TRAINING & PLACEMENT DEPARTMENT

180 DEGREES CONSULTING

DELHI TECHNOLOGICAL UNIVERSITY

CASEBOOK

2021-22

Disclaimer

First Edition: September 2020
Second Edition: December 2021

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From the Vice Chancellor's Desk

"Delhi Technological University has continued on the path of excellence in education for nearly 80 years, producing extremely capable and competent professionals. With the onset of a new academic year, and given the difficult times we are facing, it is a delight to see how students are persevering to make the most of their abilities.

Looking back at the last academic year, students' accomplishments have been exemplary in a multitude of disciplines, including commendable performances in various exams, exceptional achievements at international and national level competitions, and securing positions at some of the finest organisations in the world. I hope that we keep pursuing our path of excellence and keep working towards the vision of being a world-class university through education, innovation, and research for the service of humanity.

This casebook should prove extremely helpful to all the students who wish to pursue a career in consulting and business analytics. I applaud the achievement of the team not only for their incessant effort to create this Casebook but also for helping social enterprises all across the world to drive their impact forward. I wish the students all the very best for all their endeavours and hope that they take the university to greater heights. "

Prof. JP Saini,
Vice Chancellor, Delhi Technological University

Preface: Head, Training & Placement

“Delhi Technological University has unremittingly been acting as a medium for providing quality technical education with a mission of developing technocrats having the potential to excel. The placement records even during the pandemic have been stellar with several students bagging opportunities at organizations of inordinate importance. The Training & Placement Department along with the student coordinators enjoy highly cherished partnerships with all our recruiters and remain devoted to making their recruiting experience fruitful and positive along with helping students in order to find the best match between their needs and capabilities.

Our students are abundantly talented and go beyond the curriculum to excel in diverse fields. Over the past several years, there’s been a steady rise in the number of students vying for consulting and analytics roles during the on-campus placement process. With the presence of top firms and international conglomerates recruiting both undergraduate and postgraduate students for multiple profiles, a centralised repository of resources will prove to be extremely beneficial for those aiming for these positions.

The response of the first edition of the Casebook was quite overwhelming which indicated a true need for a one-stop solution for case interview preparation. I congratulate the 180 Degrees Consulting DTU team for taking the torch further ahead and coming up with an updated version of the casebook. I wish the students the best for the upcoming placement season and hope they continue to bring glory and be a connected and proud alumnus of this prestigious institution. ”

Prof. Rajesh Rohilla,
Head, Department of Training & Placement, Delhi Technological University

Foreword

It gives me immense pleasure to bring you the second edition of the 'Delhi Technological University Casebook' prepared by 180 Degrees Consulting DTU and T&P. With the DTU Casebook's first edition, we reached 6000+ inquisitive minds from universities across the globe as well as from corporates. The cumulative positive response and feedback we received from all our readers motivated us to work on an improved version of the Casebook, and here we are!

To make the Casebook a more holistic resource for all the university students, we added a section for the typical HR questions that consulting companies ask and another which provides an overview into the consulting world for beginners. With a bigger team working day and night on this Casebook, we've incorporated more cases and guesstimates this time around without compromising quality. To cater to a broader audience interested in taking up roles within the non-technical domain, we've added private equity cases for the finance enthusiasts and product-based cases to prepare for product analyst interviews.

While there are many online resources with heaps of cases and guesstimates, we realised there was a lack of a single consolidated document that outlines a basic overview of all the major industries. Thus, we have prepared concise one-pager industry reports, incorporating 13 major industries from which cases are generally asked in a case interview - just enough for a basic understanding of the industry and to get you off to a confident start in the case round.

As always, we'll be making our Casebook available on a public platform to reach people from across the professional spectra and contribute our bit to make the consulting world more accessible, one step at a time. If you have any feedback regarding this edition, please feel free to reach out to us!

The entire team has put in monumental amounts of effort over the past six months to come up with the DTU Casebook 2.0, and I'm incredibly proud of the consistency with which every team member has worked. We hope this Casebook continues to serve as a one-stop solution for building your base and makes you better prepared for the exhilarating world of management consulting.

Divyam Goyal
President, 2020-21

Acknowledgements

We'd like to express our heartfelt gratitude to Hon'ble Vice Chancellor Prof. Yogesh Singh, Prof. Rajesh Rohilla, Head, Department of Training & Placement and Dr. Anil Parihar, Associate Head, Department of Training & Placement, for providing us an opportunity to build and release a university casebook. We are also thankful to the faculty advisors of 180 Degrees Consulting DTU, Dr. Vikas Gupta & Dr. Sonal Thukral of Delhi School of Management, for being constant pillars of support through our many endeavours.

We are grateful to all the people who have helped in the development of the casebook by sharing their interview insights and experiences that have enabled us to put together a comprehensive preparation resource for future batches. We are grateful to the previous team for creating the comprehensive 2019-20 edition, which served as the perfect stepping stone to build upon. We are also immensely grateful to various go-to resources that served as an introduction to this field for most and helped us learn case solving, such as the workshops by Victor Cheng, Case In Point by Marc Cosentino, several B-School casebooks and all the compilers before us for serving as inspirations to undertake this initiative.
We would like to thank DTU Studio and DTU Times for providing the photographs used throughout the book.

Any resemblance of a case here to any real-life problem elsewhere is purely coincidental. We have taken utmost care to ensure a book free of errors and conceptual ambiguities. However, if there are any issues, please do reach out and let us know. We'd love to hear your feedback and review of the casebook and how we can make it more reader-friendly for the next edition.

Team

Class of 2021	Class of 2022				Class of 2023	
Divyam Goyal	Adarsh Chawla	Krishna Choudhary	Pulkit Chugh	Shristi Mehrotra	Anoushka Das	Rajan Yadav
Kshitij Rastogi	Arnav Garg	Mayank Dawar	Purshottam Kandhari	Vrinda Sharma	Ayan Bindra	Sarvesh Shaw
	Ashi Gupta	Mridul Gupta	Sakshi Jain		Kamal Patro	
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About: 180 DC DTU

180 Degrees Consulting is the world's largest university-based consultancy providing affordable yet high-quality strategic & operational assistance to socially conscious organizations across the world. It has over 10,000 carefully selected and trained volunteer consultants worldwide, who develop innovative, practical and sustainable solutions to ensure that organizations can achieve their full potential.

Why are we called 180 Degrees?

"It's because we work to turn good organizations into great organizations, challenges into opportunities, ideas into reality. We're focussed on positive transformation.

Transforming organizations, and – in turn – transforming lives."

Present with 150+ Branches operating in 35 countries.

Over 3 Million hours of consulting provided.

40,000+ future leaders trained to date.

3000+ Organisations assisted to date.

The DTU Branch was established in April 2019 with the vision of filling the opportunity gap between untapped capabilities of top university students and the unmet needs of social enterprises, while pushing the envelope of knowledge transfer at the undergraduate level.

Within two years of operations, we have successfully completed **14 client projects** and our members have won **50+ podium positions** at several prestigious case competitions - at both undergraduate & postgraduate level - across the nation. We're proud to be a part of an international community of go-getters and changemakers committed to meaningful social impact.

What's New ?

The second edition of the Casebook by 180 DC DTU has incorporated the following additions:

- Comprehensive explanation about the field of Consulting and the Case Interview process.
- Basic concept section to equip the reader with few of the commonly used frameworks.
- HR Fit questions typically asked in an interview.
- Enhanced transcript layout for a better readability.
- Addition of Product Based Cases asked in the Case interview process of Product based firms.
- Industry Reports Section containing a detailed analysis of all the major industries relevant for consulting preparation.

How to use this Casebook ?

While reading the Case Book, we suggest the reader to employ the following steps in order to extract maximum learnings from this Case Book:

Step 1: Form a case preparation group with your peers with whom you can carry out your case preparation journey.

Step 2 : Use the interview transcripts to set up a case between 2 people (or groups), and after solving the case, the solution should be looked into to gain a broader understanding of the approach and areas of improvement. Do not make the mistake of reading the cases in the book on your own. One person can take on the role of the 'interviewer' and the other, the 'interviewee'. Only the interviewer must go through the case to understand the problem. After this, the 'interviewer' gives the case to the 'interviewee' who makes an attempt to solve the case.

Step 3 : The reader should maintain a separate notebook/document to take a note of the learnings from each case. If used properly, it can act as a single stop solution during the days leading to the interviews.

NOTE: *It is suggested, not to memorize the frameworks. Frameworks used in specific type of cases are only the guidelines and tools enabling you to think in the right direction. Do keep a note that they won't be applicable in all types of cases. Also, the reader should leverage the recommendations, tips, and suggestions to apply learnings from one case to another.*

About Consulting

Consulting means “engaged in the business of giving expert advice to people working in a specific field.” In other words, a consultant is somebody who gives advice to a specific group of people. They work across a huge range of roles and industries and share their gift of analyzing information and identifying the best path for each company to take.

Major Consulting Service Areas

Strategy Consulting

Corporate strategy, economic policy, mergers and acquisitions, organizational and functional strategy form a part of this area

Operations Consulting

It consists of Organisational Operations, Sales & Marketing, Supply Chain, Sourcing & Procurement, Finance, Business Process Management, etc.

Technology Consulting

Methods implemented by tech consultants aim at improving business processes, minimizing costs, and enhancing technological opportunities.

HR Consulting

HR Technology, talent management, benefits and rewards, learning and development and organizational change come under HR Consulting.

What is a Case Interview?

A case interview is a part of the process of recruitment carried out by the consulting firms. In a case interview, the candidate is provided with a detailed situation, problem or challenge and asked to analyze it and come up with a solution. A case interview question can be based on a creative business situation your interviewer has experienced in real life, or one fabricated to deduce your abilities.

Through a case, the interviewer tries to check the candidate for the following qualities:

- Communication Skills
- Ability to draw essential insights from the given information
- Ability to generate a structured solution
- Analytical Ability
- Quantitative Ability
- Impact and Effectiveness

Case Interview Process

General Discussion → Case Statement by Interviewer → Analysis by Interviewee → Synthesis of the Case → Wrap Up

HR Questions you might come across in an Interview

There are a lot of questions which are asked by the consulting firms in addition to the guesstimates and cases in an interview to understand the personality, fitness for the role, background, ability to work under pressure, leadership qualities etc in a candidate.

Some of the questions that might be asked by the firms are:

- Introduce yourself/ Walk us through your resume.
- Tell us about your strengths and cite an example from your life where you showcased these qualities.
- Tell us about your weaknesses and what are you doing to overcome them?
- Why are you interested in consulting?
- Why this company?
- What do you know about our company?
- What experience do you have that would be relevant to this role?
- Tell us in detail about a situation where you showed resourcefulness.
- Tell us about a time when you showed leadership skills.
- What is the biggest regret/failure that you have faced?
- Mention 3 most important values that you ensure to follow. Why are these values important to you.
- What do you consider to be your most significant professional/academic achievement. Why ?
- Sometimes, we may find a group of people disagreeing with our beliefs/point of view. Give us an instance where you had to convince a group of people on your point of view.
- Three significant events that have shaped my personality.

BASIC CONCEPTS

MECE Issue Tree

Mutually exclusive, collectively exhaustive (MECE) issues trees are used to break down complex problems into more manageable sub-issues.

Example Issue Tree: Reducing Energy Costs

- How can the company reduce energy costs by 20% by the middle of the next year, without compromising production quality?
  - Cut Consumption
    - Reduce energy consumers
      - Disconnect installations
        - Use control/time switch systems
        - Disconnect superfluous energy consumers
      - Reduce capacity level
        - Optimize regulating systems
        - Reduce energy consumers/power generators
    - Improve use of energy
      - Increase efficiency
        - Increase technical efficiency of system parts
        - Extend/renew technological basis
      - Minimize loss of energy
        - Intensify recovery (eg. heat exchangers)
        - Improve insulation
  - Reduce costs/unit
    - Use cheaper energy providers
      - Optimize providers' tariffs
        - Capture advantages of bundled purchasing
        - Beat down prices to market level
      - Substitute energy provider
        - Contract from regional providers
        - Contract from national providers
    - Optimize mix of energy carriers

Need For Frameworks

Frameworks are an essential part of case interviews and competitions, as they allow for simplified understanding of the company or industry and provide a structured approach towards aspects of the problem.
Each case study is different, so it is essential that you choose a framework which is best suited for your problem.
These ease your workflow during the solution generation phase, and aid in the isolation of problem into smaller, more easily workable parts, and give you a clearer image on the main points.
Detailed in this section are some of the most commonly used frameworks for your easy reference.

FRAMEWORK	WHEN TO USE
SWOT Analysis	Allows a clearer understanding of internal and external factors effect on any decision
PESTLE Analysis	Provides key macro-environmental trends which impact the client's industry
Porter's 5 Forces	Lists the factors for gauging competitive intensity and industry attractiveness
7P Framework	Allows to review and define the issues that affect the marketing of products or services
McKinsey 7S Framework	Used to understand how various parts of an organization function with one another
BCG Matrix	Used to determine the profitability/returns of a business unit of a company

SWOT Analysis

S

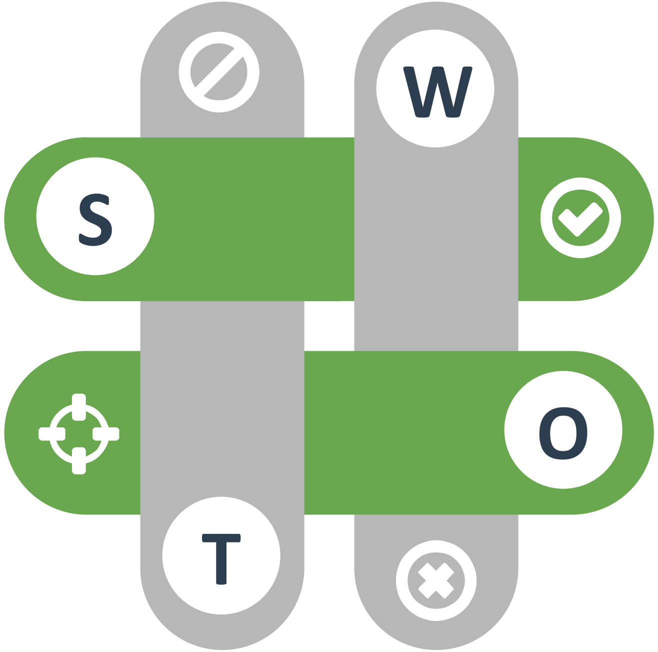
STRENGTHS

Areas where your organization does particularly well, or factors that distinguish you from your competitors.

W

WEAKNESSES

Things that your organization could improve or work upon. It is extremely important to be honest during this exercise.



T

THREATS

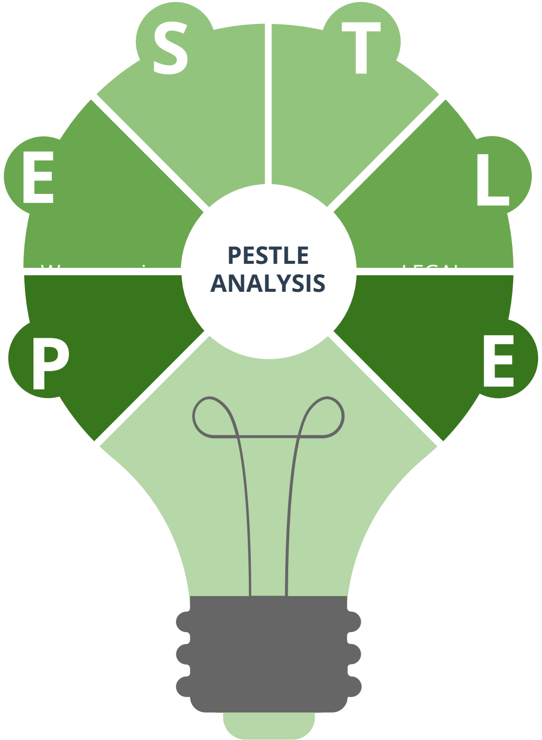
Anything that can negatively influence your company such as shift in market requirements, supply chain problems etc.

O

OPPORTUNITIES

Developments in external conditions (market, government policy, buying habits etc) that could help increase your company's competitiveness.

PESTLE Analysis



SOCIAL

Widespread belief and attitudes of the general population. Factors that have an effect on consumer buying.

ECONOMIC

Economic growth, interest rates, inflation, disposable income of consumers, business etc.

POLITICAL

To what degree does the government intervene/hold sway regarding your recommendation

TECHNOLOGICAL

New ways of producing goods/services.
New ways of distributing goods/services.
New ways of communicating with target markets.

LEGAL

Health and safety analysis of your solution, as well as consumer rights in the domain of recommendation.

ENVIRONMENTAL

Environmental sustainability of your recommendation (positive or neutral preferably)

Porter's 5 Forces

Ability to serve the market and make a profit

Threat of New Entrants

Legal Regulatory Barrier
Economies of Scale
Cost Advantage
Distribution Channels
Product Differentiation

Competitive Dynamics

Industry Growth Rate
Industry Fragmentation
Level of Switching Costs
Motivation to Lower Prices

Supplier Power

Level of Substitutes
Supplier Reputation
Switching costs
Forward Integration possibility by supplier

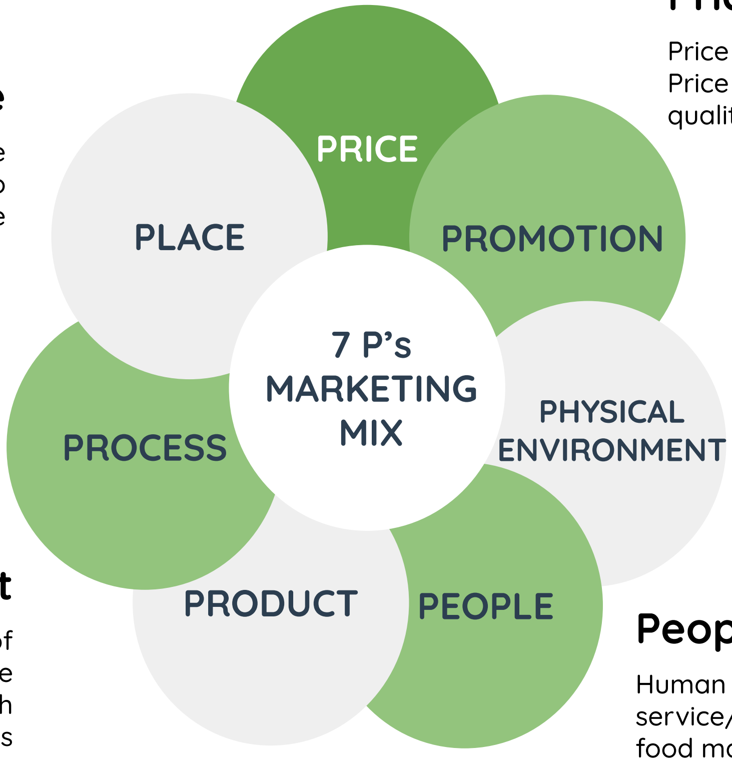
Buyer Power

Customer Concentration
Level of Commoditization
Switching costs
Informed buyer

Threat of Substitutes

How easily the customer can switch over to competing products, or services and at what cost

7 P Framework



Place

Where is your good/service available? How convenient is it to gain access to your product/service

Process

Processes that will be followed to ensure quality standards are met with. (eg. Process Mapping)

Product

"The thing" that fulfills the needs of the consumer. Attributes of the product, comparison with competitor products

Price

Price of your product vs competitors products. Price is sometimes considered a proxy for quality and vice-versa

Promotion

How will your promote your product/service and make sure it reaches the target audience?

Physical Environment

Physical environment can affect customer satisfaction. (eg. one would prefer to eat at a clean restaurant, over a dirty one)

People

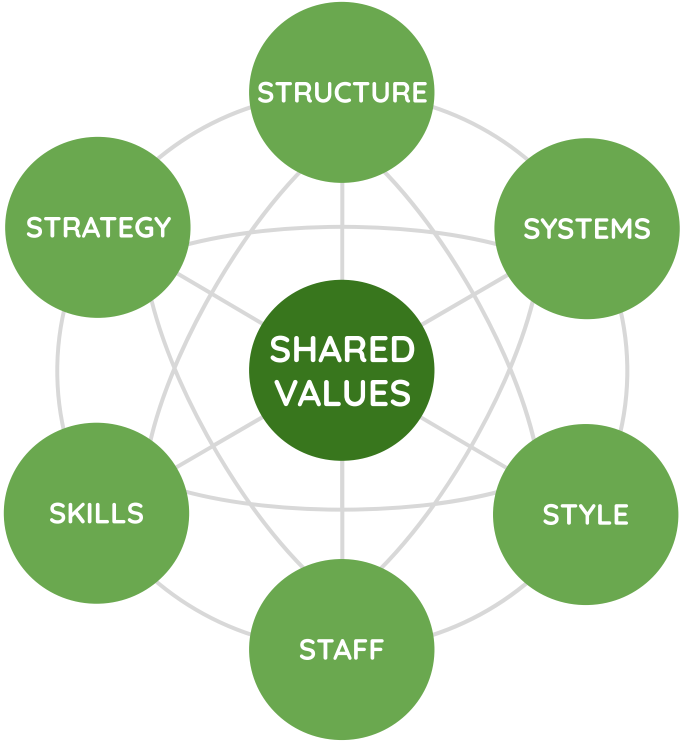
Human connect between your service/product and the consumer. (eg. the food may be good, but a rude waitress may affect return of the customer)

McKinsey 7 S

STRATEGY
What is the plan to enhance your company's competitive advantage in the industry?

SKILLS
What are the organization's core competencies and distinctive capabilities?

STAFF
Who makes up the majority of the employees in the company, and their general capabilities?



STRUCTURE
How is the company structured? Who has the authority to make the required decisions?

SYSTEMS
What is the current procedure, process, and routine of how a specific job is done?

STYLE
What is the typical behaviour pattern currently exhibited by groups within the organization?

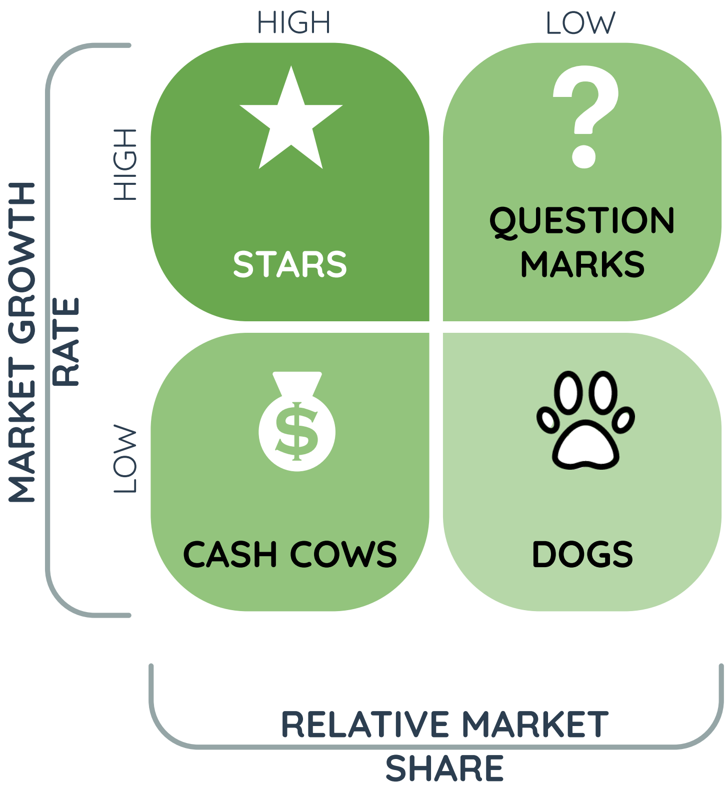
BCG Matrix

STARS

Star brands operate in rapidly growing industries and maintain a high market share. They are cash generators, as well as cash users, and are a very lucrative option for a firm to invest in.

CASH COWS

Have a high market share, but the market in which they operate is a slow-growing market. Cash cows are the most profitable brands & should be utilised to generate huge sums of cash to support growth of stars.



QUESTION MARKS

Low market share in a fast-growing market. They require the consumption of large amounts of cash and are susceptible to incur losses but also have the potential to become stars by gaining market share if external factors work in favour of them.

DOGS

Hold low market shares as compared to competitors and operate in a gradual growing or a declining market. They are not worth investing in because they generate low or negative cash returns.

GUESSTIMATES

Guesstimates: Structure & Approach

‘Guesstimates’ are an interview staple not just for consulting firms, but across industries, to evaluate the candidate’s reasoning acumen. For analytics/consulting domain companies, market sizing questions are a precursor to the business case problems later in the interview process, which is followed by an HR/fit interview round in the end.

Any guesstimation problem should be thought of with an open mind. Initiate your approach by asking preliminary questions and stating your assumptions as a primer and then lay out the structure of your solution. In guesstimates, the primary objective of the interviewer is to observe your logical reasoning process and general awareness of your surroundings in life. The key is not necessarily to get the right answer, but to show your ability to tackle a problem logically, approach assumptions sensibly and perform simple back-of-the-envelope calculations quickly.

A four step methodology should be followed to tackle guesstimates:

CLARIFY — Ask preliminary questions (even if they sound silly!), clear out any assumptions and always let the interviewer know your overall approach before delving into the problem solving stage.

ANALYSE — Always look at the problem from a larger perspective. Use everyday knowledge to make sense of the information provided in the problem statement and preliminary questions.

STRUCTURE — Attempt to break down your approach into smaller, workable demographic segments like income, age, geography, gender etc. This makes your overall solution easy to explain and holistic.

CONCLUDE — Try to make sense of your answer mentally before saying it out loud . If the answer seems too out-of-scope, re-check your calculations. Always perform a general sanity check after giving your final answer.

Guesstimates: Structure & Approach

PROTIPS

- ➔ The most important aspect of your approach are your assumptions, which should be reasonable and realistic.
- ➔ Take well-rounded numbers that are easy to work with for further calculations and should lie within your assumed range.
- ➔ It is always better to think out loud, even when you're not sure if you're going in the right direction, they will help you with course correction if necessary (but don't rely on them to do all the heavy lifting).
- ➔ Talk through your steps, any assumptions you take into account and calculations. Avoid awkward silences, and make it an engaging dialogue.
- ➔ If you are not sure about a number, say the GDP of New Delhi, just ask for it. Avoid generating data from thin air based on your hunch.
- ➔ It's always good practice to ask your interviewer if they would like you to perform a sanity check (based on general awareness and common sense) after coming up with a final number.
- ➔ Remember that guesstimates, like cases, also involve elements of creativity and out of the box problem solving.

SOME FUNDAMENTAL CONCEPTS

(1) The market size for a product is the # products sold in a year, i.e.
the growth in market size (additional demand for new products)
+ the no. required to replace old products.

Market size = Demand due to growth in market size + Replacement Demand

= (# products in market) x (Growth rate) + (# products in market) / (avg. life of the product)

(2) If the life cycle of a product is Y years on average, then in Y years' time each of these products would be replaced by newer ones. Thus the average replacement demand for any particular year is (Current # Products/Y).

Avg. Replacement Demand = Current # Products / Avg. Life cycle of product

(3) In absence of any other information, take the market growth rate as the GDP growth rate or 10% for simplicity.

Monthly Residential Electricity Consumption in India

Preliminary Questions

What is the unit electricity consumption ?
-*Consider it to be 1 kWh.*

What month are we considering as for seasonality?
- *Consider it to be May.*

Shall I include residential complex , flats , bunglows ?
- *Include all type the residential settings in India.*

Assumptions

- Population of India = 135 Cr
- Ratio of Urban to Rural population 3:7
- Average household size for urban - 4 and for rural- 6

Overall Strategy

(1) Estimate # households in rural and urban areas.

(2) Electricity consumption varies based on income level.

(3) Split # households in low, mid, high.

(4) Monthly Consumption per category = (# households) x (Average monthly consumption)

Total Population
135 Cr

Urban
(40 Cr)

Households
(40 Cr / 4 = 10 Cr)

Low Income 50%	Mid Income 30%	High Income 20%
Monthly Consumption 200 unit	Monthly Consumption 500 unit	Monthly Consumption 1200 unit

10 Cr x (50% x 200 + 30% x 500 + 20% x 1200) = **4,900 Cr Units**

Rural
(95 Cr)

Households
(95 Cr/6 = 16 Cr)

Without Electricity 10%	With Electricity 90%

Low Income 60%	Mid Income 30%	High Income 10%
Monthly Consumption 100 unit	Monthly Consumption 300 unit	Monthly Consumption 800 unit

16 Cr x (60% x 100 + 30% x 300 + 10% x 800) = **3,840 Cr Units**

Therefore , monthly residential electricity consumption in India :-
= 4,900 + 3,840 Cr Units
= 8,740 Cr Units

Market Size of Eye Lens in India

Preliminary Questions

Which Market Sizing unit should I consider?
-*Estimate in Terms of Size (Population).*

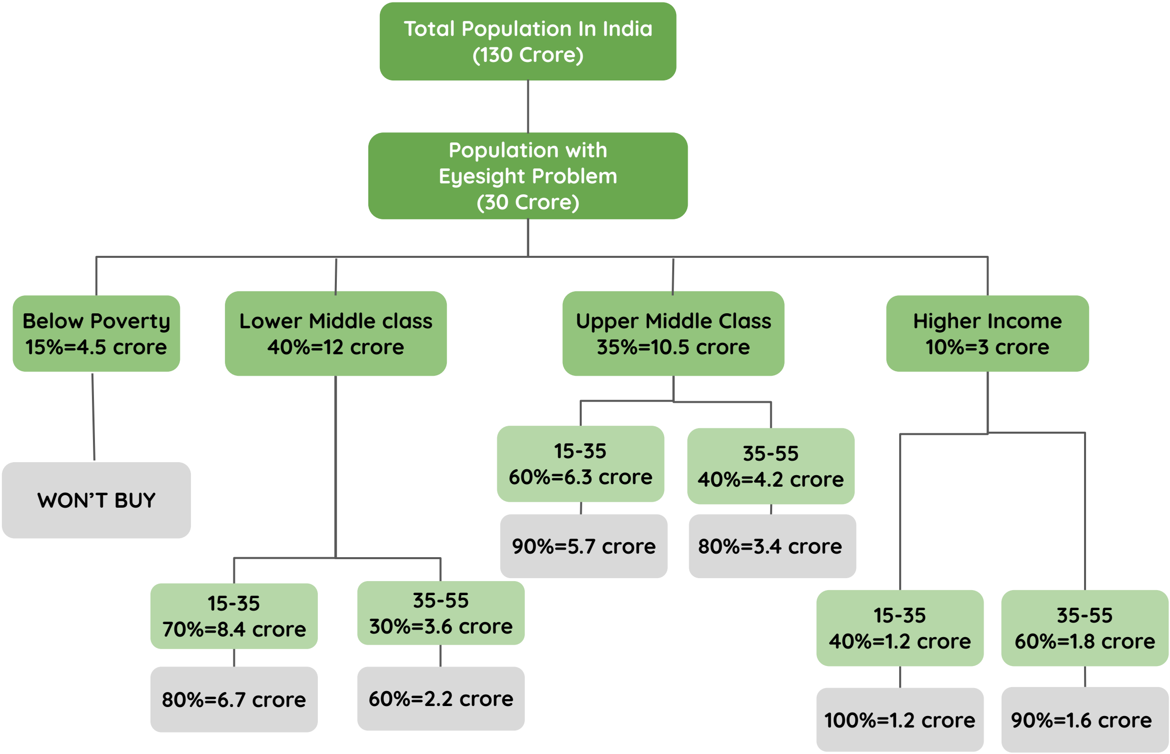
Should I consider the lens to be of same quality throughout?
-*Yes you may.*

Assumptions

- Assuming around 22% of India Population have eye sight problem i.e 30 crore.
- People below poverty line won't be able to afford.
- Children below 15 yr aren't advised to wear eye lens.
- People above 55 yr don't prefer wearing lenses due to itching and irritation.

