption process itself are not valuable.

After brief discussion, the candidate should find out that the structure is the problem and basically the customers were thinking that the kind of gifts received through redemption are not worth it.

After this, the candidate can go on to discuss possible solutions. In order to increase the value of the gift the client needs to increase the amount of points customers can earn. For that the customers have to buy more amount of stuff from station; there is limited scope in increasing their fuel consumption.

Hence the customer can look at other places like opening up small retail shops and other servicing facilities. The loyalty program should be aligned with all these facilities to increase the wallet spend of the customer at the fuel station.

35 PIANO MARKET SIZING

We're going to look at the sales of Pianos in the United States. What do you think annual sales (total revenues) are in the US for Pianos?

The answer should show a logical way of sizing the market. You need to make some assumptions, and show your way of getting to an answer. Actual numbers aren't as important as the logic behind the method.

Example dialogue

I am thinking there are two types of piano buyers, personal households and institutions. Of those, a certain percentage already owns a piano. Piano buyers, in a given year, would be divided into:

- First-time piano owners
- Upgrading an old piano or replacing a damaged piano
- Adding a second piano (small for households, larger for institutions)

Then, I would need to estimate who these buyers might be:

Households: For example, approx. 300 million people in the US. Average household size is 3 (which might be high due to many single people). So, 100 Million households.

From there deduce how many are in the $75,000/year income bracket, as they are most likely to purchase a piano (for example, 25% which equals 25 million households.)

Out of those 25 Million, 5% currently own a piano already (1.25 million pianos).

If I assume every year, 2% of the 25 Million will buy a piano, then there are 500K pianos sold to households every year.

Follow a similar logic for **institutions** – e.g. colleges, universities, symphonies, Carnegie Hall, bars/businesses, etc. Assume that there are 1 million of these institutions, of which 20% (200k) would want a piano. Of that, perhaps 5% buy a piano every year, or 10K pianos sold to institutions.

Then, I would need to figure the average price paid per piano. It is important to distinguish between new and used piano sales, as the price points are different.

In the New Piano market, I would think the low price for a piano is $5,000 and the high price is $15,000, so the average price of a new piano is $10,000.

For a used piano, the low is probably $1,000 and new is $5,000, so the average price is $3,000.

I would venture that 20% of pianos sold are used and 80% are new for both households and institutions. If this is the case, 102k total new pianos are sold and 408k used pianos are sold. To make the numbers simple, use 100k and 400k. This leads you to $1b in new piano sales and $1.2b in used piano sales, or $2.2b in total sales.

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36 US PHARMA ACQUISITION

Our client is a global pharmaceutical company that produces over the counter drugs and has its headquarters in Frankfurt, Germany.

They are thinking of acquiring another pharmaceutical company located in San Francisco, that produces nutritional drugs (for weight loss, diabetes, etc.).

The CEO hired us to advise whether they should acquire the company or not.

What are the key areas to investigate in order to determine whether the acquisition is a good idea or not?

A good answer will include the following

First the candidate needs to understand the rationale for the acquisition, that can be for

- acquiring resources (increase capacity, increase distribution, broaden product line, technology, human capital, R&D, brand name, customer base) or
- cost reduction (economies of scale, economies of scope).

It is very important that the acquisition makes sense economically (positive NPV), but the candidate also needs to look into the organizational issues (will potential synergies be realized, is the firm in the position to perform the integration).

In addition, the candidate should assess the geographic differences of the two companies under discussion. Finally I would look into the likely response of competitors if the acquisition occurs and maybe alternatives to acquisition and compare it to the acquisition itself (other target, organic growth).

Information provided upon request

- Purpose of acquisition: increase profits
- The San Francisco company has 4 drugs in the market
- Both companies are selling their products globally
- The R&D department is based in the same location with the HQ
- Revenues from an approved drug of the San Francisco based company is $1.5m
- Drug authorization % for San Francisco company

- Phase 1 (new drug conception)
- Phase 2: 30%
- Phase 3: 40%
- Phase 4 (FDA approval): 70%
- Phase 5 (market launch): 90%

We just discovered that we can improve the yield form phase 2 to phase 3 by investing $150k in the R&D technology. By how much should the yield increase so as to break even?

Other information given upon request

- The present value of launching a product is $1.5m

Sample answer

To break even, cost needs to be equal to revenue. If x = the increase in the success rate from phase 2 to phase 3 then:

$150,000 = x * 70% * 90% * $1,500,000

x = 15.8%

(it means that the success rate should increase by approximately 15.8% / 40% = 40%)

What are the risks involved with this acquisition?

The candidate should be able to recognize the different risks involved:

- Strategic rationale
- Likely response of competitors if acquisition occurs
- Organizational issues: different locations for the HQ, integration of the two organizations
- Profitability of the acquisition (NPV calculation)

- Alternatives to the acquisition

37 WEB SERVICE COMPANY

A web services company has encountered saturation in its web search and advertisement business and wants to revive itself within the next 5 years.

What should the company do?

First of all, the candidate needs to clarify which businesses the client is running, as well as the relative share of revenues and the competitive landscape in each.

An approach for tackling this case can look like the following:

1. Identify the attractive businesses for the future. This can be done using a 2x2 matrix of competition vs. growth opportunity.

2. Choose the ones that are feasible to focus on in the next 5 years based on company's capabilities.

3. Chart out an execution strategy for these businesses accounting for challenges and the effect on bottom line.

4. Consider divesting the unattractive businesses considering the risk of impact on the existing ones since there is lot of interdependency in the web space.

Based on some customer and growth data information received from the interviewer, the discussion will move around these topics.

On a broad level, the attractiveness of the business opportunities will be discussed, and which challenges the client needs to consider.

38 VITAMIN MANUFACTURER ENTRY IN CHINA

Your client is a chicken vitamin manufacturer. The vitamin helps increase the size of chicken breast and reduce fat content.

Should they enter China?

Information to be given if asked:

Chicken Industry in China

- Chinese chicken industry is twice as large as US in terms of amount of chicken consumed.
- Growth trends are similar to those of US.

Customers

- The customers in US consist primarily of large corporate farmers e.g. Tyson, Purdue.
- The customers in China can be segmented into 3 categories:

Customer Segment	Current Market Size	Growth (last 5 years)
Family poultry farms	80%	1%
Village farms	10%	19%
Corporate farms	10%	80%

Competition

- There is no direct competitor at the moment in China. There is one substitute product which sells for 47cents/lb.
- The client's product is superior in performance and has no side effects compared to the substitute product.

Client's Resources

- Magnesium is an important ingredient used to manufacture the vitamins.

- The firm has one mine in Florida which is operating at max capacity.
- There are mines in other parts of the world, which have a cost structure as follows (includes transportation of raw material to China):
    - 2 in Europe - 39cents/lb
    - 1 in Africa - 35cents/lb
    - 1 in India - 37cents/lb
    - 1 in China - 38cents/lb

    Note: These are prices if the client were to acquire the mines.

Solution:

Economics of entry decision

- Draw a basic Value Chain for the vitamin manufacturing/distribution process.
    - Raw material
    - Vitamin manufacturing
    - Marketing & sales
    - Distribution
- The cost of raw material is given above for different mines. The additional cost beyond the raw material is 10cents/lb.

Which mine will you choose? The one in Africa.

- Now that the cost structure is established, the client should perform an NPV analysis based on certain project sales volume.
- The NPV analysis was positive.

The client should enter China for the following reasons:

- The corporate market is growing rapidly (80% growth in 5 years). The corporate farms are more likely to use vitamins than the small family farms.
- The client should acquire the mine in Africa.

- There is no significant competition. The client’s cost (45cents/lb) is less than that of the substitute product (47cents/lb).

39 IT HOUSE PRODUCTIVITY INCREASE

Let's assume that the productivity of large IT houses can by increased by 50% in most of these places.

Can you help do that?

This is a very open-ended question to start with. Hence, the candidate should first push to understand what exactly is meant with productivity. Examples could be line of code per hour etc.

The interviewer might want to go further into the discussion about metrics and ask how exactly the candidate would like to define productivity and what are the elements of productivity in such a customer facing setting?

A good starting point would be structuring thoughts into 2 elements, which should be defined more thoroughly in the discussion:

- efficiency and
- effectiveness.

The discussion will be centered on those 2 elements and finding concrete levers to improve on those 2 elements.

One option of further structuring efficiency and effectiveness would be introducing a change management frame consisting of

- people,
- processes, and
- technology.

Hence there was a 2 x 3 matrix with efficiency and effectiveness on the y-axis and people, process and technology on the x-axis.

The discussion of each of these blocks can lead to the following issues to improve productivity:

- skill,
- balance of load across different people,

- specialisation and customization,
- incentives for employees, etc.

40 MAURITIUS BANK

Your client is a bank in the Mauritius. The population of Mauritius is 1 million and the average income is $10,000 per year. The bank has hired you in to find ways of boosting their revenues.

How can the bank increase its revenues?

Sample solution

Discuss the range of different means of revenue generation for the bank:

1. Interest bearing accounts: Can they offer a range of accounts targeting different parts of the market?

2. Credit cards: can they issue credit cards as a means of gaining additional revenue. This would depend on how wide spread credit card usage was in the Mauritius.

3. Extend other financial services such as insurance or share dealing options.

4. Look to expand to other islands such as La Reunion or other territories.

Interviewer: Let's focus on the opportunities available in the life insurance market. Describe whether or not a bank has any sources of competitive advantage in this market.

Candidate: The main sources of competitive advantages are

- Trust: the bank has established relationships, and people believe that the bank is going to be around long term to pay out on any life insurance policy. Branch presence: the bank has a wide reach, allowing easy marketing of life insurance in branch.

- Information: the bank knows details of each customer's accounts and can thus target those customers who would be most valuable to them.

- Cross Selling: linked to the last point, the bank can cross sell to it's existing customers.

Interviewer: OK, so how large do you estimate the life insurance market to be?

Candidate: People who are going to buy life insurance are those who have dependents and want to leave them money in case they pass on. Let's assume the average marriage age in Mauritius is 20 and the average lifetime is 80 years. Then total number of people who might be interested in a life insurance is around 600,000 ((80-20) x 1,000,000).

Interviewer: What price would you charge a 25 year old?

Candidate: Present value of future earnings will on average be a continuity of $10,000 per year for 40 years discounted to today. If we approximate this to a perpetuity and assume a 10% discount rate, then this value is $100,000. If we assume that 1:1000 25year old die, then the cost of us of a payout is $100.

Allowing some additional room for cost, profit and adverse selection, let's say we charge $150.

Interviewer, that sounds low, say $200. How big is the market then?

Candidate: The total market would be about $120 million.

41 CAR LUBRICANT

Your client is a seller of car lubricant. It has historically made significant profits, but recently it has come under threat and we have been hired to address three concerns.

1. Over a few previous years consumers believed that they needed to change their oil every 10,000 miles. They have started to realize that in fact they can get away with only changing their oil every 20 - 30,000 miles.

2. Historically in the US 80% of the market is in DIV and 20o in DIBSE (do it by someone else). This has started to shift in favor of DIBSE. Our client has a 2nd position in the DIV market but only a 10th position in the DIBSE market

3. The CEO of the lubricant business has promised his shareholders a 200% increase in profits over the next 5 years.

What do you suggest we do?

Additional information provided after relevant questions

- The DIBSE outlets can be broken down as follows:
  - 35% of the market is "Quick Lube", of which 60o is owned by one of our major competitors
  - 20% of the market is OEM related dealerships
  - 15% is small "mum and Pop" shops
  - 10% are small regional chains
  - 5% are owned by Wal-Mart who are entering this market
- Our major DIY customer is Wal-Mart, where we are the price leader.
- The margins in DIBSE are half the margins in DIY.
- Additional data for DIBSE market entry: Fixed Costs:
  - Marketing: 45,000
  - Rental: 36,000
  - Equipment: 15,000

  - Utilities14,000
  - Fixed Labor: Candidate needs to make reasonable assumption
  - 5 mechanics at 40,000 each

- The client expects to charge $25 for an oil change and the variable costs for an oil change is $20.
- Each garage has three bays. Each car change takes 15 minutes. Car owners drive their cars themselves onto the bay.

Sample dialogue

Candidate: First I would explore partnering with Wal-Mart to sell to their DIBSE business?

Interviewer: Why would Wal-Mart want to source from us?

Candidate: I think we can leverage our relationship to Wal-Mart, pointing out that people are buying our product in the DIY segment because of our value proposition, our brand name and their trust in us. We will continue to advertise our product and people are going to ask after it. Secondly as Wal-Mart is new to the DIBSE business - and this is not necessarily a logical progression for them - using a premium lubricant in their garages will help inspire confidence.

Interviewer: How would you structure a deal to protect your margins in the DIY business?

Candidate: I think we should be able to negotiate either a volume agreement, or a supply location agreement to protect our DIY business.

Interviewer: OK, what else?

Candidate: I think we should look at tying up a deal with the OEM garages, by focusing on the OEM producers and advertising with them we can link our brand to their cars.

Interviewer: That is not going to work. In the US each OEM garage has the right to sell what cars he wants to and to use whatever lubricants he wants in his garage. The OEMs have no power over the individual garages.

Candidate: OK, in which case we will need to use our brand presence in the DIY segment to create a pull effect onto the garages. For example we can co- advertise at shows such as the Detroit Auto show to create demand for our lubricants when they get their new, expensive, cars oil changed. This will create an incentive for individual garages to stock our product.

Interviewer: Good. Now the client has been thinking about vertically integrating into the DIBSE business. Do you think that is a good idea?

Candidate: It will depend on how much margin is available in that business, how easily we are able to cross sell to our existing customers and whether there are any synergies with our existing business.

Candidate: In which case, the variable contribution per car change is $5. The total fixed cost is $310,000. Hence we need to process 62,000 cars per year to break even. Assuming we are open 300 days a year, we need to process around 200 cars per day to break even.

200 cars per day - assuming a 10 hour day, means we need to process around 6.5 cars / bay / hour.

Our capacity is 4 cars/bay per hour, hence this does not make sense.

Interviewer: So what do you suggest?

Candidate: Well what we could do is see whether we can use this opportunity to cross sell other products to the car owners while they were at our garage.

Interviewer: Good. If we go with that strategy, our price will go up to $48 and our variable costs will increase to $28, but it will take 45 minutes to process each car.

Candidate: OK, so our variable contribution has now increased to $40, which is 4 times higher than our previous case. Hence the number of cars we need to process / bay / hour will drop to around 1.5. Our capacity has, however, also dropped to around 1.2 hence we still cannot break even.

Interviewer: good. You bump into the CEO of the firm in the lift, he asks you for a summary update, what do you say?

Candidate: The reason you are losing profits is a shift in the industry from DIY to DIBSE. We believe we can capture some market share in DIBSE through a deal with Wal-Mart, and have investigated the possibility of vertically integrating into the garage industry - but do not currently believe that the returns justify the investments. Over the next couple of weeks, my team is going to work further to identify further opportunities to use your strong brand name to build your presence in the DIBSE segment.

42 MIGHTY MINING COMPANY

Your client is a global mining company with a location in South Africa. This particular location is performing below average financially. McKinsey has been hired to identify the problem and make recommendations to address it.

What would you do first to approach this problem?

(Note: This leadoff question is meant to focus on actions one would take before diving into the framework – actions such as collecting data, visiting the location to observe operations, interviewing employees, etc.)

Information to be provided after actions identified:

- The processing plant is located 160 miles inland and it uses a fleet of large trucks to transport minerals from the plant (which is located near the mineral source) to a port city. The minerals are then loaded onto barges and shipped to clients around the world. The plant needs to operate at maximum capacity to meet customer demand.
- The minerals produced are commodities with low margins.

Key issues to discuss

- Revenues
  - Explore historical data, trends, product specific data
  - Benchmark against competitors and other corporate locations.

    Although important to mention, the focus of this case is cost and operations so don't spend too much time here.
- Costs
  - Costs: explore fixed costs (PP&E, overhead) and variable costs (material, labor)
  - Transportation: considering this product is a commodity, transportation makes up a large portion of the product cost and should be separated out.
- Operations

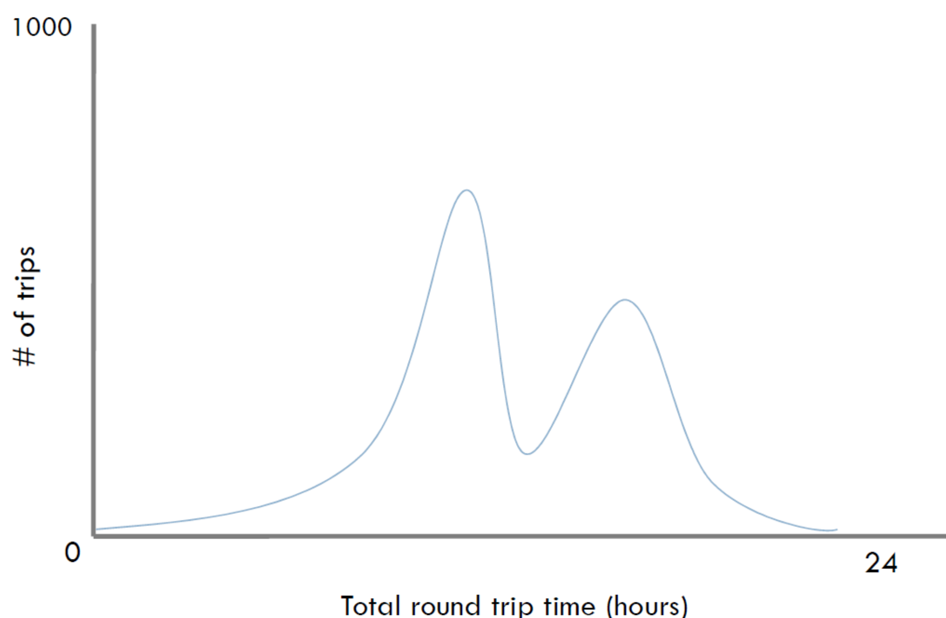
- Explore operational issues that might lead to poor performance such as interruptions in operations (is plant operating at full capacity, is it running 100% of the time or are there power outages or other disruptions, are there local protests, is theft or local unrest impacting plant), employee skill level, employee morale, etc.

In gathering data from the client, you find that transportation costs are significantly higher as a portion of COGS than any other African plant location. Why might this be? (If the 160 mile trip from plant to port has not been mentioned, inform interviewee of the transportation details here)

Response should cover a range of ideas as the interviewer is looking for out of the box thinking. Some ideas might be: the plant is sending trucks that are not full increasing trips needed, drivers are not going directly to the port (poor route planning, sleeping on the job, etc.), trucks are hijacked along the route, drivers must pay bribes to get through certain road blocks.

You collect historical data on the average time it takes a truck to make the 200 mile trip from the plant to the port, what should you expect the graph to look like?

You expected the graph to be normally distributed but your data reveals the following graph. What can you draw from this data?



The candidate should identify that the first peak is expected (per the normal distribution) but the second peak needs to be analyzed.

Ideas of what might cause the second peak could include certain drivers taking too many breaks, traffic patterns, etc.

You discover that the port closes at 10pm and any truck that does not arrive by 10pm must wait until the port opens again at 4am to drop off its load and return to the plant. The minimum roundtrip travel time is 7 hours and the plant owns 20 trucks; however, a barge needs 30 truckloads to reach capacity and ship out. What would you recommend Mighty Mining to do about this situation?

Remember: the plant must operate at max capacity to meet customer demand.

Recommendation:

Rather than crunch numbers around optimization, it is sufficient that the candidate identify that there are several bottlenecks in the supply chain (travel time, port hours of operations, capacity of trucks versus barge) and recommend potential solutions that may be considered:

- In the short term, the company needs to identify the latest a truck can leave and still arrive by 10pm. They could use employee incentives to encourage drivers to reduce rest stops along route to make the 10pm cut-off. Driver shifts should be rearranged to optimize material delivered to the port.
- In the long term, see if they lobby that 24 hour port operations is more profitable for all parties.
- Evaluate the costs of setting up a storage facility by the port for night deliveries against purchasing more trucks.
- Analyze costs of upgrading fleet to larger size trucks.
- Consider leasing trucks vs. purchasing.

Risks

Since location already is poor performing, must analyze cost of capital to ensure that investing in capital improvements is highest NPV alternative (ship from other better plants?).

Changes in customer demand could lead to an investment that is not needed long term.

Next steps

Analyzing these options and present a final recommendation for the client including justification for any investment needed by the company to mitigate the risk of senior management not wanting to invest.

43 OIL HOLDING COMPANY

Oil Co is a holding company that manages a portfolio of companies related to oil exploration. The portfolio can be segmented as:

An oil rig managed and operated by Oil Co.

A group of companies (including Oil Co.) that have a proportional stake in an oil rig, with each company sharing costs and profits.

Oil Co. wants to increase its profitability and has come to McKinsey for ideas.

What are the key areas you would look at to help the company?

Information to be provided upon request

- The company is not willing to divest any of its holdings.
- Its existing contracts with other companies (under segment 2) are iron clad and cannot be modified.
- Profitability is Oil Co.'s only concern.
- All oil rigs are operated offshore.
- The company does not know of any new areas to explore and set up an oil rig.
- Oil Co. is a British company.

The candidate should recognize this is a cost savings case, since there are no incremental revenue streams available.

Additional questions for the candidate

How would you cut costs on an oil rig?

- These options are not available:
- Closing rigs
- Changing schedules to increase work time
- Exploring new areas to drill

- Increasing the width of the pipe to bring up more oil
- Changing contracts with partners

These are the only options available. Everything else should be "shot down". Feel free to play a bad cop and push the candidate for more ideas:

- Reducing operating expenses
- Reducing cost of transporting goods to and from the oil rig

Transportation costs

- Currently 50m GBP per year
- Can be reduced to $100,000 per day
- When asked: FX rate is $1.5 / 1 GBP
- When asked: Rig operates 365 days per year

Operating costs

- Currently $40m
- Can be reduced by 30%

Sample solution

Transportation costs

- 50m GBP = $75m (current cost)
- $0.1m * 365 = $36.5m
- Savings: $38.5m

Operating costs:

- Savings: 30% * 40m = $12m

Total savings: $50.5m

Total % savings: 44% (50.5/115)

44 PAN-IIT

Pan-IIT (a group of IIT alums) is looking to build an organization called "Reach for India". The purpose is to hire top business school graduates and have them work with district collectors across India and help them solve some key national issues and also build a governing secretariat of top talent.

How can the Pan-IIT board build such an organization?

Structure

1. Strategic Goals

- Short term: Solve some existing problems and build a talent pool
- Long term: Impact on society and economy

2. Organizational issues

- Supply of Labor Pool
- Attracting and sustaining employees
    - Salary and Incentives
    - Personal Development through trainings
    - Challenging assignments
    - Exit Options
- Execution to meet the expectations of the 4 stakeholders: District collectors, Pan-IIT, Government and Employees
    - Management
    - Teachers / Training
    - Program Structure: Curriculum, Length, intensity
    - HR
    - Administration

3. Financial: Source of Finances, debt and equity distribution.

The interviewer might clarify that the focus of the present case was to just think about the building blocks of the organization. Since the initial structure contains already quite a few things, the next step is to have a discussion on the various aspects of the problem and what should be the issues in each of the elements of the organizational part, as well as layout out recommendations to tackle them.

45 HEALTHCARE PAYER & PROVIDER

Your client is based in Texas and New Mexico, and is a non profit integrated health care system. Integrated health care systems have hospitals, philanthropic organizations, nursing homes, senior resident facilities, physician clinics, outpatient surgeries and diagnostic centers, community out reach programs. The CEO wants to grow the organization.

What does growth mean for a non-profit?

There are lots of issues to consider that go along with growth, like service quality, fairness, reach etc. But in this case he wants to most importantly achieve profitability and increase in size, which could be possible with

1. new services
2. new markets
3. new channels

Growth in general can be achieved through a JV, acquisition or by growing organically. The candidate should talk about influencers, which in this case, are the doctors who send patients to the hospitals.

At the time McKinsey was retained the CEO was considering adding additional capacity. Before he invested that amount what factors as an advisor to the CEO would you want him to consider?

Demand

- How much is the extra demand?
- How sustainable is the extra demand?
- How much do you aim to capture?
- Competitor's reaction

Time horizon

- How much time needed for capturing demand?

