

## 6.6 New Edition Cases

### 6.6.1 Case 33: Guesstimate 6 | ★★

Interviewer Name: \_\_\_\_\_

Date: \_\_\_\_\_

Estimated case time: 30 min

Actual case time: \_\_\_ min

Estimate the total number of laptops in India

#### Preliminary Questions

Can I exclude desktops, and only consider laptops? Yes.

Should I include second-hand laptops? Yes, you can.

Laptops could be used for both personal and business uses? Do I have to estimate for both?

*Let's do both, but first let's prioritize personal laptops first.*

#### Overall Approach

I would like to estimate the total number of laptops as

Total Laptops =

- A. Total Laptops for personal use +
- B. Total Laptops for business use

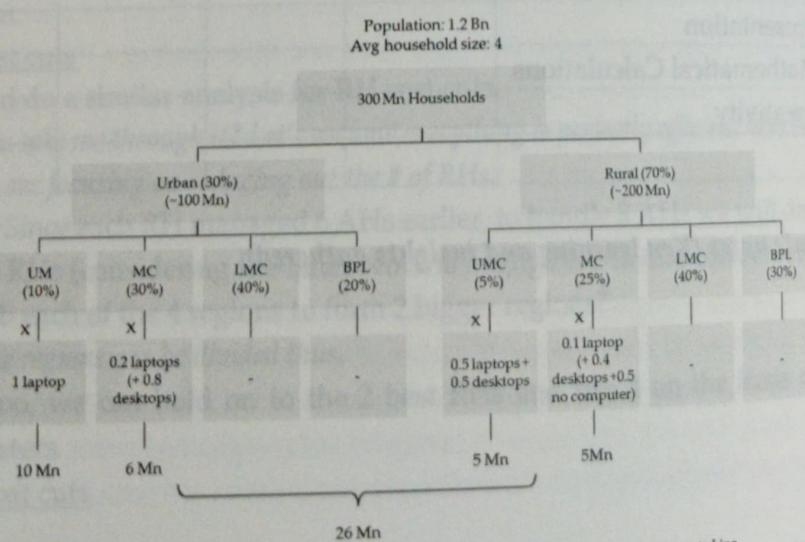
To estimate A) I shall consider factors such as

- Population
- Average Household size
- Urban vs Rural India
- Income
- Desktop use vs Laptop use

To estimate B) I shall first compute, how many white-collar professionals are there in India and then consider how many of them would have laptops.

*Seems like a good approach. Please proceed.*

Laptops for personal use:



Laptops for business use = # White collar professionals x (% using laptops)

<b>Population</b>	1.2 BN
<b>Urban (30%)</b>	360 MN
<b>Working Age (25-60)</b>	40% = ~ 150 MN
<b>Gender</b>	100 % Men + 50% Women = $150 \times 1.5/2 = \sim 110$ MN
<b>Income</b>	MC and UMC ~ 40% = 44 MN
<b>Laptop vs. Desktop</b>	(10% would be given laptops) = 4.4 MN ~ 4 MN

Hence I estimate the total laptops in India to be 26 MN + 4 MN = 30 MN

### Sanity Check

I am aware that there are roughly 300 MN internet users in India. As per our calculation 10% of them access the internet through laptops. This seems reasonable, I would have been surprised if this was just 1% or 50%.

*Great, this seems like a good approach.*

*Case performance sheet (Tick in the appropriate box)*

#.	Fields	Excellent	Good	Average	Below par
1	Preliminary questions				
2	Overall approach				
3	MECE Structuring				
4	Synthesis				
5	Business Insight				
6	Communication				
7	Presentation				
8	Mathematical Calculations				
9	Sanity Check				

*Candidate notes (Key learning and insights gathered):*

1.

2.

3.

### 6.6.2 Case 34: App-based cab company | ★ ★

Interviewer Name: \_\_\_\_\_

Date: \_\_\_\_\_

Estimated case time: 30 min

Actual case time: \_\_\_\_ min

Your internship manager approaches you. He tells you that his driver is deciding whether he should quit his job and instead become a driver for CFS (an app-based cab company). He has asked you to research and tell him, of whether this is a financially wise decision for his driver from a monthly income point of view. Additionally, he has told you that the driver currently receives a monthly salary of 20,000 per month and an additional 5,000 per month for the driver's children's education?

#### Preliminary Questions

If my understanding is right, I would need to evaluate if the expected monthly income for the driver after becoming an CFS driver would be greater than his current income stream of Rs. 25,000 per month.

Yes.

I would like to understand a few things before I begin. He is also living nearby in Mumbai?

Yes.

Can you give me a brief description about him? What are his goals with respect to seeking a change in job?

He is a 35 year old, living with his wife and two children here. He is looking to increase his monthly income and ensure it remains stable.

Alright, thanks. How many hours does he work?

He currently has a 10-hour job, but is willing to work up to 15 hours as a CFS driver.

Is it possible he can spend the extra 5-hours as a CFS driver while keeping his current job.

No, the driver will have to choose as per the internship manager.

#### Overall Approach

I'd like to evaluate what would be his new income stream if he becomes a CFS Driver. I would calculate this as

Monthly net earnings = Income - Expenses

Income streams would involve his wages as a CFS Driver. Expenses would involve things like fuel and maintenance cost for the vehicle.

#### Income

Can you tell me what is the revenue share model between CFS and the cab drivers is?

CFS passes 70% of revenues to cab drivers and keeps 30%.

I'm aware that CFS has different pricing depending on different vehicles tiers. The type of car, the driver purchases would determine his cost of vehicle as well as the fare charged to passengers. Can we assume the driver will purchase a first-hand car? Yes

I know that app based companies typically have three tiers

	Tier I - (Micro)	Tier II - (Mini)	Tier III - (Prime)
Car type	Hyundai Santro, Maruti Alto	Tata Indica, Hyundai i10	Tata Indigo / Swift Dzire
First Hand Car Cost	~2.5 lakhs	~4 lakhs	~6 lakhs

I'm not sure of the exact fare pricing, it has a combination of base fare and price per km if I'm not mistaken.

That's okay, I can give you the pricing information

	Base Fare	Distance Fare	Ride Time Fare
Tier I	₹40	₹6 per km, till 15 km ₹12 per km after 15 km	₹1 per min
Tier II	₹80 for first 4 km	₹10 per km	₹1 per min
Tier III	₹80 for first 4 km	₹13 per km	₹1 per min

Night charges are 1.5 times more between 10pm - 5am. Ignore surge pricing.

Assuming an average trip in the city, is for about 10km and a duration of 40 mins, this would mean the avg. trip fare is

$$\text{Tier I: } 40 + 6 \times 10 + 1 \times 40 = \text{Rs. } 140$$

$$\text{Tier II: } 80 + 10 \times 6 + 1 \times 40 = \text{Rs. } 180$$

$$\text{Tier III: } 80 + 13 \times 6 + 1 \times 40 = \text{Rs. } 198 = \sim 200$$

In addition, we can assume the maximum the driver would run his car would be for 15 hrs.  $\times$  6 days a week. Let's assume Y to be the avg. fare per trip. The total fare for a given day would be

	Day	Night
# Hours	11 hrs.	4 hrs.
Avg. cycle time	40 mins (trip duration) + 10 min (time to next passenger)	40 mins (trip duration) + 20 mins (time to next passenger)
# Trips	11 hrs. / 50 min = 13	4 hrs. / 60 min = 4
Fare per trip	Y	1.5 Y
Total Fare	13 Y + 6 Y = 19Y = ~20 Y	

Total Income

= (Total Fare earned per day) \* (# Working Days in a month) \* (Income split for cab driver)

= 20 Y x 24 days x 70%

= 336 Y

Depending on the car purchased, this would mean

	Tier I	Tier II	Tier III
Income	$336 \times 140 = 47,000$	$336 \times 180 = 60,000$	$336 \times 200 = 67,000$

Let's now move onto his expenses.

Expenses = Car purchase cost + Maintenance cost

Car purchase

Do we know if the driver has the capital to purchase a vehicle?

No he does not. He is looking to purchase an EMI based scheme for the same.

Assuming he takes an EMI scheme during the life of a car (~5 years) this would mean the principal amount is divided across 60 months

	Tier I	Tier II	Tier III
EMI (Principal only)	2.5 lakhs / 60 = ~Rs 4200	4 lakhs / 60 = ~ Rs. 6700	6 lakhs / 60 = Rs. 10,000

I'll assume that on account of interest, the EMI would be 30% more. Is that fine?

Okay, let's make that assumption, the math would be time consuming otherwise.

	Tier I	Tier II	Tier III
EMI (Principal + Interest)	$-\text{Rs } 4200 \times 1.3$ = ~5500	$\text{Rs. } 6700 \times 1.3$ = 8700	$\text{Rs. } 10,000 \times 1.3$ = 13,000

#### Fuel Cost

While fuel cost, would depend on type of fuel (diesel vs petrol) as well as vehicle mileage, can we assume it to be common across all three vehicle Tiers?

*Yes, you can do that.*

Additionally, we will need to take into account fuel costs. We know on average the car travel

= 10km per trip x 17 trips per day x 24 days in a month = ~4000 km per month

Next I would like to look at the mileage of the cars and the price per liter of the fuel used. The mileage would vary from car to car and the fuel price would depend on type - petrol, diesel or CNG.

*For sake of simplicity let's take a uniform mileage of 15 km / liter and price as Rs. 60 per liter.*

The monthly fuel cost would be =  $4000 \text{ km} / (15 \text{ km / liter}) \times \text{Rs. } 60 / \text{liter} = \sim 16,000$

#### Maintenance Cost

Additionally, we can assume Rs. 1,000 per month to maintain the vehicle for repairs, cleaning, etc.? Alright.

This gives us a total monthly cost of

	Tier I	Tier II	Tier III
EMI	Rs. 5,500	Rs. 8,700	Rs. 13,000
Fuel Cost	Rs. 16,000	Rs. 16,000	Rs. 16,000
Maintenance Cost	Rs. 1,000	Rs. 1,000	Rs. 1,000
Total Cost	~Rs. 22,500	~Rs. 26,000	Rs. 30,000

#### Net Income

	Tier I	Tier II	Tier III
Income Stream	Rs. 47,000	Rs. 60,000	Rs. 67,000
Total Cost	Rs. 22,500	Rs. 26,000	Rs. 30,000
Net Income	Rs. 24,500	~Rs. 34,000	Rs. 37,000

Based on this, the best option for the driver would be to go for a Tier III car

This analysis suggests that the driver can increase his income from 25,000 to ~37,000 rupees. However, this would also require him to work 15 hours a day from the current 10 hours.

*What about stability of his income? What factors would it depend on & how much?*

The driver's income would be most sensitive to the following factors

- # Hours - If the driver would work 10 hours instead of 15, his earnings would fall by ~17,000 Rupees (fuel cost would reduce as well) and become 20,000 / m
- If there is more supply than demand because, that might reduce # trips by 20%, this would lead to reduction in earnings by ~10,000 to 27,000 / m
- If CFS reduces the revenue split by three percent to 27%, this would lead to a reduction of earnings by 6,700 rupees to 31,300 rupees per month

*If fuel prices were to go up by 10%, this would reduce earnings by ~1600*

*So what would be your recommendation to the driver, can you please synthesize?*

### Synthesis

I would recommend the driver to become a cab driver for CFS in the Tier III category

- Earnings would increase by 12,000 rupees for the driver as long as he is willing to work upto 15 hours a day
- Despite income being sensitive to external factors, in most scenarios he would be earning higher than his current 25,000 rupees
- Tier II will earn him Rs. 3000 lesser than Tier III, Tier I will earn him less than even current salary, so Tier III is most optimal

Final synthesis need not be same, but structure should ideally be similar.

*Case performance sheet (Tick in the appropriate box)*

#.	Fields	Excellent	Good	Average	Below par
1	Preliminary questions				
2	Overall approach				
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6	Communication				
7	Presentation				
8	Mathematical Calculations				

*Candidate notes (Key learning and insights gathered):*

- 1.
- 2.
- 3.

### 6.6.3 Case 35: Newspaper | ★

Interviewer Name: \_\_\_\_\_

Date: \_\_\_\_\_

Estimated case time: 30 min

Actual case time: \_\_\_\_ min

Our client is a leading media firm in India which has seen a decline in profits. We need to help them isolate the problem.

#### Preliminary Questions

Where is our client based out of?

The firm operates Pan-India throughout the country.

You said the client is a media firm- so what all products does our company have? We sell 3 newspapers – English, Hindi and Business.

Where does the client lie in the value chain? Do we do everything from printing to editing on our own. Yes, it's all in-house.

So we need to find why profits declined of this newspaper business? Yes.

#### Overall Approach

I would like to look at costs and revenue separately and then try to understand the various levers in both. I'd like to begin by checking if the cost increased from last year or is there a dip in revenue?