Overall Strategy

1. Assuming around 22 %of the total population have eyesight problem (i.e 30 crore).
2. Then dividing the eye-sight population in four different income classes.
3. Further, dividing them into 2 different age groups.
4. Finally, taking some percentage of the total people in each age group who'll wear lenses.



Total Market Size in India= (6.7+2.2+5.7+3.4+1.2+1.6) crore = 20.8 crore

Number of water bottles sold on a fest day in DTU

Preliminary Questions

Which fest should I consider - cultural, sports, technical, literary?
-*Consider cultural fest*

Should I consider just the water sold or total water used?
-*Consider just the water sold*

Assumptions

- Daily footfall is approximately 30,000
- Timings are from 10AM to 10PM
- Water is sold in **200ml** bottles
- More water would be required from 2-7pm due to heat
- For participants, judges, artists etc water is provided by the fest team, and not purchased

Overall Strategy

(1) Footfall varies at different times of the day

(2) The frequency at which people purchase water would vary at different times during the day

(3) Daily number = (# people) x (average # bottles per person)

average # bottles per person = (# people purchasing bottles per hour) x (# bottles per person) x (# hours in interval)

1) Footfall from 10AM - 2PM : 5% **~1.5k people**
2) Footfall from 2PM - 7PM : 20% **~6k people**
3) Footfall from 7PM - 10PM: 75% **~22.5k people**

Now, we estimate the number of people purchasing bottles per hour, and calculate the average number of bottles purchased per person-

Total Footfall 30k

- **10AM - 2PM 5%** → 20% people buy water every hour → 0.5 bottles purchased per person
- **2PM - 7PM 20%** → 75% people buy water every hour → 2 bottles purchased per person
- **7PM - 10PM 75%** → 30% people buy water every hour → 1 bottle purchased per person

Therefore average # bottles per person =
(0.05 x 0.2 x 0.5 x 4) + (0.2 x 0.75 x 2 x 5) + (0.75 x 0.3 x 1 x 3) = 2.195

Total # bottles sold = 2.195 x 30,000
~66,000 bottles sold per day

Market Size of Whey Protein in Delhi

Preliminary Questions

Which Market Sizing unit should I consider?
-*Estimate in Terms of Units*

Should I consider different packaging sizes & brands?
-*Consider same package size, each of 1 kg.*

Assumptions

- Infants, Toddlers and Senior Citizens are considered Non-Consumers
- Population of Delhi is 2 Crore
- 1 Kg is assumed to be 1 Unit
- Rural : Urban Population = 6:4
- Gymers : Non-Gymers = 3:7
- 75% gymers consume whey protein

Overall Strategy

Starting with the population of Delhi, we segment it into various age groups. The various groups are further segregated on the basis of Urban and Rural household. Considering the high price of the commodity, the urban population is bifurcated into gymers (heavy users) and non gymers (moderate users) to calculate the total number if units used.

Delhi (2 Crore)

- 15-24
  - **20%** 0.4 Crore
  - **Urban** 16 Lakhs
  - **Rural** 24 Lakhs
- 25-44
  - **25%** 0.5 Crore
  - **Urban** 20 Lakhs
  - **Rural** 30 Lakhs
- 45-54
  - **10%** 0.2 Crore
  - **Urban** 8 Lakhs
  - **Rural** 12 Lakhs

On an average, we assume that each Heavy Gymer consumes 2 Units of Whey Protein in a Month, and each Non-Gymer consumes 0.25 Units of Whey Protein Monthly for Home Workout.

Total **# Units Consumer by Gymers** Annually
= (4.8 + 6 + 2.4) x 0.75 x 2 x 12 Months ~ **2.4 Crore**

Total **# Units Consumer by Non - Gymers** Annually
= (11.2 + 14 + 5.6) x 0.25 x 12 Months ~ **0.9 Crore**

Urban Population

- 15-24
  - **Non-Gymers** (70%) 11.2 Lakhs
  - **Gymers** (30%) 4.8 Lakhs
- 25-44
  - **Non-Gymers** (70%) 14 Lakhs
  - **Gymers** (30%) 6 Lakhs
- 45-54
  - **Non-Gymers** (70%) 5.6 Lakhs
  - **Gymers** (30%) 2.4 Lakhs

Considering the affordability factor, we will assume that only the Urban households have access to the commodity.

Total **# Units Consumed Annually**
= 2.4 Crore + 0.9 Crore = 3.3 Crore Units

Annual Market Size of Whey Protein in Delhi
= 3.3 Crore Units

Litres of Milk sold in a day in Delhi

Preliminary Questions

Should I consider the use of the milk for direct consumption or for food making purpose as well?
- *Only for direct consumption*

Should I consider the population of Delhi or the people from other regions working there as well?
- *Only Delhi's population*

Assumptions

- Population of Delhi is 2Cr
- Average Household size = 4 people
- Consumption pattern of milk varies across different income groups

Overall Strategy

(1) Segmenting the demographics by income - Below poverty line, Middle class, Upper class to segregate the amount of milk consumed.

(2) The total amount of milk used in Delhi in a day- **Number of households** x Frequency of buying milk x quantity of milk purchased.

Total Population
2 Cr

# of people	**Below Poverty Line 20% ~ 0.4 Cr**	**Middle Class 70% ~ 1.4 Cr**	**Upper Class 10% ~ 0.2 Cr**
# of households	**10 Lakhs**	**35 Lakhs**	**5 Lakhs**
Frequency of buying milk. Once in	**2 days**	**1 day**	**1 day**
Quantity of milk purchased	**0.5 Litre**	**1 Litres**	**1.5 Litres**

Total amount of milk sold in Delhi for direct consumption =
Number of households x Frequency of buying milk x quantity of milk purchased
(10L x 1/2 x 0.5 + 35L x 1 x 1 + 5L x 1 x 1.5) ~ 45 Lakh Litres / day

Number of Charging Stations Required for Tesla in India

Preliminary Questions

Should I consider only 4 wheeler charging stations ?
-*Consider only 4 wheeler charging stations*

Should i consider only tier-1 and tier-2 states first based on Tesla's price and availability ?
- *Yes, you may consider them only*

Assumptions

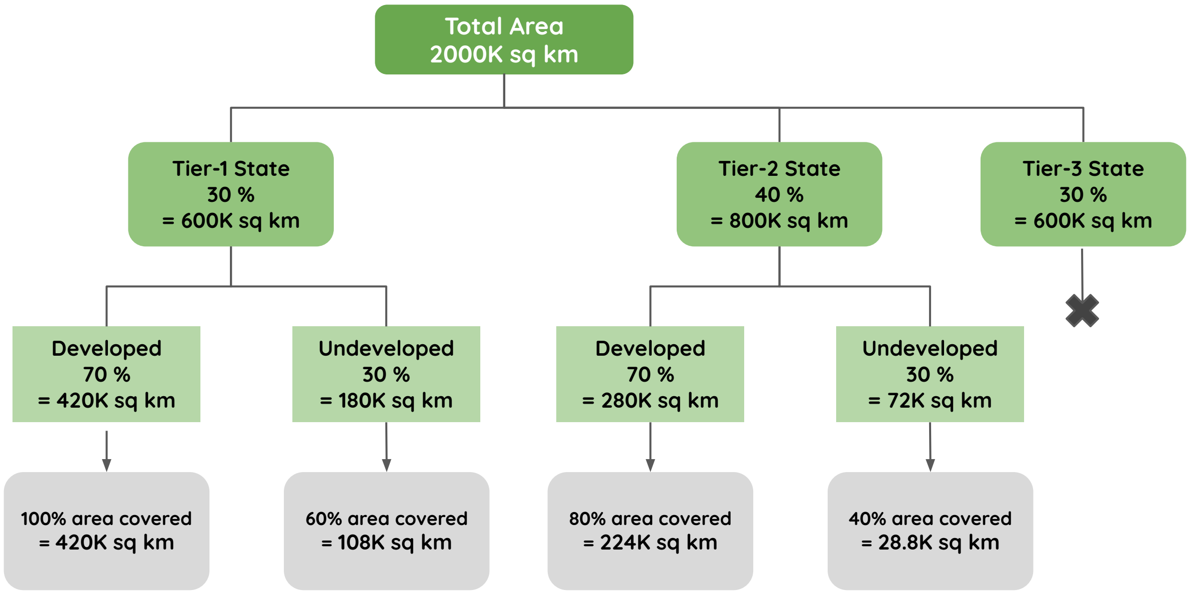
- Urban land area-20K sq km (20% of 10000K sq km)
- Ratio of Urban to Rural EV Usage 70:30
- Distance coerced in full charge - 300 km

Overall Strategy

(1) Divide the total civilized area in tier-1, tier-2 and tier-3 states. Consider only tier-1 and tier-2

(2) As Tesla is new player in Indian EV market. Consider all tier-1 states and only 50% tier-2 states

(3) Further divide the area in Developed and Undeveloped segments and consider only 60% in undeveloped segment due less developed infrastructure and affordability



On a full charge a Tesla travels upto 300 km. So it is may require a charge when 20% battery is remaining. So we consider a circle of area 240 sq km. There should be at least 1 Tesla charging station in this considered area.

Therefore number of stations = Total Area/ Area of circle
= 420K + 108K + 224K + 28.8K sq km / 240 sq km
= 3250 charging stations

Cars crossing Delhi-Gurugram Toll everyday

Preliminary Questions

Should I consider taxis/cabs as well?
- Yes

Should I consider a weekday or weekend?
- Weekday

May I consider number of unique cars or just number of cars crossing toll taking into account the fact that the same car may cross the toll more than one time in a day?
- No just consider the number of cars crossing the toll.

Assumptions

- It takes around 15 seconds for a car to pass through the toll.
- Considering the density of traffic from Delhi to Gurugram and from Gurugram to Delhi to be same at a given point of time.
- There are 8 lanes in the toll.

Overall Strategy

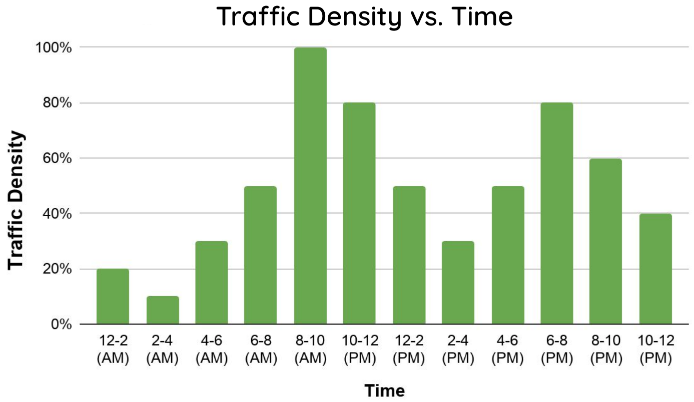
Considering different traffic density at different hourly intervals in a day (24 hours), we benchmark it with the maximum possible cars crossing in an hour. Using the varied density assumptions, we will find the number of cars crossing in each interval to get the total.

 # cars crossing toll = (Maximum # cars per hour) x (ΣTraffic Density in a day) x (# hours in the interval considered)

Maximum possible # cars crossing in 1 minute = 60/15 = 4 cars/minute/lane

= 240 cars/hour/lane = 240 x 8 = **1920 cars / hour**

Creating a traffic density distribution over 24 hours of a weekday, using 2-hour long intervals, based on general awareness and traffic trends.



 # cars = 1920 x [2 x (0.2 + 0.1 + 0.3 + 0.5 + 1 + 0.8 + 0.5 + 0.3 + 0.5 + 0.8 + 0.6 + 0.4)]

= 1920 x 12 = 23,040 ~ 23,000 cars

People using Google Meet in a day in India

Preliminary Questions

Which day of the week should I assume it to be?
- Consider it to be a weekday

Should I consider a Pre-Covid scenario or Post-Covid ?
-Post-Covid

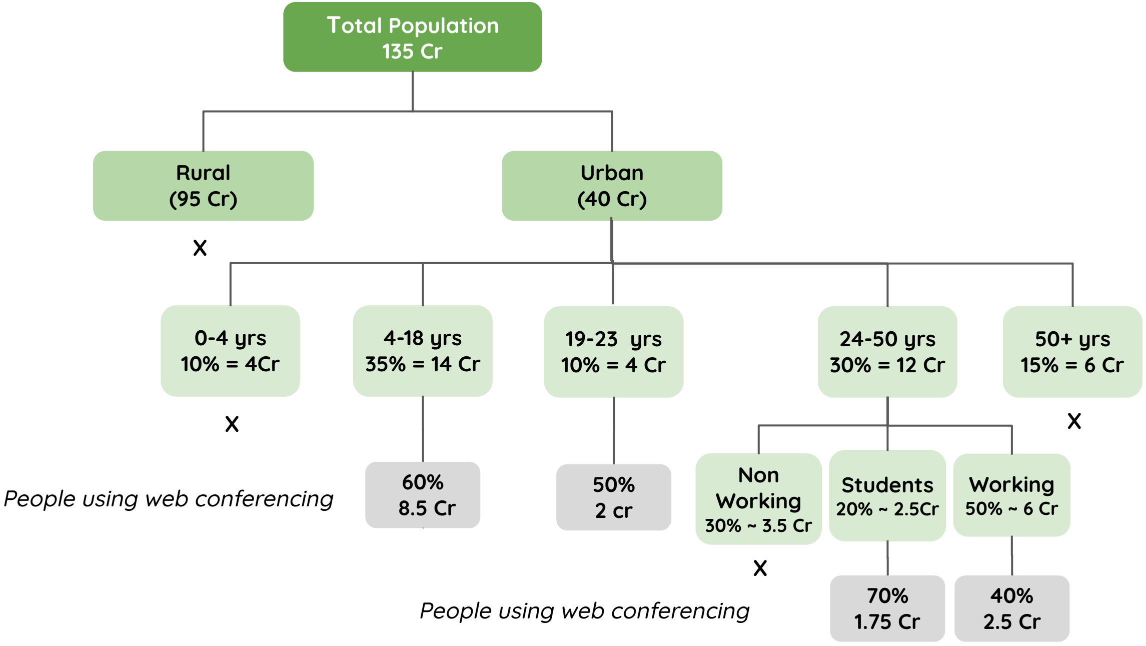
Assumptions

- Population of India = 135 cr
- Chances of rural population using Gmeet is negligible
- Age group 0-4 and 50+ have negligible usage
- The user base of web conferencing apps would majorly comprise of students going to school / college.
- Non working class would comprise of housewives who won't be using web conferencing apps
- Market Share of Google Meet = 20 %

Overall Strategy

(1) Estimate the number of people using web conferencing apps using the formula :
Population in the age group * % Target Population * % people using web apps

(2) Calculate the total number of students using gmeet by multiplying it with the market share Gmeet in India.



Total number of people using web conferencing = 8.5 Cr + 2 Cr + 1.75 Cr + 2.5 Cr ~ 15 Cr
Assuming on any given weekday, 70% of the people attend their class/work. So,
Number of people using web conferencing on a weekday = 0.7 x 15Cr = 10.5Cr

Assuming the market share of Google Meet is around 20%
Number of people using Google Meet in a day = 0.2 x 10.5 Cr ~ 2 Cr

Daily Order Received by Zomato in India

Preliminary Questions

Which day of the week should I consider?
- Any usual working weekday

Should I consider the cancelled orders as well?
- No

Assumptions

- Population of India is 135 Cr
- Neglecting Rural Population as Zomato won't be prevalent in those areas
- Rural : Urban Population = 70:30
- BPL and Lower Income categories won't order because of income and area constraint
- Average Household size is 4.
- Market Share of Zomato = 40%
- Zomato is operational in 80% of the urban areas.

Overall Strategy

(1) Segmenting the demographics by area - Urban and Rural Population and then further into income categories to segregate the percentage of people who order via Zomato.

(2) The daily number of orders received by Zomato in India = (Number of people who use Zomato x Average number of weekly orders) / 7

Urban population of India = 30 % x 135 Cr ~ 40 Cr. It is assumed that only 1 person would be ordering from 1 house.

Urban Households = 40/4 = 10 Cr

- BPL (20%) = 2 Cr
- Lower Income (40%) = 4 Cr
- Middle Income (30%) = 3 Cr
- Upper Income (10%) = 1 Cr

Total users eligible to order are = Middle Income + Upper Income = 3 Cr + 1 Cr = **4 Cr**

Users that can order online = 4 Cr

Segmentation of the User Base	40% Users = 1.6 Cr	30% Users = 1.2 Cr	20% Users = 0.8 Cr	10% Users = 0.4 Cr
Frequency of Orders on Weekly basis	0 order per week	1 order per week	2 orders per week	3 orders per week

So, weekly online food orders = (0 x 1.6 + 1 x 1.2 + 2 x 0.8 + 3 x 0.4) Cr = 4 Cr orders
Weekly Zomato orders in India = 40% of 4 Cr = **1.6 Cr**

Since Zomato is operational in 70% of urban areas. So # of Orders = 70% of 1.6 Cr = 1.12 Cr
Therefore, daily orders received by Zomato in India = 1.12 / 7 = 0.16 Crore orders = **16 Lakh Orders**

Number of flights taking off Delhi everyday

Preliminary Questions

Should I consider passenger flights or cargo as well?
- Only passenger flights

Should I consider a weekday or weekend?
- Consider all days have similar traffic

Assumptions

- Each flight takes approximately 2 minutes to clear the runway.
- Airport is operational for 18 hours in a day
- Of the 3 runways, 1 runway is used exclusively for arrival, 1 for departure and the other is used half the time for arrival and half of the time for departure.

Overall Strategy

Considering efficiency of airports varies in different intervals in a day (24 hours), We benchmark it with the maximum possible flights taking off in an hour. Using the varied density assumptions, we will find the number of flights departing from each runway to get the total number of flights. We will also consider the flights whose landing and departing time would be different.

IGI Airport
- Terminal-1 — 1 runway
- Terminal-2 — 1 runway
- Terminal-3 — 1 runway

Total flights taking off in 1 hr =
Operational runway x 60/time taken to clear runway

Total runways for departure = 1.5

Calculating for 1 runway:

Take off time = 2 minutes (approx)

Maximum # flights taking off in 1 hour = 60/2 = 30 flights

Efficiency in a day
- 6 a.m. - 12 p.m. (6 hrs): 100%
- 12 p.m. - 6 p.m. (6hrs): 60%
- 6 p.m. - 12 a.m. (6hrs): 80%

TOTAL = Efficiency x no. of hours x flights taking off in 1 hour
(1 x 6 x 30) + (0.6 x 6 x 30) + (0.8 x 6 x 30) = 180 + 108 + 144 = 432
For 1.5 runways: 432 x 1.5 = 648 **~ 650 flights**

Market Size (Quantity) of N95 Mask in India

Preliminary Questions

Should I consider pre-covid scenario or covid scenario?
- Covid scenario
Are other varieties of masks prevalent in the market?
- Yes
Can I assume that N95 masks are costly to the majority & would be affordable by a particular segment only ?
- Yes.

Assumptions

- Population of India ~ 135 Cr
- Ratio of Urban to Rural population 3:7
- Segment of mask wearing people in rural areas is significantly less.
- Market share of N95 in rural & urban is 20% & 35%.

Overall Strategy

(1) Estimate the market size of masks in general, by segregating the population into urban and rural, further into the age groups, depending upon the number of people who would be going out.

(2) Post determining the market size of masks in general, we calculate the market size of N95 masks in particular, and hence monthly consumption.

Total Population
135 Cr

Rural
90 crore

10-25 yrs 27 Crore	**25-55 yrs** 31 Crore	**55+ yrs** 9 Crore
35% 9.4 Crore	**55%** 17 Crore	**30%** 2.7 Crore

Urban
40 crore

10-25 yrs 12 Crore	**25-55 yrs** 14 Crore	**55+ yrs** 4 Crore
55% 6.6 Crore	**70%** 9.8 Crore	**55%** 2.2 Crore

Population stepping out of homes & wearing a mask.

Since N95 masks are costly, and less no. of people are aware of the masks. 20% * 29.1 + 35% * 18.6= 12.33 Crore wear N95 masks in India.

Population wearing N95 masks

25 masks 10%	**8 masks** 50%	**4 mask** 40%

#monthly consumption

= (10% x 25 + 50% x 8 + 40% x 4) x 12.33= 99.87 crore

Therefore # Monthly market size of N95 Masks in India= Market size of masks X market share of N95 X monthly consumption = 99.87 Crore

Number of Steam platform users in India

Preliminary Questions

Should I consider active users or total users?
-Consider active users only

Shall I go for pre COVID or COVID scenario ?
-Go for the latest approximation to be more accurate.

Assumptions

- Population of India = 135 cr
- Urban : Rural = 30:70
- Mobile only : Mobile + PC gamers = 30:70
- PC Gamers using Steam platform = 80%
- Number of active users = 70% of the total users

Overall Strategy

(1) Estimate no. of gamers, people belonging to middle class and upper class in urban areas belonging to the age groups of 0-34 years

(2) Split gamers into mobile only and mobile + PC, PC only gamers

(3) Estimate number of steam users by considering gamers active on the platform

Total Population
(135 cr)

Rural (70%)
= 94.5 cr

X

Urban (30%)
= 40.5 cr

Income Segmentation

Middle + Upper
(40%)
= 16 cr

BPL + Lower
Middle (60%)
= 24 cr

Age Segmentation

0-14 years
(30%)
= 4.8 cr

15-24 years
(20%)
= 3.2 cr

25-34 years
(15%)
= 2.4 cr

# of gamers

(20%)
= 0.96 cr

(70%)
= 2.24 cr

(30%)
= 0.72 cr

Total number of gamers in India = (0.96+2.24+0.72) = 3.92 cr

Total number of mobile + PC and PC only gamers (70%) = (0.7 * 3.92) = 2.75 cr
Total number of Steam users (80%) = 2.2 cr
Number of active Steam platform users in India (70%) = 1.54 cr

Number of TVs sold in a day during Flipkart Diwali Sale

Preliminary Questions

Should I consider TVs bought by personal use only?
- *Yes*

Should I consider a pre-COVID scenario?
- *Yes*

Assumptions

- Average Indian Family Size = 4
- Population of India = 135 Cr (30% of which Is Urban)
- Flipkart delivery won't be operational in Rural areas
- Average life of a Television set = 5 Years
- 50% of people buy TVs on the occasion of Diwali
- Market Share of Flipkart = 40%
- Duration of Flipkart Diwali Sale = 5 Days

Overall Strategy

(1) Segmenting the Urban population of India based upon the income group.
(2) Calculate the market size of TVs bought in a year
(3) Find the # TVs bought during Diwali and further bifurcate it based upon the Store channel.
(4) At last, multiply it with the market share of Flipkart to reach out to a final answer.

 # Urban Households = 40 Cr / 4 = 10 Cr

	BPL (20%)	Lower MIddle Class (40%)	Upper MIddle Class (30%)	Upper Class (10%)
Number of Families		4 Cr	3 Cr	1 Cr

households having a TV in their house = 4 Cr + 3 Cr + 1 Cr = 8 Cr.
Segregating the families based upon the number of televisions in their house.

8 Cr Families
- **1 TV 70% families**
- **2 TVs 30% families**

TVs in Urban Households = 8Cr x (1 x 0.7 + 2 x 0.3) = **10 Cr**

Considering the average life of a TV as 5 years
TVs bought in a year = 10 Cr / 5 = **2 Cr**

Most of the people buy TVs on the occasion due to the discounts available at that time. Assuming 50% (1 Cr) of the TVs sold in year are bought during Diwali time. Bifurcating the TVs sold based upon the Store Channel (Online/Offline).

1 Cr TVs
- **Online (60%)**
- **Offline (40%)**

TVs bought via an Online Store = 1 Cr x 0.6 = 60 Lakhs

Considering the market Share of Flipkart to be 40%

TVs sold during Flipkart Diwali Sale = 60 Lakhs x 0.4 = 24 Lakh
 # TVs sold in a day during Flipkart Diwali Sale = 24 Lakh/5 ~ 5 Lakh TVs/ day

Mobile Data Consumed in Delhi in a Day

Preliminary Questions

Should I consider pre-covid scenario or covid scenario?
- *Covid scenario*

Should I consider only 4G mobile data usage and do I have to consider both base data plans and add-on data plans?
- *Yes consider only 4G Data usage and base data plans.*

Should I consider that the network coverage in Delhi is 100%, since it's a metropolitan city?
- *Yes*

Assumptions

- Population of Delhi is **2 Crores.** Also, Average Life Expectancy of Delhi is **70 yrs** and **even distribution between the ages.**

- Age group that would be **daily active users** of their personal smartphones during covid would be **16-55**.

- **75%** of people would be able to afford a smartphone in Delhi, on the basis of annual income per household.

- Majority of users opt for **prepaid** data plans.

- Prepaid plans include **1, 1.5, 2, and 3 GB per day** and postpaid plan include **30 GB** for a month.

- Average daily data usage is **75%** of their allotted data per day.

Overall Strategy

(1) Estimating the number of people who have the utility of smartphones and can afford it.
(2) Segmenting the effective population by types of data plan into prepaid and postpaid users.
(3) Further segmenting the prepaid users into the users having daily allotted data of 1, 1.5, 2, and 3 GB/D, and postpaid users into the users having allotted data of 30 GB/M.
(4) Total mobile data consumption in a day = Daily Data Usage*Daily Active Users (DAU)

People per age group = Population/Life Expectancy
I.e ~ **2.86 lakhs (L)** people per age group.
Number of people falling in the age group of 16-55 = 40*286000 ~ **1.1 Crores**
Number of people who can afford a smartphone and fall in the age group of 16-55 (DAU)= 0.75*1.1 Cr = **82.5L**

Types of Data Plan
- Prepaid 80% Users: 0.8*82.5 = 66 L
- Postpaid 20% Users: 0.2*82.5 = 16.5 L

Variety of plans & Data Usage
- Prepaid 66 L (DAU)
  - 1 GB/D: 10% 6.6 L
  - 1.5 GB/D: 50% 33 L
  - 2 GB/D: 30% 19.8 L
  - 3 GB/D: 10% 6.6 L
- Postpaid 16.5 L (DAU)
  - 30 GB/M: 100% 16.5 L

Total data consumed by prepaid users per day = 0.75*(6.6L*1 + 33L*1.5 + 19.8L*2 + 6.6L*3) GB/D = 86,62,500 GB/D ~ 86.6L GB/D

Total data consumed by postpaid users per day = 0.75*1*16.5L GB/D = 12,37,500 ~ 12.4L GB/D

Total mobile data consumed in Delhi in a day = 86.6L GB/D + 12.4L GB/D = **99L GB/D**

Number of Jio sims sold in a month in India

Preliminary Questions

What type of Jio sims to be considered?
- Consider *both Prepaid and Postpaid sims*

Should we consider the sims sold to tourists coming to India ?
- *No*

Assumptions

- Children below 14 years will not use mobile phones
- Population of India ~ 135 Cr
- Average household size- 6 for rural & 4 for urban areas
- Rural and Urban households will have 2, 3 phones resp
- Percentage shift to Jio from other brands to be 0-5%
- Market share of Jio to be 35%

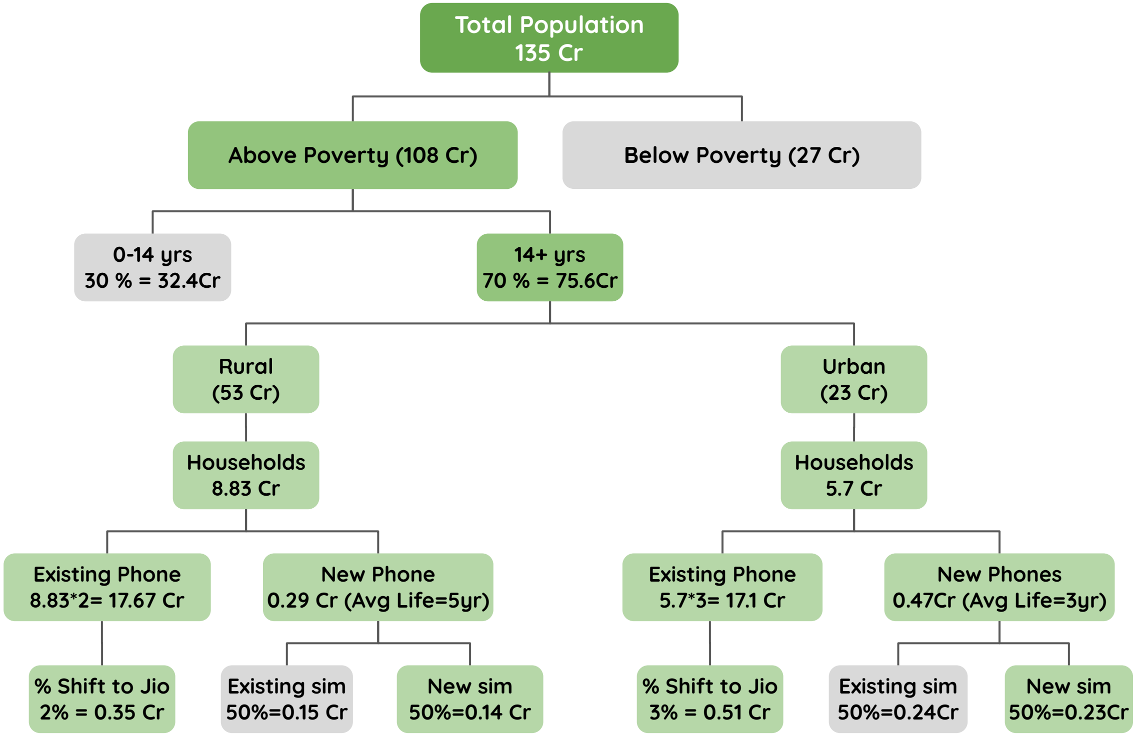
Overall Strategy

(1) We can estimate the number of existing phones.