Resources constraints

- Access to capital
- ROI needed, profit margins available
- Space/Labor etc.

Availability of alternatives

- Acquisition target

Non profit

- Affect core goals

Referrals in hospitals: Few years back the company adopted the strategy of employing practices and hence the physicians so as to growth the system? How would you evaluate if this strategy has achieved success?

Hospitals

- Profitability
- Growth in patients
- Physicians

Patients

- Service quality/flexibility (better care),
- Better reach
- Fair
- Integrated services and more flexibility and reach

Physicians

Compensation (benchmark – before and now)

Physician satisfaction – life style, etc.

Let's focus on profitability. Your client was formed by the merger of two IHS systems one operating in Texas and other in New Mexico. While Texas division has seen rapid growth as a result of this strategy the other has not? What could have caused this disparity?

Additiona information if asked: cost side is the same for both.

Macro

- Market factors: growth, size and age/health of population, per capita income of population
- Competition

Micro

- Management
- Service mix
- Price mix
- Location

Referral Analysis: Describe what referrals are. What are the ways to find out whether physician growth has resulted in facility/hospital growth?

- Simply increase in physicians correspond to facility growth
- Profile docs to see their referral patterns before joining our system versus after

What would you worry about when doing such analysis?

Effect of external factors such as

- Addition of new capacity
- Addition on new services
- Changes in market structure
- Changes in competition structure
- Changes in cost/pricing structure

Here is some data on performance of physicians in Texas division in terms of getting in patients to our hospitals. Using a 5 year horizon, would you recommend that CEO employ this strategy of hiring new physicians?

Market type	# of physicians	Total new patients added
Markets with no physicians		1
Markets with no new physicians added	Existing: 100	2
Markets with new physicians added	Existing: 50 New:50	4

- CM per new patient = $ 10,000
- One time new physician investment = $ 900K

What would be your recommendation to the CEO regarding employing this strategy?

Focus only on the high growth Texas market

- NPV = 0
- Achieves other growth goal of reach
- More services
- Better care

- New Mexico: need more information

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46 PRIVATE HOSPITAL ATTRITION REDUCTION

The CEO of a chain of private hospitals wants to reduce attrition among senior doctors. This is a serious issue because when senior doctors leave they take along patients as well as junior staff.

What can you do about this?

Initial questions which might be asked by the candidate to better understand the client and its context:

- Is the attrition problem restricted to doctors alone? (yes)
- Can the doctors be further segmented into different backgrounds? (no, the client needs a generic solution for all doctors)
- How does the compensation structure look like? (mainly fixed)
- What about other players in the industry – do they encounter similar issues? (yes, all face the same problem)

The candidate should look into the following main aspects:

- Motivation
- Compensation
- Opportunities for Growth

Those aspects can be further structured into short term vs. long term, and economic vs. soft factors.

The interview might first want to have the candidate think broadly rather than focusing on specific issues first, testing creativity and perspective in tailoring practical solutions.

Some of the key points are to tie the patients/junior staff to hospital and not to doctor, e.g. through

- brand building,
- patient management systems,
- soft loans to junior staff,
- facilities for families etc.

For doctors the client could look at

- involving them in administrative activities,
- making the hospital an avenue for conferences,
- publishing papers,
- involving family etc.

47 OIL AND GAS RIG

Your client is an oil and gas company. They own the rights to explore an offshore oil reserve in Venezuela. The oil reserve is good to exploit for 20 years. The production from a single cell will go up in the beginning, reach its peak, and then decline in its useful life. So in order to keep the production level stable, they need to drill new wells during the reserve exploration process. This makes their return on capital go down. The client currently spends $100M per year on rig (every well needs a rig). They purchase the rig from USA. USA has higher labor cost than Venezuela.

Should they take this opportunity to build their own rigs use of the opportunity, and if it is proper to do, how should they utilize the opportunity?

Additional information provided after relevant questions

- A Rig is a piece of very heavy equipment, weighing thousands of tons. Besides USA, currently there is no other place to purchase rig.
- The market demand of rig is around $1b annually, and USA rig manufactures are able to satisfy the needs.
- Rig companies in USA are making a profit margin around 5%.
- 50% cost of rig manufacturing is labor related, including wages, benefits, and overhead. It takes US manufactures 1m man hour to produce one rig. Labor related costs in USA are $50 per hour. It includes three components:
    - Wage: $25 per hour,
    - Benefit: $10 per hour,
    - Overhead $15 per hour.
- Labor related cost in Venezuela is
    - Wage: $5 per hour,
    - Benefit: $2 per hour,
    - Overhead $13 per hour.
- Initial investment required to manufacture in Venezuela is $50m.

- In order to evaluate how much it costs to manufacture rig locally, we asked three local companies to bid. They all come up with the same proposal, in which labor related cost is charged as $25 per hour.

- Material costs are the same in both countries

Key information to reveal when questioned

The rig manufacturers will experience a learning curve. In the first year, it takes 3m man hours, and in the second year it takes 2m man hours. After that, the learning curve goes flat at 1m man hours.

Sample Solution

Candidate: I will look at how attractive the business of producing rig is. Then I will look capability to manufacture rig locally. Finally, I will look at how to purse the opportunity, if appropriate.

First I will explore whether the low labor cost in Venezuela is a proper opportunity to pursue. The ultimate standard is whether pursuing the opportunity will bring our client cost saving so that they improve their return on capital.

Interviewer: Projected cash flows from producing rigs locally are:

Year	0	1	2	3	4	…
Savings	(50)	(25)	0	25	25	…

Candidate: I want to do a NPV analysis. What is the cost of capital?

Interviewer: Well, let's just look at pay back. How many years are needed to pay the investment back?

Candidate: The minimum payback time is that the selling price still maintains at the current market price level, so the manufacturer harvest all labor related cost savings and pass none to their customers. In this scenario the cost savings is the profit cash flow the company can achieve. (Notice US manufacturer profit margin is 0%). The payback time is 5 years.

Interviewer: Well, 5 years pay back sounds like a risky business to get into. Local companies may not have enough incentive to get into the business. How do you shorten the payback time?

Candidate:

1. Since this will benefit local labor market, we can get government involved, ask them to provide fund or provide debt guarantee to lower the cost of borrowing.

2. Since we will benefit from the cost saving, we can sign long term contract, for example, 20 years with local supplier.

3. We can use our network in oil and gas business world and help them supply rig to other oil and gas companies.

Interviewer: Is there anything you can think of to accelerate the payback time by lowering labor cost?

Candidate: What we can do is to introduce expertise, such as senior engineers, project management, from USA manufactures. This will also accelerate their learning curve.

Interviewer: Anything else?

Candidate: Well, I can look more detailed into labor related cost. Since the cost we used in our estimation is from bidding. I want to get my own estimation to compare. As you said, labor related cost includes wages, benefits and overhead. I will go to labor market and look at the average wages and benefits. I assume overhead cost doesn't change compared to USA. I will look at the rig manufactures in USA to get their labor cost break down to get the figure.

Interviewer: The cost structure in USA is the following (hourly rate).

- Wages: 25$
- Benefits: 10$
- Overhead: 15$

The cost in Venezuela is

- Wages: 5$
- Benefits: 2$
- Overhead: 13$

Candidate: This adds up only $20, $5 bucks less than what local suppliers bid.

Interviewer: Why do you think it is less from bidding?

Candidate: Bidders may consider training cost and get expat from USA to build up competence, etc. They may also accelerate equipment depreciation since we only ask them to bid on one rig. This will make overhead cost higher.

With this new labor cost, the savings manufactures can achieve will be:

Year	0	1	2	3	4	…
Savings	(50)	(10)	10	30	30	…

They only need less than four years to pay back.

Interviewer: Good. We are running out of time. Why don't you wrap up?

Candidate:

1. Our client should pursue the opportunity of low cost labor in Venezuela. This will help them achieve cost savings and improve return on capital. Besides, this will also help them achieve a better government relationship, which further helps them in their oil and gas business.

2. Our client should help local suppliers to get into rig manufacture business. They can help them by signing a 20 year contract with local suppliers. They should work together with local government to seek funds for local suppliers, and to organize some cooperation activity with USA to build up local competence.

3. Rig is expensive and quality is important for this product. Local suppliers may be able to produce high quality rig. This is a risk factor to our client. Get good understanding of general manufacturing quality level in this country will allow our client make proper judgment. If quality is a concern, our client will want to form joint venture with local suppliers so that they can have more control on quality. Doing so will also help them further saving cost as well.

48 MEDICAL DEVICE MANUFACTURER

Your client is a medical device company. Recently they acquired a company that produces heart stents. The CEO feels that the previous management had not maximized the market potential for these heart stents.

How would you to determine what the potential market size is as well as to determine the best method to distribute the product?

Additional information provided after relevant questions

Heart stents are small "things" that keep arteries propped open during open heart surgery. They are left inside to prevent the arteries from collapsing. Alternatives to heart stents are drugs or not using anything.

Market size

- Approximately 1% of people over the age of 55 will need open heart surgery in any given year
- Heart stents are more effective than other alternatives
- All insurance (including Medicare/Medicaid) will cover heart stents
- Only cardiologists/cardio-surgeons perform the surgery where heart stents would be used
- There are two other companies that produce heart stents, but we are the clear market leader with over 50% of the market today

Distribution

- There are three distribution options
  - Use our current proprietary sales force
  - Create a distinct sales force for heart stents
  - Have medical distributors distribute our product
- Our current sales force is comprised primarily of pharmaceutical style sales-reps with little or no medical training

- Other heart stent manufacturers use distributors
- If we were to build a new, distinct sales force it would be comprised of surgeons who would do a heart surgery alongside a cardiologist and show them how to use the heart stents
- It is not a problem to hire qualified sales reps for a new sales force

Sample Solution

Market sizing: Start with the US market and then expand to other developed countries with advanced health care

Assumption: 300m Americans

- 100m 0-25 years
- 100m 25-55 years
- 100m 55+ years

100m x 1% = 1m heart stents each year in US.

Assumption for world market = 3 x US = 4m total

Compared alternatives:

- Drugs - may be less effective, risky, and costly (risk: patients may not take drugs after leaving hospital)
- Nothing - high risk

How to distribute: Weighing the pros & cons of each alternative and ultimately recommend a new sales force as the most appropriate. However, if there is only a small market (i.e. new market such as Peru, Singapore, where sales figures are not predictable and we have no relationships, distributors may be the best method at first).

	Current sales force	New sales force	Distributors
Cost	Need to hire additional reps Mix of Fixed/Variable costs "Middle" cost option	Most expensive Large fixed costs with some variable costs	Purely variable costs May be most cost-effective for a small market
Effectiveness	Skills (not doctors) not appropriate for in-depth consultation and demonstration Have relationships with hospitals	Most effective Will need to build new relationships	Have relationships with doctors and hospitals May not be able to demonstrate product properly Also sell competitor products: may not push ours best
Other issues	May resent higher paid new sales force	Will take time to set up new sales force	

49 PRIVATE LABEL SALES

We're going to look at a growing trend in the Consumer Packaged Goods industry. Our client is a bottled water company (e.g. Poland Springs). A major retailer (e.g. Walmart) wants our client to create a private label version of its product. In other words, in addition to our client's bottled water which they already carry, they want the client to make an additional, lower-priced bottled water which will be their own brand label, (e.g. Walmart Bottled Water).

What are the pros and cons of doing this?

As it was given in the interview, this is more of a situation analysis and brainstorming exercise rather than a case to drill down on and crack. As such, there may be many more pros/cons beyond what is listed in the example below. In general, it is important to be structured and try to put the pros and cons into clear buckets. Considering the 3C's (e.g. impact on customer relationship, company's operational issues, and competitive dynamics) could also be helpful in this case.

Example Solution

Pros:

- Improved relationship with a powerful merchant (may get better shelf space and better terms on other products they purchase from us as well as cross-marketing arrangements)
- Larger production may achieve better economies of scale in both fixed costs (cost/unit to produce, esp. if certain operational procedures are synergistic) and variable costs (delivery, distribution, etc.) in addition to the potential to negotiate better terms with suppliers due to larger orders
- Huge potential revenue growth for our company (lower price but potentially high volume)

Cons:

- Cannibalization of our own private label's water sales (cost/benefit analysis of whether the volume of Wal-Mart's brand will make up for it)
- Possibility of lessening our power with the merchant as a supplier if private label takes d supplants our own product
- Higher costs (Fixed- such as additional plant requirements due to potential capacity constraints – will the investment be worth it?)

- More complicated distribution adding additional SKU into the mix
- Potentially a different market for our product which does not work synergistically with our marketing focus (for example if our product is about prestige and image, we would be catering to a different customer segment with a lower priced product)

50 OFFICE FURNITURE MANUFACTURER GROWTH

Our client is an office furniture manufacturer. They are concerned that their stock price is not growing as fast as their competitors'. Furthermore, the client's annual growth is 1% per year, while that of main competitors' is 10% per year. Also, our client's EBIT margin is 10% while competitors' EBIT is 20%.

What would be your recommendations for our client?

Additional information to be provided upon request

Market information

- Market grows 1% per year (no information about size available)
- We are the market leader with 20% market share. The other three competitors have 10% each. The rest of the market is fragmented.
- 3 main competitors have prices that are 10% lower than ours.
- Market is composed of two segments
  - Segment 1 - Fortune 500 companies – 80% of our sales.
  - Segment 2 - channel sales to small companies – 20% of our sales. We don't own these channels.
- Customers are looking for furniture that is hassle free (i.e., universal, will fit in all offices, goes with each other etc.)

Product information

- Our product is viewed as being superior and we have a strong brand

Cost information

- Fixed costs can be ignored.
- We assume that competitors' material, other costs and SGA for one product are the same as ours. Our COGS break down into materials (40%), direct labor (40%) and overhead (20%). We know that they have probably the same material cost, overhead and SGA per product (in dollars not as a percentage of price). However we don't know anything about their labor cost.

The candidate should be asked to calculate it. Assume that we sell our typical product for $100.

- Competitor has an $18 labor cost advantage per typical product. The answer can be calculated using the table below, which is not supposed to be handed over to the candidate.

  If our price is $100, their price will be $90. Our EBIT margin is 10% or $10, their EBIT-margin is 20% or $18.

	Client	**Competition**
Price	100	90
Cost of Goods Sold		
Materials	40% = $36	40$ of clien COGS = $36
Labor	40% = $36	?
Overhead	20% = $18	20% = $18
EBIT	10% = $10	20% = $18

  Labor costs are higher because this is the policy of our company. We hire the best people and pay them more. They produce higher quality products and we charge premium for them. We don't want to pay less or lay people off. We pay on per-unit base. But some people are more productive than others.

Sample Solution

First, the candidate should stick to the growth framework (market, customer, company, competitors, ability to build competitive advantage).

The candidate might have a hypothesis that the client has an ineffective process because of different throughput rates in the production processes. Suggestions may include:

- Train less efficient workers
- Resource pulling
- Resource reallocation
- If resource pulling is impossible, build production lines based on performance of workers: e.g. get more efficient works into one line and less efficient works into other.
- Provide less efficient workers with more efficient tools.

However, if we aren't able to sell more, we will not be able to realize saving from higher capacity utilization. In this case, we could change incentive system to have more efficient workers produce less.

To realize these savings, we have two broad possibilities.

1. Lay off people.

2. Increase sales.

As laying off people is not acceptable, the focus should be on the second option:

- Go into service business providing integrated solutions to the Fortune 500 customers.

- Acquire one or two competitors to benefit from their higher growth rate and realizing increased capacity utilization.

- Increase sales efforts.

51 GAS MANUFACTURER

Your client is a gas manufacturer. Currently the client owns and operates its gas plants nationwide. They have hired McKinsey to investigate whether they should enter into the business of running 3rd party gas plants.

How will you structure the analysis of this case? Should the client enter or not enter into this business?

Information to be given if asked:

Customer Information

- The client manufactures hydrogen, oxygen etc.
- The customers are other industrial goods companies which use gas for producing steel, waste treatment etc.
- Some of the steel mills and waste treatment agencies own their own gas plants. For instance, a steel mill can have its own gas plant, which is located right next to the steel mill. These are the gas plants that the client wants to operate (not buy them, just provide operations service)
- The client has highest market share in the market (about 30%).
- The market grows pretty much along with the GDP (1-3%).
- The cost of the gas for the customers is a small % of their total direct production costs. It is extremely important for the customers to have an uninterrupted supply of gas, since their steel plant shutdown is extremely expensive for them.

Firm's current economics

- The product is a commodity, so the firm is a price taker.
- The firm's revenues grow with GDP.
- Client's cost structure is the lowest in the industry.
- Think about how the gas plant's cost structure will change if the client operates it:
    - Direct Material (DM) – raw material is air, which is free

  - Direct Labor (DL) – very lean operation. One gas plant can be run by 1-2 persons. There will be no change.
  - SG&A – Some reduction due to client's scale
  - O/H – Some reduction by centralized monitoring and repair crew. Possible due to client's large scale of operations.

Client's resources/capabilities

- They have perfected the technique of monitoring the gas plants (using remote monitoring) and have the minimum average plant downtime/breakdown in the industry.
- By being the largest producer of gas, the client has achieved the highest economies of scale.

Competitive landscape and current issues

- There are 3 other national firms that manufacture and provide gas.
- Their market shares are smaller than that of our client.

Solution:

The client can create value by operating 3rd party gas plants by lowering the operational cost somewhat. More importantly by minimizing the downtime of the gas plants they can add more significant value. Therefore, based on the value proposition, the client should enter into this business.

The client then needs to consider barriers to entry for other firms and implementation strategy.

Barriers to Entry

- The client's capabilities are unique in the industry. They can sign exclusive long term contracts with 3rd party clients to operate the gas plants.
- The client also needs to consider their pricing very carefully.

Implementation

- Evaluate the capital investment of this market entry.
- Since the client's infrastructure is well established, the capital cost will be minimal.

- The client could offer to operate 3rd party gas plants which are located reasonably close to their own plants. This would allow the client to go up the learning curve while ensuring uninterrupted gas supply to the customers.

Summary

The client should enter this market since there is value to be captured and the capital investment is low.

52 SUBURAN HOSPITAL CONSTRUCTION

The client wants to construct a hospital in an upcoming suburb.

What is a sustainable business model for such a hospital?

Since the problem given is very open ended, the candidate should get started asking questions on the objective of the client and any constraints we need to consider in our analysis. The interviewer needs to reveal the following information:

- The suburb is still under development and there is no infrastructure as of now.
- The client is actually a large hospital chain in the country and is not looking for immediate profits but eventually within 3-4 years.
- Financial constraints not an issue.

Possible structure

1. NPV > 0
2. Determine cash flows: revenues, costs, working capital and capital expenditure
3. Determine appropriate discount rate for cash flows: an appropriate way would be to use industry comparables of similar hospitals.

How would you further determine the revenue side?

The interviewer might lead the discussion to the revenue aspect. The candidate might approach it like this:

1. Identify customer disease patterns and demographics.
2. Pick up the attractive opportunities that could ensure long term sustainability. Identify the customer segments to target.
3. Check if the opportunity aligns with business vision and company's capabilities.
4. Determine the appropriate price for these services based on consumer willingness to pay.

The candidate needs to be informed that the real estate developer of the area had predicted the following growth of population in that area:

- 100,000 in 3 years
- 500,000 by 6 years
- 1 million by 10 years.

This serves as a basis to determine the healthcare requirements of these potential customers. Some factors to consider are

- Socio economic status,
- Age
- Idiosyncratic factors such as family history.

How can the socio-economic status be determined, without having access to any formal databases?

Clearly, some proxy indicator was needed. One option would be the kind of apartments being bought by the families could proxy for their socio-economic status.

The following information needs to be given to the candidate:

- Super luxury flat (1 crores): 10% of families, 5 members per household
- Luxury (50 lacs): 40% of families, 4 members per household
- Bedroom apartment (20 lacs): 50% of families, 3 members per household (even the relatively poorest of families were actually doing quite well as they could afford a 20 lacs flat).

Which broad categories of services can be offered, and what would differentiate them?

Given this information, the candidate should think about services which could be offered. The services could be segmented into 2 broad areas: deluxe and regular. Deluxe would include some premium procedures that could be utilized by either of the segments. Regular Procedures would be more day to day services provided to a wide spectrum of the population.

How could a timeline for introduction of the two kinds of services look like?

Based on the population immigration information provided earlier, the client could start with deluxe services when the customer base would be small and eventually move to other regular services and customer base grows big enough to achieve breakeven (due to volume).

Risks involved with this timeline could be a competitive threat, which could be conquered to an extent by making appropriate arrangements for customers to receive these services at a nearby hospital of the same chain.

53 MEGABANK UNDERPENETRATION

Megabank is a bank that issues credit cards. New cards are sold in three main ways:

1. Cross-sell to existing banking customers
2. Sell to new customers via direct mail campaigns
3. Distribute via private label partnerships with retailers and airline

Megabank is looking for new card member growth areas in the United States. Its Hispanic market penetration is low compared to comparable banks' penetration rates. That group is a fast growing ethnicity and the bank wants to capitalize on it.

What are the possible reasons for the underpenetration in the Hispanic market?
How should the bank move forward?

Recommended approach:

This case is representative of many of the prepared, McKinsey round 1 cases, in which the interviewer actively walks the interviewee through a set of qualitative and quantitative questions. The interviewer should "stick to the script" of questions. To the effect that the interviewee struggles, the interviewer can assist the interviewee to get back on track.

The interviewee should be structured in answering qualitative questions and crunch through any numbers thrown his or her way, always keeping in mind how they tie back to the larger issues.

What might be wrong? Hypothesize.

Discuss briefly the potential of each of the following to affect the penetration rate:

- Product definition – Does the card, as it has been defined meet the needs of the customer?
- Pricing of credit card terms – Are the fees and rates on par with other comparable cards?
- Marketing/advertising – Are the messages properly directed to the audience (both content and distribution)?
- Channel partners – Does our target audience shop at / eat at / buy from our partners?

- Internal sales messages/incentive structure – Are the sales messages correctly structured to entice our potential customer? Is our internal sales force (i.e., teller and desk personnel) trained and incented properly to promote the card? Discuss in detail (i.e., what might be misaligned, how that might affect adoption rates, etc.).

Calculate the number of additional members Megabank wants to add based on the following information.
There are 40 million Hispanic people in the US.
3/8ths of them are too young to have credit cards.
The average customer is worth $180 to the bank over the course of his life.
Due to decreased acquisition costs, the average Hispanic customer is worth 10% more.
Currently, the bank's penetration rate is 10% (of valid customer prospects).
They want to get to a 30% level over 5 years

3/8ths of 40m are too young, so 5/8ths of 40M are valid customer prospects. That translates to a market of 25m people.

They currently have 10% of 25m = 2.5m

They want 30% of 25m = 7.5m

They need 5m additional members over 5 years

How much is that additional market share worth to Megabank (or how much would Megabank be willing to spend on that additional market share)?

If the average customer lifetime value is $180, but the average Hispanic customer is worth 10% more, each customer is worth $198. Rounding that to $200, the total value of 5m extra member is $1b.

Cross-selling to branch customers is significantly below the industry norms (average = 15,000 to 20,000 per month; Megabank = 5,000 per month). What might be the reason?

- Product – Is the Megabank product different from competitors' products? Interviewer: NO

- Pricing – Are the fees and rates different than other comparable cards? Interviewer: NO

- Customer – Are we targeting a fundamentally different audience? Interviewer: NO
- Channel Partners – Are the distribution channels misaligned? Interviewer: NO
- Marketing/Advertising – Is there something wrong with our sales mechanism? Interviewer: Let's investigate

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Megabank uses direct mail campaigns to solicit new card members.
The average response rate for the non-Hispanic population is 1%.
Megabank's historical response rate from Hispanic prospects is 3%.
The bank is planning to target 15m potential customers with each of 3 mailings this year.
It expects that after the first mailing, the response rate will drop by 1/3rd in each of the subsequent mailings.
The bank has a conversion rate of 45% of respondents.

How many new customers should the bank expect after the third mailing?

3% * 15m = 450,000 from first mailer

450,000 – 1/3*450,000 = 300,000 from second mailer

300,000 – 1/3*300,000 = 200,000 from third mailer

950,000 * 45% conversion = ~450,000 new customers

You rounded 950,000 to 1,000,000. Would you expect the actual number of new customers to be more or less than 425,000 and how do you calculate that (in your head)?