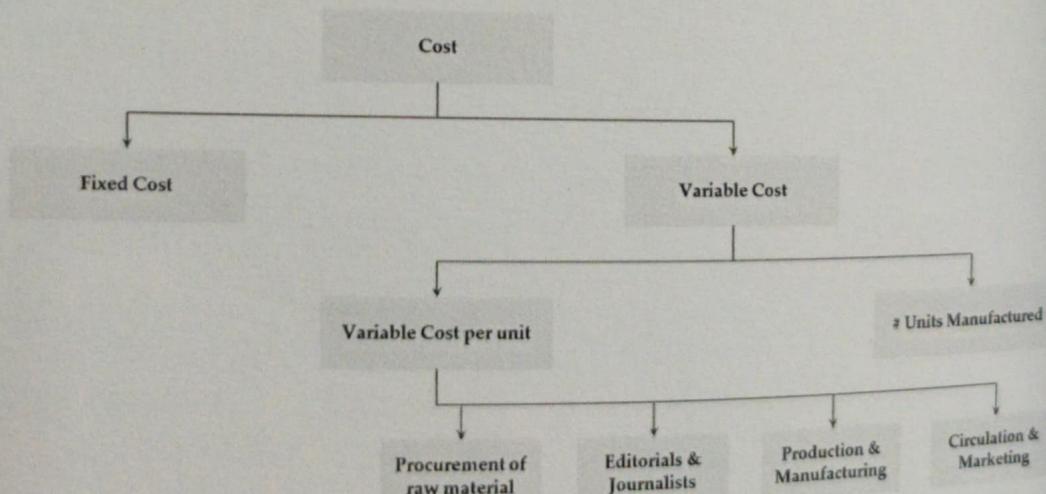
Costs have been increasing continuously; Revenues have been stagnant.

Has it been the same for the competitors as well?

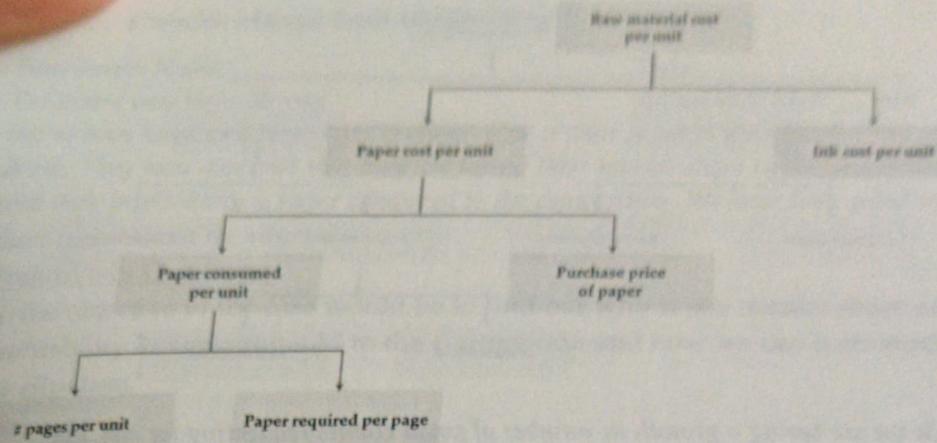
No, they have seen an increase in profits. Their revenues have increased while costs have remained steady.

You can begin by analyzing the cost branch.

I'd like to break down cost as follows, do we know which of these cost heads has increased for us?



Our raw material cost per unit has increased. Other costs have remained the same. We can break down our raw material costs as below, do we know what component has increased?



*We had added 3 pages in our newspapers, 2 covering topics on technology and startups and 1 page having additional classified ads. While our readership has increased we were not able to get more clients to advertise with us.*

*Our readership increased, yet our revenues have been more or less stagnant?*

*Why is this the reason?*

*Can you venture a guess?*

A newspaper typically has two revenue streams

1. Circulation revenues
2. Ad revenues

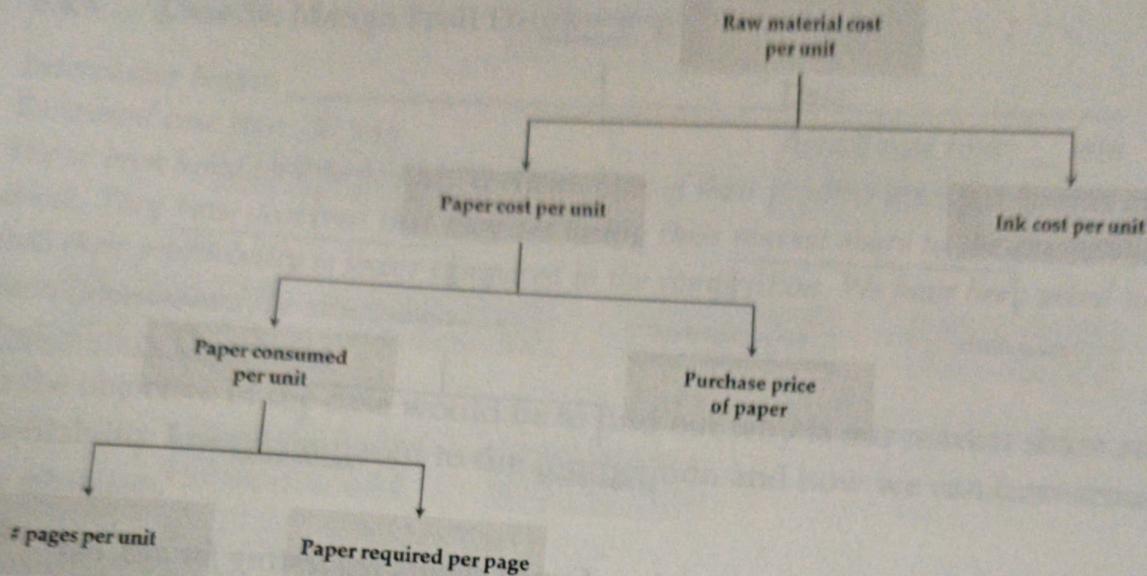
Newspapers like the Times of India have several pages but have a very small price for the customer. My guess would be that the price just about covers their cost of production and little profit is made. The real earnings come from ad revenues.

*Exactly, our ad revenues constitute 80% of our revenues while circulation revenues is only 20%. Given this situation how do you suggest we increase our revenues?*

So we have identified an increase in our pages as responsible for increase in the cost. Moving onto revenues, we know this is a company specific issue. We are seeing stagnating revenues while competition is seeing growth. I'd like to break down our ad revenues into its component parts.

*We have two types of clients - large clients (typically go for full / half / quarter page ads) and small clients (go for classifieds).*

I'd like to benchmark our growth with competition to identify where they have an edge over us.



*We had added 3 pages in our newspapers, 2 covering topics on technology and startups and 1 page having additional classified ads. While our readership has increased we were not able to get more clients to advertise with us.*

*Our readership increased, yet our revenues have been more or less stagnant? Why is this the reason?*

*Can you venture a guess?*

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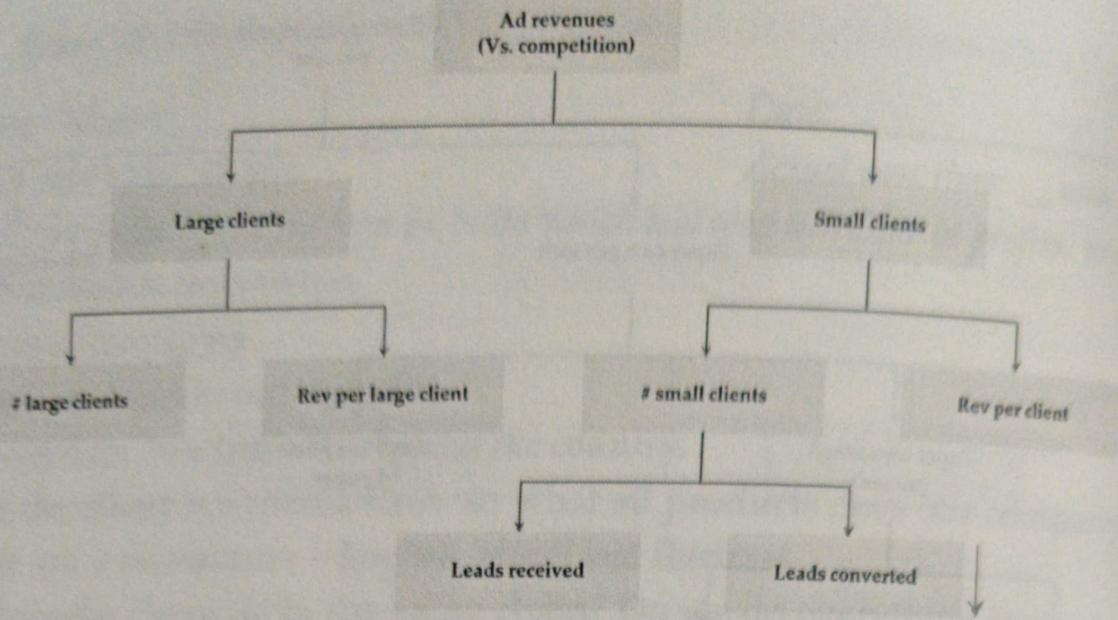
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*We have two types of clients - large clients (typically go for full / half / quarter page ads) and small clients (go for classifieds).*

*I'd like to benchmark our growth with competition to identify where they have an edge over us.*



*While we are seeing a growth in number of small clients requesting for ads, our conversion rate is lower compared to the competition.*

This could be because

- We do not have enough space - Unlikely since we just added a classifieds page
- Clients are unable to have their requests met in terms of specifications or time

*We currently book our ads over e-mail which typically has a cycle time of half a day. Our competitors have moved to an online platform where clients can directly choose their date, select their classified ad and make payment. Their cycle time has reduced to less than 10 mins.*

That seems to explain their high conversion rate. Since it is a more automated process, they are able to simultaneously cater to many of the smaller clients.  
*Great, I think we have isolated the problems. This much will do, thanks!*

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#### *Case performance sheet (Tick in the appropriate box)*

#.	Fields	Excellent	Good	Average	Below par
1	Preliminary questions				
2	Overall approach				
3	MECE Structuring				
4	Synthesis				
6	Communication				
7	Presentation				

#### *Candidate notes (Key learning and insights gathered):*

1.

Interviewer Name: \_\_\_\_\_

Date: \_\_\_\_\_

Estimated case time: 30 min

Actual case time: \_\_\_ min

We've been hired by a large FMCG client. One of their product lines is a famous mango drink. They have observed that they are losing their market share to the competition as well their profitability is lower compared to the competition. We have been asked to help them turn-around the situation.

Preliminary Questions

So the objective of the case would be to find out why is our market share and profitability lower compared to the competition and how we can turn-around the situation.

Yes.

What part of the value chain do we lie in?

*We manufacture the product and have third party distributors and retailers.*

What is the geography of our sales?

*All over India.*

By profitability we mean our annual profits divided by our annual revenues?

Yes.

Do we know what is our current market share and profitability vs our competition?

*Our current market share is 25% vs 35% for our main competitor. Our profitability is -14% vs 10% for our main competitor.*

How long has our profitability been in the negative?

*This has been since the last two years. We've tried to turn-around the situation ourselves, but haven't been able to so far.*

And are there other players in the market as well, since the combined share is only 60%? Who are they?

*Yes, there are other smaller players on whom we don't really have much data.*

Overall Approach

I would like to begin by finding out why is our profitability and market share below our main competitor in the market. I'd like to prioritize profitability first since we are currently in the negative.

Profitability

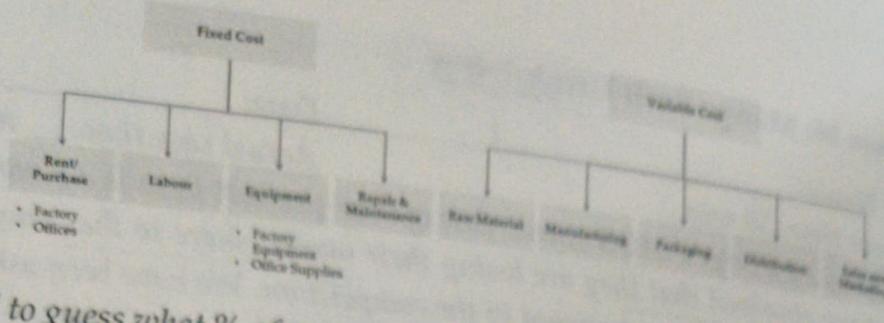
= Total Profits / Total Revenue

= 1 - (Fixed Cost + Variable Cost) / Revenue

= 1 - (Fixed Cost per unit + Variable Cost per unit) / Avg Price per unit

*Before you proceed can tell me what do you think are the potential fixed and variable cost components?*

Here it is.