(2) New phones can be calculated by considering the average life of phones to be 5 yrs and 3 yrs for rural and urban areas respectively.

(2) Calculate the number of existing phone users changing their sim to Jio.

(3) Calculate the number of new mobile phone users those who buy new Jio sim.



Therefore # Jio sims sold = People shifting to JIo + New Jio sims sold
(0.35 + 0.51) + (0.14 + 0.23)*0.35 = 0.99 Cr

Number of Udemy courses being enrolled in a day in India

Preliminary Questions

Should I consider both paid and free courses?
-Consider only paid courses

What should I consider the average course length ?
-Consider it to be 6 weeks

Assumptions

- Population of India 135 Cr.
- People in the age bracket 0-14 yrs and 45+ wont be enrolling for any online course
- Market Share of Udemy = 25%

Overall Strategy

(1) Estimate # people belonging to upper middle class and upper class who are capable enough of buying a course

(2) Split # people into age-wise distribution and further into students, working professionals, businessmen

(3) Estimate # total courses bought in a year, after splitting the # people into active users, moderate users, relatively light users

Upper Middle Class + Upper Class
25% of 135 Cr ~35 Cr

- **0-14** (30%) ~ **10 Cr** → X
- **15-24** (20%) ~ **7 Cr** → **Enrollments (50 %) ~ 3.5 Cr**
- **24-45** (25%) ~ **9 Cr**
  - **Corporate Workers** (40%) ~ 3.5 Cr → **30%** **1 Cr**
  - **Higher studies** (10%) ~ 1 Cr → **50%** **0.5 Cr**
  - **Business Owners** (20%) ~ 2 Cr → **10%** **0.2 Cr**
  - **Non Working** (30%) ~ 3 Cr → X
- **45+** (25%) ~ **9 Cr**

# of people enrolling for online courses

Total # of people enrolling for online courses = 3.5Cr + 1Cr + 0.5Cr + 0.2Cr ~ **5Cr**
Total # of people enrolling for Udemy courses = Market Share of Udemy x Total Enrollments
= 0.25 x 5 Cr = **1.25 Cr**

The users can be further segmented based upon the number of courses enrolled in a year

Heavy Users = 15% -> 6 courses / year
Moderate Users = 60% -> 4 courses / year
Light Users = 25% -> 2 courses / year

#Courses enrolled in a year= (0.15 x 6+ 0.6 x 4 + 0.25 x 2) x 1.25 Cr = **4.75 Cr**
#Courses enrolled in a day = 4.75 Cr/365 ~ **1.3 Lakh Courses**

Annual market for medical X-Ray machines in India

Preliminary Questions

Should I estimate the market value or market volume?
- Market volume (number of units)

Where are these machines installed? (Hospitals, clinics, labs)
- You can go ahead with hospitals, clinics and labs

Assumptions

- Assuming each machine has to be replaced in **10 years**.
- Assuming number of **(clinic+labs) = 2 x (hospitals)** because they're easier to setup.
- Assuming market growth rate = **7%** (average GDP growth)

Overall Strategy

We can calculate the annual market volume by estimating how many machines are sold each year in India.
We will divide the population of India in three tiers and logically estimate the population percentage in each tier, citizen density catered by a single facility and percentage of facilities having X-Ray machines for each tier to calculate total machines in India.
We will also take into account market growth rate and machine replacement rate.

Hospitals

	Tier 1 Regions	Tier 2 Regions	Tier 3 Regions
% Segmentation of Region	**20%**	**40%**	**40%**
Citizen density per facility	**20,000**	**40,000**	**80,000**
% facilities with machines	**70%**	**60%**	**50%**

Number of Hospitals in India with X-ray machine = (0.2 x 135Cr/20k x 0.7 + 0.4 x 135Cr/40k x 0.6 + 0.4 x 135 Cr/80k x 0.5)
= 2,09,250 ~ **2 Lakh**

Number of Clinic/Labs with X-Ray machines = 2 x # Hospitals with X-Ray machines = 2 x 2 Lakh = **4 Lakh**

Number of X-Ray machine per hospital = 2
Total # X-Ray machines in Hospital = 2 x 2 Lakh = **4 Lakh**
Number of X-Ray machine per clinic/lab = 1
Total # X-Ray machines in clinic/lab = 1 x 4 Lakh = **4 Lakh**

Total # X-Ray machines in India = 4L + 4L = **8 Lakhs**
Since each guesstimate needs to be replaced in 10 yrs, # X-Ray machines required in 1 yr = 80,000
Assuming market of X-Ray is increasing at 7%, Market Size of X-Ray in India = 80k x **1.07 ~ 85,000**

Revenue Generated by a Petrol Pump in Delhi

Preliminary Questions

What is the time period under consideration?
-A day

Should I consider the day a weekday or a weekend?
-Weekday

Shall I consider CNG filling stations as well?
-No

Assumptions

- In one petrol pump, there are 6 filling stations - 4 petrol filling stations and 2 diesel filling stations.
-The average number of vehicles at each station in a day is equal.

Overall Strategy

Consider the different types of vehicles (based on their fuel tank capacities): 2 wheelers, 4 wheelers and 8-10 wheelers. For each vehicle type, assume the time slots for peak hours and non peak hours. Assume the number of vehicles of each type passing one petrol and one diesel booth in a fixed period of time, say 1 hour, during the peak as well as non-peak hours.

Types of vehicles

- **2 Wheelers**
  - **Peak hours =** 8 AM to 11 AM and 5 PM to 8 PM
    - # of peak hours = **6**
    - # of non-peak hours = **18**
- **4 Wheelers**
  - **Peak hours =** 9 AM to 12 PM and 5 PM to 10 PM
    - # of peak hours = **8**
    - # of non-peak hours = **16**
- **Trucks**
  - **Peak hours =** 4 AM to 5 AM and 11 PM to 12 AM
    - # of peak hours = **2**
    - # of non-peak hours = **22**

- For each type of vehicle, the peak hours vary as shown above.
- Trucks have a limited time of entry in the city.
- Other modes of transport such as busses and 3 wheelers have completely shifted to CNG.

Assumptions

- Assume the peak hours of fuel refill for different types of vehicles as shown in the chart above.

Filling Stations

- **Petrol**
  - 2 wheelers
    - Avg spend = **₹ 150**
  - 4 wheelers
    - Avg spend = **₹ 1000**
- **Diesel**
  - 4 wheelers
    - Avg spend = **₹ 1000**
  - Trucks
    - Avg spend = **₹ 8,000**

- For each type of vehicle, the fuel tank capacity is different, and therefore, the revenue earned by the petrol pump is different.

Assumptions

- Assume the average spending of the different types of vehicles on their respective fuels as shown in the chart above.

Revenue Generated by a Petrol Pump in Delhi

Average Number of Vehicles

ONE PETROL FILLING STATION					
VEHICLE	# of vehicles/hr		# of vehicles		Total # of vehicles
	Peak hr	Non-Peak hr	Peak hr	Non-Peak hr	
2 Wheeler	10	5	60	80	**140**
4 Wheeler	15	7	120	112	**232**

ONE DIESEL FILLING STATION					
VEHICLE	# of vehicles/hr		# of vehicles		Total # of vehicles
	Peak hr	Non-Peak hr	Peak hr	Non-Peak hr	
4 Wheeler	15	7	120	112	**232**
Trucks	8	1	16	22	**38**

Revenue Earned

ONE PETROL FILLING STATION			
Vehicle	Total # of vehicles in a day	Avg spend/vehicle	Total revenue
2 Wheeler	140	₹ 150	**₹ 21,000**
4 Wheeler	232	₹ 1000	**₹ 2,32,000**

ONE DIESEL FILLING STATION			
Vehicle	Total # of vehicles in a day	Avg spend/vehicle	Total revenue
4 Wheeler	232	₹ 1000	**₹ 2,32,000**
Trucks	38	₹ 8,000	**₹ 3,04,000**

Total revenue earned = ₹ (21,000 + 2,32,000) × 4 + (2,32,000 + 3,04,000) × 2
= ₹ 10,12,000 + 10,72,000

Total Revenue Earned by a Petrol Pump in Delhi = ₹ 20,84,000

No. of people making a Dream11 team on a mid-season IPL match Day

Preliminary Questions

Should I assume a pre-covid scenario?
- *Yes*

Assumptions

- Population of India 135 Cr.
- Internet Penetration = 40%
- Percentage of people following cricket (80%)
- Total matches in a season = 60
- Duration of IPL = 8 weeks
- One match per day
- 3 Competitors (IPL Fantasy, My11Circle, Others)

Overall Strategy

(1) Calculate the # of people using the internet

(2) % people who follow IPL

(3) Calculating User Base of Dream11

(4) Distributing frequency of active users

- **Total Population 135 Cr**
  - **Internet inaccessibility (79 Cr)** → X
  - **Internet accessibility (56 cr)**
    - *# people following IPL*
    - **IPL Followers 45 Cr**
      - *# People indulging in fantasy sports*
      - **App Users 30% = 13 cr**
      - **Non - App users 70% = 32 cr**
    - **Don't Follow IPL 11 Cr** → X

Total users playing fantasy sports ~ **13 Cr.** Considering market share of Dream11 to be **25%**
User base of Dream 11 = **13 Cr x 0.25 = 3Cr**

Assuming that 70% of the users will engaging themselves with Dream 11 for a particular season.
# of users making a team on Dream 11 for a particular season = 3 Cr x 0.7 ~ **2 Cr**

The users can be further segmented based upon the frequency of usage of the app on weekly basis.

For a mid season IPL week

Heavy Usage	=	10%	->	5 times / week
Moderate Usage	=	40%	->	3 times / week
Light Usage	=	20%	->	1 times / week
No Usage	=	30%	->	0 times / week

users making a team on Dream 11 in a week = 2 Cr x (0.1 x 5 + 0.4 x 3 + 0.2 x 1 + 0.3 x 0) = 4 Cr
 # users making a team on Dream 11 in a day = 4 Cr / 7 ~ 57 Lakh / day

Amount of Money Transacted through PayTM in a Day

Preliminary Questions

Should I consider the use of paytm only for B2C transactions only or for B2B transactions as well?
- *Only for B2C transactions*

Which day of the week should I consider?
- *Any usual working weekday.*

Assumptions

- Population of India is 135Cr.
- Percentage of people that have access to Internet is 40%.
- Market Share of PayTM in E-Wallet Industry is 60%.

Overall Strategy

(1) Segmenting the population with access to internet into 4 age categories and considering the percentage of people who use E-Wallets in each category.

(2) The total amount of money transacted through PayTM in India in a day= Number of people who use E-Wallets x Average number of daily transactions x Average amount of money transacted per transaction x Market Share of PayTM.

Internet Penetration
135 Cr * 0.4 ~ 55 Cr

Age Group	Under 16 25% 14Cr	16 - 25 20% 11Cr	25 - 55 40% 22Cr	55 and above 15% 8Cr
% of People who use E-Wallets	20% 3Cr	80% 9Cr	60% 13Cr	25% 3Cr
Number of Transactions	1 Transaction per 2 days	2 Transactions per day	2 Transactions per day	1 Transaction per 2 days
Average Money per transaction	50Rs. per transaction	100Rs. per transaction	250Rs. per transaction	200Rs. per transaction

Total amount of money transacted through E-Wallets in India per day =
people who use E-Wallets x Avg # daily transactions x Avg amount of money transacted
(3 x 0.5 x 50 + 9 x 2 x 100 + 13 x 1 x 500 + 3 x 0.5 x 200) = 9,000 Crore Rs.

Market Share of PayTM in E-Wallet Industry = 60%
Amount of money transacted through PayTM in India/ day = 60% x 9,000 = **Rs 5,500Cr**

Daily Global Revenue of Starbucks

Preliminary Questions

Do you mean Global Revenue for any given day?
-Yes, Calculate global revenue for starbucks for today.

Should I also include revenue generated by eatables sold along coffee too?
-Yes, consider eatables and coffee both for your analysis

Should I consider special locations such as airports and offices?
- We're looking for an overall ballpark figure.

Assumptions

- Since Starbucks is US-based, we consider that it generates 50% of its global revenue from its home country.
- Operating Hours are 6 AM to 10 PM.
- Average time to make a regular starbucks coffee is 5 minutes
- At maximum efficiency, 3 orders can be processed simultaneously in a normal store
- Average price of a normal coffee in Starbucks is $3
- For takeaways, people only take coffee.

Overall Strategy

Revenue Generated in USA =
Average revenue of a store x # Stores in USA

Global Revenue of Starbucks = 2 x Revenue generated in USA

Average revenue of a Starbucks outlet in USA

The revenue stream is divided into two types- Takeaway and In-Store Orders

Takeaway Orders
Order density can be segmented as - Peak (100%), Medium (50%) and Low (25%).
Peak time for takeaways are in the morning and evening as the working population grab coffee while commuting. Density is medium around lunch and low for the rest of the day.

During Peak Time, store works at maximum efficiency;
3 coffees are prepared in 5 Minutes during peak time.
Therefore, **36 Coffees/hour.**

Coffees sold in Medium Time - 18/hour
Coffees sold in Low Time - 9/hour

Daily Global Revenue of Starbucks

Total Takeaway Orders in a day on average =
36 x 4 + 18 x 2 + 9 x 10 = 270 Coffee Orders/Day

Revenue Generated from Takeaways
= No. of orders in a day x Average price of a takeaway order
= 270 * 3 ~ **810$**

In-Store Orders

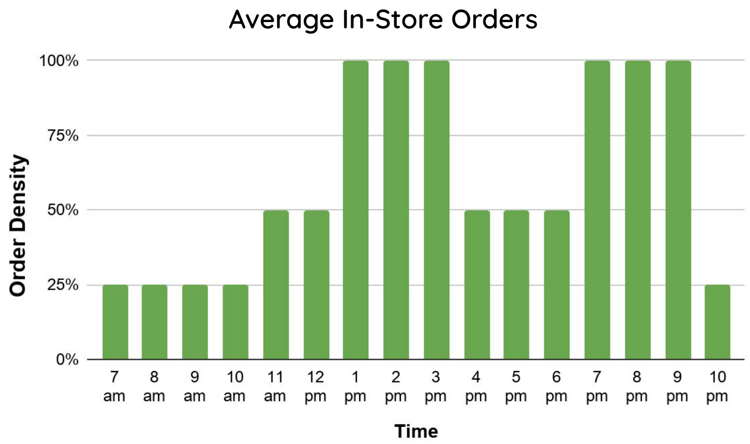
For these, the peak time is usually after noon, when most people take breaks from their work and after office timings.

Total In-Store Orders in a day in a normal store
= 36 x 6 + 18 x 5 + 9 x 5 ~ 350 Orders/Day

Average In-Store Order Cost = $5 *(including eatables)*

Revenue Generated from In-Store Orders
= No. of orders in a day x Average price of an in-store order
= 350 x 5 = ~ **$1700**

Total Revenue generated by an average store in a day
= $810 + $1700 = $2510/day ~ $2500/day



 # Starbucks stores in the USA

Population of the United States = 300M = 30 Crores
Assuming that each Starbucks location caters to 2000 people in that locality,

Total # starbucks stores in USA = 30 crores/2000 = 15,000 Stores

US Revenue of Starbucks = Total Number of stores x Average Store Revenue
= 15,000 x $2500 ~ 37,500,000$

Global Daily Revenue = 2 x US Revenue = $75,000,000

The Market Size of ACs in Delhi

Preliminary Questions

Shall I include both window and split air conditioners?
-Yes.

Which market sizing unit should I proceed with? (Quantity, Value etc.)
-Estimate in terms of tonnage.

Air conditioning is used for residential and commercial purposes. Commercial areas would include office space, mall, hospital, restaurants, school, buses etc. Shall all these be included?
-Calculate only for residential and office buildings.

Assumptions

- Average life of an AC = 10 years
- Market growth rate = 10%

Overall Strategy

(1) The overall market size in tonnage can be calculated with the demand due to market growth and replacement demand.

(2) Income segmentation for residential household demand.
(# Families who can afford ACs) x (Avg tons of ACs per family)

(3) For office buildings, air conditioning per unit area approach.
(Total office area) x (Tons required per unit area)

Market size in tons = Demand to replace old ACs + Demand due to growth in market size
= (# ACs in tons) / (Avg. life of an AC) + (# ACs in tons) x (Growth rate)

Avg. Replacement Demand = Current # Products/ Avg. Life cycle of product

Assuming the average life of an AC to be 10 years, and taking the growth rate as 10%. We have to calculate the # ACs in Delhi presently, based on our segmentation.

Residential Segment

#ACs in tons = (# Families who can afford ACs) x (Avg tons of ACs per family)

An AC ranges from ₹ 20,000 to 40,000 depending on the tons.
To determine the affordability, we do an income-based segmentation as a flow diagram.

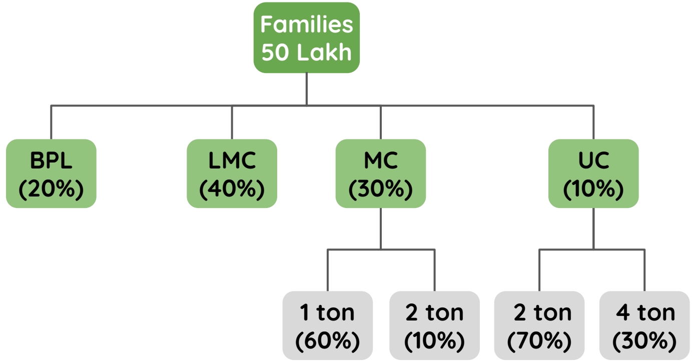
Considering that BPL and Lower Middle Class can't afford due to their income range, we focus on the Middle Class and the Upper Class. For the MC, most of the households will have a 1 ton AC and some would have a 2 ton AC.

However, for the UC segment, there would be some families which can even afford up to 3ACs, two 1 ton ACs for each bedroom and a 2 ton AC for the living room.

Tons in residential segment =
50 Lakh x [(0.3 x 0.6 x 1) + (0.3 x 0.1 x 2) + (0.1 x 0.7 x 2) + (0.1 x 0.3 x 4)]

= 900,000 + 300,000 + 700,000 + 600,000 = **25 Lakh tons.**

The Market Size of ACs in Delhi



<u>**Office Space Segment**</u>

For the Office Space Segment, since offices typically have centralized ACs and the tonnage of the Central AC decides how much area can be cooled.

 # ACs in tons = (Total office area) x (Tons required per unit area)

Typically, only white-collar employees work in air conditioned office spaces. So, neglecting exceptions, these would belong to MC and UC (40% of population) in the age group of 22-60.

Assuming an equal spread of the population from 1-80 years, roughly 50% of the population will lie in the 22-60 bracket. This is the total working-age population (1 Cr).

Assuming that all men and nearly half the women would be working.
Therefore, **no. of white-collar employees** = 20 L men + 10 L women = **30 Lakh** people.

An office space would consist of cubicle area, and common areas such as receptions, washrooms, lunch areas. Dividing the total area of an office with the total number of employees, area per person would roughly be the same as a 'bedroom' of 2 people, typically having an area of 200 sq. ft.

Hence each employee is equivalent to 100 sq. ft. area in an office.
Also we will require a 1 ton AC to cool a room of 200 sq. ft.

Hence, # ACs in tons = (# People working in air-conditioned offices) x (Office area per person) x (Tons required per unit area)

= (3MN) x (100 sq. ft.) x (1 ton / 200 sq. ft.) = **15 Lakh tons**

Combining both the segments, we get **40 Lakh tons.**

Market Size in tons = (# ACs in tons) / (Avg. life of an AC) + (# ACs in tons) x (Growth rate)

= (40 Lakh tons) / (10 year) + (40 Lakh tons) x (10% per year)
= 800,000 tons / year

Traffic Lights in Delhi

Preliminary Questions

May I assume the roads are straight and rectangular with no curves?
-Yes.

Should I consider just Delhi or the entire NCT region?
-Just Delhi is fine.

Assumptions

- Area of Delhi is taken as 1500 km^2.
- Motorable area of Delhi that is two-thirds, which is 1000 km^2.

Overall Strategy

(1) The number of traffic lights on a stretch of road depends on the type of road and its vicinity.

(2) After segmenting the area of Delhi on the basis of infrastructure, we can find the total area of roads.

(3) Using the average width of the roads, we can find the cumulative length of roads and subsequently, using the average distance between two consecutive traffic lights, the total number can be found.

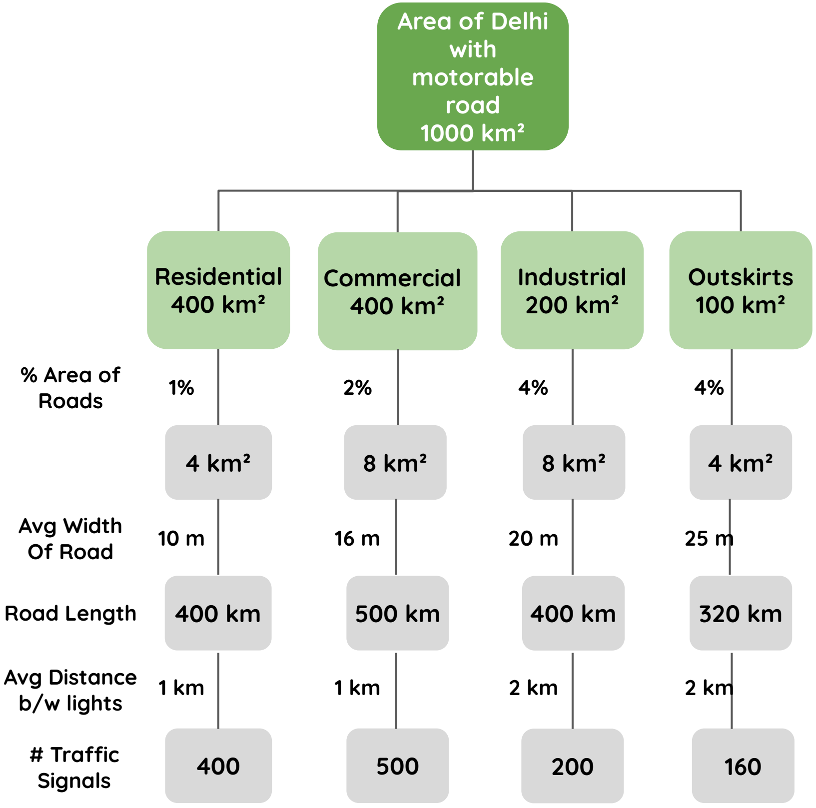
The area of Delhi can be broadly divided infrastructurally into the following:

1. Residential (40%)
2. Commercial (40%)
3. Industrial (10%)
4. Outskirts (10%)

We shall segment the area of Delhi that is built up into the area occupied by the roads with traffic lights on them.

	Residential	Commercial	Industrial	Outskirts
Percentage of area of Delhi	40%	40%	10%	10%
Percentage of area for roads with traffic lights	1%	2%	4%	4%
Average distance between lights	1 km	1 km	2 km	2 km
Average Width of Roads	10m	16m	20m	25m

Traffic Lights in Delhi



After computing the areas of roads with traffic lights on them for each infrastructural segment, the length of the roads can be found from the area computed using the assumed width for each road.

Total length of roads = Area of roads/Average width

Therefore, the length for each of the following classification will be:

1. Residential = **400 km**
2. Commercial = **500 km**
3. Industrial = **400 km**
4. Outskirts: **320 km**

Now, we divide the distance of roads by the average distance between consecutive traffic lights, to find the number of traffic junctions within each category.
400 + 500 + 200 + 160 = **1260 Traffic Lights**

Finally, we need to consider that at most traffic junctions, there are multiple traffic lights for each side of the traffic flow. There are a minimum of 2 traffic lights and a maximum of 4 at a crossroad. This assumption will also take into account the presence of multiple traffic lights at a single side of the road as well. Particularly for main roads and highways, there is a series of 3-4 traffic lights to cover the width of such roads to ensure adequate visibility for all vehicles.

Therefore, considering one-third in each segment to find the total number of traffic lights at junctions, we arrive at our final number.

Therefore, the total number of traffic lights in Delhi is estimated as:

(1260/3) x (2 + 3 + 4) = 3780 traffic lights

Annual Profit of SBI Branch at DTU

Preliminary Questions

Should I Consider all sources of Profits to a Bank?
-No, consider only profits generated from saving accounts.

Is bank accessible only to DTU fraternity or outside public too?
-Consider both.

Assumptions

students in DTU = 10,000
Day-Scholars : Hostellers = 80:20
Students Teacher ratio ~ 30:1
teachers = 10000/30 = ~330
Non teaching staff to student ratio ~ 20:1
Non teaching staff = 10000/20 = 500
- All non-teaching staff have a bank account.
- There are ~3 SBI banks in a ward.
- Bank revenue sources are

Overall Strategy

(1) The total money withdrawn is a function of the amount of money withdrawn by each family as a whole.

(2) The families have been divided on the basis of money withdrawn by families in different income brackets.

Annual Profit = Interest on loan - Interest on saving - Operational Expense

Revenue from Savings Account (SBI-DTU)

Hostellers
Given the 80:20 split between day-scholars:hostellers, there are 2000 hostellers. Most students open a new account only after starting their graduation degree. However, as most of these are students outside Delhi, some might already have bank accounts in their hometowns or in other banks. Considering 40% of them have accounts in SBI DTU,
Student account holders = 0.4 x 2000 = 800

Faculty
Consider that 75% of the faculty opt for on-campus accommodation and 80% of them have a bank account here because of the convenience of proximity and ease of administration.
Faculty account holders = 0.75 x 0.8 x 330 = ~200

Staff
For the non-teaching staff, it is preferable to have an account in a public sector bank and at the proximity of their workplace. Considering 90% of them have an account here,
Staff account holders = 0.9 x 500 = 450

Day-scholars
Most day-scholars would prefer to open their account near their homes only. So considering only 5% of them have an account here.
Day Scholar Account Holders = 0.05 x 8000 = 400

Locals
Delhi has 272 municipal wards with a population of 2 Crore. Assuming nearly equal distribution across all the wards, each ward has an population of approximately 85,000. Out of these, 70% would be eligible to have a bank account (adults).
Assuming that there are 3 SBI banks in a ward, and with the market share of 60% each bank caters to (0.7 x 0.6 x 85000)/3 = **11,900 people locally ~ 12,000 people locally**

Annual Profit of SBI Branch at DTU

Customers of SBI - DTU

- Staff
- Hostellers
- Faculty
- Day-Scholar
- Locals

Total saving accounts in SBI-DTU
= 800 + 200 + 450 + 400 + 12000 = ~14000

Account Balance	Lower Class	Lower Middle Class	Upper Middle Class	Upper Class
Percentage of people	20%	40%	30%	10%
No. of people	2800	5600	4200	1400
Avg. savings account balance	2,000	10,000	30,000	50,000
Total	56,00,000	5,60,00,000	12,60,00,000	7,00,00,000

Total sum of all savings accounts balance =
₹ 25,76,00,000

Considering,
- CRR = 4% (Nil Interest)
- Repo rate = 6.5
- Reverse Repo Rate = 6.0
- Interest rate on saving accounts = 4%
- Average interest on loan = 15%
- Asset Quality Ratio

Quality asset = 0.96 x 25,76,00,000 = ~ 24.72 crores = 25 Cr

Suppose only 80% of it is lent as loan (0.8 x 25 = 20 Cr), with an average rate of interest as 15%.
Revenue from loans = 0.15 x 25 = 3.75 Cr
Revenue from reverse repo = 0.06 x (25-20) = 0.3 Cr

Cost incurred on **savings account interests** = 0.04 x 25 = 1 Cr
Let us assume the **annual operational expense** = 70 Lakh = 0.7 Cr

Annual Profit = Interest on loan - Interest on saving - Operational Expense
= 3.75- 1 - 0.7 crores
= 2.05 Cr = ₹ 2 Cr (per annum)

Thus, the total profit made by the SBI Branch at DTU in one year = ₹ 2 Cr

CASES & FRAMEWORKS

Cases: Structure & Approach

The case interview round is an integral part of the interview process for most consulting/analytics firms. It is often a part of the 'fit' interview as well where the candidate is usually judged upon analytical thinking, business acumen, problem solving skills and creativity.

A case can simply be thought of as a business problem that has to be solved by you. You would need to analyse the situation, isolate the problem and then move on to suggest your solutions. You must remember that solving a case in front of a stranger, while talking them through it, is completely different from reading through case interview transcripts at your comfort or even attempt it by yourself while taking the help of the interviewer's text. So always make it a point to practice case-solving with another person.

The key here is to understand the situation on multiple levels and identify the pain points using a mutually exclusive & collectively exhaustive breakdown, while simultaneously engaging the interviewer and explaining your approach.
Discussing your numbers, thoughts, questions will help the interviewer understand your thought process and will also allow him/her to guide you through it. Listen to their feedback, they usually drop hints and help you navigate through the intricacies of the problem, provided you are asking the right questions!

Summarise your understanding of the case and company in question and clear out any doubts regarding the problem statement. Get the basic understanding of the situation before proceeding to drill down into the other factors.