Slightly more since 10% of 950,000 is 95,000; therefore 40% is 4*95,000 or 380,000. Add 5% of 950,000 (or half of 95,000) which is 47,500 to 380,000 to get 427,500. That would be somewhere between 2m and 2.5m over five years.

You bump into the SVP of Sales (related to the credit card business) in the hall and he asks "How does it look?" How do you respond (1 minute only)?

We are still crunching the numbers, but based on your current market position, your goal of increasing penetration by 20%, and historical conversion rates for direct mail campaigns, our initial estimates suggest that you will fall short of your goal by mainly relying on that method of acquisition. In fact, it will only get you about half way to your goal. We need to discuss other measures to increase penetration of the Hispanic market. Specifically, we need to look at your sales force compensation structure, training and specific sales and marketing messages. Let's plan to review our formal recommendations later in the week.

54 MEDICAL DEVICE COMPANY GROWTH

A medical devices is looking to expand 3x in the next 5 years.

If you were in the company, what are the questions you would ask?

In this case, the interviewer will not give any concrete answers or information, but just wants to understand the candidate's thought process. The interview might fold out as follows:

Candidate: In order to achieve a 3X growth, I would like to look primarily at topline growth, as my assumption is cost reduction would not be the primary driver. Is that fair?

Interviewer: All right, let's proceed with that assumption.

C: In that case, I would like to figure out what are the kind of products that this company makes.

I: Alright, let's say they are largely into higher end medical devices used for critical life-saving applications, such as pacemakers and cardiac stents.

C: Great, so in order to understand the potential sources of breakthrough growth, we would have to look into the characteristics of primary customers in order to determine current and future market size.

I: Ok. What characteristics would be of interest?

C: I believe that even though the patient pays for these devices, the consulting doctor would have a big role to play in determining which particular device is appropriate. Given that some consolidation is happening, hospitals might be important as well, though most surgeries requiring devices that you mentioned would have doctors as stronger determinants than hospitals, as patients follow specialist doctor advice more than hospitals.

I: That is partially correct but changing.

C: All right, so I would probably segment the market according to urban centers, as Tier I, II, III cities. Smaller cities would be unlikely to have a major hospital industry able to support volumes of critical devices like stents and pacemakers. In larger cities, my primary customer group would be hospitals, and I would focus my sales force and market research to understand the key factors which determine purchase.

I: What are some factors you could think of?

C: Quality and reliability should be major, with cost as a secondary driver. Perhaps the vendor's ability to source inventory rapidly would let hospitals maintain lower inventory and reduce their costs

I: Good. Now any other macro questions that you think would affect their strategy?

C: I believe the increasing consolidation of hospitals would be important in defining the strategy. Now since we have primarily looked at market sizing elements, I would also like to know about market share. What is the competitive landscape like?

I: Well there are 3-4 other major players, but devices are a small component of their portfolio, and they're unlikely to have focused strategies. What else?

C: Perhaps the client can look into optimizing pricing as a lever. What are margins like?

I: Margins are healthy, and all players price similarly. It is difficult to differentiate quality and hence pricing between the 5 major players. Though the market is price-inelastic on the whole, the choice between the device brands would have price as an important decision variable, and we cannot increase or decrease prices substantially without hurting ourselves and possibly our competitors.

C: Perhaps the rise of organized insurance can be an important factor, as they would influence which device to buy, as these are expensive devices?

I: That's a great point. Thanks for discussing the case.

55 LOGISTICS START-UP IN ITALY

The CEO of a startup in a small village in Italy has hired McKinsey to help them decide how many trucks to lease. There are different models available, but our client has been told that he/she will need to have a consistent fleet (they can only lease one model type) and so we will also need to identify what model he/she should lease. This company provides the local delivery of packages sent to this village through UPS next-day-delivery service.

Let me provide a quick overview of how the company operates:

1. they receive every package at 5pm from UPS,
2. a bunch of people then sort the packages and
3. load them on a truck where they are stored overnight, and
4. then deliver them starting at 9am for 10 hours.

How would you suggest approaching the client's problem?

Recommended approach

This case tests a candidate's ability to analyze how many packages must be delivered and to see if the bottleneck is the time or the truck size. Not all information is provided up front to the candidate; he/she should be aware of this and must identify additional data that will allow him/her to solve the case.

Key facts:

- Packages delivered per day: 1,000.
- Dimension of package (envelope) is 1 x 1 x 1.
- Operates five days a week.
- It takes 8 minutes, on average, to deliver a single package and to be ready for the next one ("assume they deliver one every 8 minutes").
- Truck A costs $150 per day and its dimensions are 3 x 4 x 5.
- Truck B costs $140 per day and its dimensions are 9 x 2 x 1.
- Truck C costs $130 per day and its dimensions are double the size of truck A.

- Drivers, fuel, etc. are not considered and do not make a material difference to the analysis (for sake of simplicity).

- The case will include additional questions not addressed in the initial scope.

Example Dialogue

Interviewer: So, how would you go about analyzing this problem?

Candidate: I'd like to understand a few things to evaluate this decision. First, I would like to start by analyzing the demand. I would like to know how many packages we have to deliver and how long, on average, it would take us to deliver a single package. Then, I would like to analyze the numbers in the context of the three truck models our client can lease.

Interviewer: Ok. We can satisfy a demand of 1,000 packages / day and it takes 8 minutes on average to deliver each one.

Candidate: So, 1,000 packages x 8 minutes / 60 minutes x 10 hours = 13.3 trucks. So we need at least 14 trucks. I would like to think about the leases we can consider.

Interviewer: Ok. Let me show you the information we received from the client:

Truck	**Cost per day**	**Dimensions**
A	$150	3 x 4 x 5
B	$40	9 x 2 x 1
C	$130	6 x 8 x 10

Truck A cost $150 per day and its dimensions (for the packages) are 3 x 4 x 5. Oh, by the way, you did not ask about the average size of an envelope, but our client has told us that the average size is 1 x 1 x 1.

Candidate: Ok, so when assessing Truck A we multiply 1,000 (total packages for all trucks) by 1 x 1 x 1 (average package size) and divide by 3 x 4 x 5. We will know how many trucks we would need of the Truck A model. My calculations show 16.6 which would mean we would need 17 of this type of truck. As 17 is more than the time constraint of 14 truck to ensure on-time delivery, we stick with 17.

So, this is the result of performing this analysis for each type of truck:

Truck	**Cost per day**	**Dimensions**	**# trucks (rounded)**	**# trucks (minimum)**	**Total cost per day**
A	$150	3 x 4 x 5	17	17	$ 2,550
B	$40	9 x 2 x 1	56	56	$ 2,240
C	$130	6 x 8 x 10	3	14	$ 1,820

Now, from a pure financial analysis, I would recommend leasing 14 trucks of the C Model because it will allow our client to minimize the cost while ensuring on-time delivery (customer satisfaction).

On the other hand, we also might consider that there would be plenty of room for delivering other things if they can figure out how in the future.

Interviewer: Ok, it seems a good idea. Let's move on. Now imagine 6 months have passed and your recommendation was pretty successful. Now the CEO want us to investigate any potential risks that he/she should be assessing/considering.

Candidate: Can I take a minute to organize my thoughts?

Interviewer: Ok.

Candidate: So, I would like to go over this problem by analyzing both internal and external factors. Here there is a list of the things I would think about:

Internal	External
• Need for extra drivers (e.g.: people get sick) – do we have enough employeees • Unionized drivers may shift labor cost up in the future • Need to lease more trucks because trucks can break down causing late delivery • Insurance costs • Extra fine tickets than forecasted because drivers want to deliver on time	• Only one supplier (UPS) – we are captive to UPS • Adoption of new technology (e-mail) might reduce the need for sending packages • Government regulation • New competition in the city – there are no real barriers to entry, since UPS would likely partner with any carrier who can deliver on customer service metrics at a cheaper cost • No association with our brand, thus our supplier can switch to our competitors or start its own operation

Obviously, I could analyze the sorting operation more to make a more profound (exhaustive) analysis but that was not covered on our initial discussion.

Interviewer: Don't go that direction. Let's think of another scenario. Now we have to investigate sources for profit growth for this company with one restriction, we can neither add new truck leases nor change the existing ones.

Candidate: Ok. Let me think, about increasing revenues:

- Extend hours: the trucks are already paid for the day, if we extend the delivery time after 7pm we can deliver more of UPS or from other companies, even local companies. That would go (impact) directly to profits.
- Different packages: we may recommend to UPS to sell different (more robust) packages to some clients and get part of it.
- Pick packages: every time we leave a package we make space to pick a package and deliver it to another part of the village or to give it back to UPS to send it to another place
- Get contract with a new operator: see whether we can deliver stuff to other company who is in the delivery business but does not compete directly with UPS. Thought we can not add new trucks we can think about utilization of current trucks

- Advertisement: are the trucks painted with UPS logos? We can sell advertisement to them or to other companies. Those trucks are all day in the street.

- Insurance: offer insurance of packages to clients.

Interviewer: What else?

Candidate: We can also think about streamlining operations (reducing costs). I would think about them in terms of fixed and variable costs.

- Evaluate the route of each truck to reduce time or usage of gas (fuel)

- Improve technology usage in the sorting and loading packages. May reduce number of people at the factory

- Re-negotiate leasing terms for trucks

- Move warehouse to a cheaper place

Interviewer: Ok, we are out of time, but thank you for the list of business challenges that the client should assess, I am sure that some of these will lead to very interesting discussions.

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56 HOVERCRAFT MOTOR BOAT CONNECTION

Your client is thinking of launching a Hovercraft, motor boat based transportation system between two parts of Mumbai.

What is the optimal fare for such a service?

After some quick initial questions, the candidate can come up with the following initial structure:

- Value to customer (willingness to pay)
- Competition (and their pricing)
- Cost-up pricing

The discussion with the interviewer can start with the value to customer, brainstorming on how could this service be valuable to the customers. Here, tangible as well as intangible issues can be identified:

- Tangible benefits: saving of time, fuel and possibly also fare
- Intangible benefits: alleviation of psychological costs like being stuck in traffic and getting to spend less valuable time at work and office

Regarding competition, the candidate first needs to find out which other modes of transport are available to the public. There are two alternatives

- Road (taxi), and
- Rail (train).

After knowing about the alternatives, the candidate needs to start running the numbers (and making reasonable assumptions regarding intangible costs) to compare the substitutes and the hovercraft service.

Another issues which needs to be discussed is the potential capacity of the hovercraft service as well as scaling possibilities. In respect to the intangible costs, the capacity and possibly reservation/planning operations are important to ensure that people do not line up unnecessarily for the hovercraft service and thus would take more time in total than going by road or rail.

Moving on in the discussion, the value-based and competitive pricing approach work better when comparing the hovercraft service with the taxi, as rail pricing is a mass-transport and thus massively cheaper.

Finally, the candidate can quickly make some assumptions about the cost of operations to see whether the business is viable at all (by defining the lower end for pricing with cost of operations), before wrapping up the discussion and giving a recommendation based on the concrete numbers discussed.

57 DIABETES TESTING METER

Our client is a laboratory that provides diabetes testing services to hospitals in UK. They have developed a self-diagnosis meter that patients can use to do testing on their own. They have hired us to determine if we should take this product to the market.

Is there enough long-term demand for this product, given the current competition?

What options does the company have, in terms of taking this product to the market?

Information to be provided upon request

Demand Estimation

- 30% of people and 5% over 65 have diabetes
- Out of total population of 10m, 20% are above 65
- No growth in % or population

Competition

- There are 4 other competitors, with market shares of 25%, 25%, 15% and 15%
- Client has a 20% share
- Growth was over 20% until 2 years ago and has been stagnant since.

Revenues and Costs

- Fixed Cost is $2.5m and marginal cost is $20. Per unit revenue is $25.

Additional points

- Patients could opt to use both methods (e.g. self-test and also the hospital testing)

- Product could be promoted as a prevention device (e.g. a low cost option to check for diabetes)

Additional questions for the candidate

- Are there any cannibalization effects with regards to hospitals in terms of introducing the product?
- If the product can't be launched within UK, what else can the lab do with the product?

Sample solution

Due to the limited number of customers available and low future growth, the product should not be launched in the market.

The company should look at markets outside UK, or sell it to hospitals or competitors.

Key: Good structure, good estimation techniques, risks analysis and breakeven analysis, recognition of long-term growth potential.

58 INDIA HIGH-END REFRIGERATORS

A producer of high-end refrigerators in India has hired McKinsey to help him solve a profitability problem. Two years ago the company had a record year in terms of growth. Though they were correct in understanding the size of the market and how it would grow, their gross profit decreased by approximately 70% and the CEO is very worried about the situation. The client has asked us to identify what happened.

What can be done to restore profitability?

Recommended approach

This is a typical profitability question. A good way to go over it is to break down the profit equation into the different concepts, build hypothesis, and test them.

Key facts:

- 800 million people in India
- Two years ago unit sales in India were 5 million and last year 6 million
- The client's company builds and sells high-end units

Example Dialogue

Candidate: Can I take a minute to think about this problem?

Interviewer: Yes.

Candidate: Ok. I would start by breaking down the problem into revenues and costs in order to identify the potential drivers of the drop in profitability.

Interviewer: Great. Let's start with the costs.

Candidate: Ok. Given that we know that this market has been growing quickly, I would like to know whether our client has decided to build a new factory to keep up with the growth. If that was the case, depreciation and amortization and interest on debt (if it was paid by issuing debt) could be putting pressure on the profit of the firm.

Interviewer: You are definitively right in your analysis, but I have to tell you that although they have built a new plant, there is no problem on the cost side. I can tell you that since we have just finished another engagement in which we streamlined all his operations.

Candidate: So, now I would like to understand a little more about the revenue side of the profit equation. Perhaps I could learn a little more about the market. I'm most interested in having some assumptions to determine the size of the market.

Interviewer: Sure. What do you want? If you ask for specific information I may have it.

Candidate: Ok, I would like to know the population of India, the number of households and what kind of refrigerators the client produces.

Interviewer: Assume 800 million people and… I am not sure about households… guess something.

Candidate: I would say that there might be 5 people per household, which leads to 100 million households. Based on my experience I will say people change their refrigerator once every 5 to 7 years.

Interviewer: Sounds reasonable, let's say 7 years.

Candidate: If I had the number of units sold in the market last year I would be able to understand how many people actually have refrigerators at home in India. Do we have any information around the percent of households that have a refrigerator?

Interviewer: Last year sales were 6 million units and one year before they were 5 million units.

Candidate: So,

Item	**Quantity**
Population	800,000,000
# per household	5
Households	160,000,000

Income	**# sold**	**Years between change**	**Market size**
Two years ago	5,000,000	7	35,000,000
Last year	6,000,000	7	42,000,000

Interviewer: You are saying that the number of refrigerators for home-use was 35 million two years ago and 42 million last year?

Candidate: Yes. However, I might question whether the 7 million growth of last year could have been in a segment not served by your client.

Interviewer: How do you know that?

Candidate: Well, we concluded that there are 160 million households and from our estimation we get that only 42 / 160 = 26% have a refrigerator. On the other hand you mentioned that they produce high-end which may signal that the growth is coming from the low income part of the society, for which your product may not be priced at a competitive level or even the product not designed for their needs.

Interviewer: You are completely right. What we should do?

Candidate: There are several options. Our client can try to use the extra capacity they have in the new plant to focus on building lower-end refrigerators, leveraging their supplier relationships, dealers, etc. However, we would need to consider how to brand these refrigerators so as to not detract from the quality associated with the higher end of the market. They can think about exporting the extra capacity to other countries where their product offering is competitive and there is market for growth, they can start offering financing for this particular segment…

Interviewer: Fair enough, let's imagine that the marketing director came last night and proposed to reduce price by 20% to appeal to this segment, which he thinks will increase sales by 30%. Should we support him?

Candidate: Is that all the information we have?

Interviewer: Yes.

Candidate: Let me think. Lets denote P = Price, C = Cost of goods sold, Q = Quantity. The general formula to make this decision should be $P \times Q - C \times Q > 0$. In this case:

$80\% \times P \times 130\% \times Q - C \times 130\% \times Q > 0$

$104\% \times P \times Q - C \times 130\% \times Q > 0$

Break-even point at:

$104\% \times P \times Q = C \times 130\% \times Q$

$104\% \times P = C \times 130\%$

$104\% / 130\% = C / P$

$80\% = C / P$

COGS of 80% over price does not seem to be completely out of what we would expect in a manufacturing company. I would worry about COGS being just 25%, which will signal that reducing price by 20% is not a good idea to attain 30% more sales.

Interviewer: Thanks.

59 STEAM BOILER HOSES

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

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

The following information is also available in response to questions asked by the candidate:

- Last year's P&L showed (as a percent of sales):

  Raw Material: 70%

  Labor: 20%

  Distributed overhead: 10%

  SG&A: 15%

  Profit: (15%)

- The raw material is a commodity petrochemical.
- At least two of the other companies in the industry are making moderate profits. QUESTION

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

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

- Drop the product line (apparently not possible because hoses are necessary for boiler sales).
- Raw material prices (they are the same as everyone else's)
- Allocation of overhead (no cash savings and provides little potential)

- SG&A (standard industry fee paid for independent installers).

Better answers will move beyond the previous answers to consider:

- Scale economies (client is big enough to achieve scale production).
- Production technology (client has a modern plant)
- Labor costs (wages rates and productivity are average for the Industry)
- Raw material purchasing practices (material are purchased through long term contracts with prices based on the spot market minus a discount).

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

- How is our product engineering operation wired into the marketplace? (there is little contact he engineering and marketing/sales organizations)
- What kind of feedback are we receiving form our sales force? (customers are delighted with our hoses, but require all the product features)
- Are there other areas in the company where similar problems exist?

60 CANADA HEALTH CARE

Our client is a Canadian pharmaceutical company. Their first drug has just been approved by what is equivalent to the United States' FDA and is an asthma treatment. The client has hired McKinsey to help them assess what is the right price for this new treatment and they will also need McKinsey's help with completing an application to the government for price approval. The second step is necessary because, as you may know, Canada's government subsidizes healthcare costs and we will discuss this in greater detail later in the case.

How would you help our client?

Interviewer Information

- Candidates should consider what information will be necessary to address this case and ask for data as they see fit.
- Research and Development costs for this drug are estimated to be $5 billion.
- Beyond R&D, marketing is the largest cost for a pharmaceutical. The interviewer, however, will ask the interviewee to assume that marketing costs are $0 and there are no variable costs.
- There are three segments to this market:
    1. Basic – 2% of the population – have a periodic asthma attack, use 1 inhaler/month
    2. Serious – 2% of the population – use 1 inhaler/week
    3. Acute – 1% of the population – use 1 inhaler/week, but attack sometimes results in hospitalization and death.
- The client's new treatment is classified as preventative. It is a pill that must be taken every day.
- Regular inhalers cost $10 each. This is the common treatment for asthma.
- Acute patients that result in hospitalization spend 1 night/year in the hospital at $1000 and the rate of death is 1%.

Example Dialogue

Interviewer: First, let's discuss the possible ways of framing the client's first question – how should it price this new drug?

Candidate: Well, there are three different methods I can think of:

- Cost based pricing – set the drug price at cost and add a percentage markup
- Value based pricing – set it at what customers are willing to pay
- Determine minimum and maximum prices

Interviewer: Great, now, go through the steps to solve this problem and provide a price to the client.

Candidate: Okay, so let's try cost based pricing. I would assume that the company has both fixed costs and variable costs. Have we gathered any information from the client about its cost structure?

Interviewer: Well, what do you think would be its largest costs?

Candidate: Given what I know about the pharma industry and the extensive R&D for drugs, I would guess Research and Development.

Interviewer: Good, R&D costs are $5 billion. What would you guess are some other key categories of costs?

Candidate: Marketing is usually a big cost.

Interviewer: Right. For this case, let's assume marketing is $0 and there are no variable costs. [Where possible, the Candidate could have tried to anticipate this chain of questions and suggested, without being asked, the key categories of costs that might be relevant].

Candidate: Next I would want to size the Canadian market for this drug, assuming that we will only sell in Canada. To do this, the population of Canada is approximately 30 million people. We would now need to estimate the percentage that is asthmatics?

Interviewer: There are 3 segments to this market:

1. Basic – 2% of the population – have a periodic asthma attack, use 1 inhaler/month.
2. Serious – 2% of the population – use 1 inhaler/week.
3. Acute – 1% of the population – use 1 inhaler/week, but attack sometimes results in hospitalization and death.

Also, the treatment is preventative. It is a pill that must be taken every day.

Candidate: Okay, so let's assume every segment will use this drug. 30 million * 5% = 1.5 million people. However, I would expect that there would be some barriers to switching and not all potential users will switch from inhalers.

Interviewer: Okay, so now how do you set the price?

Candidate: I want to determine the price to break-even. For a pharma, I think 5 years is acceptable.

To break even in 5 years: 1.5 million * Revenue = 5 billion (R&D)

Revenue = $3,300

Use 350 days / year for simplicity, one pill every day over 5 years = 350 x 5= 1,750 pills

$3,300 / 1,750 pills = approximately $2 / pill

Interviewer: So do you think this price should be the minimum or the maximum?

Candidate: This is the minimum because it is the break-even price.

Interviewer: Okay, let's consider the second half of the question. As I mentioned, the Canadian government subsidized medical costs, let's for the sake of this case say that it pays back its citizens for medical treatments. How do you determine how to set the price so that the government will agree to pay it?

Candidate: Assuming that the government is paying for the current treatment, I would want to know their current spend and determine what the difference is between that and the new drug. Do you know how much the government is currently paying patients for their inhalers?

Interviewer: The cost of inhalers is $10 each. Also, acute patients that result in hospitalization spend 1 night/year in the hospital at $1,000 and the rate of death is 1%.

Candidate: So I want to determine how much the government is currently spending on inhalers.

Basic: $120 / year (1 inhaler a month), 600,000 people, $72 million total Serious: $520 / year (1 inhaler a week), 600,000 people, $312 million total Acute: $520 / year (1 inhaler a week), 300,000 people, $156 million total.

Total government is spending on inhalers: $540 million / year.

Now I want to determine how much government is spending on hospitalizations.

$1,000 x 300,000 people = $300 million / year

Total government spend = $540 million + $300 million = $840 million

Over five years: $840 million X 5 = $4.2 billion

So with the new drug, we calculated the break-even at five years to cover $5 billion in R&D. With inhalers, in five years, the government is spending $4.2 billion.

Interviewer: Good, so with this information, summarize for me the minimum and maximum price.

The candidate should summarize results to interviewer and state what you think the minimum and maximum prices should be. Make sure to note that the new pill is a preventative measure, as opposed

to the current method of using inhalers as treatment. A good summary will be structured and go back through the information used in solving the case. At this point you can also bring in other parameters that may not have been discussed in the case such as the price on-patent versus off-patent, or the potential larger international market for this drug as further issues that might want to be considered.

61 AUTOMOTIVE CONSOLIDATION

Your client is a company which has experienced growth in the past through acquisition. It is composed of the following areas:

- Automotive parts - this has three different areas within the division construction materials
- Automotive parts - this division owns four separate companies

Which opportunities can you identify for consolidation and off-shoring?

Additional information provided after relevant questions

- Auto parts division #1 produces metallic parts and sells to OEM's
- Construction materials division produces plumping, electrical, and other building materials. Their customers are construction companies.
- Auto parts division #3 produces rubber parts and sells to OEM's
- The company does not operate any call centers
- Auto businesses ship directly from its plants to customer plants (no warehouses)

Sample solution

The candidate should look at areas of opportunity and then identify off-shoring and consolidation opportunities for each area. It is important to identify levels at which consolidation can occur.

An initial structure could look like this:

- Cost (tailor to specific industries)
  - SGA (sales, general and administrative)
  - PPE (plant, property and equipment)
  - Purchasing
  - Other operational

        - Distribution
        - Design services
        - Best practices in general

- Revenue
    - Cross-selling

The main opportunities are between automotive areas. Due to different automotive products, I recommend that automotive divisions remain separate, but there is opportunity to consolidate much of these businesses.