If you had to guess what % of our price is the raw materials cost, what would your rough estimate be?

I'll take the example of a mango drink I'm familiar with. I'll consider a typical 200 ml tetra pack which costs Rs.15, I think. The main raw material costs would be

- Mango Content: A single mango costs roughly ~Rs. 45 to buy for me. Assuming 1 mango is sufficient for 3 packs, this would cost Rs. 15; With economies of scale and buying directly from wholesalers, this could go down to Rs. 7.
- Water: A 1 litre bottle costs Rs. 10. The price for 200 ml would be Rs. 2, and after accounting for bulk purchase, this would be Re. 1
- Others - sugar, preservatives, etc.: Re. 1
- I'm excluding packaging from raw materials for now

This would roughly result in Rs. 9 / Rs. 15 or ~60%.

Okay. Fair enough. Anyways let's get back to our main problem, what would you like to do next.

Do we have any data on what is our fixed cost and variable cost as a percentage of revenue vis-a-vis competition?

We have some data for you here.

Per unit analysis	Client	Competitor
<b>Volume</b>	200 ML Price: 15	200 ML Price: 15
Fixed Costs - General & Administrative	Exclude from analysis	
Raw Materials	12.9	10
Mango Pulp	11.9	9
Water	0.8	0.8
Other ingredients	0.2	0.2
Manufacturing	1	1.5
Packaging	1.5	0.5
Distribution	1.4	1.4
Sales & Marketing	0.30	0.10
<b>Profit</b>	-2.1 (-14%)	1.5 (10%)

As per the above data, it looks like our profits are down because we have higher

1. Mango Pulp cost : 11.9 vs 9 per unit for competition
2. Packaging cost: 1.5 vs 0.5 for competition
3. Sales cost of 0.3 vs 0.1 for competition
1. Our mango pulp cost per 200 ml may be higher either because our pulp content is higher or our mango procurement price is greater.  
Our mango pulp content is 10% lesser but our procurement cost is 40% higher.  
I'd like to understand why our procurement cost is higher by understanding our procurement process and that of competition.  
Our competitor is in part of an exclusive joint venture with an irrigation equipment manufacturing company where they provide irrigation equipment to the farmer in exchange for right to purchase their produce directly from them. We on the other hand purchase from wholesalers. This leads to lower procurement price relatively. Interesting, the competition has a strategic edge over us. If we could match their procurement price, we could turn profitable. I'd like to see if we can

- Purchase from farmers directly to reduce our procurement cost
- Optimize current procurement process to make it cost effective

*Let's say after exploring all options reduce our procurement price by Rs. 1.0*

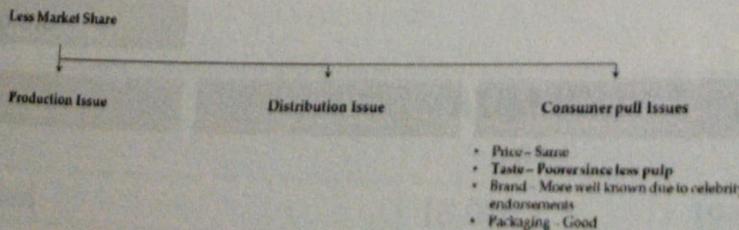
*Great we further need a reduction of Rs. 1.1 to turn profitable.*

2. I would like to now see why our packaging cost is so high. What is the type of packaging that we are using vis a vis competition?  
*We are using plastic bottles while competition is using tetra packs.*  
It seems usage of the tetra-packs is cost effective by a factor of 3. Can we switch to tetra packs ourselves to reduce our packaging cost.  
*We can reduce it by Rs 0.6 only since competition has a scale advantage.*  
This would lead to a total cost reduction of Rs. 1.6. Even if it were possible to bring our sales & marketing spend on par with competition we would still be losing Rs. 0.2 per unit. To be profitable, we will need to explore other cost heads.

*We have already explored that, we will not be able to reduce our costs further. What would you like to do next?*

If that is the case, there is little incentive to increase our market share, since we will be losing money on every unit. The only other option to increase our price.

*Still, why don't you identify the reason why our market share is lower?*



It seems that our market share is lesser owing to our poorer pulp content leading to customers preferring our competitor's product owing to taste issue. Yes. Now what do you propose that we should do to still stay in this business and be profitable?

Looking at our existing cost structure, it is clear if we are to stay profitable we will have to increase our price since we have explored all cost reduction options. However, we will have to justify the increased price tag, else we will lose all our market share.

We could look at positioning our brand as the more premium brand in the market. This can be done by improving the taste of our product by adding more pulp content than the competition. This will increase our cost, but we can even increase our price proportionately. We can also change our packaging to reflect the same like how Cadbury Silk has done it for their brand.

Good suggestions. Thanks, we will consider the same.

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*Case performance sheet (Tick in the appropriate box)*

#.	Fields	Excellent	Good	Average	Below par
1	Preliminary questions				
2	Overall approach				
3	MECE Structuring				
4	Synthesis				
5	Business Insight				
6	Communication				
7	Presentation				
8	Mathematical Calculations				
9	Creativity				

*Candidate notes (Key learning and insights gathered):*

1.

2.

3

### 6.6.5 Case 37: Mutual Funds | ★★

Interviewer Name: \_\_\_\_\_

Date: \_\_\_\_\_

Estimated case time: 30 min

Actual case time: \_\_\_ min

Our client is a public sector bank. Their mutual fund division is not doing well in the recent past. Identify the reasons and solve the problem.

#### Preliminary questions

Can you tell me what does the mutual fund division do?

A Mutual fund is a pool of money invested in a diverse set of stocks to minimize risks and achieve a good return on investments based on the aggregated performance of underlying stocks.

Our mutual fund division manages the money of volunteering investors in exchange for a small fee.

When you mean the MF division is not doing well, is it revenues, profits or some other metric?

In a Mutual Fund, the commonly used metric is Assets under Management (AUM). Assume that it's the total amount of investor's money that the company manages. Our AUM has not been growing fast enough. We've not been able to attract more investments.

Great. So AUM is basically the total sales of mutual fund products by the bank to the consumers. Is that right?

Let's go with that.

Do we know how has our AUM grown vis-a-vis competition?

AUM industry growth rate for the last couple of years has been 27% whereas the client has been growing at 17%

So it seems to be that we are growing slower compared to the competition. Is that the problem?

Yes.

#### Overall Approach

I would like to segment MF sales (AUM), to understand where the problem may lie. Do we have any segmentation along these lines?

- Products: Sales of various MF products
- Distribution channel: Sales through various channels
- Consumer: Sales to different consumer segments

We have sales by distribution channel. Sales data of the bank through our distribution channels is given below

Channel Type	AUM (Cr.) 2014	AUM (Cr.) 2015
Own bank Channel	18,000	19,000
Other Channels	42,000	51,000

We have ~28% of our sales coming from our own bank channels. Calculations reveal that the growth % of MF sales through the own-bank channel is only 6% whereas the other channels are growing at 21%, thus the overall 17%. I want to now benchmark these numbers with the industry

Avg. growth rate of sales through bank channel (for the industry) is around 20-25%. The split is more like 50-50 between bank channel and other channels for competition. This indicates that we are not selling well through our own channel. Let's now focus on how to increase the sales of MF through our own bank.

I want to look at the following hypotheses to identify the reason for poor performance of MF sales through the bank

- Do we fundamentally have fewer bank account holders?
- Our conversion rate of bank account holders to mutual fund buyers is lesser? This could be because:
  - We don't have good MF products
    - We do not have enough types of MF products to offer compared to the competition
    - The return on investment has not been good on our MF compared to the competition
  - We have good products but our sales team is ineffective
  - We have good product and sales but not the right customers - we have a different profile of customers who do not tend to invest in MF or as much

Hmm. Why don't you look at the below data and tell me the quick conclusions you can draw from these?

Table 1

(Avg. value of every Rs. 100 invested across MF products)	1st year end	2nd year end	3rd year end
Client	111	125	145
Competitor 1	109	127	144
Competitor 2	112	127	140
Competitor 3	112	131	146

Table 2

	Total deposits in the bank (2015) Cr.	Sales AUM through bank's channel (2015) Cr.
Client	1,00,000	19,000
Competitor 1	75,000	35,000
Competitor 2	40,000	25,000
Competitor 3	75,000	20,000

Looking at table 1, it reveals that our product's returns are in comparison with the competitor's returns.

Also looking at table 2, we have a large enough customer base but our conversion is 19% of deposits compared to 25-60% for other players.

Based on this I would like to begin by checking if our customer profile is different from competition. For Ex - is our average deposit per customer lesser? This may make them less willing to invest their money in MFs.  
*You can assume the customer profile is the same.*

What about the variety of MF products we have to offer?

*We have a good diversity of products that a customer can choose from.*

Then, the only remaining hypothesis I would like to test is whether we are not selling our mutual fund products effectively to our customers. Can you explain to me how our sales process works currently?

We have sales agents who call up our banking customers. They typically offer Life Insurance and Mutual Fund products. If a customer is interested, they visit them and help them with purchasing a product.

Do we know what is the incentive structure for our sales agents?

*Yes. They typically receive Rs. 900 for every Life insurance product sold and Rs. 600 for every Mutual Fund product sold.*

Why do we have this difference?

*The bank offers a higher incentive for life insurance sold as the profit margins are higher. But the trends show that volume of money that would be invested in Mutual funds in the coming years will be very high. As the incentives are lower for MF, the eagerness to learn about MF products is lower for the sales staff, hence their knowledge about them is poor.*

Do we know what are the relative sales incentives that the competition offers?

*The competition offers nearly equal incentives for both life insurance and mutual funds. Assuming you are a part of a 6-member team of a top tier consulting firm, what would your advice to the CEO be?*

There are 2 ways I would tackle this problem

1. Make the incentive structure of MF at par with incentives offered for selling life insurance products. Even though the profit margins are lower right now, the future is bright for MF considering the huge increase in volume in the upcoming years
2. Conducting trainings to increase the awareness of MF products among the sales staff to enable them with adequate knowledge to sell MF. We can also look at actively hiring people if the existing capabilities aren't enough.

*Alright. You have only 4 months to implement the above two steps and you have to show maximum incremental sales in MF. But there are 10,000 branches spread all over India. How would you prioritize these branches?*

We can prioritize branches based on which branch has the highest total deposit from customers who match the profile of mutual fund investors. This profile can be based

- Deposit in account – larger the deposits, more is the person likely to invest
- Age group – the working age group is most likely to invest
- Location – urban population maybe more likely to invest owing to their awareness of MF products

Thanks.

*This case was contributed by Kishore Kothandaraman, BCG, IIT-Madras Alumni*

---

*Case performance sheet (Tick in the appropriate box)*

#.	Fields	Excellent	Good	Average	Below par
1	Preliminary questions				
2	Overall approach				
3	MECE Structuring				
4	Synthesis				
5	Business Insight				
6	Communication				
7	Presentation				

*Candidate notes (Key learning and insights gathered):*

1.

2.

3

8.6.6 Case 38: Steel Company Admin Cost | ★★

Interviewer Name: \_\_\_\_\_

Date: \_\_\_\_\_

Estimated case time: 35 min

Actual case time: \_\_\_ min

Our client is one of the largest steel manufacturers in India. Their largest plant is located in Karnataka. Due to a global slowdown in steel prices, the company is focusing on cost-reductions and improving profitability. They have hired a 10-member consulting team to help them, you are one of them.

While other team members are working on modules related to cost reduction of steel production value chain, you have been given a module which includes reduction of administrative costs across the steel plant. Your project manager has asked you to focus on specifically reducing

- Sales office rental cost
- Security costs at the plant

Preliminary questions

So the scope of my module only includes reducing the sales rental cost and security costs?

Yes.

I want to understand each of these cost heads better. Can you please explain what falls under sales office rental cost and security costs?

Sure.