It is always better to customise the structure for your case using the essential frameworks and not saying that you're using them directly. Once you have finalised an overview, take your interviewer through it. Always, fall back upon this while going back and forth on segmentation.

The devil is in segmentation. Make sure while you are trying to isolate the problem that you properly segment each branch and ask relevant questions. Use the 80:20 rule to prioritise the branch you want to drill through. After the problem has been isolated, suggest innovative solutions to it.

CLARIFY → **EXTRACT** → **STRUCTURE** → **SEGMENT** → **SUGGEST**

Cases: Structure & Approach

PROTIPS

- ➔ While navigating through the case, first try to have a clear picture of the structure in your mind, and then try to elucidate that with the same clarity.
- ➔ It's okay to stumble onto a wrong path and try to retrace your steps back to a point. Don't let this derail your train of thought, maintain composure.
- ➔ The best way to go around the case preparation phase is to practice with a friend, or a case buddy. Pair up with your friends who have the same level of preparation as you and take turns of attempting cases being in the roles of interviewer & candidate. In this scenario, the interviewer must have read the case beforehand, understood the problem analysis and the kind of answers that should be given to the questions.
- ➔ Do not miss out of the creative aspect of any business problem and compel yourself to think innovatively as well. It's always recommended to apply your insights from the current industry trends and real-life examples to earn brownie points.
- ➔ Regularly read the business news, keep up with the market trends and familiarise yourself with the different factors unique to each industry. Refer to: Business Insider, CNBC, Mint, Finshots, r/consulting
- ➔ Practicing vocal delivery of your analysis > Practicing analysis itself.
- ➔ While reading the casebook, you should try to apply the learnings and insights from one case to another and try to form your personalised analysis structure that best suits your way of thinking and naturally comes to you while approaching problems.
- ➔ Do follow the frameworks shown in the earlier section as a generic layout of how to approach any given case, inculcate them but do not memorise.
- ➔ Lastly, do not overdo the preparation. Just practice a diverse set of cases enough to equip you to walk through your thinking aloud and explain your analysis in succinct sentences.

CASES

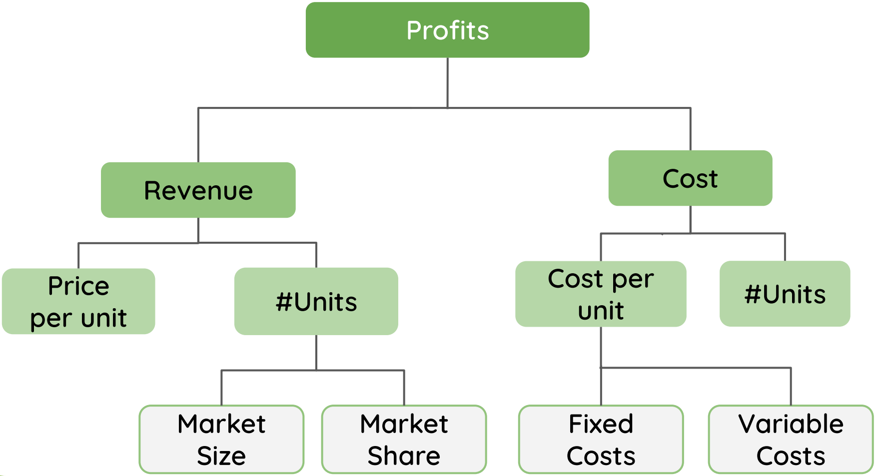
PROFITABILITY

Framework: Profitability

Profitability cases are the most common type of cases and their importance stems from the fact that profit-making is the ultimate goal of every business problem.

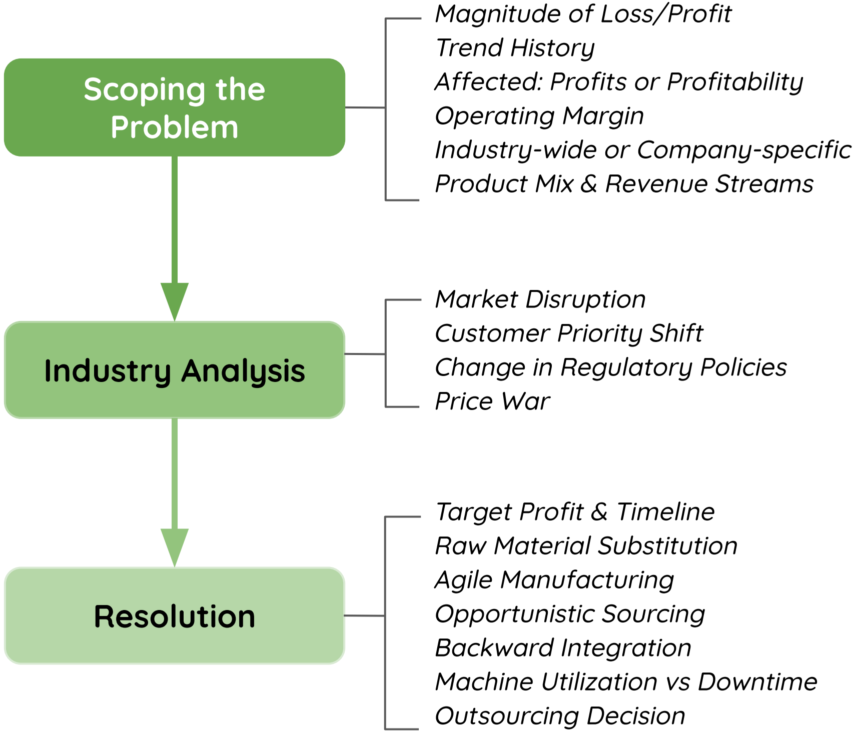
These deal with revenue issues, cost issues or both. One needs to identify the key revenue and cost parameters, deconstruct the problem into components and isolate the cause for a poor bottom line.

To be solved effectively, a profitability problem requires proper scoping and isolation using the drill-down approach.



Solution Structure

Key Parameters



Framework: Value Chain

This type of case is usually implemented in a cost reduction case where a company is aiming to reduce their bottom line. The best way to reduce cost is to follow the journey of a product/service through its lifetime.

The fundamental idea behind the value chain analysis is to understand different steps that add value to the product and identify the abnormalities/inefficiencies arising in any of them.

One is expected to identify various cost components and validate them, identify major cost drivers and then recommend how the company can change its ways to become more cost efficient.

After identifying a problem within the profitability framework (Cost/Revenue/Both), it is generally effective to delve into the value chain and to drill down for RCA (Root Cause Analysis) of the stated problem.

R & D	Sourcing	Warehousing	Storage	Manufacturing	Transportation	Distribution	After Sales Service
Equipment	Raw Materials	Plant Rent	Inventory	Technology	Mode	Sales Channel	Accessibility
Human Capital	Procurement	Machinery	Labour	Overhead Cost	Negotiation	Sales Force	Service Time & Cost
Finance Cost	EOQ	SKU Visibility	Capacity Utilization	Automation	Network Optimization	Training	Repairs & Returns
	Make/Buy			Process Efficiency	Turnaround Time	Penetration	Customer Satisfaction
					Retailer Rationalisation	Shelf Space	

Mango Juice

The client is an FMCG conglomerate who has witnessed a decline in profits for Mango juice recently. The market share dropped from 98% to 45% in 2 years. You have been hired to find out the root cause for the same.

So just to clarify the question - our client is an FMCG conglomerate which has witnessed a significant decline in its Mango juice business profits. I have to identify the reason behind it, correct?

Correct. Please go ahead.

Before making a framework, I would want to know is this is an industry wide problem or just company specific?

This is just a company specific issue. Our competitors are doing fine.

Okay, since profits are declining, and it is a function of revenues and costs, do we have any information regarding which of these factors have changed?

Yes, our revenues have gone down by 10% and costs have increased by 5%.

The profits can be declining due to combined effect of both revenue and costs. I will first analyze the revenue side. So, have our price gone up?

No, they have remained same but sales have gone down.

Okay, Let me draw the value chain first. So there are 3 segments in value chain - production, distribution and customers. Are there any changes in these parameters?

Assume, there are no changes in production and distribution. It has remained the same. You can move on to other parameter.

Okay. Have our product changed with respect to our competitors in terms of physical appearance, size or taste?

Yes, we have reduced the size of bottles but appearance and taste is at par with our competitors.

Have our productions decreased? Since we are losing on our market share.

Good Question. We had to reduce the production due to declining demand.

That's reasonable, our fixed cost/bottle have increased then. Is it a price sensitive market? Also what do we know about our closest competitor?

Yes, it's a price sensitive market. Our product is priced at Rs. 300 per litre while competitors product is Rs.250 per litre. All that we know about our competitor is that they are profitable.

Okay, so we should analyse the cost segment as well. Is there any change in our fixed costs or variable costs?

Fixed costs have not changed, but we have seen an increase in our variable cost.

So do we have information on which segment of variable cost has the cost increased? - raw materials, manufacturing, packaging or sales and marketing?

Good Question. So we changed our mango supplier, and our raw material cost has gone up slightly.

Okay, so this be one of the reasons for increased cost. Since our product is priced Rs.50 more than competitor, we have to work on cost reduction and production increment.

Mango Juice

That's right we want to target our product at Rs. 250 per litre. We also have information about our costs in current period. Distribution cost is priced at 25% of revenue, raw material cost is Rs. 50, variable cost is Rs. 95 and fixed cost is Rs. 75. What can you conclude?

So our bottle is priced at Rs. 300, which means our profits are Rs. 5 per bottle. Do we want to maintain this profit?

We want to increase our profit by 20%. Also assume no changes in labour costs.

Okay, so our target cost of bottle should be Rs. 244. And we know that productions of the unit decreased which means that fixed cost/ bottle also increased.

That's right. Now tell me what could be done to reach the set target.

For a reduced price of Rs. 250, our distribution costs will now be Rs. 65. And variable cost will be the same at Rs. 95 per bottle. However, we can focus on reduction of fixed and raw material cost. These need to be Rs. 84 per bottle.

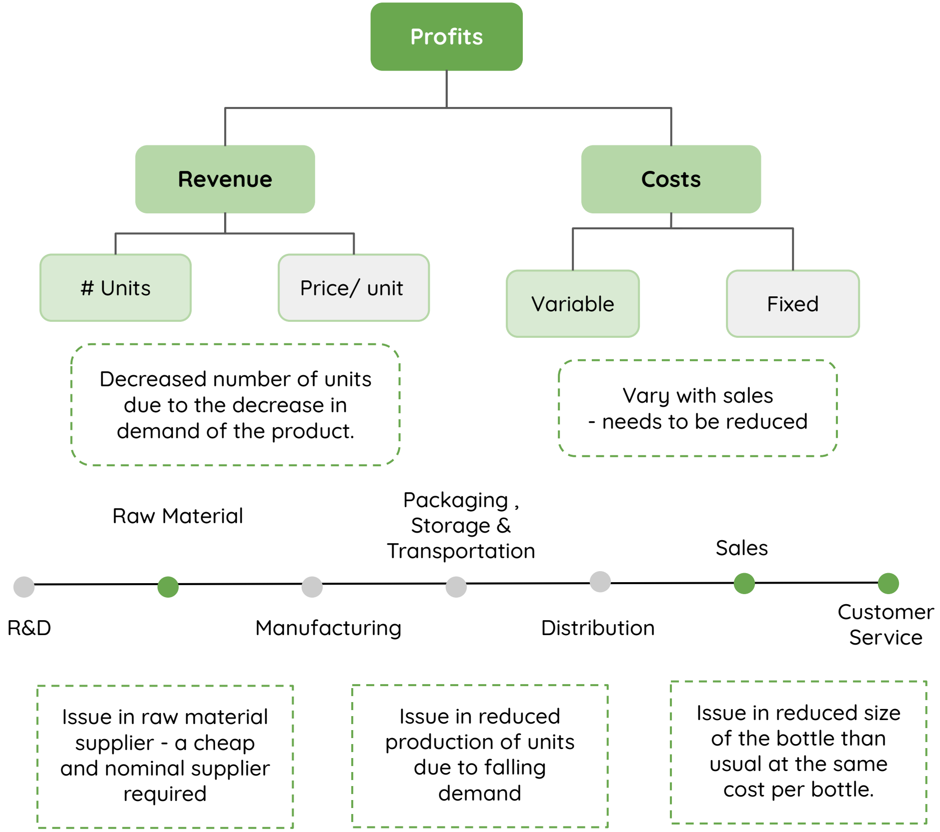
What should be sales volume, if current volume is 1.5 Million?

The current volume should be approximately 2.2 million as 1.5*(125/84) to achieve the target cost of the bottle which will be 0.7 Million additional sales. With this, you will also have an increased profit of Rs 6 per bottle.

That's right. You are on track. So can you summarise all the proposed solutions.

Yes, so the size of bottle needs to be back as usual; the cost of raw material and fixed cost has to be reduced drastically; and the sales units have to be increased i.e increased production units.

Sure. Good Job! Thank You!



Chips Producer

Your client is a chips manufacturer. Over the past couple of months it has seen a decline in profits. You've been hired to diagnose the problem and suggest mitigation measures.

Before beginning with the analysis, I'd like to know more about the client. How many types of chips does the company make?

The company predominantly makes only 1 flavour of chips.

Which country is the client based out of and how many factories do they have? I want to understand the scale of business and extent of coverage.

The company has its factories and warehouses across the country. They are facing a decline in profits within three of their old warehouses spread uniformly across a specific state.

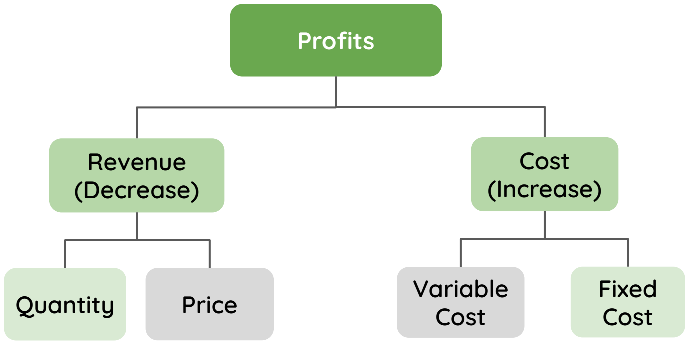
That's helpful. Splitting this further to understand the problem, are they observing rising costs or declining revenues?

Both.

Okay, I will first delve into the value chain analysis, where on the cost side the factors involved are manufacturing, supply chain, retail & distribution costs and other marketing costs. And within the supply chain, storage & transportation may be the areas of concern. Should I take both into consideration moving forward?

Take both into consideration and move forward.

Firstly, on the transportation side, I would like to ask if the distance between the warehouses and factories is on similar lines as our competitors?



No, the average distance between the warehouses and factories is in excess of 200 km while the same is <100 km for our competitors.

This is definitely a major issue. Their factories may be located at remote locations, away from the main manufacturing units. On the storage side, is the overall cost of storage per unit at par with the competitors?

No, it's a tad bit higher as compared to the competitor

So the storage cost may be higher because of various factors - pilferage, spoilage of chips due to pests, higher rent, inefficient inventory management etc. In fact, due to the higher transportation time, the distribution may be delayed and the chips may expire before they reach the retail stores. This affects the shelf life directly and thus the overall sales.

That's right. Explain your approach for an efficient inventory management system.

Chips Producer

Thank you. The inventory management system can be of LIFO (Last in first out) or FIFO (First in first out) type. The problem arises if it's of LIFO type, leading to a further delay in supply and early expiration of products.

Yes. You are correct. At present the cartons which enter the warehouse last are the ones which are sent to the retailers first. The company has employed two different transportation companies for moving biscuits from factory to warehouse and then from warehouse to the retailers. Due to the lack in coordination between these two entities, a lot of biscuits were getting spoilt. How can we solve this issue?

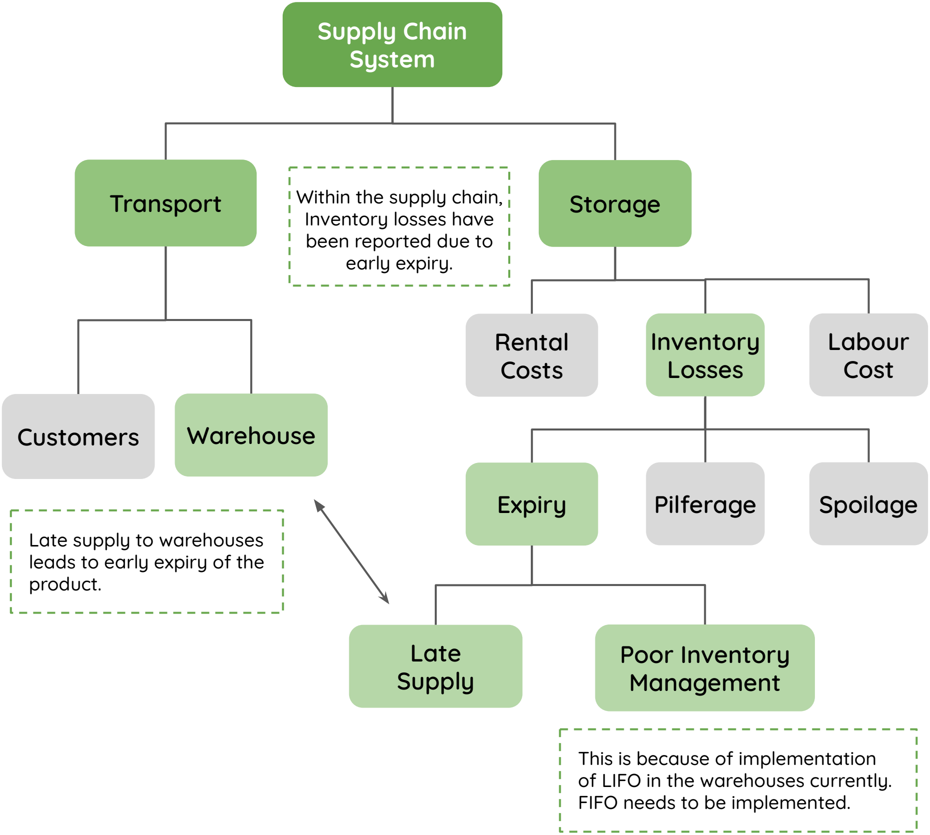
I see. The cartons that come in last must be placed near the entry gate of the warehouse and the transportation company which takes them to the retailers just picks it up from there. Is that correct?

Yes that's right. What are your final recommendations?

(1) An extra entry/exit should be created within the warehouse which can help streamline the entire process. The cartons that would first come in could be picked up directly from the second exit thus ensuring FIFO is being followed. They can even have the same transportation company for both the tasks to be free of any lapses in communication.

(2) In addition to higher costs, the greater distance between warehouses and factories is also a reason for the expiry of chips. So it is recommended to move the factory to closer locations or adopt a central warehousing model currently on a rental basis.

Good analysis. Let's end the discussion here. Thank you!



Delhi Metro Network

The Delhi Metro Network is facing a decline in profits at Huda City Centre station. You need to figure out why and give suitable recommendations

Alright, so our client is the Delhi Metro Network who's facing a decline in profits at Huda City Centre, and we need to find out why and give recommendations, right?

Correct. Please go ahead.

I would like to know since when the problem has been occurring.

Right from the beginning.

Are any other stations facing this issue, or just this one?

Just this one. The profits are less as compared to the other stations.

Profits are a function of costs and revenues. How do these numbers compare to those of the other stations?

Our revenues are lower than other stations. Costs are not a concern.

I can think of 3 primary sources of revenue for a metro station - tickets, concessions, and advertisements. Are there any other sources I should consider?

No, these 3 are fine, you can proceed with them.

Which of these 3 streams is generating low revenues?

The revenue from concession stands is lower than that of other stations.

The primary factors outlets would consider while setting up shop in a metro station would be rent, operational hours, expected revenue, margins offered, terms of the agreement and other miscellaneous costs. Am I missing anything?

The rent is fixed, and expected revenue and costs incurred are the same as the other stations. You can look into the terms of the agreement.

The various factors in the terms of a rent agreement would be the rent, area of the land, due date, duration and lock-in period. Since rest is fixed, that can be ruled out. Are these other factors different from the other stations? If yes, then how?

The difference is in the lock-in period. For other stations, there is a lock-in period of 2 months, while Huda City Centre has a lock-in period of 6 months. Can you tell me why that would be a problem?

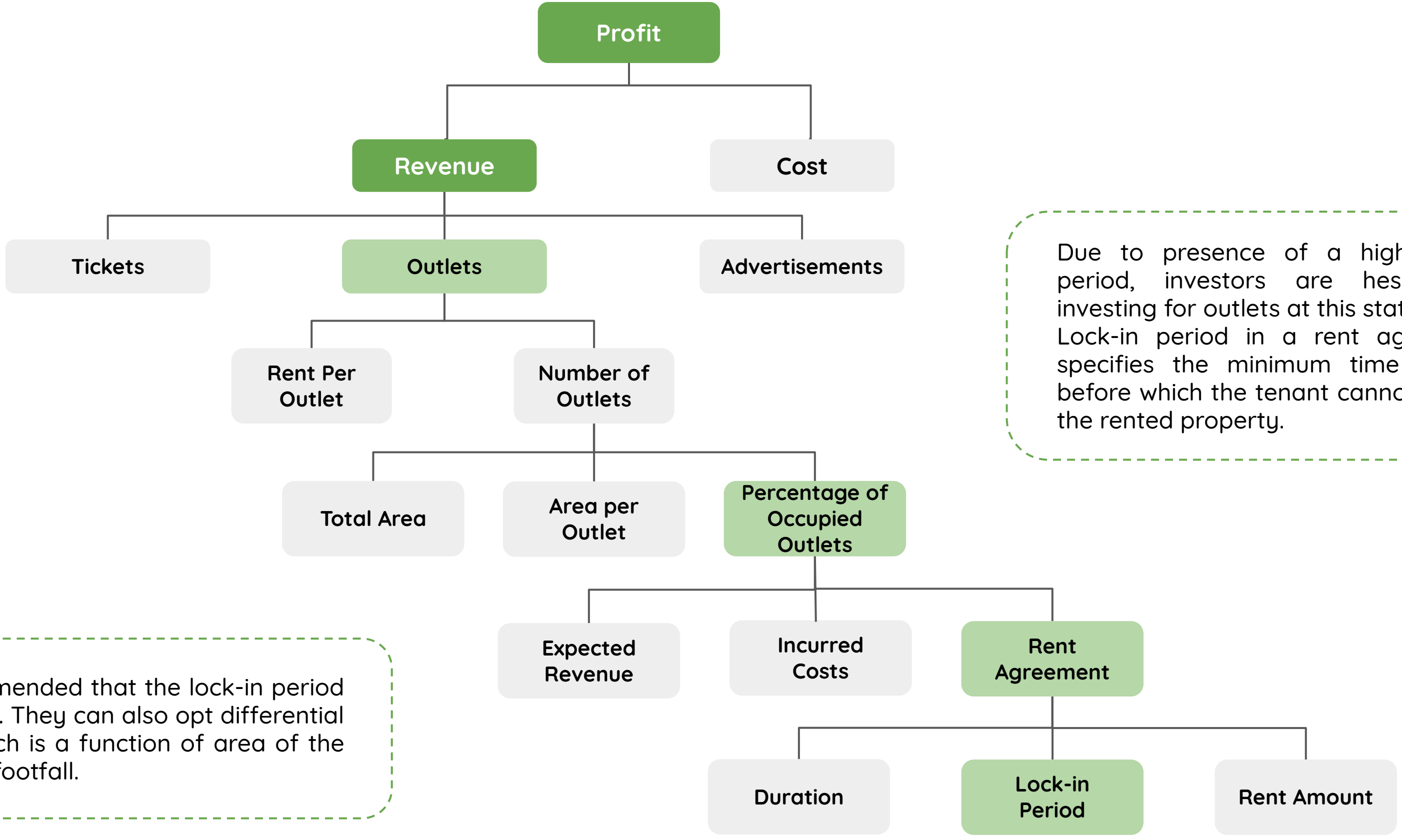
A longer lock-in period would mean a higher risk for the shopkeeper, hence they would not prefer to rent the outlets.

Correct. Can you give any recommendations?

Yes. There are 3 major options we might consider. First, we should explore the reason behind the longer lock-in period and reduce it if possible. Otherwise, we could charge lesser for the same lock-in period. Lastly, we can opt for a differential pricing model, where rent is based on area and location of the outlet. For example, outlets located at hotspots with high footfall can be charged a higher rent.

That's great, thanks. We can close the case here.

Delhi Metro Network



Due to presence of a high lock-in period, investors are hesitant in investing for outlets at this station
Lock-in period in a rent agreement specifies the minimum time interval before which the tenant cannot vacate the rented property.

It is recommended that the lock-in period be reduced. They can also opt differential pricing which is a function of area of the outlet and footfall.

Lubrication Oil

The client is a Lubricant Oil manufacturer who has witnessed a decline in profits recently. You have been hired to find out the root cause for the same.

So our client is a Lubricant Oil manufacturing firm which has witnessed a significant decline in the profits. I have to identify the reason behind it, correct?

Correct. Please go ahead.

Before beginning with the analysis, I would like to know more about the client. What is the product mix of the client and where does the firm stand in the value chain ?

The client is involved in the Upstream business of manufacturing the Lubricant Oil. It predominantly makes 1 type of lubricating oil used in diesel engines of vehicles.

Where is the client based out of and how many plants does it have.

The client is of Indian origin and currently has 2 plants, located in Gurugram and Chennai. Both of them have witnessed a decline in profits.

Are the competitors facing the same issue as well or is the decline in profits specific to the client?

We don't have data specific to a particular competitor. But the industry as a whole is experiencing a 10% decline in profits, while the client is facing a 25% decline.

Shall I take a minute to gather my thoughts and then proceed with the analysis ?

Yes please.

The decline in profits could be a function of Micro factors such as Revenues and Costs and Macro factors which includes Political, Economic and Technological factors. I would like begin with the analysis of Macro factors first since they would be directly affecting the complete industry.

Go ahead.

In the past few years, has there been any Political, Economic or Technological change that is affecting the complete lubrication oil industry ?

The government has recently hiked up the tax that is being levied on fuel based products leading to an overall increase in the price. The market has also been flooded with Chinese products of similar type which have led to a decrease in demand.

This explains why the Lubrication oil industry is facing a 10% decline in the profits. But since our client has been witnessing a further dip in its profits, I would like to venture upon the Micro factors in order to analyse the extra 15% decline.

Sure.

Since the profits are a function of revenues and costs, do we have any information regarding which of these factors is disrupting the equation. Have the revenues decreased or have the costs increased or both ?

So the revenues have declined and there has been no major change in the costs involved.

Alright, since revenue is directly dependent on the number of units sold and the price per unit, I would like to know which of these factors have changed, or both, that has led to the decline.

It is mainly because of the lesser number of units sold..

Since the quantity sold has declined, it can either be due to supply side issue or demand side issue. What is the case with our client?

Nice observation. You can consider it to be a demand side issue.

Thank You Sir ! So the demand side issue can be further segmented into 2 segments of Marketing and Customer Pull. Do we know which one of these fronts has taken a hit for our client.

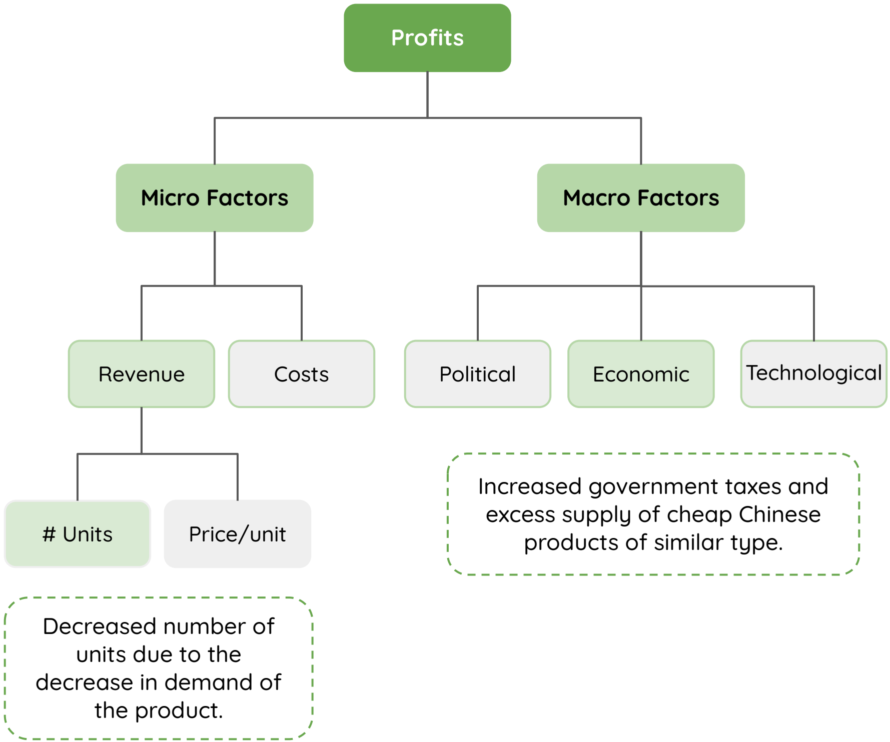
Yes. Consider it to be a customer pull issue, particular with the product feasibility.

Alright ! Is the client facing any regulatory issue which is affecting the feasibility of the product.

Yes. The government has recently announced to introduce the BS VI norms. The engine oil which the client manufactures is reacting with the additive AdBlue used in diesel engine due to which the pollution check is not showing the desired results.

That explains the declining sales volume of the client's product.

Good Job. You can leave now.



Factory Insurance Provider

The client is an insurance provider for Factories in Rural regions. They are facing a decline in profits. Figure out why they are facing a decline and suggest recommendations to mitigate the same.

Reiterating for clarification - Our client is an insurance provider catering to Factories in the rural areas. What kind of insurance does the company provide and since when have they been facing this issue?

Client provides insurance for factories and machinery in rural areas. They have been facing this issue for 2 years.

Can i assume that the client operates in India?

Yes they operate pan India.

Is this a company issue or an industry wide issue?

Loss in profits have been observed industry wide.

How many competitors of the company exist? What is our market share?

There are total 5 players in the industry and hold almost similar market share.

How does the client reach out to customers? Does it deal directly with customers?