Cost - SGA

- Selling - Should consolidate sales forces across automotive divisions. There should be a central director over both to ensure use of best practices. We should be able to have sales people who represent all of the rubber companies instead of individual reps for each subsidiary.
- G&A - Accounting, billing, finance should be consolidated to reduce cost and improve quality. Billing, some accounting, and some finance can be sent to India. This has been common in many industries and should not be difficult to accomplish.

Cost - PPE

- Since much of SG&A is being consolidated we can combine some/all of our headquarters
- Utilization - We need to see where there is opportunity to consolidate and achieve high levels of manufacturing and design utilization (balanced with growth plans). Main areas are across metallic auto, across rubber auto, and maybe minor opportunities with metallic auto and construction.
- Foot print rationalization - balance this with customer locations/distribution and manufacturing costs. Could be big opportunities to send manufacturing to China

Cost - Purchasing

- This must be centralized to maximize our buyer power across all three areas and reduce headcount.

Cost - Other operational

- Distribution - Main opportunities between auto areas. These divisions share customers. Therefore, distribution network may have substantial opportunities for trucking/shipping.

- Design Services - tied in to utilization tick. Again consolidate within each of the auto areas and share best practices across both. Offshore much of computer aided design and lower level engineering work that requires slightly less communication. This should save you 50% where used and can also improve timing because you will have teams working around the clock.

- Best Practices in general - structured product development process, etc.

Revenue

Cross-selling in auto - central director will help focus the sales team to leveraging contacts across areas. You may be tempted to go to OEM's as central supplier and even offer integrated solutions, but this will not give you supplier power with them. It would likely make you a bigger target for price givebacks. Integrated solutions have been popular with the OEM's, but suppliers are less profitable in these arrangements. Therefore, I would keep separate rubber and metallic salespeople and products, but leverage network and best practices. This set-up will be more like an in house manufacturer's representative.

62 MINING CARTEL WITHDRAWAL

There is a tin mining cartel consisting of Country A, B, C, and D. Every year the four governments get together to decide how much to produce according to demand forecasts, and allocate the production quota evenly among them. Now, Country A is thinking about withdrawing from the cartel.

Country A comes to you for advice. What will you tell them?

In this case it was necessary to determine if it is more profitable for country A to mine according to the guidelines of the cartel, or on their own.

Q: “What are the relative production costs of each of the countries?”

A: Countries A and B have a 10% cost advantage over countries C & D. (Alternatively, you may be asked how you would find out the production costs of each country)

Q: “What volume does each country produce and sell, historically?”

A: Last year, Country A and B both produced twice as much as countries C&D (you may get actual numbers, but very often you will get broad generalizations like these.)

Q: “What is the demand curve facing the producers?”

A: A basic downward sloping demand curve (drawn as such on a piece of paper).

The candidate wanted to derive the price implied by the supply and demand curves. The key to this question is to derive the world supply curve. The basic concept is from basic economics: supply curve is the sum of MC curve of all producers. Here we only have four producers.

Based on what the candidates finds out from the questions, the candidate knows that the supply curve will be a step function and can compare the price with A's marginal cost. Based on A's cost position on that supply curve, you can decide whether A will be better off producing on their own.

Wrap-up / Recommendations for client:

It is recommended that country A goes for it alone, based on their favorable cost position, and the fact that the remaining countries did not have enough volume to “open the flood-gates” in an attempt to punish me for leaving the cartel.

However, in addition further analysis is needed on non-cartel producers who could fill the world supply.

63 BIG CARDIAC HOSPITAL IN SMALL TOWN

Your client wants to begin a big cardiac hospital in a small town.

How large is the market, and which factors would affect the revenues of the hospital?

The case was asked in such a way that made it clear that the interviewer did not want a complete solution to the problem but wanted to see the thinking process and how the candidate breaks the problem into parts and identify which are the working factors and which are not.

The candidate divided the whole population into age groups (<25, 25-50, >50) and calculated the population of each group. Group 1 can be ignored for it has negligible number of heart patients. The candidate assumed that 20% people in group 2 have heart problems of some sort, and that 30% people in group 3 have heart problems of some sort, and confirmed with the interviewer. This led to the local market size.

Next, the candidate needed to find out if the hospital aims to attract people from outside. The interviewer didn't want him to calculate the market size of non-locals but wanted him to list some factors that would affect it, like

- financial condition of the customer to traveling to another city, or
- brand image of the hospital, etc.

The interviewer next asked to think of factors that will affect the hospital revenues and that need to be taken into account by management. The candidate came up with three major factors

- Brand name or reputation - the common man would not, in general, come to an expensive hospital unless he has heard of testimonials. The rich section is not very big in a small town.
- Publicity of the hospital, especially in other cities, because towns like this are not expected to have a huge number of heart patients.
- Competitive rates, as health care facilities are comparably cheap in small town as compared to the rates of a typical big hospital.
- Other factors - ease of the customer, amount of formalities required, good hospitality etc.

The Interviewer wanted something more and asked to consider two big hospitals of the same kind in the same town and think of factors driving the customer to choose one. Even though there is more than one right answer to this question, the popularity and fame of the doctors are certainly one of the most important factors influencing patients' decisions.

64 TANZANIA SOUTH BEER AND NORTH BEER

Your client is "SouthBeer" a beer producer in Tanzania. SouthBeer used to be the only supplier of beer in Tanzania until a few years ago when North Beer entered the market. In retaliation SouthBeer entered the Kenyan market.

What do you expect happened to the revenues of SouthBeer in the Tanzanian market?

Additional information provided after relevant questions

- The candidate should be asked what could have happened? Expect prices to drop from a monopoly position based price, to a market price. NorthBeer entered the market with low prices to build market share.
- What else could have happened? Cost increases.
  - COGS may have increased due to smaller volumes being sold in Tanzania
  - Marketing costs may have increased to stop NorthBeer's entry
  - Labor costs may have increased due to second potential employer being available
- In fact after a couple of years both the Kenyan and Tanzanian parts of the business were making a loss. What should SouthBeer do?
- NorthBeer is also not making money
- NorthBeer has 90% market share in Kenya and SouthBeer has 80o market share in Tanzania.
- Information given - we think the MS of S beer in Tanzania is worth
- $80M and the MS of N Beer in Kenya is worth $180M.

Sample solution

Suggest to buy out NorthBeer's share > calculate the market share of NorthBeer in Kenya = market share of SouthBeer in Tanzania = 20M

However when evaluating how much you would pay for the business you also need to consider:

- Is profitability of market share related to market share %, or have we captured a high profitability niche market?

- Cost cutting opportunities
- Cross selling opportunities

The interviewer might ask: How would you go about estimating future revenues streams, ignore volumes but focus on how would you get good pricing data?

- Inflation > get from governmental sources
- Analyze/compare previous inflation data to beer prices
- Predict inflation impact on beer prices

After the interview the interviewer might provide the following information: eventually NorthBeer and SouthBeer bought each other out in the other's territories and they set about a JV in a third country to leverage their expertise and to get used to working together.

65 SUPERMARKET CHAIN GAS STATIONS

Your client is PD Inc., a large US based grocery supermarket chain. PD Inc. also runs 999 gas stations next to its retail stores.

Last week, PD Inc. was approached by a large US based oil and gas distributor which offered to buy out the entire portfolio of 999 gas stations from your PD Inc.

Your PD Inc. immediately reached out to you and has sought your advice on whether to sell these gas stations or not and what factors to consider when making this decision.

What do you tell the client?

Additional information provided upon request

- PD Inc. has not been offered a specific price by the buyer. Interviewee can be told to consider price as part of his recommendations though. The key is to first decide whether the PD Inc. should sell or not.
- PD Inc. cannot choose to sell a part of the portfolio of gas stations. It will either sell the entire portfolio of 999 gas stations or nothing at all.
- No information on competition is available.
- No information on the buyer's scale, geographic presence or reason to buy is available
- PD Inc.'s stores are spread across the United States. All stores have a gas station next to them.
- A good candidate will identify that initially, PD Inc. needs to value it gas station business based on cash-flows and also identify the synergies with the retail stores.
    - Revenue for each gas station each year: 60m
    - Cost of fuel sold at gas stations (COGS): 59.98m
    - Cost of licensing fees paid to distributor: 3.02m
    - Cost of rent of land and equipment: 2m
    - Cost of labor, utilities, insurance and miscellaneous: 1m
- Really good candidates identify that that the Gross Margin is extremely low either because it's a very low margin business or because PD Inc. is discount prices on purpose to attract customers. In this case, PD Inc. is using its fuel stations as loss leaders.

- Candidate should ideally then enquire about retail revenue and synergies.
- PD Inc. has been making losses in the gas station business since the past 3-4 years
- There is no information on the growth of the fuel and the retail business for PD Inc.
- The gas industry as a whole has a similar cost structure
- The gas station has no additional revenue streams (carwash/repair/convenience store)
- PD Inc. has no other business verticals other than fuel and grocery retail

Sample solution

- For revenue on the retail (grocery) side, upon request, candidate should be told that fuel station revenue accounts for 20% of overall revenue. Hence, retail revenue will be $240 million per store.
- Upon request, candidate should also be told that we are very proud of the way we manage our suppliers and have fairly high profits margins relative to the retail (grocery) industry. The margins on the retail (grocery) side are 16.66%. Candidates intuitively good with numbers will identify this as the fraction 1/6. if they don't, tell the candidate to consider it as 1/6.

The consolidated revenue and cost figures for PD Inc.'s business are as below:

	Revenue (m)	**Cost (m)**	**Profit (m)**
Gas stations	60	66	-6
Retail store	240	200	40
Total	300	266	34
After sale	204	170	34

- Potential synergies are additional walk-ins to retail stores, joint loyalty program, supply chain synergies (cheaper fuel for PD Inc.'s trucks, same trucks used to deliver goods etc.)
- Additional information on synergies:
    - 15% ofInc.'snc's customers on the retail side come to buy groceries only because they came to the gas station to fill up gas
    - 40% of PD Inc.'s customers on the retail side come to buy groceries but also end up buying gas at the gas stations later (i.e., they don't really care if there was no gas station next door) Candidate should realize that the 15% of the customers who came to buy gas first are the one which account for synergies on the retail side directly attributable to the gas station

	Revenue (m)	Cost (m)	Profit (m)
15% synergy impact	36 (15% of 240m)	30	6 (16.6% of revenue)

- Candidate should now realize that the losses on the fuel business are getting covered by the synergies from the fuel business on the retail side. Hence, it is a wash.

What are the client's pros and cons for selling the business?

Pros

- Increased cash flow due to cash received from sale
- Lesser working capital (reduced by $5.5b - annual cost of $66b divided by 12 months = approx. $5.5b in working capital)
- Increased focus on existing business
- Leaner operation with higher margins (refer to next slide for details)

Cons

- Drop in economies of scale as PD Inc. no longer buys $30b worth of goods. This also results in excess warehouse, transportation, store capacity hence downsizing costs
- These 15% customers will go to competition which will get economies of scale hence lower prices and this may result in further erosion of our customers
- Stock market may react negatively to drop in revenue
- May impact inventory turnover etc.

Most candidates will assume that PD Inc will lose the 15% of the customers once it sells the business but it is important for them to identify the exact reason why PD Inc will lose these customers.

The correct reason is that PD Inc is currently selling the fuel at discounted prices to get customers to come to the fuel station and then buy groceries but the buyer has no incentive for doing so and is likely to raise prices to market levels and hence the customers will stop coming to the gas station.

The candidate should be led to examine the expected impact on margins after selling the business. The actual impact will differ as this margin does not include downsizing and other costs. These figures are

given to candidate only to see if he/she can realize that the actual figures may be very different because of the negatives listed in previous slide. The margins as % of revenue are as below:

	Revenue (m)	**Cost (m)**	**Profit (m)**
Pre-sale	100%	88.66%	11.33%
Post-sale	100%	83.33%	16.66%

Recommendation

An ideal recommendation is to advise PD Inc to sell the business but contractually obligate the buyer to three conditions:

1. The buyer will keep all fuel stations open/seek approval before closing stations
2. The buyer will not open any competing establishment (convenience stores) at the fuel stations
3. The buyer will keep the prices discounted by allowing PD Inc to subsidize the prices. (the key is to realize that PD Inc does not have to discount so heavily since fuel is highly price elastic. Even if the buyer sells fuel at prices 5% below competition (assuming competition sells to entirely breakeven, i.e., at $66 Bn, buyer will sell it at ~ 63 Bn) the customers will still come. PD Inc. can reimburse ~ $ 3 B to buyer and hence still end up making a net profit of ~ 3 B on the retail side along with getting benefits from all the positives of selling the business.

Next steps

- Conduct a market survey to test price sensitivity of customer
- Discuss the stipulated conditions with buyer. The 40% of customers that end up buying fuel can be used as a leverage
- Discuss potential for co-branded loyalty card to further increase customer overlap

66 MEDVISION X-RAY

Our client is Medvision, an X-ray equipment manufacturer. Its products are currently 98% analog and 2% digital, both of which are sold directly by sales force. The client's European division is suffering from declining profit.

Why are profits declining and what can we do about it?

Additional information provided after relevant questions

- Market: There is price pressure by buyers (hospitals) to control costs.
- Company
  - Revenue breakdown
    - Machine/equipment: 800m
    - Films: 2500m
    - Service: 100m
  - Revenue within films
    - 1999 price: 6.67
    - 2003 price: 5.00
    - 1999 volume: 300m
    - 2003 volume: 500m
    - 1999 revenue: 2,000m
    - 2003 revenue: 2,500m
  - Some salespeople give more discounts to clients than others.

Sample solution

- Explore the product mix and was told three kinds of revenue sources for the company. Look into revenue and cost and was told costs were already cut to the bones.

- Focus on revenue for films as it was the biggest revenue stream, and I would first explore the changes over the years. Find the price went down by 25% over 4 years. The interviewer will confirm that the buyers were exerting pressure on the price.
- Then the candidate will receive a table of sales revenue and discount given by salesperson. Point out that some salespeople are giving far more discount than other people and this could adversely affect the actual price the company can get.
- The interviewer might ask to give recommendation at that point. The reason for declining profit is decrease in price of films. Key drivers were buyers' pressure and problematic sales force practices. The company should focus on the driver it can control (i.e. the sales force) and change its commission structure to align the sales force interests with company's interests.

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67 MUTUAL FUND REVENUE & PROFITS

Our client is an asset management firm with flat revenue and profits. We have been asked to help them to remedy this condition.

How would you think about this problem?

A good brainstorming should include discussions on the following elements:

- Revenue
- Costs
- Regulatory environment (e.g. restrictions on fees, etc.)
- Competition (currently there is increased competition in funds)
- Distribution environment (e.g. the emergence on online brokerage)

Information provided upon request

Revenue

- $2 billion in revenue based on 1% management fee of $200b of assets

Costs

- Overhead: $200m
- Money management: $800M, 50% based on assets
- Distribution/ brokers: $800m, 100% based on assets (i.e. 40% commission of total revenue). All sales are made through independent brokers (they also sell funds from other companies).

Fund strategy

- US equities

At what level of assets will the fund owner begin to lose money?

Sample answer

This is a question of fixed and variable costs.

Currently our fund has a $200m in general overhead; I assume that is not going to change with asset size.

The brokers are paid purely on commission, so all of their costs are variable. The money managers are paid 50% on commission, meaning $400m are fixed.

Total fixed costs = $200m + $400m = $600m

At a 1% management fee, we need a minimum of $60b in assets to cover our fixed costs

Based on what you have found, what would you recommend to the fund manager?

- We need to look at ways to drive revenue first. We could change the incentive structure for the money managers, adjusted more to the fund's performance.
- With the brokers, we could pay them a higher commission to try to encourage them to sell our fund over another (we would have to tease out the quantity/price relationship to see if this makes sense.
- There probably is not much to gain with overhead.
- Additionally, this is a US fund only. We should consider launching an additional fund - perhaps focusing on international markets - to drive up revenues and leverage our brand.
- We are a $200b fund - we probably have a strong brand that we could use to sell more to our existing customers (i.e. new fund) and possibly bring in new customers as well.
- Look into new distribution methods
- Look into asking brokers to do cold calls
- Have the brokers in house (this will increase fixed costs but might provide better productivity)

68 HOSPITAL CHAIN GROWTH

The client is a hospital chain with 12 hospitals across India and plans to grow to 40-50 hospitals. The first hospital was set up 8 years back. The client has taken both organic and inorganic routes to growth with the last acquisition some 2 years back. Their profit has been declining over the last one year.

Why did profit decline and what are suitable recommendations?

Client expectations and constraints: We need to focus on EBIT and ROI improvement. The current EBIT and ROI were negative and our goal was to take them to 25% and 30-35% respectively. There were no financial constraints for the particular case.

Structure: ROI = After Tax EBIT / Invested Capital Invested Capital = Working Capital + Net Investments

- EBIT can be increased by increasing revenues or reducing costs or both.
- Analyzing decreasing invested capital through analyzing components like receivables, cash, inventory, payables, fixed investments and depreciation.

Starting with revenues makes sense because there were considerable improvements required in both EBIT and ROI and cost cutting might not suffice.

Revenue drivers in a hospital: diagnosis, outpatient department and procedures.

After some discussion it should become clear that the revenues from procedures, which was a major contributor to hospital's income, were declining. The price of procedures had been constant so it was an issue with the number of procedures. Also, the other hospitals had lower prices for the same services, so hospital seemed to be charging a premium for their services, which is another interesting topic to discuss.

Various factors that drive premium: patient care, diagnosis authenticity, convenience and future tests required. For patient care in more detail: doctors & nursing staff, length and time, accommodation, flexibility of meeting close ones, and miscellaneous things such as food etc.

The interviewer needs to mention that key doctors had left an year back and the hospital's premium was to be attributed to the presence of these doctors when they were in service, This nailed down the key reason of decline of procedural revenues.

Next, look at reducing costs, along the entire value chain of the hospital:

- Supply Side consisting of utilities, drugs and equipment
- Operations consisting of procedures, labor and R&D.
- Marketing and promotions

After a brief discussion on the factors driving supply side costs, the candidate needs to understand that the procurement of drugs can be optimized through consolidating purchase.

On the operations side, the wage structure is pretty much fixed and there might me some possibilities to improve labor efficiency, like implementing a performance based incentive structure with the use of balance scorecards and leading indicators to assess performance.

Given the initial structure of the case, there are a lot more topics to discuss if time permits; however so far the core issues have been covered.

69 DRUG STORE PROFITABILITY DECLINE

Our client is a drug store chain, similar to CVS pharmacy, They are losing profits in the last few years.

Can you help us identify the reasons and means to improve the profits?

In addition, the candidate should answer the following questions during the discussion with the interviewer:

Is the loss of profitability due to product mix, store mix, increasing costs or decreasing revenue? Or a combination of all the above?

What can the company do to improve profits - focused discussion around one area of improvement from above list.

Information to be provided upon request

Store details

- Stores are typical to CVS pharmacy, located in several areas. They have pharmacy, health and beauty, and general merchandise.
- 60% of the stores are located around hospitals, with heavy competition and in some crime infested areas – these stores make 10% loss
- Remaining stores make 25% profits

Sales and profitability by square feet and product type:

- Pharmacy: $20,000 / 5%
- Health and beauty $10,000 / 20%
- General merchandise $5,000 / 10%

Additional questions to be asked during interview

- What factors affect profitability of a particular store?

Sample solution

The firm is losing profits due to several reasons:

1. Product mix
2. Store Mix
3. Location details

The company should look at

1. Changing product mix
2. Closing bad stores
3. Improving on locations

Key: Good MECE structure, deep dive analysis in one area, bringing different points together in final analysis.

70 MEDITEST

Our client is called Meditest – they make equipment for blood sample test labs. Specifically, their machines are used to test blood samples for their glucose levels, meaning they are used to monitor diabetes. Their machines are very expensive, often costing more than $20k, and they must be operated by professionals. They also make the consumables that go in these machines. Meditest has a presence only in Europe.

The market for these large machines is growing very slowly and Meditest is looking for more growth. They have designed patient-operated machines that can do simple glucose level tests. These devices are small and portable, are easy to operate, and do not need much in the way of extra consumables.

Meditest is considering launching this device, called glucore, in the UK. They have retained McKinsey to examine what considerations they should have in this launch.

Recommended Approach

The first step is to establish a framework. Ideally, the interviewee would take into account internal and external factors, the characteristics of the customers, and why UK?

- Internal considerations: capabilities, capital, culture
- External considerations: competition, regulation, market trends
- Customers: market size, segmentation, preferences, payment assistance
- Why UK? Why not other places, why not other value-added services for their core product?

Once you get through the framework in a McKinsey case, it's more or less listen and respond so try to think about the implications of what you're being told and analyzing.

This case represents a mix of numbers and detail analysis, then the need to step back and consider what the numbers are telling you. Take a moment to think about the numbers in context and it should be fine.

Key Facts

- Size of the market is 108k people/year
    - Population of the UK is 60 million
    - 20% of that population is over 65 years old
    - Of those over 65 years old, 5% are currently diabetes sufferers

- Of those under 65, 1% of the population are currently diabetes sufferers
- 10% of the population buys glucore every year

- Revenues will be 2.16M pounds/year in 4 years
  - Price point on these machines today is 120 pounds
  - The marketing department project that the price will fall by 50% in 4 years (60 pounds)
  - Total market will grow by 33% in terms of people with diabetes (144K)
  - In four years we will have acquired a 25% market share (36K)

Example dialogue:

What issues what you look at?

I would look at internal and external factors, the characteristics of the customers, and why the UK vs. elsewhere.

- Internal considerations: capabilities, capital, culture
- External considerations: competition, regulation, market trends
- Customers: market size, segmentation, preferences, payment assistance
- Why UK? Why not other places, why not other value-added services for their core product?

Is there anywhere in specific you'd like me to start?

Let's start with the customers. You said you wanted to think about the market size for this product. How would you do that? What would you need to know?

Well, I'd need to know the percentage of the population with diabetes, the total population, then the percent that could afford this item. I'd need a price as well if you wanted the market size in pounds.

Interviewer: Let's just do it in terms of people and add in the pounds later. So the population of the UK is 60 million. 20% of that population is over 65 years old. Of those over 65 years old, 5% are currently diabetes sufferers. Of those under 65, 1% of the population are currently diabetes sufferers.

Through my calculation I get 1.08m people (1/5 of 60m = 12m; 5% * 12m = 120k*5 = 600k. 1% * 48m = 480k. 600k + 480k = 1.08m)

Now what else do you need to know?

I need to know how many people will buy this device.

Interviewer: So assume that 10% of the population buys every year. How many people is that?

108,000

Does that sound like a lot to you?

Not really. We're talking about a company that sells machines for over 20k apiece, so without knowing anything about the price of this new product it seems like this is a pretty small total market to be going after.

Interviewer: Alright, we'll come back to that. Assume the price point on these machines today is 120 pounds. The marketing department project that the price will fall by 50% in 4 years. Also in 4 years they assume the total market will grow by 33% in terms of people with diabetes. In addition, in four years we will have acquired a 25% market share.

What will our revenues be in 4 years?

The price will fall to 60 pounds (0.5*60 pounds), and the number of purchases in a given year will grow to 144,000 (108,000/3 = 36,000). Our market share is 25%, so there will be 36,000 people buying (144,000 / 4 = 36,000) at 60 pounds per person. That brings me to a revenue number of 2.16 million pounds.

Now how does that number sound to you?

It still sounds a little low for the type of growth I believe this company is looking for.

So what are some levers you might pull to increase that number?

There are a number of drivers. First there is the population size – you might want to include other countries or markets to increase the overall field you're competing in. From market share, you could try to position yourself differently, maybe as the more convenient option or the most trusted one. Or you could try to keep prices high. I'd think the most logical would be to try to hit more people overall.

You mentioned price. How would you think about pricing this product?

I would think about the value add to consumers in terms of the convenience offered and money saved. If this means they don't have to go to the physician then they will be saving time and money.

Do consumers always pay for their trips to the doctor?

No. Often insurance would pay, so they might be willing to do some sort of a co-pay for devices like this. The devices might also prompt people to keep better tabs on their blood-sugar levels which insurance companies would like a lot. After all, the major cost to insurance companies is the catastrophe, so anything cutting down those chances would probably be a good investment.