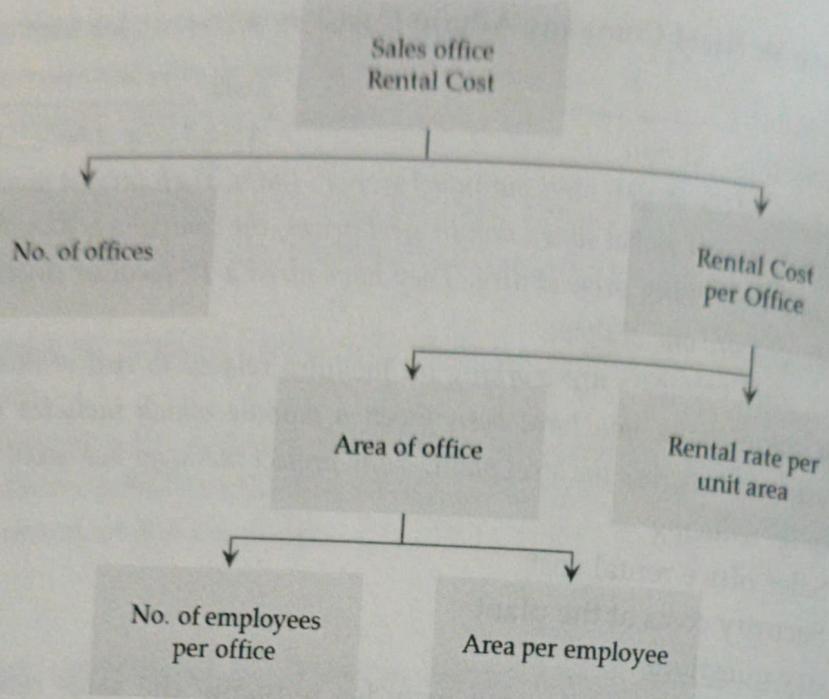
- We have 5 major sales offices across the country. Our sales agents work from these offices and meet prospective buyers of our steel products. The sales office rental cost is the sum of rent we pay for each of these offices.
- Security costs are mainly the cost of deploying security personnel within the entire plant. We have a contract with a security firm and they provide us our security personnel at a negotiated rate.

Overall Approach

Let's look at the overall costs for each of the two heads. We can prioritize starting from the largest cost head. We can then breakdown the costs into its component parts and see where there is scope for reduction.

Why don't you begin by looking at Sales office rental costs? We can then look at security costs. What could be all the possible ways according to you by which we could reduce rental costs?

We could break down our office rental cost as below



- Based on the above, we could explore the following ways to reduce rental costs*
- Shut offices which are not generating enough sales or merge different offices into one
  - Reduce the area of the office; For this
    - We can look at reducing the area per employee based on internal benchmarking across our sales office or external benchmarks of industry standards
    - We can reduce the number of employees and thereby the need for area - but I think this would be less practical to do
  - Reduce rental rates
    - Re-negotiate existing rental contracts
    - Move to a new office with lower rental rates

*We are not looking at shutting any offices or reducing employees, but your other suggestions can be taken forward. We have some data for you on this. Can you estimate what could be the potential savings in rental costs?*

Sales office	Area (Sq. ft.)	# Employees	Total Rent (Rs. / month)
Delhi	10,000	100	45,00,000
Mumbai	15,000	100	22,50,000
Indore	2,000	10	60,000
Kolkata	12,000	120	7,20,000
Chennai	21,000	70	12,60,000
<b>Total Rent</b>			<b>87,90,000</b>

I have analyzed the above information

Sales office	Area per employee (sq. ft.)	Rent per sq. ft. (Rs. / month)
Delhi	100	450
Mumbai	150	150
Indore	200	30
Kolkata	100	60
Chennai	300	60

- We have a big variation across offices on area per square feet. Do we have any benchmark on what should be the right area per sq. ft.?
- Rental rates are often dependent on city and location. Do we have benchmarks on commercial rental rates in the area where these offices are located?

We spoke to a real estate firm, and they have told us that the industry range for area per sq. ft. is ~100 per employee. We've also collected data on same locality commercial rental rates in the city.

Sales office	Same locality commercial rental rates (Rs./sq. ft./month)
Delhi	150
Mumbai	150
Indore	30
Kolkata	75
Chennai	60

Based on this information, I can now calculate potential savings shown in the table below

Sales office	No. of employees	Ideal area per employee (sq. ft.)	Total new area (sq. ft.)	Ideal rental rate (Rs./sq. ft.)	Total New Rent (Rs.)	Current Rent (Rs.)	Monthly Potential Savings (Rs.)
Delhi	100	100	10,000	150	15 L	45 L	30 L
Mumbai	100	100	10,000	150	15 L	22.5 L	7.5 L
Indore	10	100	1,000	30	30 K	60 K	30 K
Kolkata	120	100	12,000	60*	7.2 L	7.2 L	0
Chennai	70	100	7,000	60	4.2 L	12.6 L	8.4 L
<b>Total Potential Savings</b>							<b>46.2 L</b>

\*In Kolkata office we already have a lower rate compared to the market rentals

Great, any other considerations you would have when looking at reducing these rental costs?

*Yes, I would look at the following additionally*

- We might have a lock-in period with the owner of the properties, and we will have to see what is the contract termination penalties
- We've currently only considered same locality rental benchmarks; we could also consider moving to a different locality within the city if this does not affect sales operations
- At Indore, where savings are limited, instead of shifting office we can sub-lease our extra office space to some other company to avoid hassle of moving out

*Good, let's now move onto plant security costs. We have some data for you.*

Plant is broken into 5 zones	No. of security supervisors	No. of security personnel	Total deployment
Zone - 1	15	40	55
Zone - 2	10	100	110
Zone - 3	3	35	38
Zone - 4	1	10	11
Zone - 5	30	120	150

*Contracted rate of security supervisor: Rs 40,000 per month*

*Contracted rate of security personnel: Rs 15,000 per month*

*Can you suggest qualitatively what could be the possible ways to reduce security costs?*

To reduce security costs, we should look at the following levers

1. Reduce number of personnel where possible without compromising on the security of the plant
  - a) We can find out what is the area of each zone. We could then compute security deployment per unit area for each Zone. We can then find where we may have more security than required by comparing with standard benchmarks. A similar analysis can be done by using security deployment per 100 employees as a metric for each Zone.
  - b) We can classify certain zones as high risk, where additional deployment may be required because of a higher chance of robbery / violence. Entry points like gates may require additional security, so would executive office locations
    - i. If there would be significant benefit of doing this, we can consider aggregating high risk assets (property, equipment, offices) at once

place where we can concentrate our security and relax the coverage in other areas

- c) Where only surveillance is required and no manual security intervention, we could have security cameras
- 2. Reduce security supervisor to security personnel ratio
- d) From the information given the ratio of supervisor or personnel varies from 1:4 to 1:11. We can agree upon what should be the right ratio and cut down excess supervisors
- 3. Reduce contracted rates if they are above market rates

*These are good suggestions and we will take them forward. Great job, we can end the case here*

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*Case performance sheet (Tick in the appropriate box)*

#.	Fields	Excellent	Good	Average	Below par
1	Preliminary questions				
2	Overall approach				
3	MECE Structuring				
4	Synthesis				
5	Business Insight				
6	Communication				
7	Presentation				
8	Mathematical Calculations				

*Candidate notes (Key learning and insights gathered):*

1.

2.

3.

### 6.6.7 Case 39: Public Healthcare | ★★

Interviewer Name: \_\_\_\_\_

Date: \_\_\_\_\_

Estimated case time: 40 min

Actual case time: \_\_\_\_ min

The Rajasthan state government has hired us to help them improve their public healthcare system. Currently there is a three - tier infrastructure in place.

1. Sub-Centres (SC) - The sub-centre is the most peripheral institution and the first contact point between the primary health care system and the community. SCs provide basic drugs for minor ailments. It is managed by a nurse. They are located in small villages.
2. Primary Health Centres (PHC) - It acts as a referral unit for six SCs for more serious ailments. It has four to six beds for in-patients. A doctor is in charge of the PHC supported by fourteen paramedical and other staff. They are located in large villages.
3. Community Health Centres (CHC) - These form the uppermost tier. A CHC has thirty in-door beds with Operation theatres, X-ray, and laboratory facilities. A CHC is a referral centre for four PHCs within its jurisdiction, providing more specialized care. Four doctors and 21 paramedical staff are managing the CHC. They are located in towns.

While the government has created the physical infrastructure so that anyone can access the healthcare system, there are several people who are not receiving treatment on the ground. It has been seen that the State's CHCs are perpetually crowded and many patients are left untreated. We have been called in to help find a solution to the problem.

#### Preliminary Questions

I want to clarify my understanding of the hospital infrastructure better. So the smallest centres are the SCs. Here basic ailments are treated. For more serious cases, they are referred to the PHC. If the patient's condition cannot be taken care of at the PHC or requires an operation, they are referred to the CHC. Is my understanding correct?

Yes, that is right.

And we want to find out, why despite having the adequate physical infrastructure, there are a large number of patients who are unable to get treatment?

Yes.

When we say there are large number of patients left untreated, how do we measure this?

Of the total patients, visiting the CHC in a week, we are able to treat only 25% of them. We want this to be 100%.

Why do we believe we have enough physical infrastructure in place?

As per the national rural health mission guidelines, for every 5,000 people there had to be a Subcentre, for every 30,000 people a PHC and for every 1,20,000 people a CHC. We have more or less achieved this in the state. For this case you can assume the policy has been intelligently designed.

#### Overall Approach

I'd like to begin by identifying the drivers which could be causing a high number of untreated patients at our CHCs

No. of untreated patients in a week

= Total patients coming in a week - No. of treated patients

No. of treated patients = Avg number of doctors present x No. of patients treated per doctor per week

So we can have one of the three problems

- 1) Either we have too many patients coming in per week than what our capacity allows
- 2) We have too few doctors & staff personnel to treat patients
- 3) Or we have adequate staff, but they are not treating as many patients as we expect from them

We have met staff strength as prescribed by policy and they are treating as many patients as reasonably possible.

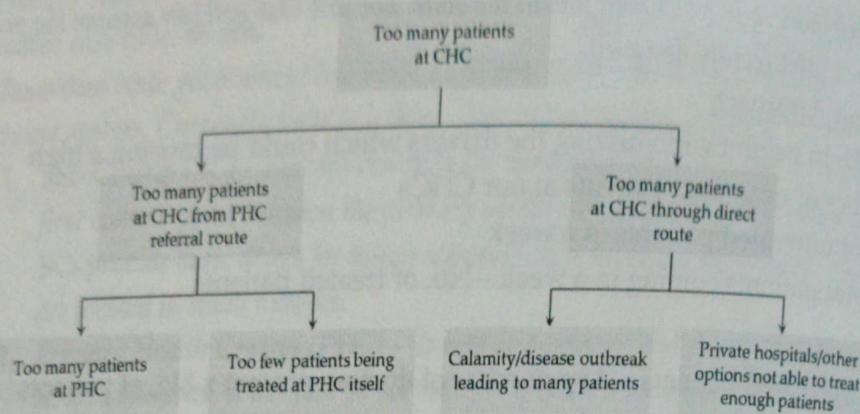
Since we know there is an adequate coverage of CHCs, and we have enough doctors as well, it means we have too many patients coming in per week, four times more than a CHC's capacity to handle(able to treat only 25% of them).

Yes. We have some data for you.

	Patients coming to CHC through referral from PHC	Patients coming directly to CHC
Policy design prescription	80%	20%
On-ground reality	50%	50%

We know we are receiving 4 times more patients than we expect. This means, in the PHC referral channel we are getting more than 2 times the expected patients

and 10 times the expected patients from the direct route. This could be because....



*As it so happens, we are not being able to treat enough patients at our PHCs. As a result a large number of PHC patients are forced to seek treatment at a CHC instead, even those that ideally could be treated by PHC itself. Because of the ineffectiveness of PHCs, patients are being directly referred to CHC by SCs or patients often visit fake doctors in hope for a cure. These patients too eventually get diverted to a CHC.*

Based on this, the problem is that PHCs are unable to treat patients effectively which is increasing the load at CHCs.

*Correct, let's say we want to find the root cause as to why the PHCs are not effectively running. You are to do a survey of several PHCs, what would your survey questionnaire cover?*

My questions would try to answer the following questions

1. Are the PHCs accessible? - Is there transportation available that can help people to conveniently reach there
2. Are the PHCs functioning? - Doctor & staff availability, drugs, lab test and equipment availability, maintenance of infrastructure, quality of conditions at the PHC
3. Is the treatment given effective? - percentage of patients that are able to recover from an illness

*Let's say we conducted this survey and find that because of doctor absence, the PHCs are not able to treat patients. What do you think could be the reasons for this doctor absenteeism?*

Following could be some of the reasons I can think of-

1. Lack of accountability and repercussions for absent doctors
2. Low compensation currently and better paying options available outside PHCs

3. Inability to treat patients owing to lack of proper knowledge and training
4. Inability to treat patients owing to lack of facilities - supporting staff, equipment, diagnosis labs
5. Poor working conditions due to location, ambience

Great. So we have found that the root problem is that doctors find the working conditions adverse. Basic requirements of 24 x 7 availability of water, electricity & cleanliness is not being fulfilled. Even if they do come, there is almost always a dearth of drugs, functioning equipment and diagnosis labs. As a result, they are unable to treat patients. Instead these doctors prefer to work with private clinics / hospitals, so they can treat more patients.

So it seems the PHCs are suffering from supply, maintenance and equipment related issues which have hindered the doctor's ability to treat patients. Do we know who is responsible for managing this at the PHC?