Factories are mandated by government to have insurance in order to get an operating license. Clients choose an insurance at the time of starting operations.

Have the costs increased or revenues decreased in terms of profit? Or a combination of both?

The revenues have fallen

Can we assume revenue to be directly related to number of premium payers?

Yes

The premium is a function of number of customers, amount paid and its frequency. Which among the following has seen a decline?

The number of customers have reduced.

Since the customers have reduced, we have seen a direct fall in demand across the industry? As you mentioned before, the whole industry has seen decline in profits..

Yes the demand for factory insurance has fallen.

Have the national laws for factory insurance changed? Do factories not require insurance anymore?

No, the laws requiring insurance for factories are unchanged.

Okay, since each factory still needs an insurance and insurance demand has reduced, this means that the number of new factories coming up has fallen which has lead to a direct decline in demand for insurance.

Yes that is correct, the rate of new factories coming up has reduced.

Factory Insurance Provider

So is this a supply side or a demand side issue? Supply side includes problems in supply of equipment and material needed for factories while demand side issues includes lesser requirement of goods and services by business owners.

Problems have been seen across both supply and demand side.

In terms of demand, have the prices of goods or land increased or have the income of customers reduced? In terms of supply, do we see a fall in new land availability or ownership or a fall in raw materials needed in factories?

Income of customers has not fallen. But we do see a rise in prices of machines and rise in prices of land. Availability of new land and new land ownership among people has also declined.

Ok, so we can point out that inflation in a post covid scenario has caused an increase in prices of goods and machinery for factories while income has remained the same. This has created lesser demand for raw materials and machinery hence lesser factories are opening up.

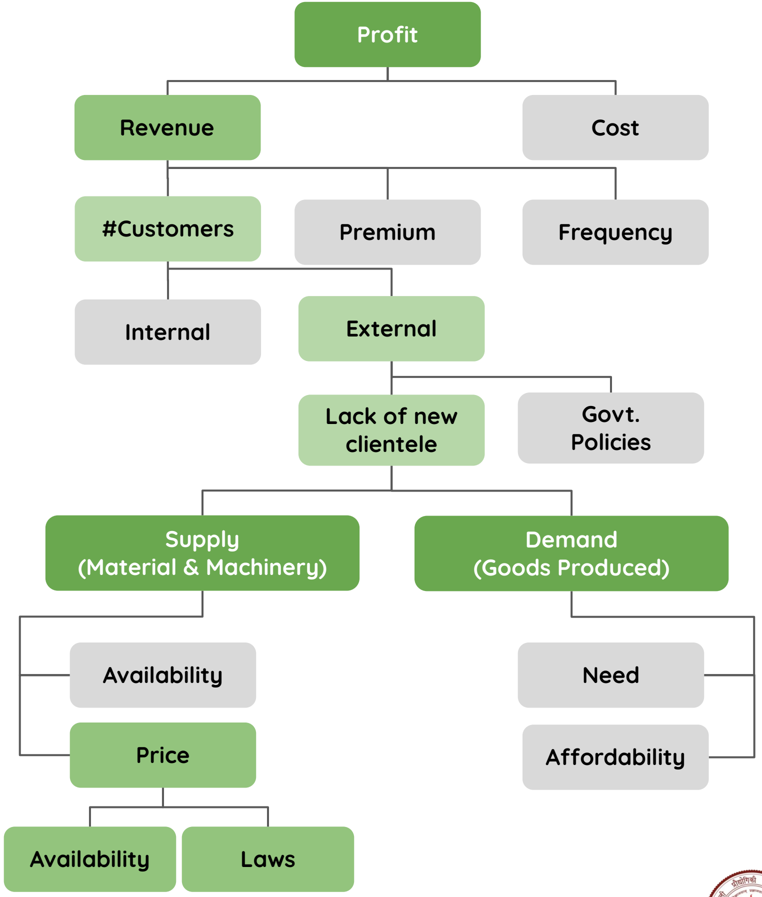
Yes that is correct. Why do you think land ownership has declined and lesser land is available?

Land prices must have increased due to lesser land available. Less availability can point to high demand, but that's not possible due to high prices, hence it must be changes in land ownership laws.

Yes, new environmental laws & pollution laws have resulted in lesser commercial land being available. How do you think the company can mitigate this decline?

The company can offer lower premiums to take away market share of competitors. They also need to target factory owners in non rural areas and target a new customer base to ensure a steady increase in customers and profits.

Good! We can close the case here.



Your client is a refrigerator manufacturing company who is facing a decline in profits. He wants you to figure out reasons for the same and suggest recommendations

So our client is a refrigerator manufacturing company and is facing a decline in its profits. I have to find out reasons for the same and suggest recommendations

Correct. Go ahead please!

I would like to begin by asking about the client. In which demographic does the client operate?

So our client operates primarily in Northern India.

I would like to know the position of the company in the market, the market share it captures and its customer segment

So the client is a market leader in the Refrigerator segment. It targets middle class consumer and does not manufacture high end products

Alright. I would like to understand the timeline for the decline in profits

Revenue and profits have seen an overall decline of 10% in the past two years

Is this an industry wide problem or company specific?

It's strictly a company specific problem

Since the company has been facing a decline in revenue, profits, I would like to further break revenue into revenue per unit and the number of units sold. Are there any changes to these

There has been a decrease in the volume sold

Okay I would like to know more about the product, and how it is differentiable from the competitors

Okay. So the company's product is higher in quality as compared to competitors and the price is almost as comparable to them

Since the product is of superior quality and price is almost same, and this isn't an industry wide problem, the product should be in high demand among the consumers. Since this is not the case, is it safe to assume that it's a supply side problem

Yes. That's correct!

So working our way through the value chain- R&D, Manufacturing, Processing, Distribution, Warehousing, Transportation, Marketing and Customer Service, which division faces problems

Alright. So the company is facing problems with distribution. The company sells to the distributors, who sell it to retailers, who in turn sell to end customers. The distributors feel that the margins being offered by the company is less compared to competitors. Hence they gradually reduced the stock being offered to retailers

Do we have the details of the margins being offered by us and the competitors? .

Yes. We offer 4% margin while the competitors offer 7% margin

Alright. Can we consider increasing the margins and absorbing the increased expense in our income statement

Have a look at the following data and then decide!

Particulars	FY 2020	FY 2021
Units Sold	100,000	90,000
Price to Dealer	20,000	20,000
Expense per Unit	15,000	15,000

In FY 2021, there were profits of 45 Cr, as compared to 2021, when there were profits of 50 Cr. If we increase the margin from 4% to 7%, the profits would further decline and hence, it's not a viable option. Hence, we should look at other aspects, that may be an issue. Do we have information regarding the distributors, their demographic presence?

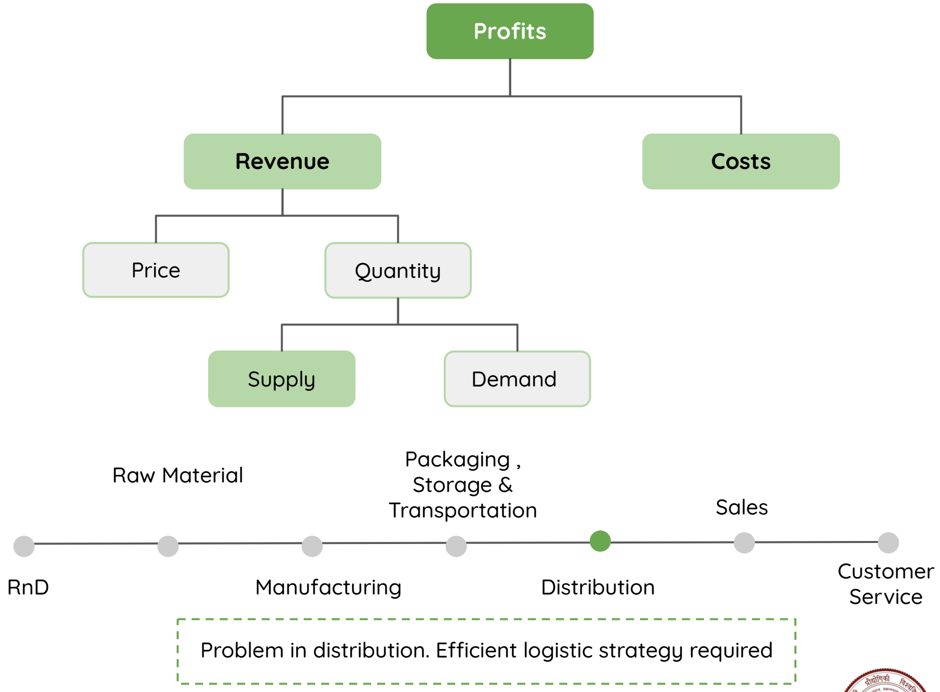
Currently the company has 5 distributors. 2 distributors handle Uttar Pradesh while remaining 3 handle Delhi region. There are 200 retailers in the Northern region with 50 in U.P. and 150 in Delhi

Also, is the company exploring e-commerce or any other distribution channels ?

Company itself has minimal presence on e-commerce portals. The products are often sold by distributors on such portals

Alright, so carefully analysing the situation, I would like to give the following recommendations:
The company can **re-look their distribution channels**, choose the most optimised logistic strategy.
Secondly, they can start **dealing with retailers directly**, thus eliminating distributors completely.
Next, they can **look at e-commerce portals** and sell **through their own website**, to recover from the lost sales due to distribution channels
Lastly, they can try to **offer some premium features, bundled deals**, to **online customers**, to reduce the reliance on distributors & increase the volume of product sold online.

Good Job. We can close the case here!



Hotel Owner

The client owns a hotel and is pondering whether to increase the room rental from ₹6000 to ₹7500 per night to increase profits and wants your recommendation on how to approach this.

Is ₹7000 the average room rate, or do they have standardized rooms with a uniform rate?

Uniform rate across all our rooms. They are all similar.

Could you provide me more information about the hotel, like its location and facilities?

It is located in a commercial area in Gurugram. The hotel also has a banquet hall and facilities for business customers such as lounges and conference rooms.

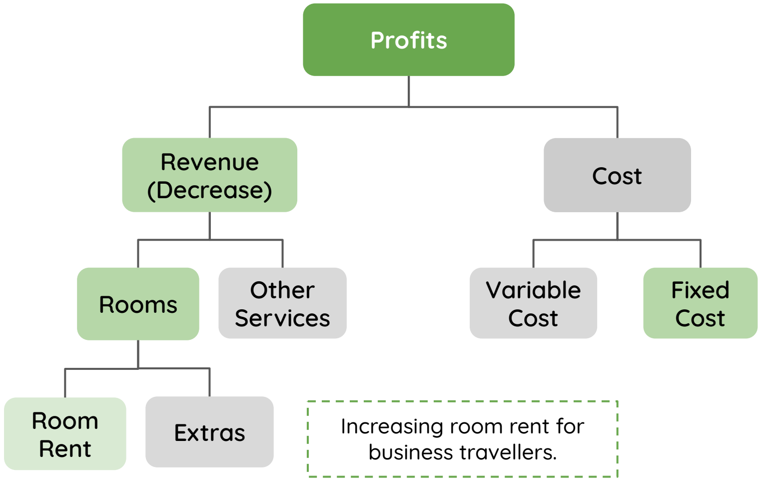
As far as room rental is concerned, does the hotel offer any extra paid services to customers?

Customers have the option to spend on food, beverages and premium TV channels etc. by paying extra charges.

Okay, I would like to begin by understanding the profit structure of the company. Then I'll proceed to calculate the additional new revenue and costs to check if we are more profitable than status quo.
Since the profit is directly dependent on the revenue, increasing rent may increase the revenue if it yields well with the price elasticity of the customers. Do we also plan to increase our costs by providing additional facilities in order to justify the increase in rent.

Yes we can also consider the possibility of that.

Okay. To understand the impact of increase in rent in the revenue, these two would be our primary parameters for making the decision.



1. Occupancy rate: The price sensitive customers may go for the cheaper alternatives nearby, which may hit their occupancy rate.
2. Spending on services: To offset the higher rent, customers may scale back on this expenditure on other amenities.
To understand this price elasticity, I'd like to know the split in the type of customers that visit the hotel.

Mainly business (60%), tourists (20%) and guests (20%) via banquet hall bookings. Most guests usually book the rooms along with banquet hall as it is normally used for special functions.

Since the major bookings are for business purposes, it's interesting to note that most business customers often don't pay from their own pockets but rather bill their company for the stay, usually on a fully-sponsored business trip. Does the company also cover for the extra expenses?

Yes. So, some of the companies whose employees typically stay at our hotel have a cap for room rentals at ₹10,000 per night. And also, there is no restriction on the employees' billing of extra services.

That's great! This means that we can expect similar occupancy and expenditure since the employees are unaffected and their spending is in line with company policies. Moreover, given that the cap is ₹10,000, they may potentially increase room rentals even more to maximize profits, but that would severely hamper the other customer segments of tourists and guests.

Good suggestion, we will look into that later.

The second factor that I'd like to analyse is the nearby competition, since the hotel is located in a commercial area. What kind of alternative options are available for the companies and do they prefer cheaper options with similar facilities?

In the same area, there is one other hotel which has rate of around ₹7000 per room per night. However, it is not preferred by business travellers as we have better corporate facilities such as conference and waiting rooms.

How important are these facilities for business customers?

They are used to conduct client meetings and corporate events hence, it's of significant value to them.

This means we have an edge over the competitor which will make our business customers stick with us and they will be largely unaffected by the rent hike.
Now, when it comes to the other customer segments, I think that tourists and guests would definitely be more price sensitive. But since most of the guests come through banquet hall bookings, do they have a special provision for such group bookings?

No we do not. But, the banquet hall is one of the finest in the area and our in-house catering service is also regarded well by the customers.

Okay so despite the increase in rent, the occupancy may not be affected as much because the banquet booking charge remains the same and customers would be willing to spend a little more for their convenience and quality.

Good point. Let's proceed with you recommendations.

I would like to put forward the following recommendations:

1. Introduce a two tier room structure with 'Executive Suites' for business users and 'Regular Rooms' for others. This way, they can provide business customers with slightly better ambience/facilities such as smoking rooms, access to business lounges and more additional facilities that would justify a further hike upto 10,000 for the price elastic business segment, to maximise the revenue stream.

2. Keep the price at 6,000 for 'Regular Rooms' but encourage tie ups with tourist agencies and venue booking platforms to provide group discounts to guests.

These are good points. Thank you! You may end this here now.

Restaurant Owner

The client is a restaurant owner in New Delhi and their sales have plummeted significantly in the past few months. Identify the reasons and suggest measures to mitigate the issues.

Okay. That's an interesting question! I would like to ask a few background questions to get better understanding of the problem. How many restaurants does the client have, where are they located, what cuisines do they offer, and what is the average price per meal for two people in the restaurants?

Those are quite a few questions! So, the client owns 5 restaurants spread across different regions of New Delhi. They mostly serve Indian Cuisines and the average price for a meal for two is ₹700.

Okay, It means our client caters mostly to the middle class segment. Do they have deliveries as well, or partnerships with any platforms?

They do not have minimal online presence as of now, and dine-in is the major source of revenue.

Noted. Since when are they facing this issue and by how much have the sales declined so far?

They are facing 80% decline in sales since March

That's a huge decline! I assume this is due to the Covid-19 crisis and the nation-wide lockdown that we have witnessed..

Yes, in fact, they had to shut their restaurants completely for the month of April and May because of it.

Okay, now I would like to study the profit structure of our client's restaurant thoroughly. Obviously, the major reason for the drop in sales is the shrunk market for eating outdoors due to the fear of contagion during the pandemic. It's safe to assume that this situation will persist for a while. So, to overcome this for the long term, they will be have to overhaul their operations process. would have to bring a few changes in their processes. Do you want me to think of ways to do that?

Yes. We would be interested to know what we can do right now to better the business situation and what further steps we should take to evolve with the changing times.

Fair enough. So, there are three kinds of people they have to target, based on their inclination to eat at restaurants.

For the first segment, the best option would be to focus on home deliveries and partnering with online platforms like Zomato and Swiggy. In the competitive mid price range segment, the restaurant must leverage their brand reputation to gain a foothold and offer discounts/coupons to move up the listing algorithms of these platforms. It may be a loss-making exercise initially, but it will yield results very soon. Secondly, they should launch packaged ready to cook meals for people who are not able to step out for a long time or in quarantine.

For the second segment, they must make efforts to market their hygienic practices for preparing and packaging the food to allay the worries about sanitation and encourage more people to take safe delivery and take-away options.

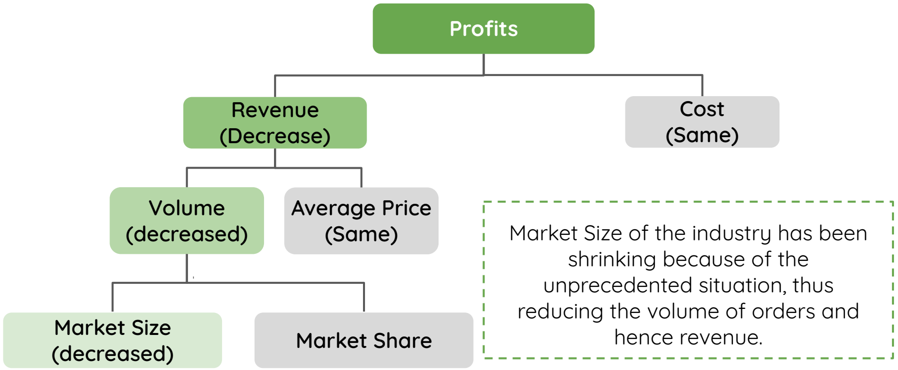
For third segment, they should step up the sanitation at the restaurant by means such as providing hand sanitizers at all tables. The seating layout of the restaurant should also be transformed to align with the social distancing practices by increasing the space between individual tables and removing community tables, unless for a single family. They can explore introducing e-menus, and minimise the contact between the waiters and customers. Online payment options are a must as well.

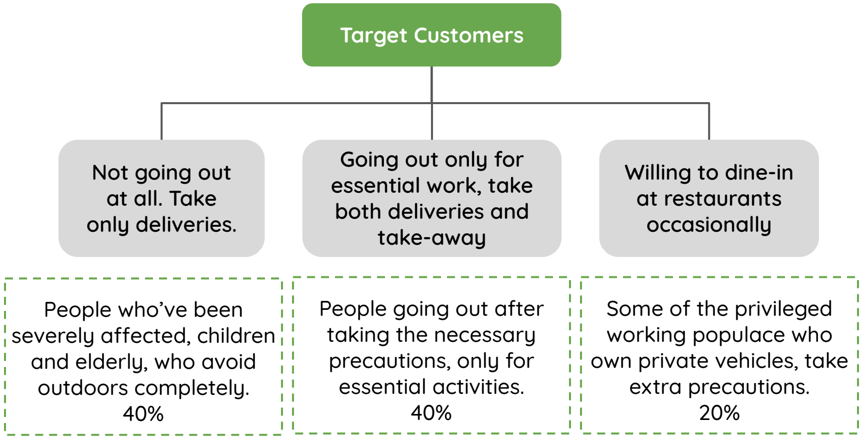
Great Suggestions. What more can they do to adapt to the new normal in the long run?

1. Since diners will be more concerned about the hygiene conditions of the kitchen along with the restaurants, they can install a transparent glass between the dining area and kitchen to alleviate these concerns.
2. They can implement new sanitation technology to clean the tables and cutlery after each use more effectively.
3. Focus on a balanced combination of take-away, deliveries and dine-in, because the psychological fear is bound to persist for a while. Capitalising on various online modes of delivery would be the best option to survive.

These changes can be help them adapt to the new normal but will also increase costs. Do you want me to do a break-even analysis?

That will be all. We may close the case now.





CASES

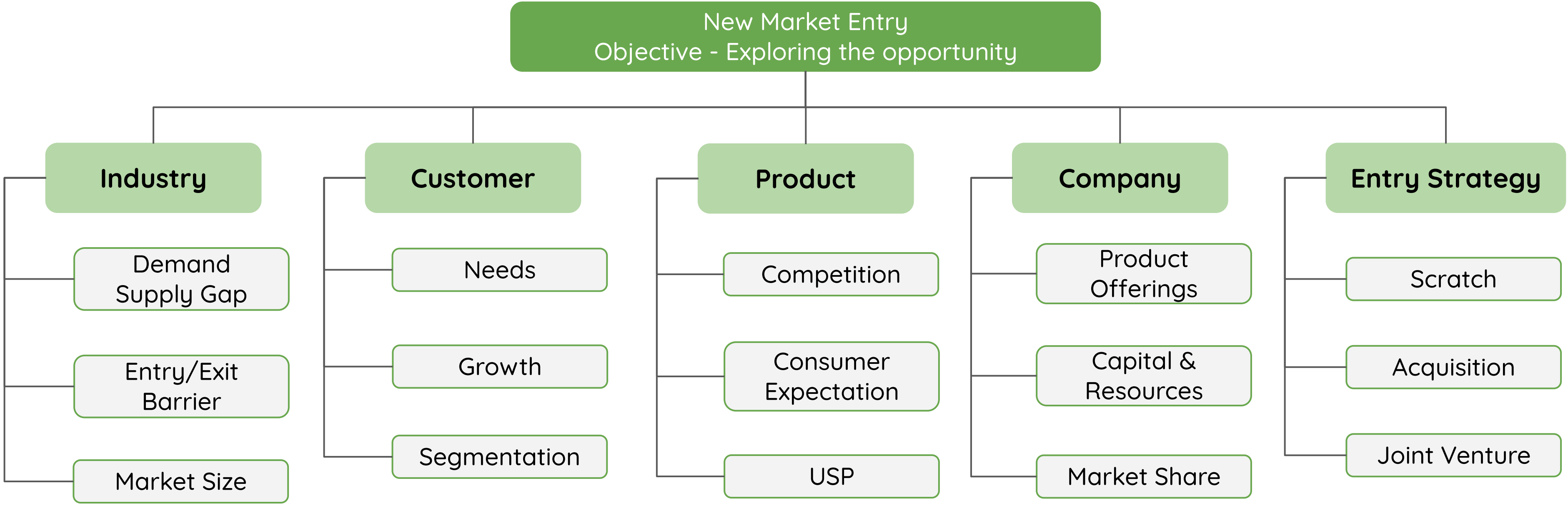
MARKET ENTRY

Framework: Market Entry

In market entry cases- be it a new product launch, entering a new geography or both- there are two basic considerations –

a) ***Is it a good idea?*** b) ***How to enter?***

The first step is to understand and explore the opportunity by thoroughly analysing the following 4 parameters: Industry, Customer, Product and Company. This is followed by metric evaluation and finally a mode of entry is chosen.



Framework: Market Entry

- Whenever you are required to make a decision - develop a choice rule or a mathematical metric of evaluation - as the choice cannot be made entirely based on qualitative analysis and quantitative metrics need to be developed in order to exercise the choice.

- This evaluation is a function of **4 parameters:**
  Motivation, Profitability Targets, Investment Constraints and Competitive Positioning.

- This approach helps one answer the two fundamental questions associated with market entry:
  a) ***Where to invest:*** Geographically and in value chain
  b) ***How to Invest:*** Mode of entry

- Protip 1: Not every aspect of the framework mentioned will be applicable to all cases, but try to cover as much as you can, so that you get a good idea of the industry and the client current status.

- Protip 2: It is very important to identify where the client would stand in the industry compared to the existing competitors and the measures to be taken to mitigate competitive edge of incumbent.

Evaluation Parameters	Evaluation Metrics
Motivation	*To enter a new industry* *Reason of choice of chosen industry* *Strategic Intentions* *Economic Intentions* *Cost-Benefit Analysis*
Profitability Target	*Cost of Capital and R&D involved* *Target Rate of Return* *Target Market Share* *Target Revenues and Profits* *Target Payback Period*
Investment Constraints	*Levels of investment (Upfront/Residual)* *Geographical Feasibility* *Opportunity Cost of Investment* *Synergy with existing product lines*
Competitive Positioning	*Brand Equity* *Economies of Scale* *Supply chain/Distribution Synergies* *Patent/Proprietary Technologies* *Organization Design/structure*

Framework: New Product Entry

A subset of Market Entry case, here, the company aims to introduce a completely new product, expand its existing product line or extend reach in a new geography.

One has to analyse the viability of success and feasibility of entry, followed by identification of the correct price point and target segment and finally recommend levers that can drive product success in the market.

New Product

Initial Investment
- Self Financed
- Debt Financed
- Equity Financed

Value Chain Challenges
- Production
- Distribution
- Marketing

Break-even Point
- #Units Sold
- Price/unit
- Fixed Cost
- Variable Cost/Unit

Evaluation Parameters	Evaluation Metrics
Product Analysis	*Value Proposition* *Target Customer Segment* *Substitutes* *Cannibalization* *Product Segment*
Industry Analysis	*Growth Opportunities* *Size* *Competition* *Entry/Exit Barrier* *Distribution*
Economical Analysis	*Financial feasibility of market entry* *Production cost* *Launching cost* *Pricing (Refer to Pricing Framework)* *Break-even volume/ period*
Strategic Fit	*Existing product line* *Company resources/capabilities* *Technology disruption risks*

Teens Magazine

Your client is a major magazine publisher in India. It is considering the idea of launching a new Teen Magazine targeting the young adults. Demonstrate and recommend if he should go ahead with this idea.

I would like to ask a few clarifying questions before I begin. I want to understand a few things about the publisher. What is his current portfolio and how successful are they in the market.

The publisher is one of the industry leader with 2 categories focusing on personal and investment finance and other on entrepreneurship.

In that case, what is the objective of launching a new product from the scratch? Why does the publisher doesn't want to work on growing the existing portfolio itself?

The market for existing products is saturated and doesn't have significant growth potential matching the company's expansion objective.

Okay, then what are the target figures for this magazine in terms of volume and profits?

The company's is aiming to increase its bottom line by 10%. Having a current value of 100 Crore.

I would like to know about the competition and the difficulty level of catching the market.

Through our survey we found that we have scope of capturing 10% market share from existing target population.

Ok, can you please brief me about the distribution channels and pricing or subscription model for the magazine.

Sure, the company offers a subscription model of Rs 150 per copy for a year and for retail shops Rs 200 per copy. You can assume a 40-60 split between the two.

Ok, I Think I have enough information. Now I would like to take you through the structure for proceeding ahead.

Go ahead.

Sure , firstly I would like to calculate the market size of magazine readers in India then taking the market share captured by company.Then multiplying it by the price of magazine will give us net income. Should I proceed with the calculations ?

Sure, Go Ahead

Now considering the Indian population of 140 crore and target audience ranging from age 13-19 i.e. 20% of the population. Now out of this 20% i.e. 28 crore 30% live in urban areas and 70% live in rural areas. Assuming that magazines are sold in urban area only. This give us target audience of approx. 8.5 crore. But all people are not fond of reading magazines in this digital era we can assume 30% of population is magazine reader. Now taking 5% of the magazine reading population we have 26 lakh customers. Should I proceed further ?

Sure.

SInce you mentioned that split 40-60 , multiplying 150 with 40% of 26 lakh gives us 16 crore. Similarly for retail shops we can have 31 crore. Making it a total of 47 Crore.

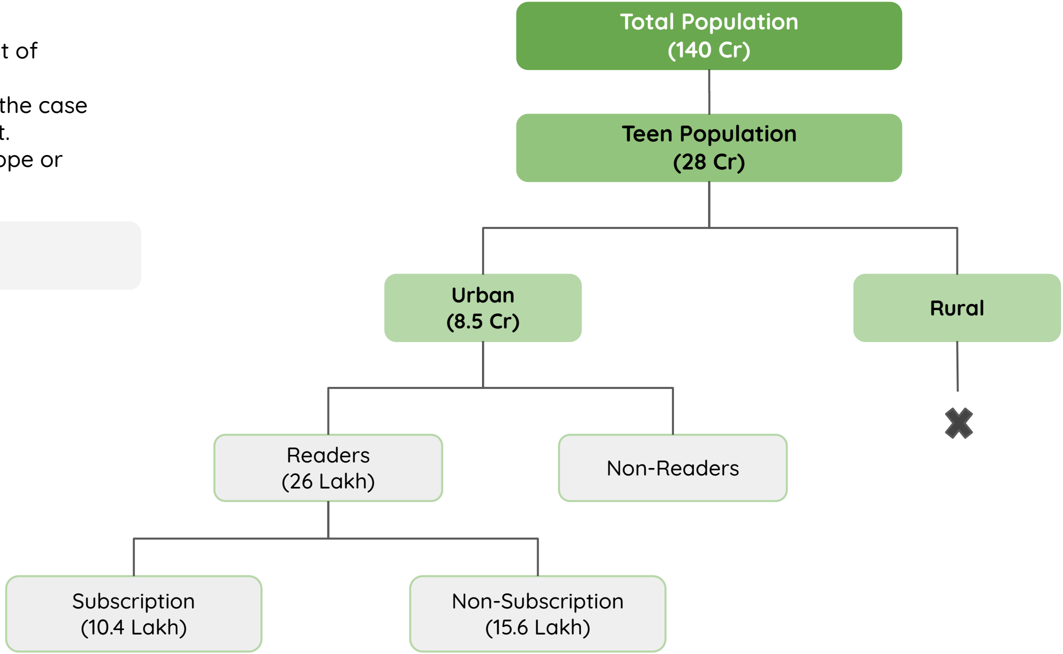
That sound good to me. Do you have any other points that publishers should consider ?

Yes , the publishers can consider some issues :-

1. Given the revenues for the magazine , we should check if the cost of magazine allow us to reach 10 Crore target.
2. There may be scope of cannibalizing existing products. If that is the case we should not dilute the existing high performing product market.

Should I look into the cost side of product and scope for economies of scope or utilizing synergies for production process.

No, that would be all. Thank You



Total Sale= 150 x 10.4 + 200 x 15.6
= 16 + 31 Crores
= 47 Crores

Olive Oil

The client is an Olive Oil producer based in Italy. They dominate the southern European market with around 95% market share. You have to provide recommendations for them to enter new markets.

I would like to reiterate the problem just to be on the same page. Our client is an olive oil producer who are strong in the southern European market. They want to enter new markets and we need to figure out which ones. Is that correct?

Absolutely. You can proceed.