So if you had to summarize what we've looked at so far…

We've looked the current size of the market in the UK for consumer blood-sugar monitoring devices, as well as the growth potential in four years. There seem to be lots of benefits to the customers and to insurance companies meaning the product should be accepted if effective. However, it seems that a launch just in the UK has limited revenue potential.

71 CONSUMER ELECTRONICS PRIVATE LABELLING

A consumer electronics retailer is considering the introduction of private label brands.

Is there value in this product line? What are the sources of value of this program? What are the potential downside risks associated with introducing private label products?

Additional information provided upon request

- 300 stores nationwide
- Private label brands are unbranded products made by an OEM (Original Equipment Manufacturer)
- Margins are high on low end products; high end branded products have low margins
- Selling a branded television currently offers them 30% margins while a similar private label product would give them 35%

Sample Solution

- Sources of value
    - Promotion: We will be able to price this product more competitively and generate traffic in our stores.
    - Product knowledge: By, in a sense, becoming a supplier we are making a vertical move that could increase our product knowledge and, consequently, supplier power.
    - Becoming a supplier: Because we are supplying ourselves, we could also supply other retailers. This may give us more power in the relationship with the OEMs. We may be able to move into other product lines and create a well-known private label brand.
- Downside potential
    - Brand erosion: Customer may perceive us to be a discounter resulting in an inability to charge premium prices or sell high-end products.
    - Supplier backlash: Suppliers may not want to supply us if we introduce this private label product. It may cannibalize sales of their items or they may fear brand erosion from supplying our stores.

- Poor product knowledge: Thus far we have only been a customer, never a producer. Thus we have no competency in this area and may be taking on too much risk given the mediocre rewards available.

72 JOHN'S CABLE TV SERVICES

John Malone of TCI commissions you to look into a concern that he has. He has heard that Hughes is planning to launch a commercial satellite that will offer cable TV services to the domestic market.

Is this is a credible threat to John's monopoly position in cable TV services? If it is credible, what should TCI do?

Upon inquiry you find that it would cost Hughes $5B to get this satellite in the air and operational. You also find out that it will offer 200 channels whereas TCI only offers 50. I had a tough time putting a structure to this one. In the end, after asking a few questions, I determined that we needed to estimate the revenues and costs for Hughes to see if this was a credible threat or not.

Price

I assumed that on average, current cable bills are $35/month. In order to be a credible threat Hughes needs to be able to provide service at a price of around $35 (could be a little higher because of additional channel offerings).

Quantity

On the quantity side I estimated the number of customers that the satellite TV offering could reach. I start with 100M households, estimate that 60% of those are in the market for cable services (combination of income levels and need for cable service to get any reception, which differs significantly by region) I find out that TCI has 40M customers across the country. I assume that all of these households could potentially be in the market for satellite service (if it was priced right).

Initial Costs and Amortization

The initial $5B cost needs to be amortized over the useful life of the satellite. Upon inquiry, I discover that in general a satellite could last for 7-10 years. However, due to the rapid evolution of technology, the actual useful life of 1 particular satellite would be 5 years. This means that $1B needs to be amortized each year over the customer base of the satellite TV services.

Fixed Costs

If you estimate that Hughes can penetrate 50% of TCI's existing market (20M) than the fixed costs would be $50/year. In addition to this cost, you have to cover the costs of sales and service as well as attaining rights to cable programming.

Variable Costs

An additional cost that needs to be amortized is the cost of the satellite dish for the consumer. It's useful to mention that you could also opt to lease dishes to consumers to get around this big up front cost for the consumer. I discovered that the combined operating costs would, if you choose the leasing of the dish method (like today's consumers lease the cable box, and it gets rolled into the monthly bill of $35), be low enough to make this a credible threat to TCI!

Wrap-up / Recommendations for client:

The threat from Hughes is credible! Some suggestions that I had for John and TCI to address this were:

1. Attempt to provide their own satellite service,
2. Buy out the Hughes offering,
3. Improve (increase) the program offerings to your current customers to close the gap on what the satellite would offer, or
4. Try to develop exclusive agreements with certain programming to lock out the satellite offering.

73 HEAVY DUTY TRUCK MANUFACTURER

The client, Big Truck Co., is a large, US based manufacturer of heavy duty trucks, also known as semi-trucks. They make two types of vehicles, semi-trucks designed for pulling trailers and trucks or chassis' used for cement trucks, waste haulers, etc. The company has three marquees (brands), all of which manufacturer vehicles for both types of vehicles. The three brands are the result of acquisitions done in the past five years. The company is profitable, but profit margins have been declining slightly over the last few years. Additionally, the market is forecasting a significant market decline in the next few years, which brings great concern to the management of the company.

Additional information upon request

- How large is the company in terms of revenue? > $30 billion
- Can we clarify that the objective is to preserve profitability as the market declines? > Yes
- Does the company sell into international markets? > Yes

The CEO has hired McKinsey to help the company better understand their position and to look for solutions for the coming years. How would you structure the problem for the CEO?

Sample answers

Poor answer: I would want to examine the revenue, starting with volume and then looking at price. Second, I would want to look at costs, better understanding the variable and fixed costs.

Good answer: This is clearly a profitability question. In order to understand this problem, we need to examine the cost structure of the business and determine where we can be flexible in an ensuing economic downturn. Additionally, we may want to understand ways of adding to our top line. Starting with the revenue, I would want to better understand the product mix. Perhaps there is opportunity to upsell for better profitability. Second, I would want to understand our sales model (dealership, wholesale, fleet, etc.). On the cost side of the equation, I would want to examine any additional synergies we could achieve from our recent acquisitions. We could also look at our fixed costs and overhead and determine if new investments may be worth it to save costs in the long run. Finally, I would want to look at the variable costs and see if we can reduce our labor or input costs on a per truck basis.

Great answer: A great answer would include all the elements of a good answer, plus the following additional ideas. From a revenue standpoint, analysis of our three marquees would be useful. Perhaps we are cannibalizing our own brands and need to consider a drastic reorganization. Additional,

analyzing the competitive marketplace could provide significant information on how we can achieve better profitability. Within costs, operational efficiencies and lean processes could be a way to achieve costs savings. One thing to watch out for, however, is regulatory changes, most likely emissions rules, that could dramatically change our costs. We should be cognizant of this and other external factors in everything we consider.

While a profitability framework does work well in this case, the specific bullets beneath revenue and costs should truly address this company in particular and the issues it will face. Here is a potential framework that will serve the interviewee well in this case.

Revenue

- Product mix (semis vs. chassis, or marquees)
- Cannibalization across marquees
- Styling of vehicles
- Sales model (dealership, wholesale, fleet, etc.)
- Competitors
- Market volumes

Costs

- Synergies across marquees
- Labor/union costs
- Input/commodity costs
- Operational efficiencies (lean, six sigma, etc.)
- Fixed overhead (SG&A)
- Fixed manufacturing (age of facilities, etc.)

External

- Regulatory changes
- Market substitutes (rail, air, water, etc.)

The team decided to take a closer look at the costs of producing a particular line of trucks. Take a look at the cost breakdown below. What is the potential savings for Big Truck Co. were we to be best in industry in regard to our cost structure?

Manufacturing mix	Client	Competitor A	Competitor B
In-house manufacturing	70%	50%	30%
Out-sourced parts	30%	50%	70%

Parts cost index	Client	Competitor A	Competitor B
In-house manufacturing	100	100	80
Out-sourced parts	120	80	100

Total cost per truck: $40k

Sample answer

Calculation: Total cost / truck * [in-house % * (competitor B cost / client cost) + out-sourced % * (competitor A cost / client cost)]

= $40,000 * [30% * (80/100) + 70% * (80/120)]

= $30,400

= Savings of $9,600 (24%)

Annual volume: 5,000

Total annual savings: $48m

The interviewee should be told to leave the Manufacturing Mix constant in the calculations.

Good answer: If I understand this correctly, we are basically indexing the costs of both manufactured goods and outsourced parts against that of our competitors. Given that, it looks like we could save 20% in our in-house manufacturing ((100-80)/100) if we had the same cost levels as competitor B. On the outsourced parts, it looks like we could save ~33% ((120-80)/120 if we matched the pricing competitor A is achieving. Given we know our product mix, we know how much of the $40,000 is being spent on both areas. I can then calculate the new cost at the “best in the business” cost structure. It appears that we can save approximately $9,600/truck or 24% of our original cost on a blended basis.

Great answer (containing the elements from above): While this savings is great, I want to better understand the savings to the company. Do we know how many units are manufacturing in this product line a year [answer of 5000 units given]. Given that, it appears we could save $48 million dollars a year. For a $30 billion company, that is about 15 basis points of operating margin before accounting for taxes.

Note: The candidate will likely struggle with understanding how to calculate the savings as the indexing is an odd way of thinking about the market. Be prepared to nudge the interviewee to keep the product mix constant. Additionally, many interviewees may use 80%/100% for the outsourced parts, instead of 80%/120%. Watch for this and guide the interviewee toward a better answer. Obviously, the great answer brings in the context to the company as a whole and truly seeks to understand the impact of the savings.

The team decided to take a closer look at the costs of producing a particular line of trucks. Take a look at the cost breakdown table above. What is the potential savings for Big Truck Co. were we to be best in industry in regard to our cost structure?

Sample answer

Great answer: If we structure this out, I think we can come up with multiple ideas as to how we can remove costs for this system. Let's look at it this way:

In-House Manufacturing

- Lean/Six Sigma evaluation, continuous improvement
- Labor evaluation – are we union? What can we change?
- Commodities/inputs – LT contracts?
- Facilities – are they old/new? Can we upgrade? Are we at capacity? Are the flexible?

Supplied Parts (Outsourced)

- Can we improve our contracts?
- Is our delivery/distribution poor and costing us additional dollars?
- Are we scaling properly across our marquees? Can we leverage the volume/standardize parts?

Other

- Can we improve by changing the mix of outsource versus manufactured parts?
- Can we vertically integrate? Buy suppliers?

Good answer: The candidate will list a number of the items listed in the great answer, but will lack completeness and structure in comparison.

Note: A great answer will really go through this problem in a structured way. Additionally, each answer should be listed as a conversation with the interviewer. Ask outright about some of the ideas. Perhaps they have been tried already. The interviewer can engage as much as desired in this question guiding the interviewee to specific ideas if desired.

The team also identified another area that it thinks there is potential for savings. The company has a significant used truck business and has contractual obligations to purchase trucks back form customers who bought them new. Take a look at buy back schedule below. What analysis can you do from this data? What is the potential for Big Truck Co.?

Buy back schedule

Buy back price: $25k

Years until buy back: 3

Trucks in buy back program: 20k

Aging of trucks: 1 year 50%, 2 years 25%, 3 years 25%

Valuation of trucks at time of buy back: 1 year $20k, 2 years $15k, 3 years $20k

(time value of money can be ignored for the following calculations)

Sample answer

Expected cost of buy backs

= buy back price * trucks in program

= $25,000 * 20,000

= $500m

Expected value of trucks in program

= (trucks * % year 1 * valuation year 1) + (trucks * % year 2 * valuation year 2) + (trucks * % year 3 * valuation year 3)

= (20,000 * 50% * $20,000) + (20,000 * 25% * $15,000) + (20,000 * 25% * $20,000)

= $375m

Expected loss: $125m

Good answer: After analyzing this program, it is clear that we are mispricing the trucks intended to be bought back. We are offering to buy trucks at $25,000, but at no point in the next three years are the trucks worth that much. While this may be a good program and offer us other profits as part of a used truck business, we are taking a large loss with this program. Based on the calculations, we are projected to lose $125 million dollars and I suspect we are selling trucks under these same contracts every day, only further exacerbating the problem.

Great answer: After answering the good answer, additional points like the following could be made. Although it seems obvious that we should seek to change these practices, I would want to better understand why we are in the position that we are in. Is there an advantage to selling at a loss because it translates into larger profits in our used truck business? Does this create goodwill with our customers and draw them to buy more new vehicles at a greater margin? Understanding these issues more fully would better help me understand how to create a positive solution in regard to this issue.

Note: This problem has fairly straightforward math and shouldn't take the interviewee long to see what the potential loss would be. The great answer should not only bring to light the scale of the potential loss, but be inquisitive as to why this might be the case. A good interviewee should also guide the interviewer easily to the next question regarding potential solutions.

What specific steps would you take to achieve the savings identified in buy back schedule?

Good answer: My first action would be to halt the practice of these sales immediately to avoid further sales at a loss. I would then work very quickly with our sales managers to structure new contracts so we can launch the business again. I recognize this may be a key sell point for our salesman and do not want to leave them without this tool. At the same time, I would begin an analysis of how affective of a tool this business is for driving business. There may be a reason to be creating contracts that drive a small loss if it allows us to take profitable new truck sale volume from our competitors and creates greater profitability overall.

Great answer (would be inclusive of the statement above): After stopping the current unprofitable practice, understanding more appropriately how to drive sales, and creating new procedures, I would

then go back to the current contracts and see how we can squeeze value out of them. We may be able to renegotiate some of the contracts finding alternate solutions that are more profitable for us. Perhaps we can break the contracts early. Perhaps we can negotiate service packages in trade for buybacks at a higher profitability level to the company. Maybe we can sell the contracts to a third party who thinks they can get more value out of them than we can. Exploring as many options as possible to increase profitability would be a worthwhile exercise.

Note: The interviewee should very deliberately talk about things the company should do, preferably in a timeline (short, medium, and long term) format. Thinking through not only what to do going forward, but what to do about the current position is what truly makes an answer great. The interviewer should be open to using the phrase "what else?" to push the interviewer outside their comfort zone.

It appears the potential for savings is there. The CEO would like a specific recommendation as to what action he should take. Can you provide a recommendation?

Good answer: After extensive analysis of both the cost of manufacturing and of the buy back program, I have identified significant savings in both areas. By modifying the buy back program, we could potentially save $125 million, keeping in mind that these obligations are unlikely to disappear entirely. As for the manufacturing, we have identified an annual savings of $48 million, again under the caveat that some upfront costs may be needed in order to realize the savings. I recommend you begin by modifying your buy back program first and then looking more closely at your manufacturing and suppliers in hopes of achieving the additional savings there as well. When modifying the buy back program, you do want to be careful not to damage relationships with your customers. However, the scale is large and needs to be addressed regardless.

Great answer (includes the above recommendation, but add the following): Given this recommendation and the inherent risks, I would begin tomorrow with communication to your sales team to begin implementing a solution to the buy back program. Additionally, we should begin doing deep analysis on our manufacturing operations in order to identify our inefficiencies and talking with our suppliers about how to reduce costs. We should also look into the future to see if we can take some of the savings for this line of trucks and apply it across the many product lines that we sell. Additionally, given an impending downturn, we should also perform an analysis of the effects of a changed sales program as it may affect the implementation.

Note: A good answer should have a clear, early recommendation, evidence for the recommendation, risks inherent in the changes, and clear next steps to be taken in the immediate future. Credit should also be given for noticing that an improvement to operations creates perpetual annual savings. The interviewee should be comfortable asking for a moment to synthesize their thoughts and structure an answer starting with the action, then reasons, then risks, and finally next steps.

74 TAJ PALACE ELECTRICITY BILL

Please estimate the monthly electricity bill for the Taj Palace hotel in Delhi.

Note: This is a typical estimation case, and should be solved using the usual MECE approach.

A starting point is to identify that the hotel's electricity expenditure is in three major areas:

- the rooms,
- the services (background and foreground),
- the lobby and reception.

Let us take each of these one by one. For the rooms, the candidate was asked to assume 500 simple rooms. For each room, the candidate needs to account for lights, AC, miscellaneous supplies like ironing/laptops etc. For all the rooms, the power consumption came out to be 30MWh.

Then the candidate divides the services into 3 restaurants, 1 bar, 1 coffee-shop, 5 shops, 5 office complexes, 3 conference halls. Services like swimming pool and parking etc. could be ignored as they don't take up much electricity. Next, the candidate calculates the power consumption of all of these one-by-one making appropriate assumptions, by estimating the size of each of these in terms of the size of the room. All of this was after confirming with the interviewer. Finally, this came out to be another 500 rooms, hence another 30MWh for the services.

Then, a lobby was taken to be roughly the size of 50 rooms. The candidate assumed 5 such lobbies in the hotel. This gave another 15MWh. Hence, the hotel spends a total of 75MWh in one day. This means 75000 units of electricity. Assuming a price of roughly Rs. 10 per unit, this gives us Rs. 7.5 lacs per day, or about Rs. 2.5 crore per month. The interviewer said it was good answer and that the actual expenditure is close to this.

Next, the candidate was asked to estimate the revenues earned from hotel rooms, per month, to see if the hotel at all recovers this cost. Here it is important to consider that hotels usually reserve rooms for businesses at a cheaper rate, and that all the rooms would not be occupied all the time (an occupancy rate of 70% is realistic).

75 SHIPPING COMPANY PROFITABILITY

Our client is a major shipping company and owns 200 ships and leases an additional 150 ships. Our shipping company transports all kinds of goods except oil and other liquids. We also do only port to port transport which does not include ground transportation from the port to/from client location.

Recently they have noticed a steep decline in their profitability – what do you recommend in order to remedy the situation?

Sample solution

- Reasons for revenue decline
  - Decrease in global trade owing to the slowdown in Europe and China
  - Increased competition
  - Decrease in utilization (load factor) of ships
  - Emergence of alternative transport mechanisms
  - Types of service offered vis-à-vis product mix (e.g. shipping time vs. price)
  - Brand image problems causing declining revenues
  - Other problems associated with reputation e.g. recent accidents
  - Security and reliability of delivery
  - Competitors offering ground transportation in addition to port to port transport

- Reasons for increase in costs
  - Increase in maintenance for ships
  - Increase in insurance costs
  - Labor and material costs
  - Fuel costs
  - Costs associated with route (e.g. Piracy resulting in longer hauls or weather related changes causing longer time to ship)

- Environmental costs
- Costs resulting from underutilization of ships
- Increase in leasing costs
- Duration and contract terms for leased ships
- Holding costs related to holding items in port
- Docking and transit costs paid to governments

What would have been the impact on profits if fuel prices did not rise?

Our client conducted an in depth analysis and discovered that it's cost for the current fiscal year were $1b. The revenue has remained steady but the load factor of ships has decreased. 35% of this cost directly resulted from payment made for fuel. The price of fuel has appreciated 300% since 2009. Assuming that the fuel price did not appreciate what would be the net impact on our bottom line.

- Fuel cost in 2012 = $350m
- The fuel appreciated by 300% therefore fuel cost in 2009 = $87.5m
- If the price today was $87.5m it would have meant an increase in profit of (350 - 87.5) = $262.5m

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Brainstorm: Given our discussion so far, how can profits be increased?

- Given that revenue has remained steady and load factor has decreased implies we are making more runs, we should identify ways to increase our load factor and decrease the number of runs
- This would mean holding goods at the port for a longer duration
- It is interesting that the fuels costs have increased by 300% whereas the oil prices in the market have not seen a similar increase indicates the price must be a result of the refining cost. It will be important to investigate the reason for increase in refining costs.
- We could renegotiate our lease contracts and possibly terminate some of these
- We could hedge fuel (make sure the interviewee understands how and what they will be hedging – if the refining cost increase is not permanent the hedging would be detrimental)

- Explore replacing engines with ones that use electric motor’s
- Optimize routes to take advantage of ocean currents thus saving on fuel and decreasing transit time
- Ensure optimum vessel size and optimize route so that there is commonality between refueling stops and port calls for transfer of goods.

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76 AIRLINE CALL CENTER

Our client, Airline A, is one of two airline companies (duopoly) in Australia. Both companies are identical in every aspect (brand, price, etc.) and have a 50% / 50% market share. For year X, Airline projected revenue of 200m. An audit of their projected revenue for the year (in November) reveals that their revenue for the year has actually dropped to 180m (a 20m reduction).

What happened and how can we rectify the situation?

Additional Information

- No new competition or regulatory changes
- No major changes in customer behavior or segments
- No new substitutes
- Same prices / promotions by both airlines
- Same in-flight services by both as last year
- No new organizational changes or new investments
- We sell tickets through agents (20%) and through call centers (80%)
- Client decided to sell holiday packages in addition to tickets
- Call time increased to 3 minutes; previously time was 2 minutes
- Each call center has 20 operators

Sample dialogue

Candidate: I'd like to look at why revenue is declining.

- External: I would like to understand changes in the customer or the Australian market that happened during the year, including possible externalities. Then I'd like to also understand how our competition (Airline B) fared and any strategic changes that they had during the year.
- Internal: I'd like to look at the company, specifically any new investments, organizational changes, price drops, or marketing campaigns that the company undertook.

Interviewer: Sounds good.

C: Let me start with the external factors. Were there any changes in the Australian airline market – new competition, regulation, or big consumer trends that I should be aware of.

I: Everything was just like last year.

C: How about substitute products – cars, trains, buses, etc. – did gasoline become cheap?

I: No.

C: What about our competition, did they ….

I: Our sources indicate they have gained market share, ~20m.

C: Hmmm, our loss has gone to Airline B. You mentioned that we were identical in the number of flights, brand, price, delays, etc. Has anything changed over the last year?

I: Everything is the same as last year. (Strong clue to candidate not to go down the path of 3-C's)

C: So there were no strategic changes made by Airline B.

I: None.

C: Now, how about the in-flight service that we provide to our customers?

I: No change.

C: Is it possible that we are attracting a new segment of customers that alienated our past customers?

I: Our average customer segment has not changed.

The answers by the interviewer must give a clue that the problem is not external. Candidates should be instructed to never assume that the interviewer is rude if he is terse, but instead take that as a clue.

C: Ok, let me shift to internal factors. Were there any organizational changes, operational changes in our company?

I: No.

C: How about new investments?

I: Nothing that we don't normally do in other years.

C: No changes. Revenue has dropped. Number of tickets we sell is less – well through what outlets does the client sell tickets?

I: Through a call center and through travel agents. (The goal is to try and lead the candidate to this point within 5-10 minutes. An outstanding candidate would get to this point in 5 minutes if she had prioritized the issues based on the situation. It is unlikely that customer preferences/segments changed drastically, so perhaps she could have gone through the above questions a little faster)

C: Did we have any marketing campaigns/promotions to increase sales through any of these outlets?

I: No changes with the travel agents. For the call centers the client did include a new feature. The client felt that air travel should be sold as a package deal – car, hotel, air travel. So they aligned with some partners to provide the package to customers.

C: Is it possible that customers are dissatisfied with say the car rental or the hotel and reflect the dissatisfaction on us?

I: Our Client was extremely careful in selecting their partners. In fact customers are extremely satisfied with our deal and our customer satisfaction rating has increased.

C: Hmmm. How about the average call-time? I'd suspect that it has increased.

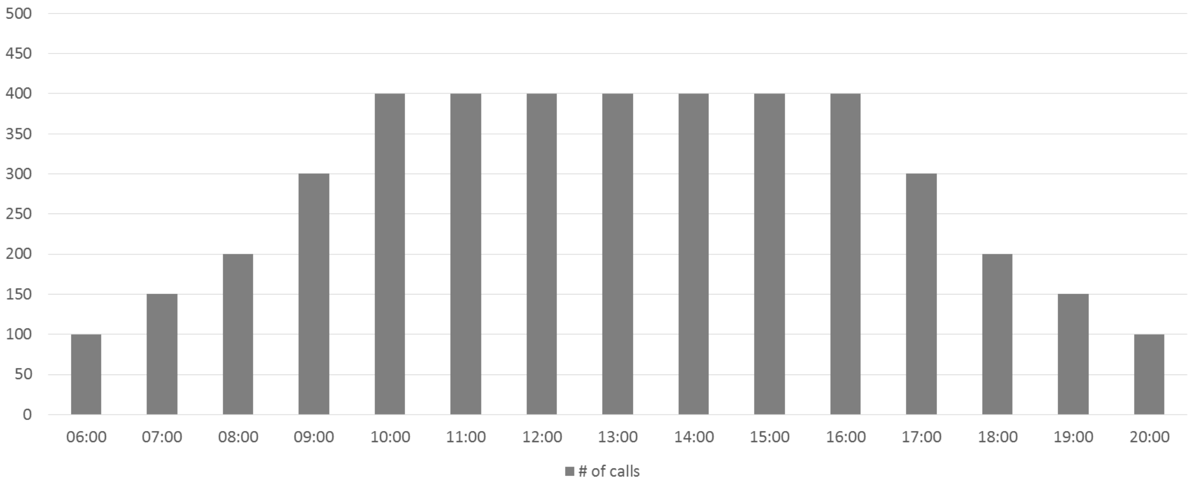
I: Call time has increased to 3 minutes.