Yes, every 4 PHCs have an inspection officer assigned. He is supposed to do monthly checks at all his PHCs and fill in a form with the current status and order any fresh supplies, equipment or repair needed. Despite this can you suggest why are we unable to meet the PHCs requirements.

Sure, it could be because the inspection officer is not following one or more of these steps

- 1) Either the inspection officer is not visiting the PHCs
- 2) He is visiting but not inspecting and placing the desired orders sufficiently
- 3) He is placing the orders but they are not being delivered
- 4) The supplies are delivered but they are not available at time of need

Great, we have found out that the inspection officers have not been doing their weekly rounds at the different PHCs. However, they manage to mark their attendance on the PHC calendar through proxies (informal connections within staff at hospital). Can you suggest a robust system to ensure they can be held accountable?

Yes, one possible way could be a GPS based monitoring of their inspection routines. We can have an app on the phone where the inspection officer needs to fill in supplies and equipment info for each of his PHCs. To verify that the inspection officer is physically present at the PHC, the form can be made to open only when the GPS detects the right location. To verify that the form is being filled by the inspection officer and not someone else on his behalf we could do fingerprint verification of the officer through the app.

That's a great idea. We can conclude the case here. Thanks

**Case performance sheet (Tick in the appropriate box)**

#.	Fields	Excellent	Good	Average	Below par
1	Preliminary questions				
2	Overall approach				
3	MECE Structuring				
4	Synthesis				
5	Business Insight				
6	Communication				
7	Presentation				

**Candidate notes (Key learning and insights gathered):**

- 1.
- 2.
- 3.

## 6.6.8 Case 40: Ship Building Company | ★★

Interviewer Name: \_\_\_\_\_

Date: \_\_\_\_\_

Estimated case time: 30 min

Actual case time: \_\_\_ min

Our client is a new ship-building company. They want us to estimate the demand and then figure out how much market share they can get.

### Preliminary Questions

What kind of ships does the client build?

These ships are used to transport passengers from the land to off-shore oil rig platforms. They typically have a capacity of around 100-150 people.

Are these ships used to just transport people or also cargo?

Both, but primarily people. You can consider them to be passenger ships.

What geography is the client looking to service customers from?

They are looking to cater to the demand from Indian off-shore oil companies with rigs around the sub-continent.

Where do we lie in the value chain? I am assuming we build the ships and directly sell to these oil companies.

That is correct.

Shall I begin by estimating demand? We can then look at what kind of market share we can get.

Yes, please go ahead.

### Overall Approach

We'll look at two things

1. Estimating the demand for passenger ships for off-shore oil rigs in the next three years
2. Estimating market share we can get

To estimate the demand for these ships I would like to break it down as

Replacement demand + New demand

### Replacement demand

= #Off-shore rigs x # Avg. ships required per rig x (1 / Life cycle of each rig) x 3 years

= 10 offshore rigs x 3 ships / rig x (1 / 10 yrs.) x 3 years (Data Provided by interviewer)

= 9 ships

### New Demand

= # New off - shore rigs being built x Avg. ships per rig

= 1 offshore rig x 3 ships (Data Provided by interviewer)

= 3 ships

Total Demand = 9 + 3 = 12 ships

Great. Can you estimate what kind of share we could expect now?

Yes, do we know who are the competitors in the market?

*There is only one government owned company (B) which is currently in the market. You can assume they are the only player as of now.*

That is surprising, why are there so few players in the market?

*Private companies were only recently allowed to enter the market by regulation and fixed costs are high. You can assume we (A) are the only new player entering the market. To see if we can capture market share from B, I would like to benchmark our client's offering with that of the government player.*

*What parameters would you benchmark on?*

The most important parameters according to me would be

- Safety
- Pricing
- Capacity / Size of ship
- On - time delivery
- Credibility / Experience of company
- Maintenance services

*Good. You can assume that this is largely a commoditized product and price is the major consideration for the oil rigs.*

Do we know what is the difference in price for us and competition?

*We have some data for you, can you tell us how should we price our ships to maximize profits.*

Company	Fixed Cost - 3 years	Variable Cost	Current Price
A	\$ 200 MN	\$ 15 MN	?
B	\$ 60 MN	\$ 30 MN	\$50 MN

*We also know that our competitors are slow movers when making major business decisions.*

*For the twelve ships, there will be four rounds of bidding, three shipbuilding contracts will be given out in each bidding round. The bidding rounds will happen once every 3 months, bids have to be sent in sealed envelopes; they will be disclosed only after winner is decided*

Based on the data, we have higher fixed costs compared to the competition but lower variable costs. Depending on how many shipbuilding contracts we receive, our break even average price would vary.

I have considered four scenarios below:

Scenario	# Bids won by client (A)	# Ships to be built by A	# Ships to be built by B	Break-even Price for A (\$)	Breakeven price for B (\$)
i)	1	3	9	~81	~37
ii)	2	6	6	~48	40
iii)	3	9	3	~37	50
iv)	4	12	0	~31	None

Scenario i) is not practically possible since we cannot win a bid at a price higher than \$50

Scenario ii) involves us having a price very close to the current government price so it would not be easy to win over the established government player

Scenario iv) Even if we win 12 bids, we won't be making much of a profit. And it's possible the government, could match us at \$31, for at least one bid.

Scenario iii) seems the most likely outcome where we should be aiming to win at least 3 bids through aggressive pricing. I am assuming that the government entity would be slow to reduce their price. For Scenario iii) where we win 3 bids (75% share), we should aim an average price point of around ~\$37-\$45 to be profitable.

For the first two rounds we could bid at around \$45/\$40 and once the government begins to react, we can even take the price it to \$30 at which point they will not be able to compete.

Great, that seems like a good strategy. Thanks

Note the final part of the problem does not have an exact mathematical answer. It involves elements of game theory in which you need to predict what would be the response of the competitor. In this situation, the interviewer is looking to see how you can use a combination of business judgment and structured thinking to arrive at an answer. The solution given is just one of the many possible ways of answering this question.

This case was contributed by Harish Varadharajan, BCG, Chartered Accountant(CA)

*Case performance sheet (Tick in the appropriate box)*

#.	Fields	Excellent	Good	Average	Below par
1	Preliminary questions				
2	Overall approach				
3	MECE Structuring				
4	Synthesis				
5	Business Insight				
6	Communication				
7	Presentation				
8	Mathematical Calculations				
9	Creativity				

*Candidate notes (Key learning and insights gathered):*

- 1.
- 2.
- 3.

## 6.6.9 Case 41: 4G Telecom Company | ★★★

Interviewer Name: \_\_\_\_\_

Date: \_\_\_\_\_

Estimated case time: 50 min

Actual case time: \_\_\_ min

It's the year 2016. Our client is a large telecom player. Let's call them company A. They have customers with voice only plans as well as 2G, 3G & even 4G mobile subscriptions. This particular case will have two parts. Let's first begin with part 1.

### Part 1 of case

Below is the revenue structure of our client. based on this, can you calculate

- 1) Voice revenues as a % of total revenues
- 2) Split of voice revenues across data-using and non-data using customers
- 3) Split of total data consumed across 2G, 3G, 4G subscribers

Note to interviewers: Ask each question after the candidate has solved the previous one. The purpose of part 1 of the case is to familiarize the candidate with the below table and see his data interpretation skills.

SHOW INTERVIEWEE TABLE 1 ON NEXT PAGE

What do we mean by voice only customers?

These are customers who do not use the internet on their mobile phones and only use it for calls and SMS.

What do we mean by voice revenues and data revenues?

Voice revenues are the revenues made when we charge customers for their calls/SMS.

Data revenues are linked to the internet usage of customers.

What does "Free voice over 4G mean"?

4G infrastructure and speeds enable customers to talk using the internet. Since these calls do not cost much data, we provide them for free to attract customers.

Alright, here are my calculations...

1) Total voice revenues across all subscribers

= Voice revenues of (voice-only) subscribers + voice revenues of (voice + data) subscribers

$$= 30,000 + (50 \times 200 + 25 \times 240 + 5 \times 0)$$

$$= 30,000 + 16,000$$

$$= 46,000$$

Voice revenues as part of total revenues are  $46,000 / 61,000 = \sim 75\%$

Data revenues account for  $\sim 25\%$

2) Split of voice revenues across data-using and non-data using customers

Voice revenues of non-data users is 30,000

Voice revenues of data users is 16,000

Table 1

The split of voice revenues across data and non-data users is 66% and 34% respectively.

3) Split of total data consumed across 2G, 3G, 4G subscribers

Subscriber type	Number of subscribers (MN)	Data consumed per month (MB)	Total Data consumed (MN MB)
2G	50	500	25,000
3G	25	1,000	25,000
4G	5	5,000	25,000

Hence the split of 2G/3G/4G data consumption is 1:1:1

Good.

### Part 2 of case

Please have a look at the data below. As per this data, average handset purchase price of a 4G user is 15,000 rupees, while the lowest priced handset supporting 4G technology is Rs. 4,000. You can assume that voice, 2G and 3G subscribers currently have handsets that do not support 4G.

Table 2

Subscriber type	Average handset purchase price by subscribers (Rs.)	Lowest priced handset supporting technology in the market (Rs.)
Voice only	1,200	750
2G	2,500	1,500
3G	10,000	2,000
4G	15,000	4,000

A famed industrial conglomerate, let's call them company B, is making a massive push in the telecom sector. They have invested heavily in developing their 4G infrastructure and are now rolling it out to prospective customers. They only have a 4G infrastructure and none for 2G or 3G.

The client wants to know how company B's entry would affect our revenues.

They are pricing their data packs at Rs.100 per 1000 MB and providing free voice calls.

They are also providing unlimited data usage for first 3 months.

Can you estimate what would be the impact of this player's entry on our revenues over the next year? You can assume we will not change our pricing plans.

Do you want me to calculate how much the revenues of the client might decline?  
Yes, please do that.

### Voice only customers

Let's begin by looking at Voice only customers. Voice customers have phones which are not 4G compatible, hence cannot shift to Player B's network without upgrading their phone. These customers tend to use their phone till it stops working, we can assume a life cycle of 3 years.

Hence a third of the customers would have to choose whether to buy a 4G enabled handset for 4,000 rupees or purchase a new handset at Rs. 1,200. Their annual mobile bill is Rs 1,800 which would become zero. This means indirect cost for a new non-4G handset is  $Rs. 1,200 + 1,800 = Rs. 3000$ .

However, I believe voice customers would be unwilling to pay an extra 2,800 rupees upfront to purchase a 4G phone because of affordability concerns. Hence we can say that that revenues of voice only customers would be largely unaffected in the first year.

### 2G customers

The case for existing 2G customers upgrading to 4G enabled handsets is stronger. Assuming a life cycle of three years again, a third of 2G customers would be looking to buy a new mobile.

They will have to pay Rs. 1,500 more for a 4G enabled handset, but keeping their monthly bill of 320 rupees constant they can now get 3.2 GB of data + unlimited voice calls compared to only 500 MB of data and limited voice calls before. These users will shift to our rivals' network. Assuming that their mobile upgrade would be distributed throughout the year, we will lose 50% of the revenues from this segment.

This would translate to  $16,000 \times 33\% \text{ mobile upgraders} \times 50\% \text{ revenue lost} = \sim \text{Rs. } 2,700 \text{ MN}$

### 3G customers

3G customers are more affluent and they typically replace their phones once every 2 years to keep up with technology. For the 50% of customers who are looking to upgrade their phones this year, company B's value proposition would be quite attractive providing them 4.4 times the data, if the user keeps his monthly bill constant. This coupled with the fact that company B is providing 3 months of data free would incentivize them to upgrade quicker.

We can assume we would lose all these 3G customers who are upgrading their phone to the competition. Most of them would shift to competitor within 3 months, meaning we would lose ~90% of their revenues. This translates to a loss of  $11,000 \times 50\% \text{ upgraders} \times 90\% \text{ loss per upgrader} = \sim \text{Rs. } 5,000 \text{ MN}$

*4G customers*  
4G customers would already have 4G enabled handset. They would be tempted by paying 60% lesser (Rs. 100 per GB instead of Rs. 160) on their data as well as the initial 3 months of free unlimited data.

However, these customers are typically more price insensitive. They might find it a burden to shift their mobile network because of the slightly tedious process. Nonetheless we can assume that we will lose 50% of them, most of them quitting in the first 6 months.

This translates to a revenue loss of  $4,000 \times 50\% \text{ shifters} \times 75\% \text{ loss per shifter} = \text{Rs. } 1,500 \text{ MN}$

This translates to a total revenue loss of  $2,700 + 5,000 + 1,500 = \text{Rs. } 9,200 \text{ MN or } -15\% \text{ by end of first year.}$

*Great. So, what would you suggest we should do to reduce this revenue loss.*  
We should look at bringing our 4G pricing from Rs. 160 per 1 GB to Rs. 100 per 1 GB like competition and also provide a similar 3-month data pack so that we do not lose customers. However, we will have to see if this is reasonable from our cost angle.