Before delving deeper into the case, I would like to ask a few clarifying questions. What is the product mix of our client? Is olive oil their only source of revenue?

Sure. The client generates revenue through two types of olive oil: edible olive oil and beauty olive oil.

Alright. How does the client manufacture and distribute its products?

The client independently manufacture their products and distribute it through external distributors.

Why does the client want to expand to new markets? Is there any specific reason?

The client wants to enter new markets because their dominant position in Southern European market has led to saturation. They want to grow their revenue by entering new markets.

Okay sounds good. Is the client considering to enter any particular markets? Or can we restrict our case to European markets as a whole?

Currently four regions are being considered: northern, western, central and eastern Europe.

Okay sure. Is there a timeframe when the client wishes to enter these markets?

The client will explore international markets also, but as a future prospect. Currently, you need to figure out which market is to be targeted first.

Okay sure. I want to understand the demand for our product categories in the regions that are being considered. Also, can you tell me whether the market is growing for these products in these regions?

Definitely. You can refer to the table provided to form your recommendation.

		North	*West*	*East*	*Central*
Growth	Edible	-4%	0%	2%	15%
	Beauty	12%	5%	25%	50%
Demand	Edible	80%	80%	10%	95%
	Beauty	20%	20%	90%	5%

That's great. Can you also provide information regarding the current market players in each of these regions?

How would it help you in your recommendation?

Olive Oil

It would help me understand market domination by other competitors. This information will come in handy while deciding which markets have a good scope for new entrants such as our client.

Okay sure, here you go.

		North	*West*	*East*	*Central*
Current Market	Edible	85% 3 players	85% 2 players	25% 2 players	35% 3 players
	Beauty	15% 10 players	15% fragmented	75% fragmented	65% fragmented

Sure. Thank you for providing this information. According to the data, I will initially focus on edible olive oil. The market in north Europe has good demand but its growth is declining. Moreover, three players dominate the market. Hence, it is not a viable option. Can I proceed with this logic?

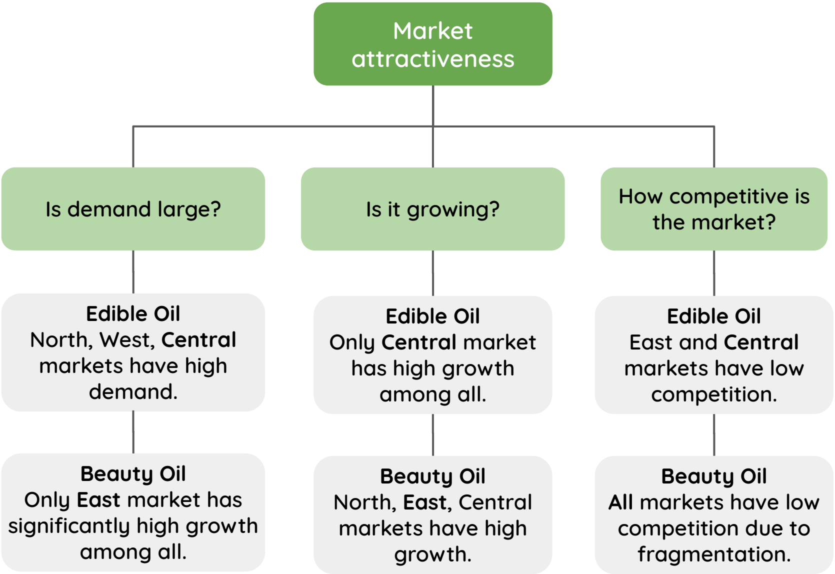
Absolutely. You can proceed.

Through similar reasoning, west European market can also be skipped considering growth has stagnated. Even east European market has low demand and growth. Hence, the most viable option for edible oil is the central European market due to its high demand, high growth and low market domination.

Sure. You can now analyse the market for beauty olive oil.

We can expand to the Eastern market for beauty olive oil considering its high demand and growth. Also, there is no dominating player due to fragmentation.

That sounds incredible. Thank you for your recommendations.



A diagnostic laboratory chain based in USA wishes to enter the Indian market. You have to help them with this decision and advise them on various aspects of this move.

Okay, I would like to know more about the kind of operations this lab undertakes, if it is a general-purpose or an R&D laboratory.

They specialise in general testing of patient's blood and urine samples for disease as wide-ranging as cancer, AIDS, diabetes, and hepatitis. So, you can refer to it as being fairly general in operations.

Okay, so is the lab using advanced technology or primitive methods?

They use the latest ones, the very cutting edge.

Understood, may I know their mode of operations, as in, do they advertise independently or are they prescribed to patients in hospitals by doctors?

These labs are fairly high end, so the main source of revenues in USA is the hospitals which recommends patients to us.

Okay, to analyse the market entry prospects, first I have to look at the nature of health services in India and compare it with that of USA. I would need to examine and compare the demographics, purchasing power and health infrastructure of the two markets.

That sounds right, all I want from your side is the enumeration of the various factors you will consider while analyzing.

I would look into the demographic segmentation and since the lab operates at the advanced end of the spectrum, it would be catering to the urban middle and upper class only. After this, I will try and understand the patient referral process from hospitals and clinics and what the tie-up opportunities are with these.

Okay, what are the other things?

I will also look into the prevailing competition from the point of view of the nature of the services that they offer. This will help us in figuring out the competitive advantage our client enjoys by ways of test. We have to also figure out whether they want to establish as high volume based on low margins or low volume based on high margins, to implement the major revenue structure.

That sounds good. What other factors should the company consider while launching services in India?

I think tie ups with big hospitals will need to be explored as the first step towards gaining a foothold in the diagnostic laboratory industry. As most of the government and existing private healthcare infrastructure has been overwhelmed by the COVID crisis, this has opened the floodgates for high quality foreign private services. They must aggressively advertise their technology-enabled, digital-driven services to the segment that does not mind paying a premium for superior doorstep services.

What about the rural areas?

Indian Rural areas has huge scope for such labs, but affordability will remain a major issue as largely the rural and lower class population is dependent on government facilities, even though they are meagre and substandard. Secondly, the nature of health service that is in demand will vary as compared to that in USA. Typically, the nature of the health ailments people face will be significantly different and for general testing, the people will prefer the cheaper alternatives. So the best course of action would be to target specialised tests for the upper class segment and start with tie-ups with well reputed multi-speciality hospital chains that would yield an initial footprint in the segment.

Alright. That makes sense. Let us wrap it up here. Thank you

C #11 Laboratory Chain

New Market Entry

Market Attractiveness	Is demand large & growing	Yes, current Indian laboratory chains are fairly adequate in urban areas and close to crisis in rural, not enough to cater to demands
	Is competition reactive to price.	Not as such, patients obey the doctor's prescriptions
	Market Demographics	Private sector mainly controls laboratory chains. Govt labs are only present in hospital campuses.
Market Barrier	Existing competition	Laboratory chains are controlled by a limited number of players
	Regulations	Stricter regulations during licensing but no regular auditing leading to malpractices.
Feasibility	Investment Pay Off	High initial investment is required in the Health sector but once supply chains get in place it starts returning to the Indian market
	Distribution Channels	Mapping could be done ensuring dedicated channels near hospital clusters. Later on, a franchise system could be incorporated.

My friend's cousin is an investment banker. She wants to open a Beauty Parlour in Delhi. We want to assist her in making a decision based on the financial viability. How should we go about this?

So, your friend wants to open a Beauty Parlour in Delhi, and I have to help her in making this decision. Right?

That's Correct!

May I know her objective behind opening a Beauty Parlour? Does she want to make profits or she wants to capture the market?

That's an excellent question! She wants to make a decent profit, and avoid any losses.

How is she planning to finance the Beauty Parlour?

As previously stated, her cousin is an Investment Banker, and she intends to use his funds. So, what factors should I consider when evaluating economic sense?

We'd have to look at the revenue and costs that the beauty parlour could generate.

Okay, go ahead.

To understand the revenue and cost streams, we must first determine who our target customers would be.

Consider the target customers to be rich and upper middle class people.

Is it reasonable to assume that we will open the beauty parlour in a posh neighbourhood, such as South Delhi, because our target customers are upper middle and rich class?

Yes. You can assume that.

Now, I need one clarification. Is the beauty parlour unisex or catering to only men or only women?

It is unisex. Can you help me come up with the revenue streams for both?

Haircuts, shaving, and other services would be the major revenue streams for men. Haircuts for women would be infrequent. Waxing is one of the most popular services, followed by beauty services such as manicures, pedicures, and massages.

Okay. Can you give me a number for each?

For men, I will assume haircut to be priced at Rs. 800. In Delhi, we have Affinity Salons which charge around Rs. 500 for a haircut. In an area like South Delhi, the price of a haircut in a premium beauty parlour should be around Rs. 800. I believe shaving would be priced at Rs. 200, and other services also Rs. 200.

For women, since a haircut involves more effort, I would assume the price to be Rs. 1500, washing be Rs. 300, and other services to be Rs. 300. Do you want me to do a market sizing in order to estimate the revenues?

Go ahead.

Okay. Let's say the beauty parlour would be open for 10 hours/day for 7 days in a week. Let's consider that the beauty parlour has a capacity to serve 5 customers in parallel. Can I assume that for a premium beauty parlour, average time taken for every customer (both male and female) is-1 hour?

Fair enough!

Then, the total customers that could be served in a month would be: 1 customer/hour x 10 working hours/day x 30 days/month x 5 customers in parallel = 1500 customers/month.

Isn't 1500 too much? Do you believe your beauty parlour would be occupied all day?

You're right. We must account for the variability of customer arrival. For simplicity's sake, can I assume that the average occupancy rate is 50%?

Sounds reasonable

With that assumption, it would give us 750 customers/month. I would now divide the customers between men and women.

Assume that only men visit the beauty parlour for getting a haircut during a month.

In that case, since a haircut is priced at Rs. 800, this would give a monthly revenue of 6,00,000/month.

Okay, What all components would be included in the costs?

I would divide the cost into two categories: fixed costs and variable costs. Shop rent, employee salary expenses, and so on are examples of fixed costs. Variable costs include the cost of materials such as shaving cream, waxing cream, oil, blades, and so on.

What are the main challenges you see with opening a beauty parlour?

One significant challenge that I see is competition from other well-established and reputable salons and beauty parlours.

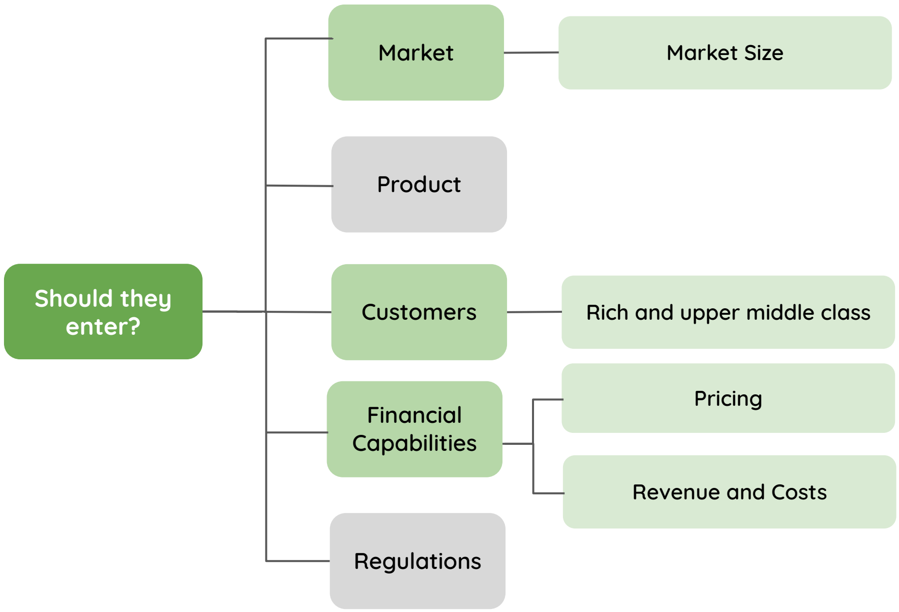
How do you plan to tackle it?

Initially, to build credibility, the beauty parlour could offer a free service to the influencers to spread the word in the market. We would also require to spend on marketing and advertising on various channels. Also, considering it is a premium service, I would look for ways to differentiate the offerings and gain customer loyalty.

How would you differentiate and gain customer loyalty?

This could be done, by providing home beauty parlour services by collaborating with aggregator services like Urban Company. This would help us reach more customers initially. For the existing customers, the beauty parlour could offer a coupon on every visit that can be redeemed for discount during next visit. This would ensure that the customers stick and remain loyal to our beauty parlour services.

Great! This should be it. Thank You.



Employee Benefit Fund

Our client runs a large mutual fund. An employee benefit fund has been recently introduced, wherein every employee makes contributions from INR 5k-20k. The savings are tax free till the retirement of the employee. The client wants to know how big the opportunity is and the various challenges they probably would face.

Can you please throw some light on the size as well as the working of the mutual funds industry.

Definitely. These companies calls for investments either from individuals or from different funds of various firms, like employee benefit. These are reinvested in creation and management of portfolios in lieu of management fees.The investors benefit from this as well, since the risk in these mutual funds are minimised.

How big is this industry? And do we have other players as well.

There are an extremely large number of players in the market and the worth of this could be running into trillions..

Do we have any idea about the approximate amount of money entering the industry each year.

In accordance with our analysis, in the previous year, the addition of new assets to the mutual fund industry was around INR 5 trillion.

Shall we consider that employee benefit fund is primarily meant for the organised sector and not for the unorganised one.

Yes, the employee benefit fund shall be valid solely for employee of the organised sector.

I shall now be estimating the number of people working in the organised sector, as they shall be paying for the premium amount for this policy.Is it safe to assume that individuals between the ages 18 and 60 are eligible to be employed. And shall I proceed further assuming the life expectancy to be 70 years in India.

Yes, you can proceed further with your assumptions.

I shall segment the population of 135 crore into rural and urban with a ratio of 7:3. I shall also assume rural employment sector is not the organised sector. So, the number of people in the urban sector is around 40.5 crore. Since, the working population comprises 60% of the total, with 70% of which employed in the organised sector, for urban. We get the labour force to be 150 million. Assuming a 10% unemployment rate, the required population turns out to be 135 million.

Alright. Please proceed further.

Shall I take divisions in the INR 5k-20k bracket, or shall I assume an average.

You may proceed further with the average of the contributions to be INR 12k.

So, as per my calculations the increase in the assets would be INR 1.62 trillion. This is quite substantial in comparison to the total worth being INR 5 trillion.

Employee Benefit Fund

Great, this definitely seems like good opportunity considering the substantial addition in assets. KIndly proceed further, exploring whether this is profitable as well.

Since, you mentioned our client charges a management fees, do we have any information on the fees charged and the expenses incurred by the client.

The client charges 1% management fee on the assets which are there under management. You may take up the administrative expenses to be INR 90 annually, while other operating expenses add to around 10 bp.

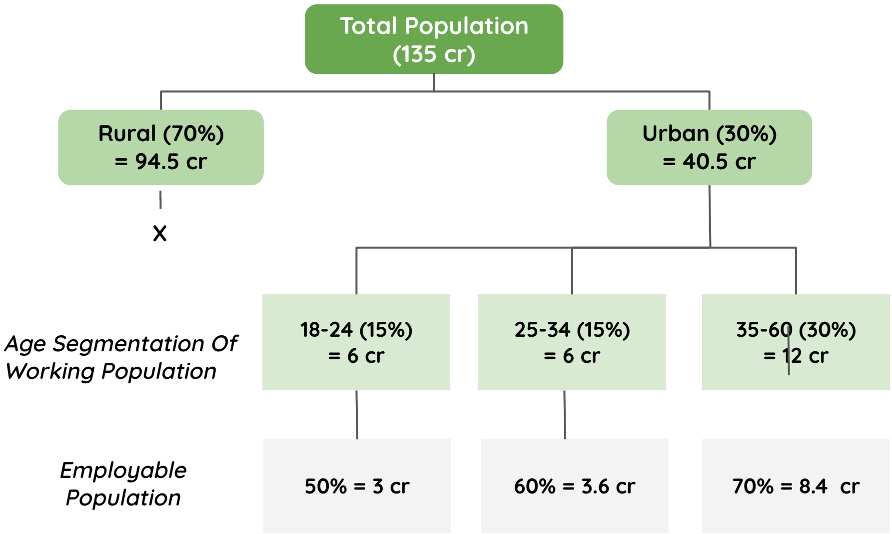
So. on every 12k invested, we make 120 in revenues while our expenses shoot upto 100 per customer. The profit is coming out to be 20 for every investment.

Would you think this to be a substantial opportunity?

Yes, I think of it as a good opportunity. According to our calculations, the total profit comes out to be around 270 cr which is a very good number. Also the profit margins for the customers is not very high currently, so if we look at the growth rate and future earnings of the employees then it will a profitable business.

Can you provide some recommendations for improving profits in long run?

I believe this could turn out to be a profitable business. We can also provide additional services in order to increase customer convenience, loyalty and retention. Apart from that the costs involved in switching could be increased leading to an increase in customer retention.



Total employable population in India = 15 cr

Required Population = 15 * 0.9 = 13.5 cr

Anti Freezing Chemical

Our client is a pharmaceutical major in and is looking to enter the anti freezing chemical market in India. They need us to estimate the market size and how they should enter the market.

To make sure I have understood the context clearly, our client is a pharmaceutical company, and they are considering expansion into the anti freezing chemical market in India. I am required to estimate the market's size, analyse the current market players and decide whether to enter or not enter the market.

That's correct!

My first thought is centered around the reasons as to why they want to enter the market.

They think that there is a large opportunity in the market since the market share is quite fragmented, however they are not sure how big the opportunity size is.

Okay. I would first like to take a shot at estimating the market size and then think of the business opportunity. I would like a moment please to jolt down.

Sure, go ahead and let me know what information you need.

Do we need to only consider the automobile anti freezing chemical market or the industrial application as well?

You may consider the automobile (car) segment for the purpose of the case.

Sure, thank you. I would like to attempt a guesstimate at estimating the market size. Considering the population of India to be 135 crore and the urban is to rural divide to be 30:70. The average household size is 4.9. Cars are affordable for the middle and upper class families which constitute 30% and 10% of the population respectively. Considering 1.5 cars per average household size middle class family and 3 cars per average household size richer class family.
We can now estimate the total number of cars currently in India.

Number of cars in India = [(135 * 0.3) / 4.9] * 0.3 * 1.5 + [(135 * 0.3) / 4.9] * 0.1 * 3
= 6.2 crore

Since the requirement for antifreeze chemical would only be in the regions witnessing snowfall and with low temperatures during the winter months. We can assume the northern and north eastern mountain states of India to be the primary target regions which constitute about 4% of the population.

Number of cars in north and north eastern mountain states = 6.2 * 0.04 **= 0.25 Cr**

What is the average time before a replacement for the antifreeze chemical is required and what is the average quantity of the chemical needed per replacement? Also what is the average cost per litre of the chemical?

You may consider the need for a replacement after every 3 years, and the average quantity per replacement to be 500ml. The average cost for antifreeze chemical in India is Rs. 40 per litre

Sure, thank you. Assuming the requirement for antifreeze chemical arises mostly during the winter months from November to April i.e. 6 months and it has to be replaced after every 3 years, and 500ml is the average quantity required per replacement, we can estimate the market size for antifreeze chemical in India.

Requirement for antifreeze chemical = 0.25 * 500 * 180 / 10 **= 2.25 crore litres**
The overall industry size for the automobile (car) segment would be = 2.25 * 40
= Rs. 90 crore

Anti Freezing Chemical

Are you sure the automobile segment size is this big?

Yes sir, I think I am right.

Great! Whis is your understanding of whether our client should enter the market or not?

Sir before I come to that, I would like to understand what is the current distribution of the market like? Who are the major players in the market and what is the current and forecasted industry growth rate?

The industry has 6-7 major players currently, but none of them have an individual market share of more than 10%. There is not much happening in the industry otherwise, the margins have saturated

Okay. that is interesting! I am trying to understand that given a fragmented market, our client might want to consolidate its position and emerge as the market leader. However, I am bound to think otherwise given the industry has reached its maturity.

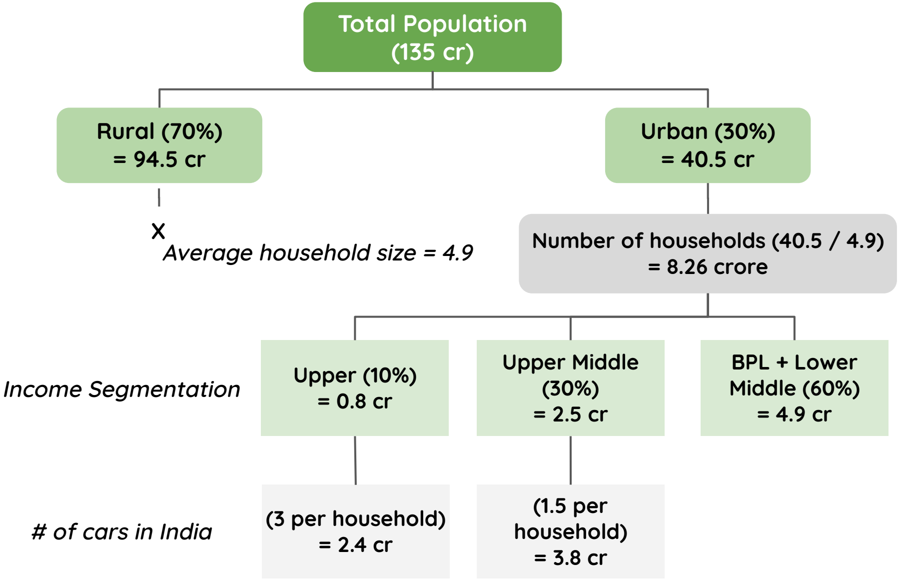
Yes, that is absolutely correct. How do you plan to go about it now?

Sir, I am trying to analyse as to why the company wants to enter the industry given its saturation and competition. Is the product being offered by them any different?

There you go, our client has come up with a patented solution in an independent research, which requires the usage of a lesser amount of the chemical and this would bring down the overall cost for the same. So, given the scenario, how do you suggest the client should enter the market?

The client could either enter independently, and acquire small sized players in the market, or do a joint venture with one of the major competitors. I would suggest given the inexperience of the client of the Industry and the strong R&D support, it would be better if the client goes into a Joint Venture with a couple of the existing local players using their B2B local distribution network and building strong product capabilities through its R&D focus.

Great! That will be all, thank you!



Total number of cars in India = (2.4 + 3.8) = 6.2 cr

CASES

PRICING

Framework: Pricing

The objective, in these cases, is to develop a method for pricing any product.
One has to identify the kind of pricing problem in the case, consider the objective of the company, understand the product features and market environment. Finally, one should conduct market sizing analysis where required and apply a relevant method to price the product.
The crucial part is to justify the pricing recommendation not just with numbers but also with industry awareness.

Cost-Based Pricing

- Considers all activities involved in the production process:
  - Research & Development
  - Manufacturing Costs
  - Distribution/Logistics Costs
  - Service Costs
- Determine the break-even point and payback period.
- Add the margin on the top of total costs.
- Define the lower/minimum limit of pricing.

Competitive Pricing

- Occurs when a similar product exists in the market.
- Requires information about the industry structure (Consolidated/Concentrated).
- Supply/Demand trade-off analysis.
- If a competitor product is unavailable, price the product according to the NPV of a substitute.

Value-Based Pricing

- Identify the customers' willingness to pay.
- Select and focus on the target customer segment.
- Factor in the opportunity cost of no product.
- Supply/Demand trade-off analysis.
- Define the upper/maximum limit of pricing.

Revised Pricing

- Used in rare cases where an old product needs to be priced.
- Consider the utility of existing product w.r.t a new product
- Factor in the depreciation or salvage value need
- Estimate the additional revenue considering the supply/demand trade-off.

Framework: Pricing

PROTIPS

1. Many pricing cases are coupled with **market size estimation** problems. Ensure to clarify the need to calculate the market size before pricing the product.

2. **NEVER give a single price point – Always offer a price range.** Mentioning the *price sensitivity* metrics in calculations would fetch brownie points.

3. Visualise the **competitive reaction** in the market and incorporate it for a comprehensive solution.

4. Formulate your **price range** as *lower than Value Based Pricing* and *above Cost Based Pricing* calculations due to customer switching costs, market fluctuations etc.

5. **Innovative solutions** like product bundling and discount schemes will fetch bonus points as well.

Approach	Evaluation Factors
Identify the Problem(s)	*Bidding* *Auction* *Straightforward Pricing*
Understand the Product	*Singular Product or Product Line* *Commodity or Differentiated Product* *Luxury or Necessity* *Patent and Technological Expertise* *Imitability & Substitutability*
Understand the Company	*New Entrant or Existing Player* *Growth Objective - Market Share or Top Line* *Willingness to play Price Wars*
Structure the Solution	*Consider policies & regulations* *Calculate lower & upper limits of pricing* *Choose a feasible range* *Offer a rational explanation*

Cardiac Drug

A leading multinational pharmaceutical corporation has developed a drug that would make any patient free of risk from cardiac arrests. You must determine the appropriate price for the drug.

I would like to know more about the client company, their core competencies and their goals from this new drug.

The company is known for its technical expertise and R&D capabilities in the pharma sector. They want to maximize revenues from the drug, with a minimum of 40% profit margins from market sale of the drug.

Alright. Could you tell me more about the type of the drug, how it's consumed, the frequency and duration? Are there any side effects to consuming the drug?

The drug is a capsule that has to be had thrice a month, for 4 years in order to fully mitigate the risk of cardiac arrests. And no, there aren't any observable side effects so far.

Great! May I know the R&D and manufacturing cost per unit and the associated distribution cost in transferring the drug to retailers?

You can take the combined R&D and manufacturing cost to be ₹8000 per unit. The distribution cost is ₹2,00,000 per box and each box contains 100 capsules.

Okay, so combining the manufacturing and distribution cost, each unit will cost ₹8,000 + ₹2,00,000/100= ₹10,000. Given the client's objective of 40% margin, the drug should be priced with a lower limit of ₹8,000 + ₹3,200 ~ ₹11,000 upwards to retail partner. The ceiling price would depend on the competitors, substitutes, regulations. Are there other competitors who currently sell equivalents or substitutes of the drug, and have they been awarded a patent?

No, there are no current equivalent competitors, and yes, they have a patent. As far as substitutes are concerned, you can consider pacemaker to be one.

- Okay, I'd like to estimate the amount a patient spends currently for prevention of cardiac risks, to determine the consumer affordability. For that I'd like to know the average market price and average life of a pacemaker?

You may assume it costs around ₹7,00,000 and has to be replaced once every 5 years.

So, assuming that an average heart patient starts using a pacemaker by the time they turn 50, and their average lifespan to be 80 years, that amounts to six cycles of pacemaker usage. Therefore, the total cost of mitigating a cardiac risk with the next best alternative is ₹7,00,000 x 30/5 = ₹42,00,000.

Whereas, with the new pill, thrice a month amounts to 48 times a year. For four years, this amounts to 192 pills., let's round it to 200 pills. And with ₹11,000 for each drug, that amounts to ₹20L. For a customer to value the pills as much as a pacemaker, the ceiling theoretically sums upto ₹42,00,000/200 = ₹21,000

Is that the final price?

No, considering that this is a radical invention and much superior to all substitutes, I will go ahead with a value based pricing. Since willingness of the customers to pay a higher price for the drug would be significant, a ceiling price can be estimated. Assuming they are willing to pay 20% more, the upper limit of the price is 1.2 x ₹21,000 = ₹25,200
Considering the client's objective and the market scenario, the client should price the drug in the range of ₹21,000 to ₹25,200.

Those are reasonable figues. Thank you!

EverLight Tubelights

The company, EverLight, has invented a new tube light that never fuses. It could function for more than 500 years and would never fluctuate. The CEO of the company has asked you to price this. What would you tell him?

Alright, before we figure out the appropriate price for this new tube light, I would like to ask a few questions about our company, about this product, about the potential customers and the competition. What is the objective of the company regarding this product?

To gain as much profit as possible.

Okay, so since this is a new invention, has our company or any other company introduced something similar in the past? If so, do they have a patent?

No this is a completely new product that we have developed. We have a patent pending, and no one else is trying anything similar.

Do we have information on if the product has any disadvantages? Does it use more energy or is it harmful to the customers in any way?

No, as per our trials so far, it is a safe product, ready for the market. It also doesn't use more energy than regular tubelights.

I see. I was thinking we could either price the product comparable with the competition or base it on the costs that we have incurred. Also, we can look at the price the consumers might be willing to pay. Since you have mentioned there is no competition I shall rule that out and focus on what costs we have incurred for this. May I know the R&D expense and the costs of a regular tube light manufactured by your company?

We've spent ₹ 120 Cr. on development of this tube light and each piece costs ₹ 400 to manufacture. For a conventional tube light, it costs us ₹ 4 to manufacture, we sell it to the distributor for ₹ 10, the distributor sells to retail outlets for ₹ 14 and he sells it to the customer for *₹ 20.*

Ok so if the manufacturing cost is 100 times, then accordingly the customer will have to pay ₹ 2,000 for this tube light. On the upside, this is a tube light that will never burn out, so say the people will buy it once for the next fifty years and are essentially paying for 100 tube lights that they would have used in the next 50 years or so, considering a tube light is changed twice in a year.

So? Will the customers agree?

I do not think so. This is improbable since customers would not shell out a huge amount for a tube light and the longevity benefits are difficult to be perceived by the average customer. However we have spent ₹ 120 Cr. on the project and it is a very pertinent invention. Let us broaden the scope for the product a little and think more about the customer. I think various city civil bodies are our customers too as they need to provide lighting for public places. There may be around 5000 tube lights at various public places like stations, hospitals etc.

Ok, what are you proposing?

These buildings incur a significant, additional expense of changing of the tube lights and on staff for maintenance. If we target this product to them, they will save heavily on these additional costs and will not have to worry about maintenance at all. Estimating that these tube lights are available for ₹ 15 per piece to the govt. Officials who buy in bulk, upon which they need to pay labour charges of ₹ 5 each to workers needed to change the tube light, it still costs them ₹ 1 lakh+ for 5000 tube lights, twice a year. We can have a mark-up over this and sell each tube light at ₹ 3,000 each.