C: Did we increase the number of operators?

I: No.

C: So it's possible that our clients are trying to reach us, but get queued and leave?

I: Possible. Unfortunately the call center managers are not very sophisticated and all that they could provide is the following graph showing the calls per hour for each hour of the day.



C: One thing I note is that the calls flatten around 10:00am at 400 calls. It's unlikely that consumers come in at the same rate from 10:00-17:00. So perhaps we have queuing during those houses due to capacity constraints and some customers leave.

I: Good hypothesis – how will you verify that this is true?

C: Is the call center reaching capacity, or alternatively how many operators they have?

I: Each center has 20 operators.

C: Each call takes 3 minutes, so in an hour each operator can take 20 calls. 20 operators means 400 calls per hour – so they are indeed at capacity.

I: Very good, but are you sure that this is the cause of a 20m drop in revenue? If it is indeed a capacity problem it can be easily solved. But I don't want to look like a fool before the board if I suggest this solution and it does not work.

C: Well 20m is a huge number, but it is 10% of the revenue. Consider a possible scenario where we had infinite capacity and let us assume that the calls increase till 14:00 and follows a normal distribution.

I: Fair enough, what are you getting at?

C: If I complete the bar graph to peak at 14:00 we can fit another 1,800 calls (area of triangle =

½ * 6 (base = 6 hours) * 600 (height of triangle at peak is 600 calls, assuming linear rise and fall)). This is around 40% of the existing total calls. So I'm fairly confident that this capacity constraint, if it exists in all centers, could account for 10% reduction.

I'm assuming that customers who leave the phone go to our competition – they may go to travel agents, so we may not be losing all of our customers.

I: Great point. It was found that the yield with travel agents was far less – so the client actually lost customers in total.

77 US CT SCANNER

Your client, Melson, is a dominant (98% market share) manufacturer and seller of CT scanners in the US hospital market. The market is quite stable, and the U.S. demand for images from a CT scan grows 5% every year. At the beginning of last year, Melson launched a new CT scanner model that is sold at the same price but can produce 20% more images per year than the previous model. However, apart from the sales due to product replacement, the sales growth of the new model has been stagnant in the last year. The CEO has hired McKinsey to find out the reason for stagnant sales growth, and asked you how to increase sales.

Additional information upon request

- CT scanners produce images of patients for doctor to diagnose disease.
- Melson only manufactures and sells one model at any time. i.e., when the new model goes to market, they stop manufacturing and selling old models.
- The life time of old and new model are both 8 years.
- Hospitals match their number of scanners with the image demand. There is no idle capacity, and new purchase will be driven by either replacement or increasing demand.

Why has the sales growth of the new model been stagnant?

Sample solution

The image demand of CT scanning in the US only grows 5% every year, while the new model can produce 20% more images than the previous model.

Conclusion: by introducing a new model, the total demand for CT scanner will actually go down!

What is the new sales of the new model (i.e. total sales excluding replacement sales)

Note: when interviewee asks about the revenue, sales price and volume, push her/him back to let her/him assume some figures and figure out what can be calculated!

Sample solution

Before the new model launch (the year before last year):

- Let the total number of existing old-model scanners in all hospitals be X
- Let the number of images produced per old-model scanner per year be S

In the last year:

- The replacement sales will be $X * (1 / 8)$
- New model can produce $1.2S$ images per scanner
- Let the new sales of new model be Y

Last year's image demand: $X * S * (1 + 5\%)$

Last year's image production:

- From old models: $X * (7 / 8) * S$
- From replacement (using new model): $X * (1 / 8) * 1.2S$
- From new sales of new model: $Y * 1.2S$

Demand = Production > $X * S * (1 + 5\%) = X * (7 / 8) * S + X * (1 / 8) * 1.2S + Y * 1.2S$ > $Y = 2\%X$

Conclusion: excl. replacement, the new sales of the new model is only 2% of existing old-model scanners

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How can you increase sales?

Sample solution

- Increase price
    - We are in a monopoly, and we offer a new model that is better than old model. So increase price!
- Increase volume
    - Enter into new segments, e.g. new geographic regions, medical research center, clinic, etc.
    - Focus on improvement on image quality rather than number of image produced.

- Shorten life time of scanner and educate hospitals on this. (by significantly improving quality, the old models will be obsolete and needs to be replaced before it is not functioning)
- Increase demand of CT scanning: Partner with media, healthcare association, key opinion leader, etc, to educate patients and physicians that CT scanning is safe to use, and the benefit of diagnosing early-stage disease can save people from death.
- Improve marketing & sales force.

What would you tell the client?

- Sales growth is stagnant because replacement are more effective than previous models
- How can Melson increase sales
  - Increase price for new models – new product is superior and client has a monopoly
  - Enter into new segments, e.g. new geographic regions, medical research center, clinic, etc.
  - Focus on improvement on image quality rather than number of image produced.
- Risks
  - Replacement rates drop as a result of the price increase
- Next steps
  - Improve marketing and sales force
  - Significantly improve quality, the old models will be obsolete and need to be replaced before it is not functioning
  - Increase demand of CT scanning: Partner with media, healthcare association, key opinion leader, etc., to educate patients and physicians that CT scanning is safe to use, and the benefit of diagnosing early-stage disease can save people from death.

78 MIDDLE EAST RETAIL BANK MARKET SHARE DECLINE

A well-known local retail bank in the Middle East is losing market share in a growing market. Its technology and service levels are just as good as any of its foreign competitors.

Why is this happening and what can the client do against it?

Sample dialogue

Candidate: Firstly, I'd like to know what is the metric to define market share - is it in terms of number of customers or in terms of the net deposits/loans?

Interviewer: Both, actually. It is losing market share on both these counts.

Candidate: Given this scenario, I'm assuming that customers are not choosing this bank and are opting for the foreign banks instead. Is that a fair assumption to make?

Interviewer: Yes, you can proceed with that assumption.

Candidate: In my understanding, there are about 5 factors that can affect the customer's choice of bank. They are:

- Service: Is there any specific service which the customers are seeking but is not provided by this bank? Is the client's services basket offered any different from those of its foreign competitors?
- Cost: Is the cost of servicing for the client any different vis-à-vis its competitors?
- Quality: is the service level, quality, customer care, etc. provided by the client inferior in any way to the competitors?
- Convenience: This could refer to difference in terms of location of branches, bank working hours, etc.
- Perception: Is there something about the bank's image or brand which creates a negative perception in the customer mindset?

We already know that the bank has good service levels, so let's consider the other 4 parameters.

Interviewer: The services provided are the same as the other banks, no special product or service. Its servicing charges are also the same as other banks. In terms of convenience, it is located in the same locations as other banks and is also equally convenient. What do you mean by perception?

Candidate: By perception, I mean what customers think of this bank and the image they associate with its name. For instance, foremost, banks need to be trustworthy, and do customers perceive the client bank as such?

Interviewer: Let's first talk about the customers. What kind of customers are we talking about?

Candidate: The bank could have both individuals and businesses as their customers. These customers could be further segmented on age, income or services used.

Interviewer: Let's stick to individual customer for the time being. Besides the parameters you just mentioned, how else could we segment them? Try to think around the people mix you'd find in Dubai.

Candidate: Yes, considering that more than half the population in the Middle East is expats, these customers can further be segmented on their country of origin. Is that right?

Interviewer: Yes.

Candidate: Considering this method of customer segmentation, is the client losing market share specifically in one of these segments?

Interviewer: Indeed, the client is losing business mainly amongst the expat population. Why do you think it is so?

Candidate: Can I take 30 seconds to review my thoughts?

(After the break) Are the expats mostly here for a short while? Or, did they grow up in the Middle Ease itself?

Interviewer: They are here for a typical period of 5-10 years and most of the customers in this category did not grow up in the Middle East.

Candidate: There are three things that could explain the low market share among expats:

- Perception: Expats may not know the local banking brands well and hence may not consider them trustworthy. They may have a different perception than the locals.
- International connectivity: Another major requirement of expats is the ease of sending money back home. It's possible that customers choose banks which facilitate this more easily.
- Home banks: Many expats may already have existing accounts and relations with their respective domestic country banks and thus would prefer to continue banking with the same bank and avoid switching over to a local bank

Interviewer: Let's look at the "perception" parameter more closely. What are some of the primary factors that influence perception?

Candidate: Three would be three important factors affecting perception:

- Name / logo / color
- Advertisements, marketing messages
- Word of mouth

Interviewer: Great! That was a real-life case situation I was once involved in. The name of the bank was in Arabic so expats could not associate with it well. Thus, we asked them to rebrand themselves. Besides rebranding, what else can the bank do?

Candidate: The client could tie-up with other organizations that hire expats. These organizations are usually the first point of contact for the expats in a foreign country and thus could significantly influence them. The client could also introduce easier ways for the expat customers to transfer money to their domestic countries.

79 EUROPEAN MACHINE MANUFACTURER

Our client is Machine Co. – a European specialty machine manufacturer. The company researches, designs, and manufactures a variety of machines from underwater drills to semi-conductor chip fabricating machines. The machines are developed based on specific requirement of a customer, as well as brand products which are then marketed and sold to niche customers. One of Machine Co.'s brand products is an injection molding machine (XG 43). This machine injects and molds plastic at high temperatures to create specific plastic products. XG43 is renowned for fabricating high quality products with a nine-sigma defect rate. The quality of products is unmatched by any other existing machine. Although XG43 has strong and profitable market share in Europe, it is unable to sell any machines in the US. Over the past few years, Machine Co. has made two unsuccessful attempts to penetrate the US market.

Please valuate whether a third attempt is warranted, and if so, how can the attempt be made successful.

Additional information upon request

- For this discussion, we are only going to focus on XG43's potential in the US? > Yes
- Do we have any information as to why Machine Co.'s previous two attempts at US market were unsuccessful? > No, but let's find out
- Success for entering a new market entry can be measured by market share and breakeven. Is Machine Co. using the same metrics? > Sure

Sample structure

- Understand XG43's value proposition
  - High quality was mentioned, but what else?
  - Investigate other value propositions
    - High efficiency/speed (No)
    - Low power consumption (No)
    - Low material waste (asking or arriving at this is 20% of the case), reduces waste by 10%
- Understand the US market

    - Size of injection molding market (segment by low quality, high quality, etc.)
    - US competitors, and how XG43 compares with them
    - Is the value proposition enough for them to switch
- Executing the entry
    - Brand awareness (none required, XG43 has received rave reviews in industry journals and has been endorsed by independent agencies.)
    - Infrastructure
        - Manufacturing location (in Europe, so none)
        - Service (none exists in US, but 10 will be needed to deliver the service that will convince users to switch) (getting this is 40% of the case. This is the reason why two previous attempts were unsuccessful) - when an injection molding machine breaks down, its needs to be fixed right away, so a technician will have to be flown in the same day to avoid costly loses
- Economics/Breakeven
    - Each Service center will cost $1 MM/year
    - Current fuel injection molding machine in the US costs $150K
    - Machine Co. would like price its machines at $450 K (which is equivalent to European prices)
    - Every year about 100 machines are ordered, only 10% are put to high quality manufacturing
    - Machines reduces waste by 10%, each machine wastes 1 tons of product daily; each lbs. of molten plastic costs $2.50 cents - breakeven for consumers in 2 years (another 40% of the case)
- Life of each XG43 is 10 years.

Sample recommendation

The recommendation is a definite GO for US market entry.

- Previous attempts have failed because of a lack of service infrastructure in the US, which is key to service machines on same day (needed to convince customers)
- Value Proposition
    - For 10% of machine buyers, value prop is strong (high quality)

    - For remaining 90%, reduction of waste will be enough to break even on the XG43's $300K price premium in two years.

- High probability of success

    - Should capture almost all the high quality segment (10 machines per year)

    - Should capture significant portion of the remaining segment due to waste reduction cost savings and high quality products

- Next Steps

    - Hiring, training and retaining technical staff will be key

    - Will need to develop a US based sales staff to convince customers

80 ELECTRONICS WAREHOUSE GROWTH AND PROFITABILITY

Our client is an electronic warehouse selling all kinds of electronics and home appliances. It was founded in 1990 and currently owns 375 stores located in all major cities across the US.

They have a healthy profit margin and represent a major player in the electronics retail market, but the CEO hired us to help them grow even quicker.

Recently they opened a number of smaller conceptual stores and these stores are less profitable than the regular ones.

How can you help them to grow aggressively while maintaining the profitability? What are the key areas to investigate in order to determine why the new stores are not profitable?

A good answer will identify the following:

- Revenues
    - Type of products sold in these stores
    - Assortment
    - Number of customers entering these stores
    - Type of customers(income levels, family status, etc.) and how the assortment in the stores meets their needs

- Costs
    - As related to the volume sold (mainly fixed costs)
    - Labor costs; maybe higher trained personnel
    - Distribution costs (from suppliers to the store)

- Competition
    - What is the presence of competition in the area
    - What kind of stores the competition has in the area

- Other
    - Number of hours open
    - Type of stores
    - Location of the stores
    - What are the customer's needs and how our client manages to meet them

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How many stores do they need to open in order to secure a 20% market share in 5 years?

Information to be provided upon request

- Current electronic retail market = $150b
- Current market share = 10%
- Electronic retail market in 5 years = $200b
- Aggressive growth would mean achieving 20% market share in the next 5 years

For simplicity of the calculation the candidate can take into account that the current stores are all of the same revenue size and the future ones will have the same average revenues; the candidate should realize that this calculation would be different if that was not being considered.

Current state

- Market = $150b
- Market share = 10%
- Revenue = 10% * $150b = $15b
- Revenue per store = $15b/ 375 = $40m

In 5 years

- Market = $200b
- Market share = 20%
- Revenue = 20% * $200b = $40b

- Growth needed in revenues = $40b- $15b = $25b
- Number of stores needed = $25b / $40m = 625 (but new stores will be only specialized that have lower revenue)

Is their current strategy a successful one?

A good candidate will realize that the result is not feasible (they have 375 stores from 1990, i.e. 18 years)

How can they achieve their objectives?

Possible options

- Open only the old type of stores
- Choose locations with a specific type of inhabitants (income, family status, hobbies, etc.)
- Introduce new products and use the customer database to sell them
- Implement marketing campaigns, loyalty cards
- Make contracts with schools, institutions, hotels, etc.
- Become a distributor for small electronics stores
- Raise prices on non price-sensitive products
- Acquire/merge with a competitor
- Get into other channels like online sales, door to door sales
- Start selling services (repairs, installations, etc.)

81 AMERICAN AIRLINES

You are the CEO of American Airlines. You are just informed that the price of oil has dropped to nearly $0. Basically, consider the idea that you can acquire oil as easily as you could water. (Assume that there are no significant costs in transporting the oil, acquiring it, etc.)

Who are the first three people you would call within your organization as the CEO? Explain your motivations for contacting each of these people and what you hope to accomplish just having received this information about the price of oil.

Additional information provided after relevant questions

Would competitor airlines have access to the same low cost fuel? > Yes

Sample solution

There are many solutions to this case, a good solution will have a solid upfront framework (touching on most of the major issues) and show some creative thinking.

The 3 individuals I would contact:

CFO

The goal would be to understand how our oil/fuel costs play into larger cost structure per flight. If oil were a significant portion of costs per flight, would there be an opportunity for us to lower costs and allow us to offer more competitive pricing on certain routes? Also, knowing that we have been taking losses on flights, so would lower costs allow us to increase capacity in order to increase revenues? Is there some difference in fuel costs between direct flights and indirect flights (1-stop or 2-stop)? Perhaps we can now afford to fly more direct flights between long distances because of lower fuel costs and gain an edge against competitors.

Marketing Department

To better understand the current level of consumer demand for the industry and to see if there are any opportunities to add additional flights on existing routes or new routes in order to raise revenues.

I would want to better understand the perceived value of direct and indirect flights and if there is opportunity for us provide lower priced direct flights out of Chicago since that is our hub.

Scheduler/Operations Department

To understand where exactly, in terms of our current flights and destinations, we could add flights and what cities we could better serve. Any operational aspects of our system that is inhibited by fueling costs.

Interviewer: Okay, let's focus on your first conversation with the CFO. You mentioned that you would consider lowering your prices with your lower fuel costs. However, your competitors can then lower their prices as well and you could potentially get into a price war, further depleting your revenues. Are you sure about this? What else might you consider?

Answer: That's a good point, since competitors would have access to same low cost fuel and assuming they have a similar cost structure. One possibility would be to differentiate our service. For example, some competitor airlines out of Chicago likely have lower airfares than us for certain destinations, but they have 1 to 2 stops in between. AA, on other hand, offers all direct flights out of Chicago (because the city is our hub) for a slight premium. Perhaps, we can now lower our prices to compete with indirect flights prices but with the added value of a direct flight. It serves to our advantage that Chicago is our hub and one of the busiest airports in the country because this will give us huge volumes of direct flights.

Another possibility would be to consider the Southwest model for AA. Now that oil is cheap, it might become economical for us to operate flights with very short distances such as a Chicago to Detroit and offer a more convenient option to driving, or other modes of transportation.

82 INDIA CARBON INTENSITY REDUCTION

How should India reduce its Carbon Intensity by 25%?

This case usually starts off as an extension of a general discussion about carbon intensity or related issues. The candidate is expected to ask a few initial clarification question:

- What is Carbon Intensity? How is it measured?
- What is the level of GDP that needs to be maintained while reducing the Carbon Intensity?
- What is the time frame for the implementation?

Carbon intensity is the amount of CO^2 emitted per unit of GDP produced; no compromise in GDP growth from the current trend of 7-8%; time frame is next 3-5 years.

The candidate can lay out an approach like the following:

- Identifying sources of CO^2 emissions
- Disaggregating them by sectors and geographies within India
- Prioritizing these based on amount of CO^2 that can be reduced and the impact on GDP that would occur
- Implementing steps to reduce Carbon Intensity for the prioritized areas

The following sectors as the major contributors to emissions:

- Power
- Transportation
- Construction
- Cement
- Steel
- Agriculture

At this point and some discussion, the case is usually already over and the candidate is asked to synthesize his learnings.

83 LONDON MUSEUM

Your client is a London Museum which has an "encyclopedic" range of attractions. They receive 5m visitors a year and currently break even with 50m £ of revenues and costs.

The government has told them that they are withdrawing 5m £ of funding next year.

How would you help the museum regarding their revenue and cost streams?

Additional information provided after relevant questions

Touring exhibits

- One revenue stream is touring exhibitions. Each year the museum sends on average 12 exhibitions to another museum. The average cost per exhibition is 60k.
- Revenues for touring exhibits over the last seven years: 80k, 70k, 70k, 60k, 40k, 40k and 50k.
- Variable costs comprise most of the exhibits cost (insurance, traveling curator, transportation)

Capital Investments

- Each year they get 6m £ to invest in capital projects and they want us to determine their returns.

Previous year investments

- £1.5m in building maintenance.
- £3m in fixing the main courtyard and advertising that it was fixed (most of it was spent on advertising).
- £1.Sm on installing security cameras.

The additional advertising brought in an extra 10% of visitors.

- Each visitor brings in £3 in contributions from fees and £3 contribution from profits in the gift shop.

- Assume visitors will not come again and will not tell any friends.

The security cameras are part of a 5 year project where the same amount of money will be invested each year.

- Museum saves 500k on security guards for first 5 years and £1m in perpetuity.

Sample Solution

Interviewer: What are your thoughts?

Candidate: Well the total average income over the last 7 years is 410K and the total average cost is 420k. Hence on the average we loss money - ignoring any discount factor.

I: Ok, what do you propose

C: A number of options:

- Focus on the big exhibits which make money and cut out the small, less profitable ones.
- See if we can send exhibits to more than one location
- Only do exhibits in the good years, and store them during the bad years.

I: Ok, let’s focus on sending them to more than one museum. What do you think the costs are?

C: Obviously there will be some fixed costs to get each exhibit ready, but the main costs will be variable, in particularly insurance and specialized packing/transportation. So it may only be profitable to send to more than one location if the additional transport costs are smaller than the net revenues.

I: Excellent, they also send a curator along with each exhibit. The museum asked us to look at their capital budget. Each year they get £6m to invest in capital projects and they want us to determine their returns.

This year they invested ¼ in building maintenance, ½ in fixing the main courtyard - but actually when we dove into the costs we found that the majority of the money was spend advertising to people that they had fixes the main court yard - and ¼ on installing security cameras.

Extra info: The additional advertising brought in an extra 10% of visitors and the security cameras is part of a 5 year project where the same amount of money will be invested each year. We expect during the installation that we wills save 500k on security guards and after the project is complete we will save 1m / year on security guards. The building maintenance is fixed and hard to calculate a return on.

C: Each customer brings in a £6 contribution. 500,000 visitors extra = £3m additional revenues.

I: Assume that these extra visitors will not come back and that they will not tell their friends.

C: So expenditure is £3m, hence a zero NPV project.

So we need to look at other ways to better spend their advertising money to increase their NPV. However, on the whole as museums will be stewarded towards maximizing the number of people that come through so this advertising investment makes some sense even if the NPV is negative.

I: During the building of the security cameras the net costs are:

- Year 1-5, 1m net costs.
- Then from year 6 onwards they make 1m savings.

C: Assuming a 10% cost of capital and a perpetuity for the savings, although the cameras will need annual maintenance and they will need to be replaced every 10 - 20 years or so, however we can approximate to a perpetuity of savings.

- Perpetuity of savings is 10m in year 6.
- Present value of savings is 6m (estimated)
- Present value of net costs is (again estimates) at 4m
- Hence the NPV is +2m, given the estimated present value estimation.
- Hence this is a positive NPV project and should be encouraged.

All these investments are sunk costs, so we should also look at future investment plans.

I: Thank you.

84 INSURANCE COMPANY

Our client is a major Insurance company that sells insurance packages directly to corporations in the west Pacific Rim. Their growth has been traditionally achieved in two ways:

1. Adding new accounts (adding more companies as their clients)

2. A growth within the account, i.e. the companies adding more employees to the insurance program

There are a couple of trends in this market. First, it seems like companies are cutting back in offering their employees insurance program and there are many employees that are left with the option of either to pay for insurance themselves or stay without it. The second trend is that the largest growing segment in the insurance market is people over 65.

How can they can increase their growth?

The interviewee should do a good job brainstorming different options for growing revenues. This portion of the case is relatively open ended. Eventually, the interviewer presents a new target market and target financials, and the interviewee should successfully crunch the numbers. Finally, the interviewee should conclude by giving a supported opinion regarding whether the required market share is feasible.

What options can you think of to spur growth?

Brainstorm various qualitative options including:

- Adding more accounts
- Cross selling
- Offering new products
- Expanding geographically
- Entering the private market
- Merging, acquiring, etc.

Now let's suppose we identified the privately insured market as a good opportunity for our client, what issues should the client consider before going in?

- Before entering the private market, we should consider various factors such as
- Market trends and growth rate
- Competition
- Existing product offerings (and how they differ from the client's)
- Different marketing methods (add telemarketers department)
- Different distribution channels, etc.

We did some internal and external information gathering and came up with the following figures. If our client wants to achieve incremental 10% profit growth over the next three years, what growth rate does the target market need to experience? When determining this, it is reasonable to assume that we will capture a market share comparable to what we have today in the public market.

(Addition information, if interviewee asks: profit growth rate from client's current market is expected to be 25% over the next 3 years.)

The following figures are presented by the interviewer:

- Total: 20m people
    - Company insurance: 50%
    - Medicaid: 20%
    - Not insured: 15%
    - Other (over 65, military, etc.): 12%

- Privately insured: 3%

- Our client's figures
  - Number of people insured: 1m
  - Premium revenues: 2b
  - Net revenues: 200m

The interviewee should come up with the following:

- The market size of the privately insured market: 3% of market = 600,000 people
- Company insured market size: 50% of 20 million = 10 million people
- Our client market share: 1 million/10 million = 10%
- Current profits: 200 million
- Incremental profits from privately insured market in 3 years: 10% of 200 = 20 million
- Current premium revenues = 2 billion = 1 million people X average premium
- The average premium = 2 billion / 1 million = $2000
- Client's margins are: 200 million / 2 billion = 10%, i.e. client makes 10% X $2000 = $200 in profit from every insurance sold.
- Client wants to achieve $20 million in incremental profits in the next 3 years, that is, he should get an additional $20 million / $200 = 100,000 privately insured people.
- If the client captures 10% of privately insured market then 100,000 people = 10% of this market which means that in 3 years, the privately insured market size will need to be 1 million people.