Here is some data for you.

Table 3

Player	Current price per GB for 4G users	Cost per GB for 4G to company
Company A	160	120
Company B	100	80

As per this, our cost per GB itself is >Rs. 100. This means we cannot match our price with competition without reducing our cost per GB. Would you like me to see how we can reduce our cost?

*Yes. The biggest component of our higher cost is the spectrum cost. We typically license spectrum through government held auctions. For simplicity, the cost per GB can be broken down as*

*Cost per GB = Spectrum cost per GB + Fixed Infra cost per GB (Rs. 40 for both A & B)*

*Spectrum cost per GB*

*= Annual spectrum investment / Annual data volume that can be handled on spectrum*

*= Annual spectrum investment / (# Subscribers that can be handled x Avg. data usage)*

According to this, we can reduce our spectrum cost either by reducing our spectrum investment or by increasing the data consumption on our spectrum. The former is not possible since its investment is a sunk cost but the latter can be done by reducing price to encourage greater 4G data usage.

*Our current 4G spectrum has already been saturated with data volume.*

*How is it that company B has managed to reduce their cost per GB significantly?  
They had invested heavily in the previous 4G auctions and were able to get the spectrum  
at a cheap rate capable of handling large volumes of data.*

*Then the only way to reduce our spectrum cost would be to buy additional  
spectrum at a cheaper price. However, my sense is that would be difficult to do  
in a competitive market.*

*Yes, that is true. Thanks for your suggestions. We can end the case here.*

---

***Case performance sheet (Tick in the appropriate box)***

#.	Fields	Excellent	Good	Average	Below par
1	Preliminary questions				
2	Overall approach				
3	MECE Structuring				
4	Synthesis				
5	Business Insight				
6	Communication				
7	Presentation				
8	Mathematical Calculations				

***Candidate notes (Key learning and insights gathered):***

1.

2.

3.

### 6.6.10 Case 42: IT - BPO Firm | ★★★

Interviewer Name: \_\_\_\_\_

Date: \_\_\_\_\_

Estimated case time: 45 min

Actual case time: \_\_\_ min

Our client is a Business Process Outsourcing (BPO) company. Their customers are corporations based in the US who are looking to outsource certain functions to reduce labour costs. The client has offices in India where their staff is allocated for different outsourced operations of their customers.

The client has found out that while their service offerings are similar and in some cases even better than competition they are unable to grow as fast as them. They believe they need to improve their sales force effectiveness and have roped you in to analyze the same.

#### Preliminary Questions

What kind of business processes are outsourced by the client?

These can be Customer Service Operations, Finance or Accounting.

Has any one of these segments seen a greater decline than others?

We've largely seen a uniform decline across all three.

You mentioned the client has not been growing as fast as competition. Do we know how sales have been growing vis-a-vis competition?

Yes, while the sales of competitors are growing at 30%, we are growing at only 12%.

#### Overall approach

Since we know we are growing slower than the competition, I would like to breakdown our Revenue into its components to see where is the slowdown coming from. Then we can analyze from the perspective of our sales processes to identify what seems to be the challenge.

Great. In fact, we have some data - we have an account linked to each of our customers.

Account Size (Annual Revenue per account)	Total Sales Split	Growth Rate
Small: < \$1 MN	10%	10%
Medium: \$1 MN - \$5 MN	40%	5%
Large: > \$5 MN	50%	20%

Do we know how has the competition performed across the three segments?

Competition has seen a uniform 30% growth rate across all three segments.

I would like to begin by analyzing the deficit in growth rate in each segment with the following prioritization

- i) Medium Accounts
- ii) Large Accounts
- iii) Small Accounts

Medium account growth rate: I would like to break as  
= # Medium Accounts \* Avg. Rev per account

Do we know how does the growth rate of each component compare vs competition?

Avg. revenue has remained the same for client and competition, however number of accounts have been growing faster for competition. We also know from experience that most new medium sized accounts are converted from small sized accounts which have stayed with us over a period of time.

Do we know what has the conversion rate been for ourselves and that of competition?

We don't have data on that, but we can provide you with the following information on small accounts

Table 1

For Small Accounts (<\$1 MN)	FY 14	FY 15
# Accounts at beginning of year	100	110
# New accounts opened	65	70
# Existing Accounts lost (Attrition)	55	60
#Accounts at end of year	110	120

We analyzed new small accounts opened across several years and found this

Table 2

Account size when opening new account	Split by number of accounts	% Accounts lost after first year from opening	% Accounts lost after second year from opening	% Accounts lost after third year from opening
<\$250 K	60%	70%	90%	95%
\$250 K - \$500 K	30%	40%	70%	85%
\$500 K - \$ 1 MN	10%	10%	30%	50%

As per Table 1, while our new account growth rate is 65%, our attrition rate is very high at 55% leading to a net growth in small accounts of 10%.

As per Table 2, the high overall attrition is largely happening in accounts with opening sizes less than \$500 K, but is lower in accounts between \$500 K - \$1 MN. This leads me to hypothesize that \$500 K+ accounts are most likely to convert/grow into medium sized \$1M+ accounts because they have the lowest attrition rate and largest size amongst small accounts.

I would like to validate this hypothesis with data. What % of our medium sized accounts originally had an account opening size of >\$500 K as opposed to <\$500 K?

*We did this analysis and looking across the last 3 years, 80% of our medium sized accounts had an account opening size of >\$500K.*

This is a very interesting insight. When we are opening new accounts, most of them have an account opening size of <\$500 K. These accounts have the highest attrition rate and are least likely to convert into medium sized accounts. This is leading to a poor growth rate in both small and medium accounts.

I would now like to find out why our account opening sizes are so low? Do we know what is the average account opening size for competition?

*We know that they have an average opening size of \$500 K.*

This is much higher than ours. Let's look at what parameters the account opening size could depend on

1. Type of customers(corporations) targeted
  - a. Are we targeting the right sized prospective customers (Annual Revenue of customers targeted)?
  - b. Is the outsourcing opportunity (as % of Annual Revenue) large enough?
2. Product Offerings - We already know this is comparable to the competition
3. Client's Brand - Do our prospective customers trust that we can work well with them
4. Sales Effort
  - a. Are sales executive's incentives linked to opening larger account sizes?
  - b. Do they have the ability to negotiate larger opening account sizes?

*Our current sales executive incentives are linked to the total revenue they bring through the acquisition of new customers.*

And these incentives are not dependent on account opening sizes?

*Yes, they are not.*

Do we know what the incentive structure offered by competition is?

*We are not aware of that.*

Is opening a single \$500 K account more difficult than opening two \$ 250K account for a sales executive.

Yes, since it requires a higher level of commitment from the customer, hence more negotiation with the sales executive.

It seems then our incentive structure needs to account for this. We need to have greater incentives to encourage our sales executives to open new customers with account sizes >500 K.

This will have a long term impact on revenues since these customers are more likely to stick. They also become more likely to convert into medium sized accounts by purchasing additional services.

To do this, we could have a higher sales margin for larger accounts, or we could link incentives to revenues generated across 2-3 years and not just the first year. That is a great idea. Also, analyze why large account growth rate has been slower?

Large Account Growth Rate: I would like to break sales from large accounts as = # Large Accounts \* Avg. Rev per account

Do we know how does the growth rate of each component compare vs competition?

Our growth in # large accounts is at par with the competition.

However, competitors are able to grow their average revenue per account, but we haven't been able to. This is happening because competitors are cross-selling value added services to the client. These value added services are analytics or consulting projects to improve the efficiency of the corporation and help them boost profits.

Do we have such value added offerings?

Yes, but we are not able to cross-sell them.

What is the sales process for cross-selling?

Typically, the sales executive involvement is required since he is also the account manager for our customers. He/she is unable to devote time for pitching new value added services to existing accounts since he/she is busy acquiring new accounts.

Do we know how are our competitors able to cross-sell?

In the industry, there are two types of roles - hunters (or sales executives) and farmers (or account managers). We have a hybrid system, where our sales executive acts as both the hunter as well as the farmer.

Why do we have this hybrid role, is there any advantage of it?

We were a new entrant into the market when we started small. Hence our sales executives had to do both the roles initially and that has continued even now.

Based on this information, it looks like for large accounts we need dedicated farmers so that they can spend enough time required to grow the account further. As such I would suggest we create more specialized roles of hunters and farmers, at least for our large accounts.

Great, we can end the case here. Can you provide us your recommendations and synthesize the case for us?

Synthesis - I would have two recommendations:

Firstly, we should link sales executive compensation to the opening size of new accounts acquired by them and not just total revenue across new accounts. This is because

- Medium account growth rate is lagging behind at 5% due to low conversion from small accounts
- Conversion rate is highest for small accounts with opening size >\$500K, but these make only 10% of new accounts opened
- Current compensation structure does not account for the increased effort needed for opening larger new accounts & their greater value than small new accounts

Secondly, for large accounts, the client should have dedicated account managers. This is because

- Large accounts can be grown through cross-selling of value added services
- Our sales execs are currently not able to give due time required for cross-selling since they are busy with acquiring new clients
- Competition has dedicated account managers enabling them to cross-sell

Excellent job. Thank you.

**Case performance sheet (Tick in the appropriate box)**

#.	Fields	Excellent	Good	Average	Below par
1	Preliminary questions				
2	Overall approach				
3	MECE Structuring				
4	Synthesis				
5	Business Insight				
6	Communication				
7	Presentation				
8	Mathematical Calculations				
9	Creativity				

**Candidate notes (Key learning and insights gathered):**

1.

2.

3.

### 6.6.11 Case 43: Student Credit Market | ★★☆

Interviewer Name: \_\_\_\_\_

Date: \_\_\_\_\_

Estimated case time: 35 min

Actual case time: \_\_\_ min

Our client is a large non-banking financial company(NBFC). They wish to enter the student lending market and have asked you to tell them how they should go about it?  
Preliminary Questions

I am not familiar with how NBFC's do their business. Could you please provide me a brief understanding of the business model?

Sure. NBFCs operate like banks, where they earn money through the interest rate difference charged to the lender vs paid to the borrower. However, NBFCs by regulation cannot accept deposits from regular retail customers like you and me and instead borrow money from banks.

I understand. So we borrow from banks and then lend the money at a higher interest rate. May I know who do we lend to currently?

We currently lend to both - businesses and individuals. But currently, we are not lending to students and wish to explore if that is a good market to target.

On what parameters would you decide whether we should enter the market or not?

We would like you to tell us whether the market is large enough and whether there is a profitable business model around it?

What would you classify as a 'large enough' market?

Well, let's say if the total opportunity to make loans is >INR 1000 Cr. annually

#### Overall Approach

To understand whether we should enter the market, I would like to break it into two-sub questions that we are looking to address

1. Total market size in terms of the loans that can be made annually to students
2. If the business model is profitable

#### Market Size

I would like to first understand what would the students be using the loans for? Why don't you take a shot at it?

According to me students would primarily be needing loans for

- Necessary spending - College Tuition, Text Books, Laptops, Mobile Phones
- Discretionary spending - Foreign travel, Cameras, other electronics

Great. Since we are lending money, we want to explore only necessary spend. Let's exclude textbooks since it is a small ticket size item.

If you had to size the total potential market for loans across the three categories of Tuition, Laptops and mobile phones, what would your approach be? I just want to know your approach.

I would consider the following factors

1. Population
2. Age group
3. Enrollment ratio (% enrolled in college programs from age group)
4. Income split across lower middle, middle and upper class
5. Most students would need to pay tuition fees, ~30% would have laptops and ~80% would have mobile phones
6. Avg. tuition fees (India & abroad) / laptop price / mobile phone price
7. Frequency of purchase (Ex - Laptop typically purchased once every 4 years)
8. % students who could potentially take loans
9. Down payment

Great, that's quite comprehensive. Let's say we did this analysis and find that the market size is as follows

Type	Tuition Loans	Laptop Loans	Mobile Phone Loans
Market Size - Annual Loan Disbursal (Cr.)	60,000	5,000	5,000

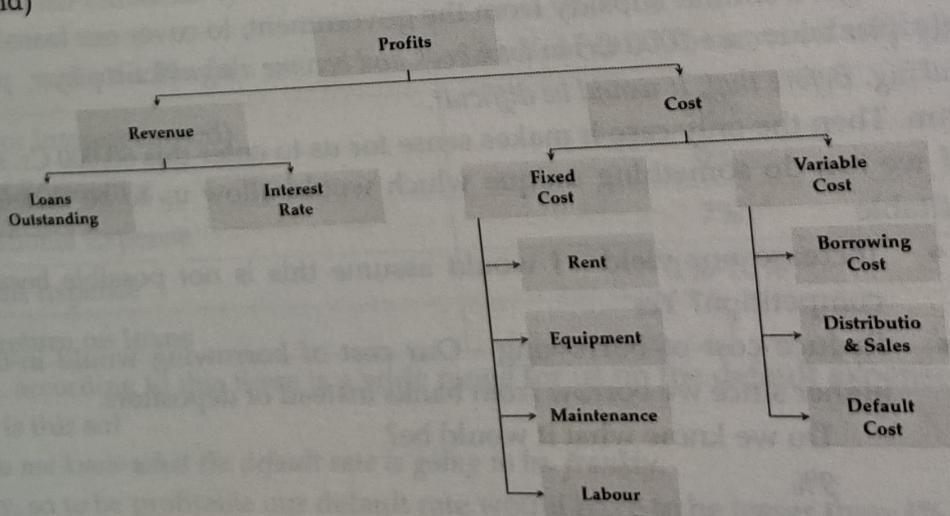
Hmm. Based on this Tuition loans is the biggest segment which is 6X compared to Laptop and Mobile Phones combined. And each of the three segments is >1,000 Cr., so all of them qualify as per our market size opportunity consideration.