They would recover the amount in less than five years and we can use this price based costing to get a very good profit.
However, I'd like to highlight that the new tubelight will be cannibalizing the sales of the conventional tube lights of the company, so it is important to charge a premium on this product as for every sale of the new tube light, we are losing the sales for 100 regular tube lights. Hence, I've chosen a higher price point

Good point , thank you

What are your recommendations?

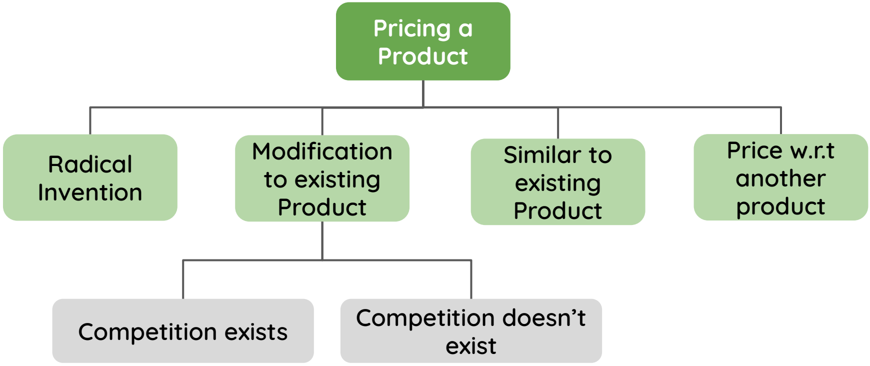
Since the manufacturing cost is 100 times that of a conventional tube light, customers would ideally have to pay ₹ 400 for us to recoup costs. This is improbable since customers would not shell out a huge amount for a tube light and the longevity benefits are difficult to be perceived by the average customer.

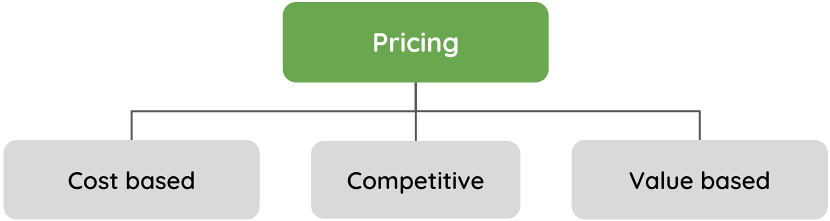
However, this innovation can be useful for public places such as streets, stations, hospitals etc. where additional staff is required for maintenance. A long-life tube light in such areas would be extremely useful as maintenance costs would be largely reduced. Hence, such customers should be targeted for this product.

Any closing comments from you?

This case is for pricing of radical invention. The student should be able to approximately determine the price based on manufacturing and R&D costs. In this case, the price estimate leads us to carefully consider the customer segments, their willingness to pay for the product and carefully tailor the segment to achieve the company objective.

Okay, Thank You.





SpaceX Space Tour

SpaceX has developed a rocket-boosted shuttle for India that can take passengers on a space tour upto 300 KM from Earth's surface, while the take-off and landing are like a conventional airplane. SpaceX wants to take passengers on a six-hour tour. Determine what price they should charge for a ticket in the Indian market.

I'm assuming they want to build a profitable business to break-even first. Any other objectives that I should be aware of?

No.

Are there any competitors and do we have a patent on this technology?

There are currently no competitors and we have a patent which should safeguard us for around 3 years.

Okay, brilliant! How many passengers can the plane accommodate and how many trips per day are we planning?

100 passengers and 2 trips.

So, I will first try to estimate the market size which would majorly depend on the price. For example, if we charge ₹ 10000 the market size will be almost the whole of India, but if we charge ₹ 1 Cr. the market will be much smaller. Before I figure out the price, I will also try to estimate how much it will cost us per passenger. How long is the life of the plane?

The life of the shuttle is around 20 years and the costs can be allocated uniformly. What do you think the major costs are?

I think the major costs would be cost of R&D (including on-board and administrative costs), maintenance, fuel, airport fees, insurance and marketing.

Okay, 3000 Cr have been spent on developing the shuttle and the total operational costs incurred per year would be ~₹ 200 Cr, excluding the fuel costs, which I would like you to estimate. You may assume that the rocket fuel which costs ₹ 50,000 per kilolitre and consumes 10 litres of fuel per km.

Alright, since the highest point of the space tour is around 300 km from the surface of the earth, so I'll take a rough estimate of 600 km as the total length of the trip. So 10 litre per km times 600 km equals 6000 litres, times ₹ 50 per litre is ₹ 3 Lakh. per trip. Since there would be 2 trips daily, taking 320 working days, ~ ₹ 200 Cr per year is what the fuel costs would round up as. So the total costs are ₹ 400 Cr. Further, assuming 640 flights per year with 100 passengers per flight, the cost per passenger would be ~₹ 62,000.

Ok, so how much would you charge per trip?

In this case I could follow a cost-based pricing and hence ₹ 1 lakh would probably be a good margin. However, this is a special invention offering customers a travel close to fantasy, hence, I think value-based pricing would be a more prudent approach.

Fair enough, how would you proceed with that method?

I would like to figure out the market for ticket price of ₹ 4 lakhs. Realistically, only the top ~2% of 130 crore Indians would be able to afford such an expensive trip. So that is approximately 2 crore people. Out of these, only ~20% would be interested i.e. ~40 Lakh customers Also, we can carry around 64,000 customers a year. Hence for 3 years, before competitors set in, there's potential to maximise revenue with ample demand and fixed costs, which is a great profit opportunity for such an innovative offering.

What are your recommendations?

The cost-based approach indicates that charging ~₹ 1.6 lakh per trip will give us enough profit margin. However, this is a radical innovation and hence the perceived value for the customer can be much higher than what the cost suggests. Hence a value-based approach with a price of ₹ 4 lakh can help us gain a good potential of this innovation until competitors arrive and there needs to be a reduction in prices.

Any closing comments from you?

Since this is a radical invention, estimating the costs is critical to arrive at a lowest price threshold. However, the nature of the benefits offered to the customer also need to be taken into consideration and in this case it allows us to gain a tremendously high profit margin. Of course, the passenger carrying capacity and timing of competition arrival are critical to keep in mind.

Okay, Thank You.

CASES

GROWTH & STRATEGY

Framework: Growth Strategy

In this subset of Profitability Cases, the company aims for XX% YoY growth in Z years, and you are expected to brainstorm ideas that align with the growth target and then validate them by identifying pillars to support it.

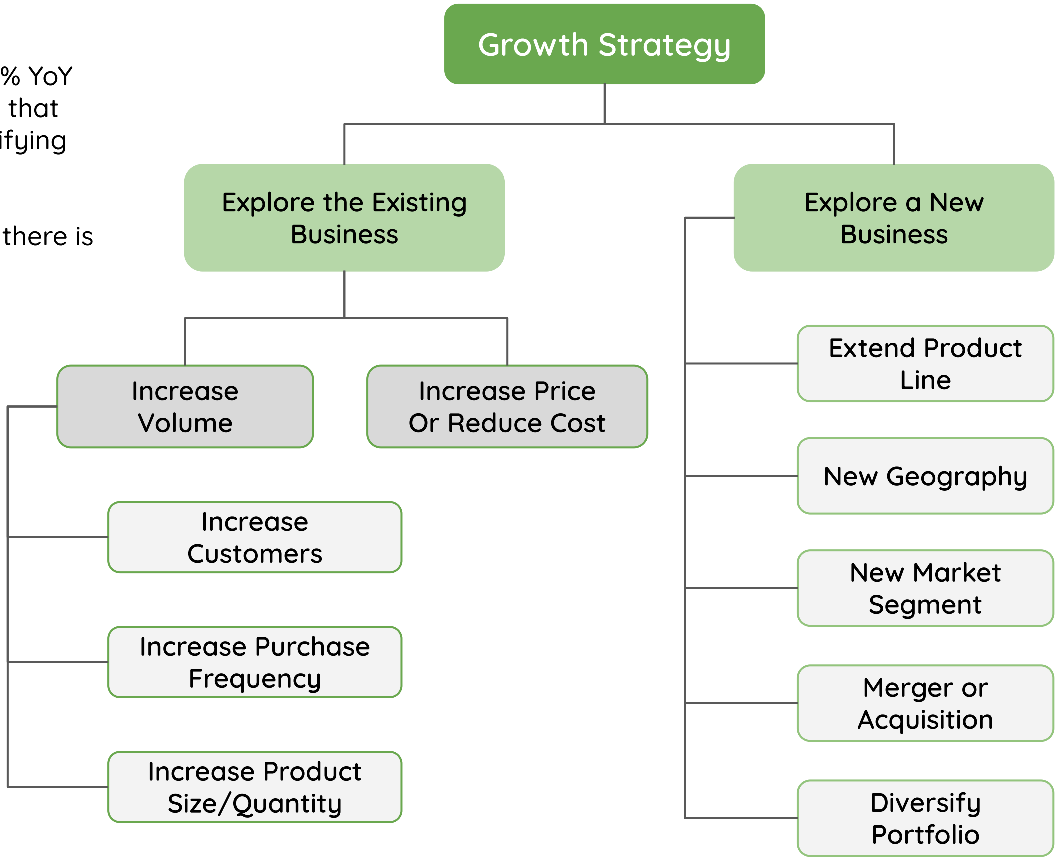
A company can grow either in its existing business (provided there is scope), or explore new business opportunities.

Protips

Always clarify the objective(s), especially growth % and time period.
There is a significant creativity component attached to the brainstorming, so keep options open while checking operational feasibility.

Key Questions

- Expected growth of the industry?
  Are we targeting growth more/less/at par with that?
- Existing capacity in the plants/services to meet the increased volume or investments required?
- Price elasticity in the market?
- Effect of substitutes and complements?



Auditing Firm

Client is a partner in a leading auditing firm. He wants to understand how they can potentially grow the revenue at a larger rate.

Okay. Where is the firm based? What are the type of clients they generally work with?

The firm is based in India, with offices in Bangalore, Delhi and Mumbai. They deal with clients across Southeast Asia, in the oil and gas, consumer and financial services industry.

What is the growth in revenue that we are targeting? Does the partner have any number in mind?

No, he just wants to explore options right now.

Okay. Can I assume that the only revenue stream is is from the auditing services that we provide to the clients?

Yes.

Should I consider only the revenue or the cost as well?

Consider only the revenue.

Okay. I would first look at organic growth opportunities, and then move on to inorganic growth.
I would break down the total revenue into the average revenue per client and the number of clients, and look at each of these separately.

Go ahead

The average revenue per client would be a function of the number of projects that we have and the price that we charge for it. I don't think we would be willing to charge a higher price, so I'll look at how we can increase the number of projects we have. Is that a fair assumption?

Yes, that is fair. Go ahead.

To increase the number of projects, we can look at how we can increase the number of modules per client. The firm can pitch different modules while working on one module, and suggest their recommendations in other areas as well. They can improve their services by over delivering, which can increase the customer loyalty and will help in increasing modules from existing clients. We can also look at bundling, where we can offer discounts if the client hires us for multiple modules.

Good, now we can go to the number of clients.

To increase the number of clients, we can diversify it into different geographies. We can approach clients in countries we haven't worked in yet. We can also look at taking projects in more sectors.

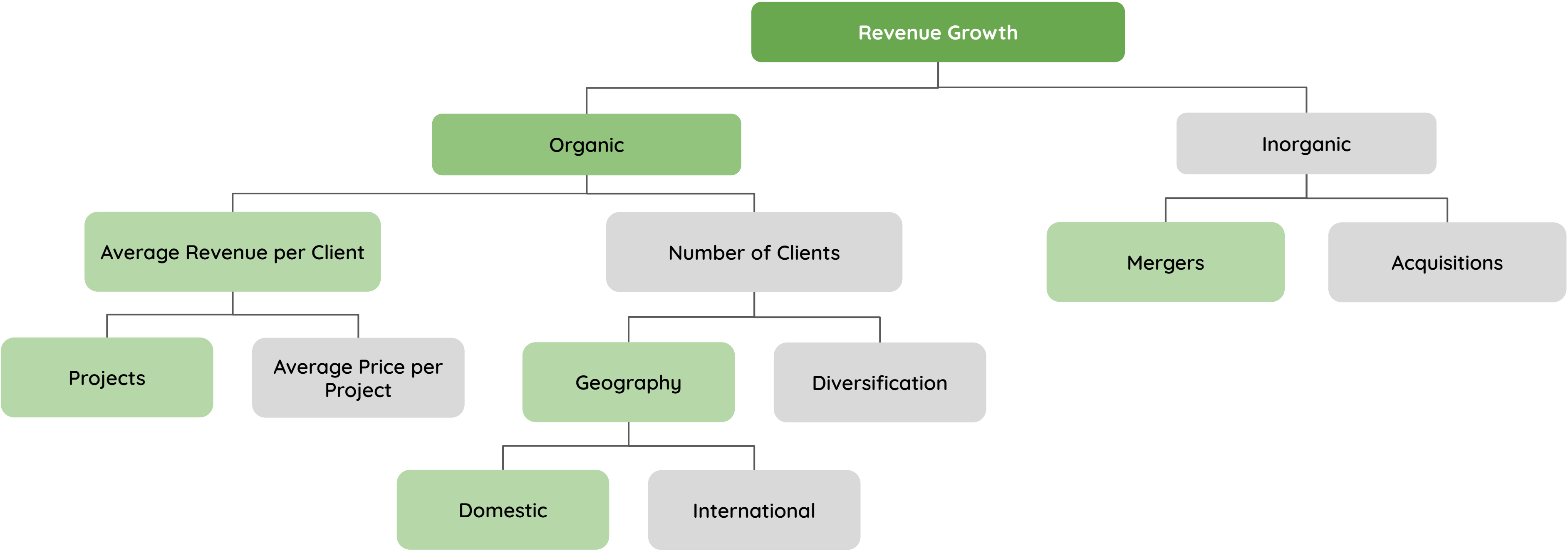
Okay. Anything else you want to add?

Yes. We can also look into expansion if the client is open to new investment. They can increase their employee base so that they can cater to more clients and projects, and also expand office space. They can also increase on-shore projects and promote work from home policies. In case of inorganic growth, the client can also look into acquiring small auditing firms or merging with other auditing firms. Although this is rare, that can be looked into.

That would be all. Thanks.

Auditing Firm

SUMMARY: The client was a partner at a leading auditing firm, and wanted to understand how they can increase their revenue faster. They can pitch different modules while working on one module, and suggest their recommendations in other areas. They can improve their services by over delivering, which can increase the customer loyalty and and will help in increasing modules from existing clients. They can also look at bundling, and offer discounts if the client hires them for multiple modules. To increase the no of clients, we can diversify into different geographies. We can approach clients in countries we haven't worked in yet. We can also look at taking projects in more sectors.



Sports Apparel & Equipment

The client is a sports apparel and equipment company in India, and is facing a decline in its market share. The market is dominated by big, international players and the client wants you to frame a revival strategy.

I would like to confirm the objective before I proceed. The client is seeking suggestions to revive its business. Is there any other objective? And do we have a target envisioned?

Yes and the company wants a 5% increase in their market share by the next FY.

Okay, I would like to understand the client a little more. Specifically, could you elaborate a little on their product portfolio and the price points to get a sense of the consumer segment they deal with?

Alright. They manufacture high quality sportswear products for people who are at the lower end of the spectrum when it comes to cost.

That helps. You mentioned about the presence of big players in the market, can I get more information as to who are these big players? Also, have sales figures dropped along with the market share?

Sure. So the market is dominated by players like Adidas and Nike. These companies, due to an array of local franchises across the country, global supply chains and a strong historic brand positioning have gained a solid presence in sportswear market in India. The actual sales have not dropped, but rather stagnated.

So, I understand that the company is growing less as compared to the industry. The reason behind this could be a lack of proper marketing strategy because of which the company struggles to reach out to a larger audience.

In order to improve this aspect, I would split the whole strategy into two main divisions: refining the existing business model and exploring new opportunities. Within existing business, I'll look at options to increase the no. of customers or increasing revenue per customer and within new business I will be considering M&A, entering a new geographical market or introducing a new product.

Sounds good. Can you please elaborate on what exactly can be done to improve the existing business?

Sure. So we can increase the revenue per customer by tweaking the price depending on price elasticity or by increasing the buying frequency of the customer. Buying frequency can be increased by reducing the shelf life of our products, however given that our products are known for their quality and low cost, this is not a good idea. We can strengthening its position to acquire more customers. This could be done through effective marketing and advertising. Here, I am assuming that we are not trying to redesign the product because of the significant costs involved. The company can target government schools/colleges for supplying sports kits through an exclusive partnership and provide them with bulk discounts or can introduce loyalty programs for the same students.

Okay. Tell me some ideas that will help the company in effective marketing and strengthening their position?

The budding sports enthusiasts in schools/colleges and youth involved in various sports activities look for affordable and good quality products and hence fall within our target audience. The company can sign rising sports players at an early stage for brand endorsement deals and share the stories about their journey through advertisements to inspire sports enthusiasts. The company can leverage social media platforms to reach out to the young, budding talent in the country. It can also collaborate with one of the leading gym chains in India (cure.fit, Anytime Fitness etc.) and associate with fitness influencers to maximise the reach into the core segment. Another option is to launch their own marathon for female runners that will get the attention of media outlets and materialize social support as well.

Alright. How else can the client maximise their foothold against the international brands?

The biggest USP of the company while competing against the likes of Nike & Adidas is its ‘Made-in-India’ tag. They can seek benefits and rebates from the government to promote the recent *‘Aatmanirbhar’* initiative by keeping the entire supply chain within the country and providing jobs to locals. The same can be advertised to capitalize on public sentiment and drive more customers towards them.

How do we go forward with capturing new customer segments?

People with higher spending capacity often take into consideration the brand value of a product. It would be difficult to capture this segment under the same brand name, so we can launch a new, exclusive product line under a different name at a premium price point to be sold in limited stores only. This brand will be showcased as a high-end alternative catering to the upper class segment looking for product innovations and variants.

That may be a good idea but what exactly do you mean by a new product?

The company can venture into the product segment related to the up-and-coming sports (Zumba, Yoga, Aerobics etc.). It can focus on improving the design of the existing market products, introducing an element of innovation and enabling high customization at a premium. Acquiring fitness or health startups that are currently leveraging technology can help the company diversify its product range and bring in the much needed boost to the market share.

Sounds good, Is there any other alternative in which the company can benefit from exploring new business.

The company can carry out extensive market research to understand the evolving markets. It can target these markets by increasing its distribution channels and enabling a chain of local franchises in these new cities.

Alright. That makes sense. Let us wrap it up here. Thank you.

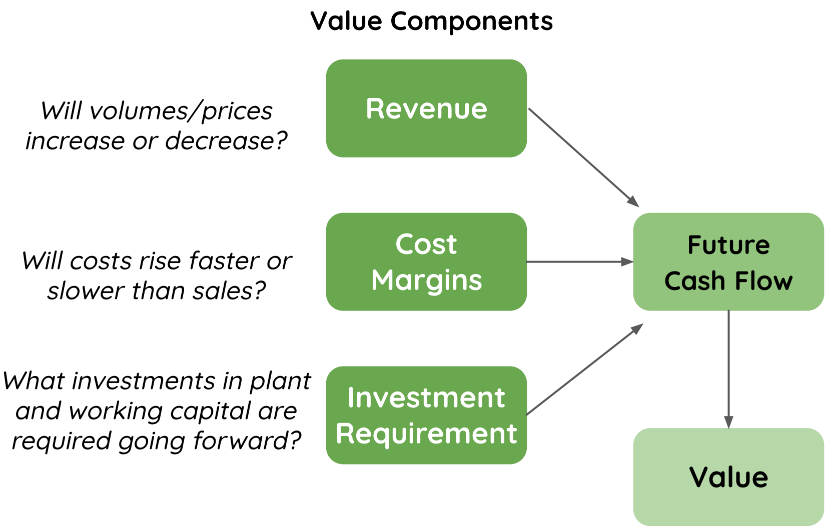
CASES

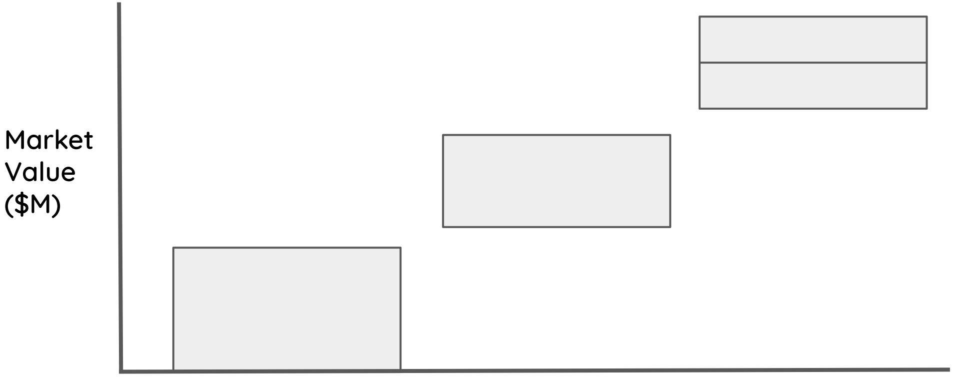
PRIVATE EQUITY

Framework: Mergers & Acquisition

The ultimate objective of a target and market assessment is to determine the value of the target.

In order to understand value, we need to understand the three primary value components..





	Baseline Value	Standalone Upside	Synergies
Definition	Value of existing earning stream with: -No Growth -No Changes in margins	Value of possible improvements from: -Market Growth -Share Gain -Margin Improvement	Value of benefits from relationships between target company and acquirer.
Issues	How secure is the business?	What upsides exist for the standalone business?	What added value does the acquisition bring?

Framework: Mergers & Acquisition

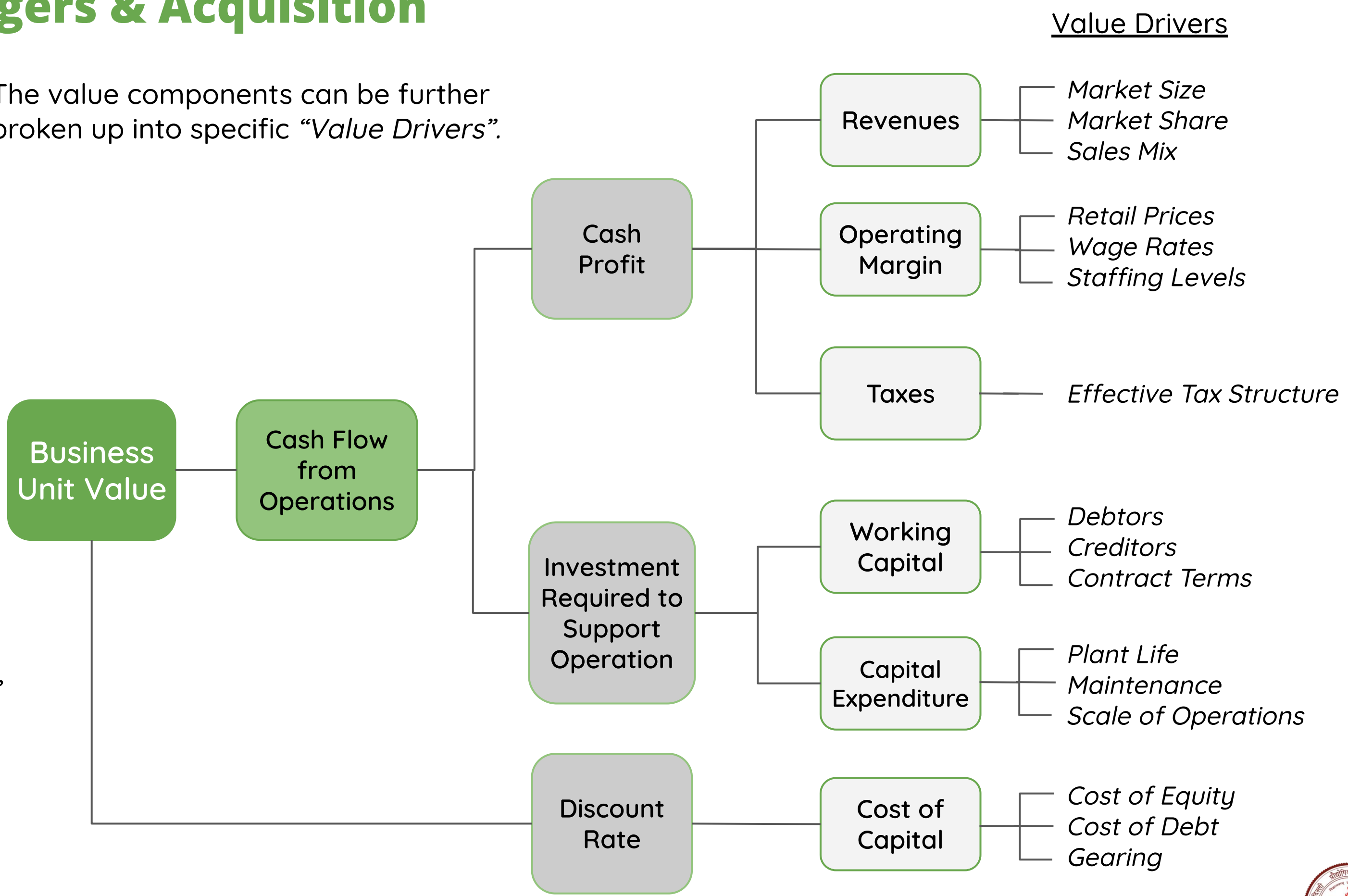
The value components can be further broken up into specific *"Value Drivers"*.

Risk Analysis

• Cultural Fit
Cultures of the merging entities should be coherent and complementary.

• Strategic Fit
The long-term strategies should be in sync for both entities.

• Organizational Fit
Degree of similarity in org structures. Matrix, functional, divisional etc.
Management overlap and talent



Framework: Private Equity Investment

These cases discuss investment into a business for financial gain .Whenever asked to evaluate an investment it is essential to understand the objective first.

- *Why? – Objective of investment: direct return from investment, incentives in the current business, synergies, etc.*
- *What? – What is the target rate of return from investment*
- *When? – Timeline of investment*

Once the expectation setting is done, the rationale to make an investment can be evaluated by these factors:
Only if the industry is attractive, target has high potential and expected return from the investment (from all sources) exceeds target ROI, investment is justified.

PE Firm Characteristics	Industry Attractiveness	Target Specifics	Sources of Returns
Fund Size	*Market Size/Growth*	*Business Model*	*Operational Efficiency*
Fund Style	*Profitability*	*Valuation*	*Unlock Potential*
Portfolio	*Barriers to Entry*	*Management Capability*	*Use Leverage*
IRR	*Competition*	*Product Services*	
Exit Period	*Customers*	*Willingness to Sell*	
	Costs & Risks	*Market Share & Growth*	
	Suppliers	*Suppliers*	

A crude oil manufacturer is considering carving out 30 factories. Determine the attractiveness of the proposition and provide a recommendation on whether a PE firm should consider to acquire these assets.

Just to confirm, our client is a Private Equity firm looking to invest into a crude oil manufacturer who is looking to divest 30 of their manufacturing plants, is that correct?

Yes that's correct.

Okay. Can you give me some background on the firm and it's objectives for evaluating this acquisition?

The firm has a background in natural resource exploration and currently has a short term view of the acquisition and expects to maximize profits

Okay. Could you please provide more information about the manufacturer and their role in the crude oil value chain?

The client is based out of the US and deals in upstream production of crude oil (though the client owns downstream operations as well)

Understood. What is the current industry scenario?

The current industry demand is on an upward trajectory and competitors have been thriving as well.

Can you tell more about the profitability scenario of the crude oil sector?

For the upstream side of the value chain, it is highly dependent on technological prowess since most of the value of crude is not realised till it is extracted.

What are factors which might affect the industry outlook in the long term?

Pressure from policymakers and stricter compliance to conserve geological resources are expected to act as a significant deterrent to the industry

Apart from the above factors, what are the other factories that determine profitability for the industry?

Efficiency is a significant factor in profitability since there's upper ceilings on sell price. In addition, purchasing and external contractors also determine a significant portion of profits

Got it. Are the efficiency losses from existing human capital or from modernised equipment?

The organization seems to suffer from a highly layered structure which causes unnecessary overheads and inadequate utilization of employees.

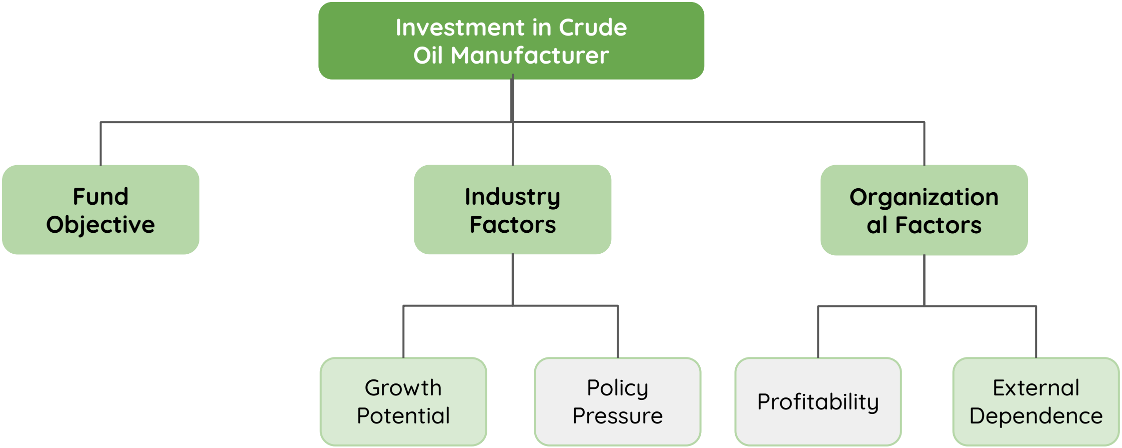
Understood. Do external contractors also play a role in this efficiency crisis?

Yes. Lack of direct engagement with suppliers and minimal redundancy have caused significant downtimes in the past.

Understood. For the final recommendation I will consider the following factors:

- Growth: Benchmark current oil production rates by competitor production plants and compare growth
- External Redundancy: Defining percentage of revenue dependent on non-redundant suppliers
- Policy Impact: Quantifying short term policy impact on in terms of asset upgradation or compliance liability

Thanks. I think we can end this here.