Given the situation, how likely do you think it is that the market expands that much over the next three years and our client captures 10% of the market.

Given the trends in the market discussed earlier, I think it is reasonable that 400,000 people would switch from public insurance to private insurance over the next three years, thus boosting the private market to the target 1 million. Also, as our client already provides so much insurance coverage, although indirectly through corporations, it seems that a 10% market share can be achieved.

85 VIDEO GAMES

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 need to know if he should approve a $200 million capital request for tripling the division's capacity.

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 is an attractive one for continued investment and why?

Addition information upon request

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 share. Remainder is divided by 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 though over last few months, sales growth has slowed.
- Division's current sales price for the basic unit is $45 per unit.
- Division remains less than 20 percent of parent company sales.
- Top two competitors also develop, manufacture and sell software/games though division sells only licensed, software.
- Industry growth of software continues to increase.

Costs

- Division estimates current cost is $30 fully loaded. Requested expansion should reduce the cost by 5 to 7 percent and triple production of the hardware units.

- Top two computers are estimated to have a 10 to 15 percent cost advantage currently.

- Main costs are 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

- Primarily outlets of distribution are top end electronics stores.

Profitability

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

Product

- Hardware standards have been established by the industry leaders.

- Product features constantly developed (e.g., new remote joy stick), to appeal to market segments.

Note to the Interviewer

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

If the candidate begins to discuss too deeply a specific issue, before having covered the key issues overall: bring them back to discuss the Industry more broadly by asking "what other issues must be examined?"

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

Minimum requirements

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

- What is future market potential? Candidate needs to question the continuation of overall industry growth. She/he might ask about the saturation of markets, competitive products (home computers), and declining "per capita" usage.

- What is the competitive outlook? Should at least recognize the need to examine competitive dynamics. Issue areas might included: concentration of market shares; control of retail channels; and R&D capabilities (rate of new product introductions, etc.).

- What will be the price/volume relationship in the future? Issues of prices need to be considered.

Better/outstanding answers

Market Potential

- Recognize that there is a relationship between market penetration and growth in new users which, when combined, yields 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 buyer segments, i.e., "fad" potential of product.

Software

- Recognize technology standards are set by industry leaders. 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,

- hardware versus software).

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

Company's Ability to Compete

- Should 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 reason for poor profit performance of division

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86 PUBLISHING COMPANY PROFITABILITY DROP

A publishing firm has been seeing a fall in profits off late.

How would you help them to diagnose and fix the problem?

On the outset, the case seems to be a generic profitability case. The candidate is expected to start with some clarifying questions such as

- What does the company do? > The company is into magazine publishing (2nd highest selling weekly magazine, in addition to few other magazines).
- Who are the competitors? > There are a few other competitors. 2 other large competitors, 1 larger and another smaller than our company and the segment is dominated by these 3. There are a few other smaller players too.
- How long have they been facing the problem? > The client is facing it for the past few years.
- How are the competitors doing? > They are doing fine; their business has been more or less constant.

A basic structure to start with is a standard profitability structure like profit = revenue – cost. In this case, the candidate will receive information early on in the case, that the client has actually seen an increase in revenue over the past few years.

Given this information, the candidate should move on to costs quickly. A way of structuring the discussion is along the value chain of the complete process:

- Collection of news and articles (reporting)
- Editing
- Printing
- Distribution
- Return copies handling

The candidate is expected to go through each of those parts of the value chain to see if something has changed, and to understand their relative cost as well as their cost drivers and identify potential measures for improvement.

However, there will be no major issues until the return copies. Here, the candidate will first need to understand the returns policy and what happens if the vendor/retailer has overstocked the magazines (the company takes those magazines back and the value is practically zero for those magazines).

Once the candidate understands the issue, he should ask about more details how return copies have developed over time to receive some data which indicate that this is actually the core problem of the profitability drop. If time allows, the candidate should try to quantify the financial impact of the return copies issue and discuss the implications of both under-stocking and overstocking at the vendor’s end and find if and how the company is supplying the optimal quantity.

87 ANIMAL PHARMA

A client of McKinsey produces 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.

Should the client continue with this development?

Additional information provided upon request

- 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

Sample solution

- 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

88 US BEVERAGE PRODUCER

Our client is RefreshNow! Soda. RefreshNow! is a top 3 beverage producer in the U.S. and has approached McKinsey for help in designing a product launch strategy.

As an integrated beverage company, RefreshNow! leads its own brand design, marketing and sales efforts. In addition, the company owns the entire beverage supply chain, including production of concentrates, bottling and packaging, and distribution to retail outlets. RefreshNow! has a considerable number of brands across carbonated and non-carbonated drinks, 5 large bottling plants throughout the country and distribution agreements with most major retailers.

RefreshNow! is evaluating the launch of a new product, a flavored non-sparkling bottled water called O-Natura. The company expects this new beverage to capitalize on the recent trend towards health-conscious alternatives in the packaged goods market.

RefreshNow!'s Vice President of Marketing has asked McKinsey to help analyze the major factors surrounding the launch of O-Natura and its own internal capabilities to support the effort.

Which factors should RefreshNow! consider and act on before launching O-Natura into the U.S. beverage market?

Sample answer

- Consumers. Who drinks flavored water? Are there specific market segments to address?

- Cost/Price. Is the flavored bottled water market more profitable than those markets for RefreshNow!'s current products? Is it possible to profitably sell (price set by the market, internal production costs) O-Natura? Given fixed costs involved, what would be the break-even point for O-Natura?

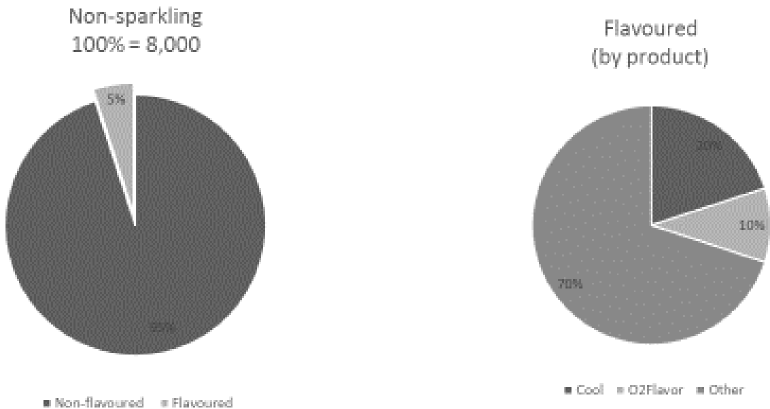
- Competitors. Which products is O-Natura going to compete with? Which companies are key players and how will they react?

- Capabilities and Capacity. Are the required marketing and sales capabilities available within RefreshNow!? Does the product require specialized production, packaging, or distribution? Is it possible to accommodate O-Natura in the current production and distribution facilities? What impact does geography have on the plant selection?

- Channels. What is the ideal distribution channel for this product? Are current retail outlets willing to add O-Natura to their product catalogue?

After reviewing the key factors RefreshNow! should consider in deciding whether to launch O-Natura, your team wants to understand the beverage market and consumer preferences to gauge potential success of O-Natura.

The bottled market splits into non-sparkling, sparkling, and imports. Flavored water falls within non-sparkling. Your team has gathered the following information on the U.S. bottled water market. The information shows an estimate for the share of flavored water, as well as the current share for the two main products: Cool and O2Flavor.



Based on the target price and upfront fixed costs, what share of the flavored non-sparkling bottled water would O-Natura need to capture in order to break even?

Additional information upon request

- O-Natura would launch in a 16 oz. presentation (1/8 of a gallon) with a price of $2.00 to retailers
- In order to launch O-Natura, RefreshNow! would need to incur $40 million as total fixed costs, including marketing expenses as well as increased costs across the production and distribution network
- The VP of Operations estimates that each bottle would cost $1.90 to produce and deliver in the newly established process

Sample answer

O-Natura would need to capture a 12.5% market share of flavored nonsparkling bottled water in order to break even. Therefore, O-Natura would need to be the Number 2 product in the market:

O-Natura would need to sell 400 million units in order to break even:

- Variable profit per unit = $2.00 – $1.90 = $0.10
- Break even units = Total fixed costs / Variable profit per unit = $40 million / $0.10 per unit = 400 million units

O-Natura would need to capture a 12.5% market share:

- Non-sparkling flavored bottled water market = 5% x 8,000 million gallons = 400 million gallons
- O-Natura sales in millions of gallons = 400 million units / 8 units per gallon = 50 million gallons
- Market share = 50 million gallons / 400 million gallons = 12.5%.

RefreshNow! executives believe that the company's position as the top 3 beverage company in the country gives them strategic strengths toward achieving the desired market share. However, they ask the team to characterize realistically what they would need to achieve that target.

What would RefreshNow! need to ensure realistically to gain the required market share for O-Natura (12.5% of non-sparkling flavored bottled water)?

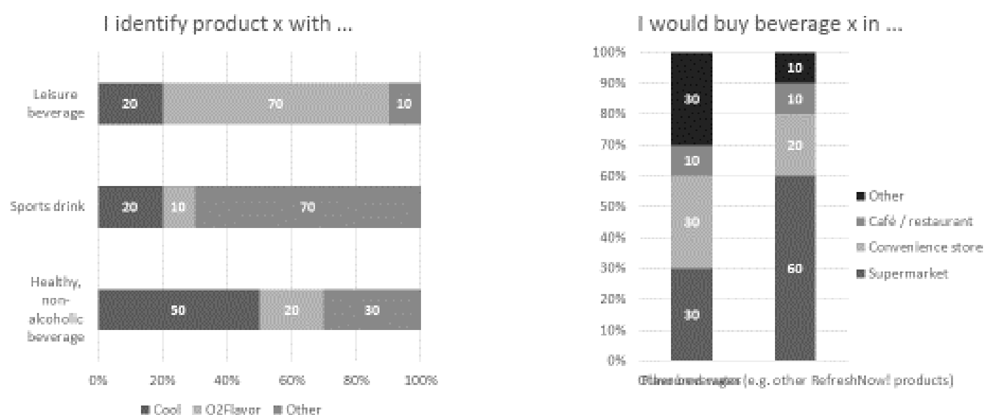
Sample answer

- Match with Consumer Preferences. Ensure product image, attributes, and quality fulfill the needs of all consumers or niche segment, reaching desired market share. Ensure target price is consistent with other products in the market and the consumer's expectations
- Strong Branding/Marketing. Create a successful introductory marketing campaign, including advertising, pricing, and bundling promotions. Leverage top 3 producer status and limited market fragmentation in order to position O-Natura brand within top 3 in the market segment. Anticipate response from competitors (e.g. advertising, pricing, distribution agreements). Ensure product positioning does not cannibalize on other, more profitable, RefreshNow! products. (Note: In marketing, the decreased demand for an existing product that occurs when its vendor releases a new or similar product is called "cannibalization")

- Operational Capabilities. Ensure access to preferred distribution channels. Ensure sales force capabilities to sell the new product. Ensure production ramp-up that allows response to increased demand.

Within the key drivers for market share, RefreshNow! wants to know which to tackle first and what the strategy should be. Therefore McKinsey helped RefreshNow! design and run a study to understand branding and distribution. The following information shows results from the study, based on a sample of target consumers. What can you conclude from the study in regards to the preferred marketing image and strategy of O-Natura?

Consumer preferences
(in percent)



Sample answer

- Branding should emphasize sports drink identity. "Healthy" identity is dominated by Cool product, "Leisure" by O2Flavor and "Sports" fragmented in other products. Clear niche within "Sports" identity, with top 2 brands currently occupying only 30% of share of mind. Sports branding should also determine thinking around the sales channels (e.g., sales during sports events or at sports facilities)

- Distribution differs from current outlets and needs new agreements/research. Major shifts compared to current distribution model required in "Supermarkets", "Other", and "Convenience stores". Agreements with major retail players may accommodate for product introduction, with RefreshNow! managing mix across channels. "Other" channels need further research, since they are a major component of the Flavored water segment

- Marketing message to emphasize identity and availability. Marketing campaign should be built around the currently unaddressed market need for sports drink in order to connect with customers in that segment. Given required changes in distribution channels, O-Natura messaging should clarify new distribution strategy.

The team now explores RefreshNow!'s internal operational capacity to fulfill the projected O-Natura demand. RefreshNow! has decided to produce O-Natura from an existing dedicated production line in a single facility. In order to be on the safe side in case of increased demand they plan for an annual capacity of 420 million bottles (units) of O-Natura. The production line they have in mind currently operates for 20 hours per day, 7 days a week and 50 weeks per year. The speed for the current bottling process is 750 units per minute. Is the current production capacity sufficient to fulfill the desired annual production plan of 420 million bottles of O-Natura?

Sample answer

RefreshNow! Would need to increase its capacity because it would currently only allow to produce 315 million bottles of O-Natura:

- Daily production = 750 bottles per minute x 60 minutes per hour x 20 hours per day = 0.9 million bottles
- Weekly production = 0.9 million bottles per day x 7 days per week = 6.3 million bottles
- Annual production = 6.3 million bottles per week x 50 weeks per year = 315 million bottles

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Given the need for a specialized production process for O-Natura, the company has decided to add a new production line to only one of their 5 facilities. What factors should they consider in selecting the adequate plant?

Sample answer

- Economic factors
    - Required investment in target plant consistent with O-Natura budget
    - Match of selected plant cost structure with fixed and variable cost targets for product
    - Product assignment matches network growth targets (i.e. expected growth due to O-Natura is consistent with planned growth for the plant)

- Speed of installation given current plant commitments
- Adequate location for overall logistics; if only one plant concentrates on production, national shipments should be optimized

- Non-economic factors – availability of additional ressources like
  - Space
  - Water
  - Material supplies (e.g., bottle caps, labels)
  - Local labor pool
  - Management bandwidth
  - Skills and training needs due to specialized process
  - Commitments to and support from selected plant community

The RefreshNow! CEO has seen the team's analysis and confirms that the decision to launch O-Natura has been made. The product will be marketed as a sports drink, produced in the Midwest US, and distributed through supermarkets, convenience stores, and sport outlets. He asks the team what the company should start doing tomorrow?

Sample answer

- Finance to allocate required resources for launch.
  - Communicate launch decision and timeline to Finance department
  - Analyze upfront investment and ongoing profitability targets
  - Secure resources required for initial investment and allocate to each department (e.g., Marketing, Sales, Production, Distribution)
- Marketing to start designing launch strategy.
  - Design product identity, message, packaging, etc.
  - Create advertising and promotional campaign
  - Define any channel-specific considerations (e.g., displays, alternative campaigns)
  - Prepare product communications for investors, customers, and consumers

- Operations to begin product testing, production line design, and logistics.
  - Create and test product
  - Communicate and negotiate product characteristics and prices with suppliers
  - Renegotiate supplier contracts for materials and water supply if necessary
  - Increase capacity of the existing production line (maybe building a new one)
  - Hire new people if needed
- Sales to start designing product approach and training for Associates.
- Collaborate with marketing in defining message for retail outlets and consumers
- Design distribution strategy and allocate resources for new product
- Design and deliver product training for sales
- Communicate new product characteristics and targets to clients (e.g., supermarkets, convenience stores, restaurants, sport clubs).

89 HOTEL CHAIN VALUATION

Your client is a hotel chain that has existing hotels and new hotels in different stages of completion.

How would you do a valuation of this hotel chain?

This is a case with lots of details and numbers.

The candidate is expected to ask a few clarifying questions about the client, like

- What are the hotel chain's revenues and EBITDA margins?
- How many hotels are in the chain and how many are currently in completion?

Most candidates suggest one of the following two approaches for valuation:

- DCF based valuation
- EV/EBITDA multiple based valuation

As a DCF valuation would be very difficult within the case interview (time, no calculator), the interviewer will ask the candidate to use the 2nd approach, doing the calculation for the existing hotels based on their EBITDA margins and the multiple values.

Here, the candidate needs to make appropriate assumptions for multiple values, like e.g. in the range of 5 to 10. This is also the time when the interviewer might want to test quantitative skills by asking the candidate to do some quick calculations

After completing the calculation, the interviewer is expected to tell the candidate that the chain is looking for a private equity investment and the candidate needs to present a case for this investment.

The discussion will move around the different new hotels that were being planned, and the factors that need to be considered like

- location,
- competition,
- region specific macroeconomic factors like income levels, purchasing power,
- etc.

Here the cases becomes a qualitative discussion and the candidate will be asked to synthesize the case at this stage.

90 CHEMICAL INDUSTRY MERGER POSSIBILITY

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 major product line, a bulk chemical used in the production of plastics.

Essential facts:

- 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% share; number two has 20%: out target company has 15 percent; the rest is divided among other competitors
- The two largest competitors earn a small return; the target company is probably at break-even; rest are operating at break-even or loss
- The largest competitor has just announced construction plans for a major new plant

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

Minimum requirements

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

Better answers

- How rational is pricing? (Prone to self-destructive cuts to gain temporary share points.)
- Are there niche or value-added uses for chemical? (Not really.)

- Does the chemical have a major by-product or is it a by-product? (Not of significance.)
- How often have companies entered/exited, and how expensive is entry/exit? (Entry expensive; exit cheap for most because older plants are fully depreciated.)
- How important is this product line to each of the competitors? (Most producers are diversified.)

Outstanding answers

- Reasons for announced capacity expansion. (It is a bluff to try and get smaller competitors to shut down.)
- Is regulation important? (Yes: all competitors have installed pollution control equipment.)
- What is nature of operational improvements that the target company could make? (Lots.)

91 ORGAN DONATION

One of the many functions of the New York State Health Commission is to coordinate organ donation amongst the state's many hospitals. In recent years the demand for organs has been greater than the supply. As a result, many patients die each year because there are not enough organ donations. The Health Commission has hired McKinsey to help it determine how to increase the number of annual organ donations in New York.

For the purposes of this case, assume that only New York residents are involved as donors and recipients.

What are the factors and drivers that determine the number of organs donated in New York each year?

Note: This question seeks to test a candidate's breadth of thinking. A good answer will be logical and structured. It will examine the factors as an equation, though not necessarily exactly as presented here. It will be thorough and should include 3-4 drivers for each factor. A great answer examines the implications of the analysis – i.e. there are only two factors that we can influence.

Additional information upon request

In New York, organs will be harvested from terminally ill or injured patients just before death only if they are a registered organ donor or if the hospital receives permission from the next of kin. New York residents may choose to register as organ donors when they apply for a driver's license.

Sample answer

(Terminal patients * % Registered donors * organs/donor) + (Terminal patients * % Not registered * % Family consent * organs/donor) = organs donated

The number of organs donated is determined by the number of terminal patients' times the percent who are registered donors times the number of organs per person, plus the number of terminal patients times the percent that are not registered donors times the rate of family consent times the number of organs per person.

The number of terminal patients is driven by the age of the population, changes in life spans, medical technology, the size of the population, the overall rate of natural death, plus the rate of accidental death, such as car accidents. The percentage of registered donors is driven by awareness of the donor program, the ease of registering, whether it is opt-in or opt-out, awareness of the benefits of organ donation and personal things such as religious beliefs. The rate of family consent is also driven by awareness of the benefits of organ donation and things such as religious beliefs, along with the information provided by doctors in a time of great grief and assurance that organs will only be

harvested after death is certain. The number of organs donated per person is driven by the average number of healthy, usable organs in a donor.

While we've identified a number of factors, it's important to note that we can only really influence the rate of registered donors and the rate of family consent.

The team has decided to focus on increasing the number of registered donors and is specifically interested in kidneys donations. The Health Commission knows that it needs 9,200 kidneys per year. What percent of New Yorkers need to be registered donors in order for 9,200 kidneys to be donated in a year?

Note: There are other possible ways to setup the equation. What's important is that the candidate takes a structured, analytical approach to the problem and doesn't panic. The candidate should walk the interviewer through the math, either as she solves the equation or afterwards. If the candidate gets stuck, give appropriate hints.

A great answer will include implications of the data. For example, they may conclude that 40% seems reasonable based on their personal experiences knowing people who are registered donors. Anything to show initiative and critical thinking without prompting is good.

Additional information upon request

- The population of New York is 10 million.
- The percentage of people that become terminally ill or injured each year is .1% (one-tenth of one percent).
- The percentage of families that give consent to harvest organs is 10%.

Sample answer

- RD = Percent of New Yorkers who are registered donors. (10,000,000 * .001 * RD) + (10,000,000 * .001 * .1 * (1 - RD)) = 4,600
- (10,000 * RD) + (1,000 * (1 - RD)) = 4,600
- 10,000 RD + 1,000 - 1,000 RD = 4,600
- 9,000 RD = 3,600
- RD = 3,600 / 9,000
- RD = .4 = 40%

Note: Set the equation equal to 4,600 because there are two kidneys per person.

4,600 * 2 = 9,200.

What are all of the things that the Health Commission should consider doing to increase the number of registered donors?

Note: This question is designed to evaluate the candidate's depth of thinking. The above plan is a sample only and there are other approaches. A good plan will be MECE, with discrete categories (i.e. "Benchmarking") and multiple items within each category. The plan should demonstrate common sense and sound business judgment.

Sample answer

First, we should conduct benchmarking studies. Internal benchmarking will reveal what they are currently doing well to drive registrations, and external benchmarking of other states or countries will uncover new ways to increase registrations.

Second, we should conduct a segmentation of current and prospective registrants. We'll want to determine the segments where we are strong so we can continue to cultivate them, and at the same time find new segments where few people are registering.

Third, we should conduct a series of marketing communication tests to determine appropriate messaging and channels to increase awareness and drive registrations. We should consider testing media such as TV, radio, online, direct mail, and may also be able to leverage the word of mouth of our current customers. We'll also want to develop messaging that increases the awareness of the donor program, the benefits of donation and the safeguards that are in place.

Finally, we need to optimize our distribution channels. Currently, people can only register when they get their driver's license. We should add ways to register, such as any time someone goes to the doctor or hospital. We should also make it easier to register. For example, if New York currently requires people to explicitly opt-in, we can change to an automatic opt-in with an explicit opt-out.

The team conducted a customer segmentation and your Engagement Manager has asked you to draw some initial conclusions from the following data (the candidate should clarify that the data are in millions of people). What would you tell her? Follow up question: Which segment represents the best opportunity to increase RDs?

	Registered Donors (m)	**Population (m)**

Caucasian	2.600	5.500
African-American	0.075	1.500
Hispanic	0.250	2.500
Other	0.100	0.500

Note: The data table is designed to present the Caucasian, African-American and Hispanic segments as strong possible targets for different reasons. The candidate should reason through the pros/cons of targeting each segment and come to a firm hypothesis based on this data. It's more important that the candidate selects a target for good reasons and less important that she selects Hispanic.

Sample answer

It looks like the Caucasian segment has the largest number of potential new registrants, but at the same time is already highly penetrated. The African-American segment is the opposite: low-penetration but low upside. The Hispanic segment has a slightly higher penetration than African-American, but is a bigger population. Based on this data alone, I would target the Hispanic segment because of the low current penetration and large population. Some of the risks include overcoming the language barrier and dealing with cultural differences.

The team has decided to focus on increasing the registration rate among Hispanics. What are some things we can do to increase registrations of Hispanics?

Note: This question is designed to test a candidate's creativity. Hence, a sample answer is not provided. It is likely that the candidate will suggest things such as community outreach, Spanish language marketing materials/registration, etc., classic consumer marketing tactics, having vans drive around Hispanic communities encouraging people to register, etc. A good answer will have a long list of ideas that include typical business tactics along with creative, interesting suggestions. The interview should push the candidate by repeatedly asking "What else?", until the candidate can no longer think of things, and to determine how they respond to pressure.

The head of the Health Commission just walked in and wants a recommendation for what he should do to quickly reach Hispanics. What's your recommendation? Start talking now.