Next, I would like to check if the business model is profitable.

Let's do that; how would you break down the profit structure for this kind of a business?

#### Business Model Profitability

We could break it down as follows. (Default cost is the cost of loans which are not re-paid)



Great, we in fact have some data we would like you to analyze.

When looking at the current players in the market offering tuition loans, this is how their profit structure looks like. You can assume fixed cost has been accounted in Operational expense.

Profit Model	As % of total loans outstanding
Yield (or Interest earned)	12%
Cost of Borrowing	6%
Operational Expense	3%
Default Expense	4%
Net return on loans	-1%

According to this, the current players are making a loss. If we have loaned a total of Rs. 100 Cr., this would mean a loss of -1 Cr. that year, right?

Yes.

Do we know what is the growth rate of the market?

The market for student loans is growing at a rate of 3-4%.

That is surprising, although the players are making a loss the industry is growing. What kind of players are these, I'm assuming many of them would be banks like SBI?

Yes, >90% of the market consists of public sector banks.

Why are they willing to bear a loss, it doesn't make sense...?

The majority of the loss that PSU banks make is borne by the government. This is because the government wants to encourage banks to provide loans to students as per its policy. So net-net, it's a zero loss venture for PSUs almost?

Yes.

And can we assume, that is the profit structure for all players in the tuition market?

Yes.

Can we get a similar subsidy from the government, to cover our loans?

Only after we cross ~1000 Cr. in loan book and become a significant player, practically speaking. Before that, it would be difficult.

Hmm. Then the only case it makes sense for us to enter this 60,000 Cr. segment is if we can do something unique which would allow us to be meaningfully profitable

- Increase our yield - I would assume this is not possible because of competition? Yes
- Reduce cost of borrowing - Our cost of borrowing would in-fact be higher since we borrow from banks instead of depositors.
  - Do we know what it would be?

- I see, this would take us further into loss
- Would you like me to see if we can reduce operational / default expense?
- No, that's fine.
- I think at this point it is fair to say, that it would not make sense to enter the tuition lending market since it would not be profitable for the following reasons
- Existing players are all loss making with losses covered by the government
- Our cost of borrowing is higher by 3%
- It's likely we won't be able to reduce operational and default expenses significantly

Let's now look at the laptop and mobile phones market. Do we have similar data on the profit structure there?  
 We in fact have some data. Before that could you take a guess of whether each row item for laptop/mobile phones would be higher or lower as compared to tuition loans...

Profit Model	Tuition Loans	Laptop / Mobile Loans	Reason
Yield (or Interest earned)	12%	Higher	Few options for students, so we can charge higher
Cost of Borrowing	6%	Higher	We are borrowing from banks instead of taking deposits so higher
Operational Expense	3%	Higher	Loan ticket size is smaller for the same amount of operational work
Default Expense	4%	Similar	Default rate should be similar assuming similar profile of students

Good. This is our estimation of what the profit structure could look like.

Profit Model	As % of total loans outstanding
Yield (or Interest earned)	20%
Cost of Borrowing	9%
Operational Expense	7%
Default Expense	1%-10%
Net return on loans	?

Okay, according to this there is a wide range for us on the default expense line.  
 Why is this so?

We do not know what the default rate is going to be, frankly.

Okay, so to be profitable our default rate would have to be lesser than 4%.

*Correct. We would like you to provide us as many ideas as you can on what we could do to reduce prevent defaults.*

We could do one of the two things

1. Qualifying our customers better when approving their loan application
2. Collecting re-payments more effectively from defaulters

## 1. Qualifying customers better

- a. Gauge ability to pay
  - i. Check Financial background
    1. Current Finances - Bank Balance, Income Streams(internships), Expenses
    2. Past Credit History - Any other loans, past repayment history
  - ii. Check Family Background - Hometown, Parents' jobs
- b. Gauge likely intent to pay
  - i. Use college, department & CPI info as indicators
  - ii. Facebook profile / Linked-in Profile - Gauge person's social network strength
  - iii. Identity Verification - Eliminate fraud by cross-checking information provided by student (Ex - cross-check college location info through GPRS on mobile or as mentioned on FB profile)

## 2. Collecting payments from defaulters

- a. Genuine Defaulters: those having difficulty in paying due to financial constraints / personal emergency
  - i. Remind students about upcoming payment via SMS / Calls
  - ii. Allow them to make their EMIs flexible, so that they can pay later despite missing a few EMIs
- b. Non - genuine defaulters: those willfully choosing not to pay
  - i. Make the person aware of consequences of defaulting such as the inability to get loan in the future for any purpose because of poor credit rating
  - ii. Apply soft pressure by informing parents of students as well as their friends
  - iii. Hire student interns who can be campus ambassadors to check on defaulting students (we will have to see how much this increases operational expense costs)
  - iv. Disabling mobile / laptop through software when payment is due for extended period of time - however this would be a last resort option and only for willful defaulters

I'd like to add that since these are students we should approach this sensitively. We should also be transparent about our policies and take consent of the student when asking for personal information.

Alright, these are useful suggestions. We'll take your suggestions forward and see if this can reduce default rates. Thanks.

---

*Case performance sheet (Tick in the appropriate box)*

#.	Fields	Excellent	Good	Average	Below par
1	Preliminary questions				
2	Overall approach				
3	MECE Structuring				
4	Synthesis				
5	Business Insight				
6	Communication				
7	Presentation				
8	Mathematical Calculations				
9	Creativity				

*Candidate notes (Key learning and insights gathered):*

1.

2.

3.

### 6.6.12 Case 44: Telecom infrastructure | ★★

Interviewer Name: \_\_\_\_\_

Date: \_\_\_\_\_

Estimated case time: 40 min

Actual case time: \_\_\_\_ min

Your client's company manufactures telecom towers. Over the past couple of years, they have witnessed a decline in profits. What is going wrong and what is your recommendation for them?

#### Preliminary Questions

Where does the client operate?

India alone.

The client's customers are the Telecom companies, I take it? I'd like to know what exactly our client does for them.

Yes. The client manufactures and installs Telecom towers for their customers according to their requirement. They are expected do a quarterly maintenance of the towers they install. There is also a replacement market where every 10 years, the tower needs to be replaced.

Does the client have competitors in the market? Are their business models any different?

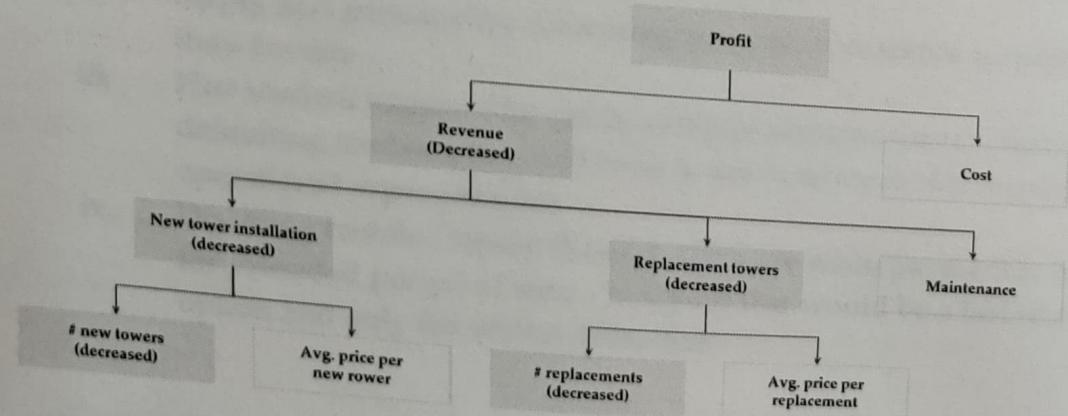
There are 3 major competitors and multiple smaller regional competitors. Everyone has the same business model.

Who is our biggest customer? Do we / anyone of our competitors have any sort of exclusive contract with any of the telecom companies?  
Vodafone is our largest account. No, there aren't any exclusive contracts. Tenders for tower installation (typically for 10-100 towers) and replacement are floated. The lowest bid gets the contract.

#### Overall Approach

I would like to study the profit structure of our client in Mumbai to see what has changed to identify the reason for profits decline and then proceed to discuss what can be done.

Okay



- We observe that:
1. New tower installations have reduced
  2. Towers replaced have reduced

*New tower installations*

$$\# \text{ towers installed} = \frac{\text{(# tenders floated)}^*}{(\text{conversion \% of tenders})^*}$$

$$(\text{avg. \# towers under each tender})$$

Assuming we are able to manufacture and install towers for all tenders we win, one of the above is reducing.

*Good. Fewer tenders were floated in the market.*

In that case, one of the following must be happening:

1. Telecom companies have started installing the towers in-house (Do we have evidence for the same?)
2. Manufacturers are circumventing the tender process and getting contracts (Do we know how our competitors are performing?)
3. Demand for such towers has reduced

*Good breakdown of the problem. Turns out the demand for such towers has reduced.*

Alright. Looks like,

$$\text{New towers demand} = \frac{(\text{Total area left to be covered})^*}{(\text{1/Coverage area of each tower})}$$

*Fantastic. The market is indeed getting saturated. Also the coverage area of each tower is increasing marginally - a constant phenomenon as technology becomes better.*

In that case, we have identified that the major reason for a reduction in new installations is the saturation of the market.

#### Replacement demand

*Replacement demand = # replacement towers for towers installed 10 years back by the client*

- # replacement tower contracts lost by competition and won by the client
- # replacement tower contracts lost to the competition

*Correct. # of replacement contracts for our old towers has reduced.*

Oh so our clients aren't replacing all of our towers. We already did the demand analysis for the towers. Since the coverage area of towers has been increasing every year, I expect over the 10 years, the requirement of towers has also reduced.

*That is correct.*

So the profits have been declining due to

- Saturation of the new tower market in India, and
- A steady decline in the Indian tower replacement market - driven by towers with better coverage area

Let's now look at what the client can do to battle this. The client can:

1. Focus on improving the current business - we shall look at how we can boost our revenues and reduce costs
2. Use their current manufacturing expertise to enter a new business line
3. Enter the telecom infrastructure business in a new geography

*Let's explore entering a new geography. How would you select which geography to enter?*

The client should enter a geography with a good business opportunity. I'd like to select the geography on the basis of:

- Business potential: market size, growth, expected profits
- Investment appetite and other operational feasibility
- Breakeven period

*Okay. We know that Africa, being a developing country, has a growing telecom industry with a good market opportunity of ~\$250MN, annually. What are the various operating models the client could use?*

1. Manufacturing parts in India, distribution to Africa
2. Manufacturing, distribution and assembly in Africa
3. Tie up with a 3rd party manufacturer in Africa

Do we have data on investment and costs for the above?

*Refer to the following table and use any data you find relevant*

Cost Headers (All costs in INR)	Option 1 (Manuf. In India)	Option 2 (Manuf. in Africa)	Option 3 (3rd party manuf. In Africa)
Land	Rs. 10,000 / sq. ft.	Rs. 5,000 / sq. ft.	Rs. 5,000 / sq. ft.
Machinery (per factory)	20 Cr.	20 Cr.	-
Employee (avg. cost)	3,00,000 pa	5,00,000 pa	5,00,000 pa
Distribution	100 Cr. pa	50 Cr. pa	50 Cr. pa
Business Development	50 Cr. pa	50 Cr. pa	50 Cr. pa
Cost of 1GB data	100	100	100
Raw material	50 Cr. pa	50 Cr. pa	150 Cr. pa (finished product)
Miscellaneous	50 Cr. pa	50 Cr. pa	50 Cr. pa

I had a few questions on the data above:

- Do we know what our market share would be like, to calculate revenue?  
Assume 20%. We will rake in revenues of \$50M.
- How many sq. ft. of land will we need for factories to meet such a production? How many factories would be needed? How many people per factory? Will our current factories be able to meet the manufacturing requirement?
- We will need a total of 3,00,000 sq. ft. across 4 factories. Every factory needs about 200 people. Only 2 new factories will be needed if we decide to manufacture in India.
- How often will we need to change the machinery? I would like to distribute the cost over the lifetime of the machinery

- For Option 3, what will the land cost and employee costs be since we won't be manufacturing anything?  
Assume an annual expense of 30 Cr. for office and labour cost.
- Okay. The cost of 1 GB data is irrelevant here

Computing the costs (all figures in INR Cr.) and assuming 1\$ = INR 70,

#### Option 1 (manufacturing in India),

$$\text{Land} = 10,000 * 1,50,000 \text{ sq. ft.} = 150 \text{ Cr.}$$

$$\text{Machinery} = 20 \text{ Cr.} * 2 \text{ factories} = 40 \text{ Cr. (10 Cr. per year)}$$

$$\text{Employee} = 3L * 200 \text{ people} * 2 \text{ factories} = 12 \text{ Cr.}$$

$$\text{Distribution} = 100 \text{ Cr.}$$

$$\text{Raw Material} = 50 \text{ Cr.}$$

$$\text{Business Development + Miscellaneous} = 100 \text{ Cr.}$$

#### Option 2 (manufacturing in Africa),

$$\text{Land} = 5,000 * 300,000 \text{ sq. ft.} = 150 \text{ Cr.}$$

$$\text{Machinery} = 20 \text{ Cr.} * 4 \text{ factories} = 80 \text{ Cr. (20 Cr. per year)}$$

$$\text{Employee} = 5L * 200 \text{ people} * 4 \text{ factories} = 40 \text{ Cr.}$$

$$\text{Distribution} = 50 \text{ Cr.}$$

$$\text{Raw Material} = 50 \text{ Cr.}$$

$$\text{Business Development + Miscellaneous} = 100 \text{ Cr.}$$

#### Option 3 (3rd party manufacturer in Africa),

$$\text{Land} = 0$$

$$\text{Machinery} = 0$$

$$\text{Office + Employee} = 30 \text{ Cr.}$$

$$\text{Distribution} = 50 \text{ Cr.}$$

$$\text{Finished product cost} = 150 \text{ Cr.}$$

$$\text{Business Development + Miscellaneous} = 100 \text{ Cr.}$$

Cost headers (All costs in INR Cr)	Option 1 (Manuf. In India)	Option 2 (Manuf. in Africa)	Option 3 (3rd party manuf. In Africa)
Land	150	150	0
Machinery	10	20	0
Employee	12	40	30
Distribution	100	50	50
Sales + Miscellaneous	100	100	100
Raw material	50	50	150 (final product)
<b>Cost</b>	272	260	330
<b>Expected revenue (\$50MN = INR 350Cr.)</b>	350	350	350
<b>Annual profit</b>	78	90	20
<b>Breakeven (months)</b>	23	20	0
<b>Upfront investment (land + machinery)</b>	190	230	0

*Observations:*

1. Option 3 (3rd party manufacturing in Africa) is the appropriate choice if making an upfront investment is an issue
2. Option 1 and 2 (manufacturing yourself) rake healthy profits of 78 Cr. and 90 Cr. respectively - much more compared to Option 3. Given the breakeven is 1.5-2 years, these 2 will help log higher cumulative profits in the third year of operation itself.
3. Between options 1 and 2, manufacturing in Africa is a clear winner given a shorter break-even period and higher profits - driven by lower distribution cost. The upfront investment is a little higher though.

*The client has the capital to make an upfront investment. Could you please synthesize the case?*

Synthesis

We recommend the client expand their operations to Africa and set up manufacturing factories - an investment of INR 230 Cr., for three reasons:

1. The Indian market for tower installations is saturated and the tower replacement market is steadily declining (due to better coverage area of towers)
2. The African market has a growing telecom industry with expected annual revenues of \$50M
3. Favorable distribution costs with annual profits of INR 90 Cr. a break-even of 20 months

Further, I would want to analyze the ease of implementation given that we are entering a completely new market.

Thanks. We can stop here.

---

**Case performance sheet (Tick in the appropriate box)**

#.	Fields	Excellent	Good	Average	Below par
1	Preliminary questions				
2	Overall approach				
3	MECE Structuring				
4	Synthesis				
5	Business Insight				
6	Communication				
7	Presentation				
8	Mathematical Calculations				

**Candidate notes (Key learning and insights gathered):**

1.

2.

3.

### 6.6.13 Case 45: Tesla Motors | ★★★

Interviewer Name: \_\_\_\_\_

Date: \_\_\_\_\_

Estimated case time: 40 min

Actual case time: \_\_\_ min

It's the year 2016. Tesla Motors is an electric car company based in the US. They have just announced that in 2018 they will begin sales of their new mid-premium car, the Model 3. Tesla currently sells their other car models in North America, Europe and China primarily. They wish to enter the Indian market with the Model 3 and want our view if that is a good idea?

#### Preliminary questions

What would be the goal of the market entry? On what parameter should we evaluate that entering the Indian Market is a good idea?

*It would be worth our time entering the Indian market if at least 2% of our expected global sales of Model 3 can come from India and if we can break-even on our fixed investment in 5 years.*

What are the expected global sales for Model 3?

*We expect to sell 350,000 cars / per year of Model 3 by 2020 globally.*

So we need to be able to

- a) Sell at least 7,000 cars per year by 2020
- b) Break-even in 5 years

if we are to enter the market.

Yes.

Where does Tesla have plans to sell Model 3 except India?

*We expect our sales split to be as follows North America: 50%, Europe: 25%, China: 15%, Others: 10%, based on pre-registrations received for Model 3. Pre-registrations involved a \$1000 upfront refundable deposit.*

How many pre-registrations did we receive from India?

*We received ~10,000 from India of a total 400,000 pre-registrations so far.*

Where do we lie in the value chain?

*We manufacture at our factories, ship the cars through third-parties and retail through company owned galleries and online channels.*

Where are our present factories located?

*We have one in the US and another one is coming in China which will be ready by 2018.*

#### Overall approach

I would like to break the problem down into two parts -

- 1) How many cars can we expect to sell by 2020 = Market Size x Market Share
- 2) Can we breakeven in 5 years? For this

- a) Expected profits from 2018 - 2022 > Fixed investments in India

I would like to begin by first estimating the market size for the Model 3 in India

*We have some data for you that maybe helpful*

Expected car sales in India	2018	2019	2020	2021	2022
Annual sales (MN units)	3.5	3.8	4.0	4.2	4.5

Price Segment (Incl. Tax)	% of Annual Car Sales
< INR 5,00,000	70%
INR 5,00,000 - INR 10,00,000	20%
INR 10,00,000 - INR 20,00,000	7%
INR 20,00,000 - INR 40,00,000	2.5%
> INR 40,00,000	0.5%

Take USD to INR as: \$1 = INR 60

Do we know what would be the price - point for the Model 3 in India?

We would actually like you to compute what should it be. Here is some information:

US price: \$35,000

China price (once China Factory is ready): \$ 35,000

Profit margins: 10%

So our price outside India is \$35,000

Yes.

What would be the shipping charges if we had to transport the car to India?

Shipping Charges from the US to India: \$2000 per car

Shipping Charges from China to India: \$1000 per car

In India (as in many other countries), there is also an import duty charged on cars by the Government:

Import Duty (applied on car price + shipping)	Fully built car import	Car assembled in India	Car manufactured in India
(i)Fully built up cars are those imported in one piece from the manufacturing country to make a car in India.	60%	30%	0%
(ii)Assembled cars involve critical car components imported from outside but assembled			

(iii) Manufactured cars have even the critical car components manufactured in India.

So let's look at each of the models and see what price we can get.  
Fully built car import

Price to customer = \$35k + \$1k (Shipping from China) + \$21.6k (60% duty) = \$57.6k

You can take USD to INR conversion as: 1 USD = 60 INR

Then this results in a price of INR 34,56,000

### Assembled Car

Will the cost to ship the components be different than that of shipping the car?  
You can consider it to be the same for the case. Also you can assume profit per car would remain \$3,500.

Price to customer = \$35k + \$1k + \$10.8k (30% duty) = \$46.8k = INR 28,08,000  
Manufactured Car

Price to customer = \$35,000 = INR 21,00,000

What would be our profit per car in this case? \$3,500?  
Yes.

From a customer point of view manufacturing the car in India would make the most sense, but we will also have to see what are the fixed investments to be made in each of these cases and see if it makes sense from a company standpoint.  
Do we know what are the fixed investments?

Yes. We will have two types of investment - factory cost and charging infrastructure mainly.

	Fully Built Car import	Car Assembled in India	Car Manufactured in India
Factory Cost	0 (No Factory)	\$200 MN (Assembly unit)	\$2 BN (Full Factory)

Additionally, we would have to setup the charging station infrastructure in India which would cost us ~\$50 MN.

In all three cases, our price range lies in the INR 20,00,000 to 40,00,000 bracket.  
We need to meet two conditions

1. Have sales of more than 7,000 cars by 2020. This would mean our market share has to be  $7000 / (4 \text{ MN} \times 2.5\%) = (7000) / (100,000) = 7\%$
2. Recover our fixed investment cost of
  - Option A: \$50 MN in case we will be importing cars
  - Option B: \$250 MN in case we will be assembling the cars in India
  - Option C: ~\$2 BN in case we have a full-fledged factory in India

For Option A, to recover fixed investment, we need to sell ~14,000 vehicles (\$50 MN / \$3,500) across 5 years. However, here meeting the second criteria of selling 7,000 vehicles in 2020 would be the bigger challenge. To do this we need to achieve a 7% share in the corresponding price segment. We will evaluate this further.

For Option B to be viable, we need to sell ~70,000 vehicles (\$250 MN / \$3,500) across 5 years, which would translate to an average market share of 14% (70,000 / 500,000) across 5 years. We will have to evaluate this further.

For Option C to be viable, across 5 years, we would need to sell ~600,000 vehicles (\$2 BN / \$3,500). The total market size itself is  $(20 \text{ MN} \times 2.5\%) = 500,000$  cars across 5 years. Hence Option C will not be feasible unless we cater to demand outside India from this factory? Our China factory has enough capacity for that. Okay, then we can exclude option C.

#### Market Share

To choose, between Option A & B, I would now like to estimate what would be our possible market share in both the options to see which one is feasible. Here I would like to benchmark our car with respect to the competition. I would like to benchmark ideally on the following parameters

- Price, Fuel Cost (Gasoline vs electricity)
- Life of Vehicle, Design, Performance, Brand Identity
- After sales Service, Incentives / Schemes

We have some data which you can use to arrive at market share.

	Tesla Model 3	Rival A	Rival B	Rival C
Price	?	30,00,000	25,00,000	30,00,000
Share in segment	?	20%	40%	20%
Fuel Type	Electric	Diesel	Diesel	Petrol
Fuel Cost Efficiency	★★★★★	★★★	★★★	★★★
Car Performance	★★★★★	★★★	★★★★★	★★★★★
Car Design	★★★	★★★★	★★★	★★★
Brand Identity	★★★	★★★★	★★★★★	★★★★★

*Additionally, we are also providing the Tesla Model 3 with autonomous driving hardware, and in the future, our customers will have the option to upgrade their car with autonomous driving capabilities by purchasing the required software.*

Based on the information, the Model 3 is a clear winner in terms of a) being the only electric car b) having the best performance and c) the best fuel cost efficiency. We are comparable in terms of car design with our rivals. However, our brand recognition is lower compared to the legacy players in the arena. Brand identity in India can be built over time, and we have a great story to tell in terms of being pioneers in bringing a mass market electric car to the market. We also already have 10,000 customers from India who have pre-registered the car.

Most of our rivals are priced between 25,00,000 to 30,00,000. If we can price ourselves at that point, we will have a clear differentiated advantage in terms of Performance, Fuel Efficiency and being an all-electric car. I would expect us to be able to capture a significant share of 20-30% at least. This can happen if we go ahead with Option B where we will be priced at ~ INR 28,00,000.

If we go with option A, our price would be INR 34,56,000. We will be priced higher than the competition and here we would need to take a bet on whether Indian customers would be willing to shell out the extra 5-10 lakhs, for the Tesla. Though I believe, we could still get a share of 10%, I would be less confident about it.

As such I would recommend, going with Option B, of setting an assembly unit. We should be able to comfortably achieve a 20% market share, above our break-even point of 14% share, and we would be selling at least 20,000 vehicles by 2020 in India.

*I think those are reasonable assumptions. Good work. We'll take your ideas forward with Mr. Musk. Thanks*

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