Note: A good answer should be short (20 seconds), organized and forceful. The candidate should be firm and not hedge her answer. The recommended steps will likely be things discussed earlier in the case, and a good answer will choose tactics that, logically, will make the biggest impact.

Sample answer

Clearly, there is a big opportunity with Hispanics. We’ve identified a number of things we can do to increase registrations, and since we’re focused on the short term, I recommend that we do X, Y, and Z, because of A and B.

92 NEW AUTOMOBILE FUEL

The client is an integrated oil company and controls the entire supply chain from oil wells to gas stations. They have discovered a new automobile fuel that will increase mileage by 30%. It will also cost 10% more to produce the fuel. The fuel is similar to the old fuel in every other way.

What should they do with the new fuel?

Additional information provided upon request

- There are 5 players in the industry (including our client). They all have equal market share.
- Assumptions of demand guesstimate
  - Population is about 300m
  - 4 people per household (75m households)
  - One car per household (75m cars)
  - Consumption of 20 gallons per week (weekly demand is about 1,500m, or 1.5b gallons/week)
- No special environment concerns or advantages from the new fuel.
- Under no circumstances can the client capture more than 10% of the market due to capacity constraint
- Margins on old fuel are 10%

Complication if the interview is going well: What if there were two distinct markets - the private sector and the government? Assume that the government buys 10% of the total market capacity and buys equally from all players. Should you sell only to the government? What effect would it have on prices?

Sample Solution

Please note: the case per se does not have a conclusive solution; it is intended to test the ability of the candidate to integrate and look at different issues within the same case.

The basic framework at the beginning should include

- Demand issues
- Capacity issues
- Internal issues - whether we could produce it on same machinery, same channel etc.
- Competition
- Environmental issues
- Alternate uses of fuel

Some key issues to be discovered during the interview

- Pricing

  How should they price the fuel? (There is no specific information on prices of existing fuels) but relative to the old fuel, what should be the price of the new fuel?

  What would be the margins from the new fuel? Assume that the margins on the old fuel are 10%. Then, the margins would be about 25% on the new fuel. This can be arrived at through following steps

  - Old fuel price: $1
  - Cost of old fuel: $0.90
  - Gross Margin: 10%

  - New fuel price: $1.30 (since it gives 30% more mileage)
  - Cost of new fuel: $0.99 (since it is 10% more expensive to produce)
  - Gross Margin: $0.31, ~25%

- Elasticity

  What kind of elasticity would auto fuel have? How do you think competition would retaliate to the suggested price?

  They could retaliate by lowering prices on the old fuel. Then the question would be how much lower? The candidate can use the break even theory and conclude that competition would drop the price until they were only covering variable costs.

Alternately, with the capacity constraint that the client has, the competition does not need to bother lowering prices. Hence, instead of losing margins on their bread and butter, competition could avoid a price war. With higher gross margins, the only player that could win a price war would be the client.

Additional questions asked by the interviewer may include:

- Is there any price movement (either priced higher or priced lower) caused due to the new fuel?
- How would the competition price the old fuel if the new fuel were priced at just higher than the old fuel?
- What if there were two distinct markets, like the private sector and the government? Assume that the government buys 10% of the total market capacity and buys equally from all players. Should you sell only to the government? What effect would it have on prices?

  A good answer here would be that it would be very sensible to sell to the government alone since this would negate the possibility of any price war.

93 US RETAIL BROKER

Our client is a retail Brokerage firm with annual revenues of $5B. They are operating throughout the US with 200 branches opened. Half of these branches are corporate and half are franchised.

What are the economics of this business?

A good answer will identify the following

In order to analyze the economics of the business the candidate needs to find more information about their revenues and costs. Then the candidate should look into what competition is doing on the market, how segmented the market is and who are the consumers and what are their needs.

- On the revenue side, the candidate needs to understand where their revenues are coming from and then break it into the two components price and quantity
- On the cost side, the candidate needs to look at the fixed and variable costs:
    - Fixed costs
        - SG&A
        - IT system
        - Marketing
    - Variable costs
        - Labor
        - Other cost related to commissions, fees
- Next thing that the candidate should look into is what competition is doing: how many competitors do we have, are there new competitors in the market, have they stolen share from us, are they offering services that we are not.
- He also needs to understand how the overall market is doing: is it growing or shrinking; how segmented the market is and if there are specificities related to regions.
- Further, the consumer: who are they, what do they want, how our client's products meet their needs.

Information to be provided upon request

Revenues come from 2 different divisions:

- Trading: $3b
- Asset management: $2b

Trading means that brokers do specific transactions as per their customer's requests. The revenue in this division would come from a fixed fee of $10 per transaction.

In the Asset Management division, the firm is administering the customer's money and the revenues come from a percentage from the total amount administered assets which is 1%

Costs:

- Fixed costs: $1b
  - $800m – IT ($700M from trading and $100M from asset management)
  - $100M – Marketing
  - $100M – SG&A

Variable costs:

- Trading
  - Commission to brokers: 40% of revenues
  - Other costs: $2 per transaction
- Asset Management:
  - Commission to brokers: 40% of revenues
  - Fee to an outsourcing firm that is managing the assets: 0.4%

The candidate should now do the calculations for the profits: Profits = Revenues – Costs

- Trading division: Revenues = $3b
  - Fixed Costs = $820m
    - $700m IT
    - $60m (Marketing – pro-rated from the revenues)

        - $60m (SG&A – pro-rated from the revenues)
    - Variable costs: = $6 * 300,000 = $1.8b
        - Commission: 40% of the $10 fee = $4 per transaction
        - Other costs = $2 per transaction
        - Number of transactions = $3b / $10 = 300m

- Asset management division: Revenues = $2b
    - Fixed Costs = $180M
        - $100m (IT)
        - $40m (Marketing – pro-rated from the revenues)
        - $40m (SG&A – pro-rated from the revenues)
    - Variable costs = $1.6b
        - Commission: 40% of $2b revenue = $800m
        - Fee for the outsourcing company = 0.4% of $200b total administered assets = $800m
        - Total assets = $2b / 1% = $200b

- Profits
    - Trading profits = $3b - $1.8b - $0.82b = $380m (12.66%)
    - Asset management profits = $2b - $180m - $1.6b = $220m (11%)

A good candidate will also observe that Asset Management is slightly more profitable than trading.

What would happen to this firm if an economic recession would happen next year? Calculate by how much they need to increase the number of transactions/assets managed now in order to breakeven in each division in case of recession.

In order to do that the candidate needs to know what happened with this firm at the last recession in order to try to benchmark the effects.

If the candidate does not ask for past recession effects ask to brainstorm on how they can estimate the effects of the incoming recession till they get to this answer. The number of transaction decreased by 50%, assets managed decreased by 15%.

Trading

- If x = number of transaction needed now
- # transaction * revenue per transaction = fixed costs + # transaction * variable cost per transaction (50% * x) * $10 = $820m + (50% * x) * $6
- x = 410m
- They will need to increase the number of transaction by ~35% [(410m-300m)/300m]. This is probably not feasible in a short period of time, especially just before a recession.

Asset management

- If y = amounts of assets needed now
- Amount of assets * % of assets = fixed costs for asset management + variable costs for asset management (80% * y) * 1% = $180m + [(40% * 1% * y * 80%) + (0.4% * y * 80%)]
- y = $112.5b
- There is no risk of becoming unprofitable in this division.

How can the client address the risk of the recession (i.e. how can they keep the profitability at current levels)?

They can either try to increase the revenues or decrease the costs.

- Increase revenues
    - Change the product mix – get more asset management business because it is more profitable
        - Advertise

        - Incentivize brokers to get more assets
        - Offer more benefits for customers coming to us instead of competition
        - Extend office locations
        - Offer new products for current customers
        - Put in place a field sales team of brokers to get more assets or trade customers either by attracting more and richer customers or by making the current ones put more money in
    - Get more, richer customers
    - Increase the fee per transaction or the percentage for the asset management
    - Segment the market and differentiate depending on customer

- Decrease costs
    - Fixed costs
        - IT seems to be the highest: outsource it because it can also bring some other benefits like expertise from an IT firm, risk dispersion if it breaks down
        - Use cheaper systems, less qualified labor
    - Variable costs
    - Decrease the commission for brokers
    - Get the asset management in house
    - Link the commission of the brokers to the performance; create an incentive system to make them bring more business

94 DELHI HOSPITAL CHAIN EXPANSION

Our client is a hospital based in Delhi.

Should it expand beyond Delhi?

First, the candidate should try to understand about the services/focus of the hospital. In this case it is tertiary care: cardiac & neurology.

An initial structure for the case can look like the following:

- Customers & market
- Company
- Competitors
- Regulation

The discussion with the interviewer will move around

- focus on customers & market
- segmenting the market (city dwellers, towns, villages)
- matching the offering of the hospital with what the customers need most and are able and willing to pay, setting up a matrix of ailments on one side and customer profiles on the other axis.

Given some discussion on the issues mentioned above, the candidate needs to find out that

- cardiac ailments are more common in cities and hence people there are better targets,
- neurology is very expensive and hence setting up a hospital in smaller towns may not work well as it is hard to recover the money; alternatives exist for towns where they either go locally or come to cities for treatment, and as it is not an emergency treatment people can plan it in advance.

95 GREEN BIOFUELS

Big Green Fuel Systems, a large provider of fuel additives required for the production of gasoline, has recently developed a substantially improved form of ethanol that adds 20% efficiency (measured as miles driven on a single gallon of ethanol). This version of fuel is costly to produce but the market is large and growing more rapidly as increased amounts of ethanol are being used in fuel blends.

How would you determine the viability of this new product, and, if it is viable, how to go about the process of launching it?

- This is a value chain analysis case. The analysis may include, but is not limited to, the following areas:
- Standard valuation (ROI + intangible benefits). What is the initial and recurring investment?
- What is the incremental profit from this venture? What can be gained beyond the sale of ethanol?
- What barriers exist for this product? How will the value chain respond? Can we make it?
- What is the standalone value of this product, and what is its value to other producers? Can we sell it?
- What will existing competitors do in response?

Additional information upon request

- Is the company working in the US only? > Yes, please concentrate on the US market only.
- Does the current infrastructure exist to make and support this product? > It’s compatible with other infrastructure in the external value chain, but Big Green does not yet have the capacity to mass produce it.
- What criteria does Big Green want us to use to determine the viability of the project? > Please develop your own criteria.
- What is the value chain for this product from Big Green to the consumer? > Ethanol is delivered from manufacturers to fuel blenders, who then sell and deliver in bulk to filling stations, who in turn sell it to consumers.
- Does Big Green have a patent on this technology? > Yes, they have a patent.

Sample case structure

Strong case structure: Includes valuation of the product as part of Big Green and at least considers its value for other firms. It is necessary to consider barriers to a successful launch (both internal capability and external pressures). Also a strong plan considers the competitive response and how it is manifested throughout the value chain. Intangible benefits (spin-offs, positive PR, etc.) should be considered as well.

Weak case structure: Valuation is important but not strong enough on its own. Failing to consider costs and investments (both fixed and working capital) is a shortcoming. Failure to consider the possibility of selling the product to another, more capable company shows lack of creativity. Intangible benefits (hard to quantify) are a strong opportunity to showcase creativity as well. Failure to consider competitive response and the full impact on the value chain would also result in a negative hit.

Calculations

The interviewer might want you to do some market sizing for the market for ethanol in gallons and will give you some data. First, there are two ethanol-gasoline blends used in the US, E-85 and E-15. E-85 is 85% ethanol at 10% of the market and E-15 is 15% ethanol at 90% of the market. The number of miles driven in the US last year was 1,800 billion miles.

This is fairly simple, but it's important to first develop the approach (gallons of ethanol = (1,800 billion total miles / X average gas mileage) * 85% ethanol content * 10% of the market + (1,800 billion total miles / X average mileage) * 15% ethanol content * 90% of the market.

A key is seeing that the X mileage is missing and is needed, so the interviewer should ask for it. This will yield a response from the interviewer of 20 miles per gallon on average.

Thus: (1,800 billion / 20) * .85 * .10 + (1,800 billion / 20) * .15 * .90 = 19.8 billion gallons of ethanol.

Expected Insight: One should notice that there's not enough information and know to ask for the average mileage in the US (20 miles/gallon). Also, one should ask about the 20% additional efficiency, but the interviewer will instruct the interviewee to ignore it. Once the interviewee calculates the answer, he or she should remark about the size of the market, and immediately want to know how fragmented it is, and will be told it's highly fragmented.

How would you best appeal to each level in the value chain in order to best promote this improved product?

Further information by the interviewer: The analysis has determined that there is no savings by using this new fuel blend. Basically, the fuel costs exactly as much to develop and deliver as can be gained by selling it. But the CEO has staked his reputation on this product, so he is committed to delivering it.

Expected Insight: The value chain should be looked at from source to consumer:

- Selling to blenders: the fuel blenders will have to blend 20% less (but will pay for it as a price premium). However, they could use it as a competitive advantage by differentiating on its basis. Additionally, it could reduce its distribution costs (delivering less to filling stations). Also, blenders would have a competitive advantage by being positioned for potential future government regulation.

- Filling stations: differentiating factor for eco-sensitive consumers. Point of positive public relations. Appeals to drivers who want to spend less time filling up. Less refills needed from the blender, so less delivery costs. Could also make it possible to distribute gas from smaller tanks, making it possible to put new stations in formerly prohibitive locations.

- Consumers: eco-friendliness. Higher cost of fuel set off by less need to fuel up (efficiency) and there is an additional value add since they'll spend less time at the gas station.

Sample recommendation

The recommendation should include the following:

- The answer – Since the interviewer will make it clear that the CEO is intending to roll out the new fuel, this is a given. The main points from the second question, regarding the value chain, should be included as supporting evidence.

- The number(s) – The ethanol market number is optional and may not do anything to add value to the argument.

- Risks or considerations – Rolling out the new fuel could cause a price-perception problem (higher cost to fill up). Attempts to fix this through marketing efforts could also drive marketing costs. There is also the consideration of what it means to release a new fuel, including risk that the fuel is more corrosive than other existing fuels.

- Next steps – Next step would be launching a pilot program, including marketing efforts, to test the fuel for its efficacy. Lessons learned would be applied to a gradual national roll-out.

Strong Recommendation: The CEO has indicated that he wants to roll out the new fuel. The best way to do this is to appeal to blenders and gas stations on the basis of reduced delivery costs and enhanced public relations, and appeal to consumers on the basis of eco-friendliness and fewer required fill-ups. The biggest risk is alienating consumers due to the higher cost perception and alternatively the marketing cost of mitigating this perception.

Weak Recommendation: The market size is 20.9 Billion gallons of ethanol each year. Thus Big Green should roll out the new product because it’s more efficient and could cut associated costs and make green consumers happy.

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96 CALL CENTER PERFORMANCE

How do you improve the performance of a Call Center?

As a broad outline, the following metrics can be used to measure performance:

- cost,
- call quality,
- delivery (meeting customer demand).

The interviewer might ask to focus on one specific measure, like cost per employee performance metric. The following, general structure can be used for further discussion:

- Understand the components of Cost/employee
- Analyze the drivers for each component
- Suggest suitable recommendations and an implementation plan

The cost components can be disaggregated as follows:

- Salary & compensation
- Long-term benefits
- Training & development
- Infrastructure

The interviewer might want to go deeper on specific issues, like discussing potential cost reductions of compensation & other benefits, which are almost 60% of the costs in this case.

The discussion might move on to motivational topics and the candidate needs to figure out that attrition is the single biggest problem in call centers due to which high levels of compensation are paid to employees and it is difficult to reduce the cost of this component.

97 CAR MANUFACTURER GROWTH

Our client is a start-up electric vehicle manufacturer that has built a prototype all-electric vehicle and is interested in mass-producing it for the U.S. market.

What do you think about this opportunity?

Additional information upon request

- What type of vehicle(s) has the client developed? > It is a light-duty all-electric truck. They have manufactured 3 identical prototype vehicles to date.
- What are the client's existing manufacturing capabilities? > Minimal. The current manufacturing facility is little more than a large R&D lab.
- Where does the client hope to sell their vehicles? > In the U.S. market. Nationwide.
- How many vehicles does the client want to produce in year 1 of manufacturing? > 150,000 vehicles in year 1.
- How much will the vehicle retail for? > Pricing has not been determined yet, but will likely be in the $35k-$50k range.

How would you think about the potential market for this vehicle in the U.S. (i.e. market segments)?

Strong answer: Breakdown of different customer segments in the U.S. auto industry (i.e. luxury, hybrid, vehicle class (SUV, sedan), etc.). Candidate should recognize that the potential market for the vehicle will depend on the price, its physical characteristics (i.e. amount of cargo/passenger space), range of the vehicle, choice and availability of distribution.

Weak answer: A weak answer will contain only one or two examples of different dimensions that consumers use to purchase vehicles. Candidate should expect to get pushed for "what else" if your answer is too thin.

How many employees will be required to build the desired first year production run of 150,000 vehicles?

The following information is known about the production process:

- The vehicle requires approximately 600 unique assembly steps.
- Each assembly step takes approximately 30 seconds.

Strong answer: The candidate needs to ask clarifying questions or make reasonable assumptions if no information is received from the interviewer

- How many hours per day (week) would the average employee work? > 10 (50)
- How many weeks per year does an average employee work? > 50

Weak answer: Candidate makes assumptions without clarifying with the interviewer.

Number of employees needed = 150,000 vehicles x 5 hours per vehicle / (2500 hours per employee per year) = 300 employees

What options should the client consider for scaling up manufacturing to mass-produce the vehicle? What are the pros and cons of each option?

Note: This question seeks to test a candidate's depth of thinking. A good answer will be logical, structured and will discuss drivers.

Strong answer: A strong answer will discuss the pros and cons of various manufacturing options. For example they could build a manufacturing facility in the U.S., build a manufacturing facility in a low-cost SE Asian country, or outsource production (under contract/joint venture) in the U.S. or overseas. Items to be addressed include labor costs, shipping, quality (actual or perceived), regulation, public reaction, proximity to suppliers, etc.

Weak answer: A weak answer will cover only one or two areas addressed above. Having at least three pros and three cons for each option covered is advisable.

Assume that the client has decided to build a manufacturing facility in the United States, what are some strategies that they could use to reduce costs. Discuss the trade-offs of each approach.

Note: This question is designed to evaluate the candidate's breath of thinking.

Strong answer: There are many different ways to address this question. The "most-right" answer is to consider the trade-off between more automated technology and more manual labor. The automated technology will require a substantial initial investment and high fixed costs but will reduce the direct labor (variable) costs. Less automation will mean lower upfront and fixed costs but higher variable costs. Other potential answers include choice of location (right to work state vs. union), engineering optimization (reduce the number of steps vs. vehicle customization), etc.

Weak answer: A weak answer will not address multiple cost-savings approaches and the trade-off involved with each one.

What would you advise the CEO to do regarding the decision to mass-produce an electric vehicle next year?

Strong answer: There is no single right answer. Some additional insights that have not already been covered by previous questions include: advising the client to consider licensing/selling the technology to a major auto-industry player with established manufacturing and distribution, forming a JV or strategic alliance with an established player, launching a pilot program to work out kinks in the technology and gauge market reaction. A good recommendation will have a decisive approach with supporting argument and address the risks and ways to mitigate risks of the recommended approach as well as next steps.

Weak answer: A weak recommendation brings nothing new to the conversation. Simply recapping some of the items uncovered in previous questions is not a strong recommendation

98 EMERGENCY RESPONSE FORCE PPP

An Emergency Response Force (ERF) needs to be set up as a PPP.

What is the magnitude of the problem in terms of the emergencies in India?

Candidate: To begin with estimating the emergencies in India it would be best to first define and lay out the scope of an emergency:

1. Broadly, and emergency would be an event that would require immediate attention and a typical response time would be within 2-4 hours.

2. The scope can be narrowed to include emergencies of the kind of road accidents, trauma and heart attacks etc. or broadened to include natural calamities, terrorist attacks etc.

Interviewer: In specific, our client will be setting up an ERF for road accidents. Would it be possible to estimate that number?

C: We could look at estimating that number by dividing road traffic in the following manner

- High traffic city > high probability of accidents
- Moderate traffic cities > moderate probability of accidents
- Low traffic cities > low probability of accidents
- Highways > high probability of accidents

Each of the types described above would have a different frequency and probability of accidents occurring.

Let us say that the total number of cities are in the ballpark range of 5,000 and the split between high, moderate and low traffic cities is 500, 1,500 and 3,000 cities. If this assumption is accurate could I proceed with calculating the number of accidents in a city in a day.

I: Sure, lets proceed, for the moment though lets concentrate only on the urban or more developed cities

C: Sure, if we take the total population of India to be roughly a billion, roughly 25% of the population will be concentrated in a developed or urban city, which comes to about 250m people.

I: Let’s take the accident rate to be 0.15% for this group.

C: So, on an average about 0.15% of this population will be involved in a road accident in a day which translates to 0.375m.

I: Fair, and suppose our ERP is to be set two years from now?

C: In that case we could assume a growth rate over the calculated number and project a 2 year forward estimated number.

I: Let's assume a growth rate of 10% a year

C: Sure, then 2 years hence we the estimated number would be 0.45m.

I: Great. If the accidents reported at each call centre are 1% of the total accidents and each accident will make 5 calls, how many calls would we receive?

C: At a rate of 1%, each unit would roughly get calls for 4,500 accidents and at the rate of 5 per accident that would be 22,500 calls.

I: And if each ER unit can handle 15 accidents what would be the requirement of the number of ER units?

C: At 4,500 accidents, we would require 300 ER units.

99 BHUTAN TOURISM INDUSTRY

The government of Bhutan wishes to revive its tourism industry which is currently facing the problem of high seasonality and highly variable returns even in peak seasons.

What would be your strategy to help them solve these issues?

First the candidate is expected to collect some more information about tourism in Bhutan in general, and specifically about the various types of tourists that visit Bhutan. The main issue in this case is to segment tourists, and will therefore take up most of the case interview time. It will usually involve a lot of discussion and refinements until the segmentation is done in the following categories (the rest of the interview will be very briefly answering some more questions from the interviewer):

- Nature lovers
- Therapeutic tourists
- Geographical researchers
- Religion based tourists

Interviewer: What should be your strategies for each of these sections?

Candidate: Develop a framework to analyze the possible issues with various sections and what should be the target advertising media to penetrate each section.

I: So elaborate more on how we can increase our reach to these sections of tourists?

C: Trade consortiums and fairs, govt. tie-ups, advertising in public media etc.

I: These are okay, but they require a lot of cash, and the government right now is cash strapped, can you suggest some economical yet effective mechanism to boost tourism?

C: Agency models and tie-ups with travel agents based on a revenue sharing principle. They bear some parts of the cost and get a share of the revenues in return.

I: So tell me which country should we ideally target if we wish to boost religious tourism, and why?

C: I think Western European countries like Germany would be a good potential base due to a high concentration of religious scholars and researchers in these countries coupled with higher spending capacities.

I: Great. I think we will stop here as you seem to have touched upon the major key-points.

100 U.S. GOLF BALLS MARKET SIZING

Golf ball sales are driven by end-users. You have to determine the numbers of end-users; this will be some fraction of the total US population (say 300mil).

If you assume a uniform age distribution and an average life expectancy of 80 years (you have to make these types of assumptions), you can then estimate that only people in the ages 20-70 will be potential buyers. Thus you eliminate 30 of 80 years or 3/8 of the 300 mil population.

So, now you are down to a potential buyer pool of about 110 million. Now you might estimate how many people out of 10 play golf - say 4 - so now 4/10 of 110 gets you down to 44 million people who play golf.

Now you have to estimate purchase frequency, how many balls per month an average person buys (you may want to temper this "average purchase" assumption by a least mentioning that retired people play much more than students). A good guess might be 15.

So demand per month is now 15 x 44 million, or 660 million. Finally, you need to estimate the number of months per year that people play golf - 12 months in good climate regions, maybe 5 in regions with cold winters - so on average 8 is a decent estimate: 8 x 660 = 5280 million golf balls per year.

Remember, the number itself is nearly meaningless. The interviewer primarily wants to see your thinking process. Also, there are many ways to come up with an answer. You would really impress the interviewer after you are done if you offered to recalculate the answer using a different method, and then explained possible sources of error in your calculations.

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