CASES

PRODUCT BASED

Amazon - Reduction in Cart Additions

The client, Amazon is an AI, cloud based E-Commerce platform with its presence around the globe. They are facing a decline of 15% in cart additions over the past 3 days. You are asked to diagnose the problem.

So, our client has web version as well as the app version, do we have to consider both? What do we mean by cart additions? Did the analytics team verify the analytical tools on which they quantify the metrics?

Just consider the Android mobile app. Cart addition is when a user clicks on an item and it appears in their shopping cart. Yes, the analytics team verified the tools.

I would like to consider four major factors: competitors, demographics, macroeconomic factors, and internal changes. After that I'd like to map the user journey on the amazon app to identify bugs/glitch, if any

Sounds good, go ahead.

Considering competitors, has there been market entry of any new competitor in the past few days or any new major announcement. Eg, - Flipkart's BIg Billion Sale, etc.

We have limited knowledge of any such occurrence, and we aren't seeing anything particular on social media. There could be a possibility of customized campaigns.

Now considering demographics, has there been an equitable location wise decline, or is it a case of any age-gender wise segmented decline?

No, there's a uniform demographic-wise decline. There has not been any unequal location based or age-gender wise decline. So, no correlation for the same.

Alright, on the macro-economic front, has there been any recent news which might cause change in user behavior, or could it be seasonality impact?

No, there seems nothing of such to be the cause.

Fair enough. Moving onto internal factors. has Amazon recently launched any targeted campaign (Age, Gender, Interest based) which might have shifted the users away from the mobile app? Or has there been any major updates in the mobile app?

No such campaigns. However, yes there has been a major app update.

Okay, alright. So could you kindly elaborate more about the update. Has there been any significant UI/UX change to cart additions feature button ?

Checkout now has an even more seamless process which provides swifter checkout for the users. This was initiated with an effort to improve the conversion rate on checkout.

Okay, has there been any cases where the customers have reported any bugs/glitches in the click to add option or during check outs?

Not many different kinds of reports, but yes there have been bugs reported during paying and checking out process.

Okay, so I think that could be a probable reason for reduced cart additions for the past 3 days. The client can ask its development team to fix the issue as soon as possible.

Sure, great job!

C #21 Amazon - Reduction in Cart Additions

Factors

- **Competitors**
  - Product Launch — ✖
  - New Announcement — ✖
- **Demographics**
  - Age/Gender targeting — ✖
- **Macro-Economic**
  - News — ✖
  - Seasonality Impact — ✖
- **Internal Changes**
  - Internal campaigns — ✖
  - App Updates
    - Bugs Reported

User Journey on Amazon App

App open → Item Viewed → Add item to Shopping Cart → **Checkout** → **Payment**

Users reported bugs during the checkout and payment process in their journey on the app, which has happened because of a **recent app update** due to which there has seen a decline in cart additions as a cause of chain effect.

Facebook Homescreen

Your client is Facebook and they want you to design Facebook's own home screen.

So our client is Facebook and they want me to build a home screen of their own for mobile device users through which they can access Facebook content directly, correct?

Correct. Please go ahead.

Has Facebook launched a home screen before?

Yes, Facebook launched Facebook Home in 2013 but it was not successful as it prioritized displaying Facebook content when users' main pain point was to access their favorite apps.

Can you please elaborate the features and shortcomings of Facebook Home?

Facebook Home covered the device's screen with a feed of Facebook photos, notifications, and posts. It was a beautiful interface, but it missed the crucial fact that users wanted direct access to their favorite apps and widgets. Facebook Home did have an app launcher that provided access to apps, but it took too many clicks to access them.

So why are they trying it again?

If Facebook can design a home screen that appeals to the majority of users, I think we can increase engagement across many of its properties.

So the primary goal is to increase Engagement across various Facebook properties?

Yes.

Are there any particular geographies that Facebook is targeting for this new feature?

US and Europe represent a large percentage of Facebook's users and hence those areas are being targeted.

Shall I take a minute to gather my thoughts and then proceed with the analysis ?

Yes, please.

Okay, so Facebook Home failed because of the lack of quick access to the apps that users may need in order to do their specific tasks. Therefore, it's essential to prioritise the users' needs. Most users do not want to deal with customizations. In the end, the main reason they are using apps is to get something done. And, the faster they can access the app they need, the faster they will get a job done. Therefore, I think the goal of the new Facebook home screen feature should be to help users get things done faster. In the context of the home screen, this can mean finding or opening an app faster, or something else.

Firstly, I will analyse the customer journey towards discovering and using apps. Next I will identify the user's needs, list some features to address those needs, and then brainstorm some solutions. Further, I will consider ways to include features within the home screen to get users back into Facebook properties. If users find the new home screen valuable, they will start using it frequently. And, as users are exposed to other Facebook properties within the home screen, they will likely use them more frequently. How does this sound?

Sounds good, please proceed.

Let's walk through a typical user journey to find and use apps to get things done.

1. A user presses the home button and sees the apps screen.
2. The user looks for a particular app.
3. The user cannot visually identify the app and resorts to search using a text-based search or voice search.
4. The user finds the app icon and touches it to open.
5. The user may want to switch to another app.

Does that sound appropriate?

Yes. Please go ahead.

I think this workflow can be improved to help users get things done faster. Here are some ideas for features:

1. Present the most appropriate app icons to the user when needed.
2. Open the most appropriate app automatically.
3. A quicker way of switching from app to app.

To decide on which feature to prioritize for development, I will now compare them against four attributes:

1. How important is the user's pain point the feature solves,
2. How innovative is the feature relative to competitors' features,
3. How much effort will it take to build,
4. And how risky it is to build the feature.

To numerically prioritize the features, I will use a scoring system, from 1 to 5, to rate a feature across 4 attributes. I will add the positive attributes and subtract the negative ones. The positive attributes are: "importance of pain point" and how "innovative" is the feature. And, the negative attributes are: "effort" to build the feature and "risk" level.

That sounds good, can you elaborate about the attributes you've chosen?.

Sure, so the "open the most appropriate apps" feature addresses a key pain point towards achieving the goal of helping users get things done faster. For innovation, I think the "open the most appropriate apps" feature is the most innovative of the three. For Effort, I think the "open the most appropriate apps" feature takes more effort than the other features. For risk, I think the "open the most appropriate apps" feature is the riskiest to develop because it chooses which apps to open on behalf of the user.

That sounds pretty elaborated. Thank you.

Feature	Importance of Pain Point (+)	Innovative (+)	Effort (-)	Risk (-)	Total
Present Most Appropriate App Icons	4	1	4	3	= 5 - 7 = - 2
Open Most Appropriate Apps	5	4	5	5	= 9 - 10 = -1
Switch to another App	3	1	4	3	= 4 - 7 = -3

INDUSTRY REPORTS

Quick Facts

- India is the **3rd** largest market in terms of aircraft passengers
- **464** Airports and airstrips in India of which **125** are controlled by AAI.
- Industry Size: **$72 Billion**
- Jobs Produced: **87.7 Million (Direct & Indirect)**
- Passenger traffic in FY 2020: **341.05 Million** with a CAGR of 11.13% during FY16-20
- Domestic Passenger Volume: **150mn** (highest globally)

Value Chain

Inbound Logistics
Aircraft lease, aviation fuel, route selection, planning of facilities

Operations
Tickets, gate counters, luggage handling

Outbound Logistics
Baggage, Crago and Flight connection, hotel bookings

Marketing
Coupons and discounts, advertising, special programs for travel agents

Current Trends

- Covid recovery in air passenger volume
- Privatisation of airports (6 privatised and another 6 in the pipeline to be privatised).
- Modernisation of non-metro projects by AAI.

Future Outlook

- Air connectivity boost in Tier-2,3 cities under UDAN & AERA scheme (Target development of 100 airports by 2024)
- Boosting **air connectivity to smaller cities** and northeastern states - new airport projects.
- Expected to cater to **520 mn passengers by 2037**

Cost Drivers

Major drivers are : Fuel cost, employee cost, aircraft depreciation and facility infrastructure (leasing, maintenance).

Business Models

Indigo Airlines(Low Cost Carrier Model)
- Focus on cost effectiveness & accessibility with market share of 48.4%

Vistara Airlines(Full Service Carrier Model)
- Focus on customer experience and luxury with market share of 5.8%

KPIs

- Operating Time
- Seat Load Factor
- Available Seat Miles (ASM)
- On Time Performance (OTP)

Revenue Drivers

- Passenger services and inflight sales.
- Freight services.
- Tours and packages.

E-Commerce Industry

Quick Facts

- **Fashion and apparel, and groceries** are the top-performing sectors in the e-commerce sector in India.
- New government policies now encourage **100% foreign direct investment in B2B e-commerce**.
- Ecommerce user penetration will be **39.7% in 2020** and is expected to hit **61.8% by 2024.**
- The largest segment of Indian eCommerce market for 2020 will be **Electronics & Media** with an expected market value of **USD 14,745 million in 2020.**

Business Models

Flipkart Model

- Controls end to end value chain
- High margin business (20-25%)
- Scale of Operation gives low costs

EBay Model

- Less Capital Intensive
- Ease of Management
- Large Marketplace

Value Chain

Sourcing
B2B, Co-Sourcing, Modular production, Mass customisation

Midstream
Demand planning, Storage, Warehousing, Inventory management

Marketing
Targeted marketing,Dynamic content, End-to-end ROI

Sales
Customer retention, Payment methodology, Unified experience

Delivery
Logistical planning, Omnichannel fulfillment

KPIs

- CAC (Customer Acquisition Cost)
- CR (Conversion Rate)
- AOV (Average Order Value)
- CLV (Customer Lifetime Value)

Current Trends

- Spiking demand due to COVID-19 movement restrictions.
- Increased price sensitivity.
- Product discoverability & In-house brands growing
- Incr. in integrated payment solutions (Buy Now, Pay Later)

Future Outlook

- Projected to exceed ~300-350 million shoppers, propelling the online Gross Merchandise Value (GMV) to US$ 100-120 billion by 2025.
- Expected to surpass the US to become the second largest E-commerce market in the world by 2034.

Cost Drivers

- Marketing (B2B, B2C)
- Logistics to drive faster, more efficient purchases
- Technology Investment for efficiency, customer satisfaction

Revenue Drivers

- Inventory Management for sellers/affiliates
- Government Policies (Udaan, Digital/Startup India)
- Digital Payments (Customer-side EMIs etc)
- Diversified Portfolio (Groceries, Suggestion Algorithms, Electronics)

EdTech Industry

Quick Facts

- The current market size is about **$700-800 million.**
- The EdTech industry is expected to grow to **$30 billion** in size over the next 10 years.
- 2020 saw India's edtech startups raise over **$2.2 billion** in **funding**
- The market leader (BYJU's) has over **70 million users** and **4.7 million subscribers**.
- India's education sector is poised to grow from the current **$117 billion** to **$225 billion** by **FY25**.

Value Chain

Research & Development
(Structure, Curriculum, Testing)

Business Development & Marketing
(Sales, Promotions)

After Sales Service
(Technical Support, Doubt Clearing)

Current Trends

- Market Consolidation with acquisitions of niche platforms
- Coalescence of Brick & Mortar and Technology driven players
- New companies catering to B2B & corporate upskilling need

Future Outlook

- Rapid expansion into rural areas & with increased internet access to villages.
- Challenges to retain online learners once physical teaching resumes in schools.

Cost Drivers

- Primary cost drivers are R&D, Technical IP & Content costs.
- Educators & sales can also be heavy cost drivers .

Business Models

BYJU's (Freemium Model)

- Most of the revenue is incurred from the subscription amount which is paid by the students.

Coursera (Subscription Model)

- Users have the option to pay monthly or yearly for membership to get unlimited access to over 3,000 courses and projects.

KPIs

- **DAU** and **MAU** (daily and monthly active users)
- **% of users acquired** to total potential users in that segment
- **ARPU** as % of user's disposable income
- **Lifetime Value (LTV)** = avg customer sale value x avg customer lifespan

Revenue Drivers

- Customer Platform Subscriptions
- Individual Course Sales
- Video and Content Platforms' Ad Revenue
- Corporate Licenses and B2B Sales

Quick Facts

- Fast moving consumer goods **(FMCG)** is the fourth largest sector in the Indian economy.
- There are three main segments in the sector: **Food and Beverages**, which accounts for **19%** of the sector; **Healthcare**, which accounts for **31%**; **Household and Personal Care**, which accounts for the remaining **50%** share.
- **Urban segment ~55%** is the largest contributor to the revenue generated.
- In recent years, the FMCG market has grown at a faster pace in rural India compared to urban India.

Value Chain

R&D
New Products
Improvements in existing products

Procurement
Raw material sourcing
Storage

Manufacturing
Production & Packaging
Quality assurance

Distribution
Channels like Distributor, Retailer, E-commerce & Warehouses

Sales & Marketing
Advertising & Promotions
Customer feedback

Current Trends

- Retail market is estimated to reach **1.1 trillion** in India, by 2020 as compared to **US$ 840 billion** in the year 2017.
- The rural market contributes around **36% of the total FMCG industry spendings**; The FMCG industry has gained up to **10.6% of growth recovery in rural areas**

Future Outlook

- Rural FMCG market in India is expected to grow at a quicker pace than urban sector.
- The market is expected to grow to **US $220 billion by 2025** from **US $23.6 billion in FY18**; **CAGR 23.15%** till 2021.

Cost Drivers

- Raw Material & Processing Cost
- Distribution
- Promotion

Business Models

Hindustan Unilever Limited (HUL)
- Leading Indian FMCG company
- Implements Reverse Innovation- Creating new products,adapting it to fit to the emerging market

Nestle
- Strategic focus on higher-growth, higher-margin segments

KPIs

- **Out of Stock Rate:** Ability to meet customer demand
- **Delivered On-Time and In-Full:** Monitor the delivery performance
- **Average Time to Sell:** Time required to sell products
- **Sold products within Freshness Date:** Check on expiration dates

Revenue Drivers

- Home Care
- Beauty & Personal Care
- Foods & Refreshments
- Leased Assets
- E-commerce

Pharmaceutical Industry

Quick Facts

- **Largest supplier of generic drugs globally** (3rd by total volume and 14th by value for industry wide)
- Value of Pharma Exports: I**NR 20.15Bn**
- Revenue from Indian Pharmacies has increased from **INR 78.8 Bn in 2015 to INR 145.6 Bn in 2020**
- Retail OTC Market expected to grow from **USD 1.9 Bn in 2020 to 2.25 Bn in 2025**
- Vitamins & Supplements Market expected to grow from **USD 1.45 Bn in 2020 to USD 1.75 Bn in 2025**

Value Chain

Research & Discovery
Collaborative Research, Open Innovation, Derivation

Clinical Studies/Trials
Checks on Safety and Efficacy

Regulatory Approval
Regional Compliance
Risk Ascertainment

Manufacturing & Logistics
Quality Assurance, Distribution

B2B Sales & Marketing
Pricing, Expiration Buyback Schemes

Current Trends

- Significant increase in spend of turnover in R&D
- Newer drug discovery and delivery focus (mRNA, NanoTech Delivery)

Future Outlook

- Expected CAGR at 15.67% for the Indian Market (2021-30)
- Emerging sectors such as Precision Medicine indicate an increase in the patient's involvement

Cost Drivers

- R&D and regulatory pressure for access
- Maintenance of Quality KPIs to prevent complaints/legal action

Business Models

OTC Driven (Himalaya)
Less R&D, Focus on volume and covering niche categories
R&D Driven (Novartis)
High focus on R&D causes disproportionate cost barriers for competitors and allows for value-based pricing

KPIs

- Average cost for each drug developed
- TAKT Time (time required to manufacture product wrt demand)
- Schedule Drugs as a percentage of total sales
- Quality (Rejected Batches, Lawsuits/Complaints)

Revenue Drivers

- Patent Licensing and Royalties
- Growth in 'Over The Counter' drug sales
- Rise in Chronic Ailments
- Increasing average population age

Quick Facts

- India is **second largest telecom market** (1.18 Billion subscriber base- as of 2021).
- Gross revenue of the telecom sector stood at **INR 68,228 crore (US$ 9.35 billion)** in the third quarter of FY 21.
- **2nd largest market of internet users**
- **Tele-density of 83.4%** as of Q2 FY21
- Wireless segment penetration : 98.3% as of Q2 FY21
- **Average wireless data usage** per subscriber : **11 GB per month** in FY20 (TRAI)

Value Chain

Telecom Infrastructure
Network equipments, towers, regulatory

Network Service Provider
Provides network services to users

Content Provider
Content Provider to users

Marketing
B2B, B2C Marketing

Current Trends

- Rural market expansion
- Mobile and Internet Banking
- Tariffs reduction
- Investment in optical fibres technology.

Future Outlook

- Cashless transactions and digitalisation
- The 5G and Internet of things Impact
- Enabling medtech companies to collect and analyze information wirelessly

Cost Drivers

- **Capital Expenditure-** cost of spectrum, govt licence fee, etc
- **Operational and Maintenance Costs-** Rentals, Salaries, Marketing, Advertisements, etc.

Business Models

Jio Telecom (Vertical Integration)
- India's largest telecom operator with market share of 35.43% with focus on vertical integration (Broadband/IoT).

Airtel (Enterprise Solutions)
- 2nd largest provider of mobile/broadband services focusing on leased line & enterprise

KPIs

- Average Revenue per user
- Subscription acquisition cost
- Network operating cost
- Minutes of usage
- Average Revenue per minute

Revenue Drivers

- **B2B Industries**
  Manufacturing, Financial, Retail and other industries
- **Rise in Mobile phone penetration**
- **Internet User Base**

Hospitality and Tourism Industry

Quick Facts

- Ranked **6th** in Travel & Tourism Competitiveness
- Number of hotels in India in 2019: **1.62mn**
- Provides **8%** of total employment in India
- Industry Size: **6.8%** of GDP
- Jobs Produced: **39mn**
- Decrease of **67.2%** in tourists to India in 2020.

Value Chain

Inbound Logistics
Contracts with Suppliers

Operations
Production of Goods and Services

Outbound Logistics
Distribution of Services and final goods

Marketing and Sales
Developing Interest among customers

Current Trends

- Covid-19 has affected the industry severely with minimal tourist flow.
- Usage of technology to reduce contact points & drive efficiency

Future Outlook

- The situation should improve once a majority of the population is vaccinated
- Mass utilisation of up and coming technologies such as Voice Assistant based controls and Robots

Cost Drivers

- Infrastructure procurement and construction
- Maintenance and Utilities
- Insurance and Taxes

Business Models

JW Marriott

- Its four primary value propositions: accessibility, customization, cost reduction, and brand/status
- Its main resources are its human resources, who include its customer support, foodservice, and housekeeping staff

KPIs

- Average Daily Revenue
- Utilization Rate
- Average Revenue per order/stay/entry
- Market Penetration Index

Revenue Drivers

- Food and Beverage deliveries
- Taxis, Self-Drive car rentals, Railway and Flight tickets
- Entry tickets for Museums and other places of attraction

Oil and Gas Industry

Quick Facts

- World's **third-largest** energy consumer globally. **Second-largest** refiner in Asia
- In 2020, India's oil refining capacity stood at **259.3 MMT.**
- **30.5 MMT** crude oil produced **in 2020**
- Consumption grew by **4.5%** to **213.69** MMT during FY20 from **213.22 MMT** in FY19.
- Around 70% of the demands are fed by the imports of oil and natural gas

Value Chain

Upstream
Exploration
Development
Production

Midstream
Transportation
Storage

Downstream
Refining
Marketing
Distribution

Current Trends

- FDI in up stream and private sector refining projects
- Market is moderately consolidated with few key players
- Several initiatives by the Government, by launching new policies and allocation of funds in the 2021 budget

Future Outlook

- To become world's largest LPG residential market by 2030
- Major upcoming projects of expansion and construction
- CAGR of over 2.64% during the 2020 – 2025 forecast period

Cost Drivers

- Investment has been the main driving force
- Rapid expansion and exponential rise in demand

Business Models

Oil And Natural Gas (Only Public Company)
- Biggest name in crude oil & natural gas
- Supplies 75% of the domestic demand

India Oil (Commercial Segment Leader)
- Largest share in revenue production
- Extensive refining, distribution, R&D and marketing infrastructure.

KPIs

- Reserve Life and Reserve replacement ratio
- Gathering and Transportation Expenses
- Taxation and Production cost
- Natural Gas Equivalent (Cfe)
- Cash Flow

Revenue Drivers

- Capital Management and Productivity
- Public and Private Contracts
- Government policies and regulations
- Expansion and Maintenance Cost

IT Industry

Quick Facts

- The IT industry accounted for **8% of India's GDP in 2020.**
- The IT & BPM industry's revenue is estimated at **US$ 194 billion** in FY21, an increase of **2.3% YoY**.
- The computer software and hardware sector in India attracted cumulative foreign direct investment (FDI) inflows worth **US$ 71.05 billion** between April 2000 and March 2021

Value Chain

Operations Setup
Infrastructure setup, employee hiring, training

Customer acquisition
Acquiring new clients and drive the IT portfolio to business innovation

Product/Service Delivery
Product development, quality testing, bugs fixation and final deployment

After Service
IT support and customer service

Current Trends

- Artificial Intelligence(AI)/Machine Learning
- Cloud Computing
- Blockchain
- Internet of Things (IoT)

Future Outlook

- Estimated size of industry will grow to **US$ 350** bn by 2025.
- IT spends in India are expected to reach **US$ 93 billion** in 2021 and further **US$ 98.5 billion** in 2022.
- The domestic revenue of the IT industry is estimated at **US$ 45 billion.**

Cost Drivers

- Data Warehousing
- Data Handling
- Software Maintenance

Business Models

Tata Consultancy Services

- Global leader in IT services, consulting & business solutions
- Services include application development, business process outsourcing, enterprise software, payment processing.

KPIs

- Addressable Market Size
- Average Handle Time
- Customer Acquisition Cost
- IT ROI

Revenue Drivers

- Pricing of the product
- Promotion
- Range of products
- Upgrades

Banking, Financial Service and Insurance

Quick Facts

- Asset of public sector banks stood at **Rs. 107.83 lakh crore (US$ 1.52 trillion)** in FY20
- According to the RBI, bank credit stood at **Rs. 108.41 trillion (US$ 1.45 trillion)** and bank deposits stood at **Rs. 152.98 trillion (US$ 2.05 trillion)**, as of June 25, 2021.
- During FY16-FY20, deposits grew at a CAGR of **13.93%** and reached **US$ 1.93 trillion** by FY20.
- Gross Non Performing Loans ratio for the FY 2020 was **8.21%.**

Value Chain

Compliance
Regulatory, Capital requirements

Building Touchpoint Network
Offline , Online Infrastructure

Products
Value added services based ‘
on current financial instruments and regulations

Marketing
Online and offline modes

Current Trends

- Risk Management Practices
- Derivatives and risk management
- Smart Wearables
- Tech Innovations

Future Outlook

- The number of digital transactions are expected to increase **>4x to 8,707cr** in December 2021.
- India's digital lending is estimated to reach **US$ 1 trillion** by FY23

Cost Drivers

- Equipment rental or leasing
- Information technology (IT) costs
- Telecommunication services, taxes, marketing
- The amortization of intangibles

Business Models

HDFC Bank

- 3 verticals: retail, wholesale, treasury
- Revenue, expenses and income are of 2 kinds: interest and non-interest

LIC

- Real product is insurance claims
- Finds safe, short-term assets to invest
- Engages in reinsurance to reduce risk

KPIs

- Efficiency Ratio
- Operating Expense as a Percentage of Assets
- Total Deposits (Growth Rate)
- Non-Performing Loan Ratio

Revenue Drivers

- Interest on loans
- Interest on investments
- Fees income
- Forex operations
- Commission on third party products

Cement Industry

Quick Facts

- India, ranked **2nd** in cement production and consumption globally.
- **FDI inflows** in the industry related to manufacturing of cement and gypsum products reached **US$ 5.28 billion** between **April and December 2020**.
- As per the Union Budget 2021-22, the government approved an outlay of **$16.22 billion** for the Ministry of Road Transport, Highways, which is expected to boost the demand for cement.
- India's top **4** cement producers by market share (2020) include **Ultratech Cement, Ambuja Cement, ACC, Shree Cement**.

Value Chain

Inbound Logistics
New Products
Improvements in existing products

Operations
Raw material sourcing and Storage

Outbound Logistics
Production & Packaging
Quality assurance

Sales & Marketing
Distribution channel- Distributor, Retailer, E-commerce
Distribution centres & Warehouses

Service
Advertising & Promotions
Customer feedback

Current Trends

- Cement demand expected to grow at **CAGR** of **5.68%** between **FY16 and FY22**.
- Cement production reached **329 million tonnes (MT) in FY20** and is projected to reach **381 MT by FY22.**

Future Outlook

- In the next **10 years**, India could become the **main exporter** of **clinker and gray cement** to the Middle East, Africa, and other developing nations of the world.
- India's cement **production capacity** is expected to reach **550 MT by 2025**.

Cost Drivers

- Freight Cost
- Power and Fuel
- Raw Materials

Business Models

Ultra Tech Cement

- Wide range of construction products under one roof with different names.
- First company in India to issue dollar-based sustainability linked bonds.
- Ultratech Building Solution - one stop shop solution for building homes.

KPIs

- Capacity Utilization
- Heat Value
- Cement Factor
- Clinker Factor
- EBITDA/ton
- EV/ton

Revenue Drivers

- Affordable housing schemes such as PM Awas Yojana by the Indian Government
- Sale of cement and revenue generated through interest
- Govt. Infrastructural CapEx and Pvt. Industrial CapEx

Steel Industry

Quick Facts

- **2nd** largest steel producer in 2019
- Growth in demand: **7%** in FY20 & FY21
- Industry Size: **2%** of GDP
- Jobs produced: **~10 Million**
- Crude steel production: **108.5 MT**
- Finished steel production: **101.03 MT**
- Export of finished steel: **8.42 MT**
- Import of finished steel: **6.69 MT**
- Per capita consumption: Grew from **46 kgs** in FY08 to **74.10 kgs** in FY19

Value Chain

Inbound Logistics
Raw Material Procurement, Distribution

Operations/Production Management
Production, Quality Check

Outbound Logistics
Planning & Despatch, Transportation, Warehousing, Distribution

Sales and Marketing
Sales, Pricing, Promotion, CRM

After Service
Commercial Terms, Quality Aspects, Delivery Aspects, Complaint Settlement

Current Trends

- National Steel Policy 2017 aims to increase the per capita steel consumption to 160 kgs by 2030-31.
- Promotion in policy which provides a minimum value addition of 15% in notified steel products covered under preferential procurement.

Future Outlook

- Demand from the C&I sector to increase substantially with more investment in Infra, stability in the real estate sector.
- Demand from the Auto and Auto component sector may witness a consolidation stage in FY22 with the thrust towards EV, petrol and diesel price hikes and export opportunities.

Cost Drivers

- Primary cost driver is availability and proximity to **raw materials** such as iron ore and coal.
- Highly **labour intensive** due to low levels of automation.

Business Models

Tata Steel (Commercial Segment Leader)

- Fully integrated operations
- Raw material security
- Strategically located manufacturing units.

KPIs

- Capacity utilisation
- EBITDA/ton
- Intra-Industry Comparisons
- Productivity per Employee
- Safety Incidents / Employee

Revenue Drivers

- Per capita steel low as compared to global average = Immense opportunity for growth
- Low steel penetration in rural areas; expected to increase in future
- **Make in India** - to drive manufacturing growth
- **Smart cities** - to drive urbanization

Automotive Industry

Quick Facts

- **6th** Largest vehicle manufacturer
- Number of vehicles produced in 2020: **3394K**
- Number of Vehicles in operation: **296mn**
- Industry Size: 7.1% of GDP
- Jobs Produced: **37mn**
- Number of vehicles exported in 2020: **4.77mn**

Value Chain

Inbound Logistics
Raw Material Procurement
Warehouse Handling

Manufacturing
Machining, Assembling, Quality Check

Outbound Logistics
Warehousing, Distribution, Dealerships

Sales and Marketing
Advertising, Pricing, Promotion

After Service
Repair and Maintenance

Current Trends

- Transition to Bharat Stage-6 (EU6) emissions norms
- Surge in personal transportation use due to Covid-19
- Additional tax reduction for EVs

Future Outlook

- Switch to mobility as a service (MaaS) format
- Increased penetration for EVs and related infrastructure
- Passenger Safety expected to be the key driver towards newer mobility arrangements

Cost Drivers

- Primary cost drivers are R&D as well as Raw Materials
- Cost increase expected for logistics and direct labour

Business Models

Maruti Suzuki (Passenger Segment Leader)
- High localisation of parts in India.
- Largest distribution and service network.

Tata Motors (Commercial Segment Leader)
- Strategically located manufacturing unit
- Efficient spare parts and service network.

KPIs

- Downtime
- Utilization Rate
- Units Manufactured
- Inventory Turnover Ratio
- Safety Incidents / Employee

Revenue Drivers

- **Automobile Sales**
  2 W, 3 W, Passenger Vehicles, Commercial Vehicles
- **Spare Part Sales**
- **After Service Sales**
  Installation and Repairs

APPENDIX

Appendix: Datasheet - India

India Demographics	
Total Population	135 Crore
Area (L x B)	3214 km x 2933 km
Density	382 people/Sq.km
Lok Sabha Constituencies	543
Life Expectancy	70 Years
Sex Ratio (F:M)	933 : 1000
Average Household Size	4.9
Urban : Rural (Population)	30 : 70
Literacy Rate	74.04%
GDP (Nominal)	$ 320,000 crore
GDP Growth Rate (2018)	6.8%
Internet Penetration	56 Crore (40%)

Age Spread	Population %
0-14 yrs	30%
15-24 yrs	20%
25-34 yrs	15%
35-44 yrs	10%
45-54 yrs	10%
55+ yrs	10%

Income Group	
Class	**Composition**
BPL	20%
Lower-Middle	40%
Middle	30%
Upper	10%

Religion	Hindu	Muslim	Christian	Sikh	Others
Population	80%	14%	2.5%	1.5%	2%

Area Distribution of India	
Cultivated	60%
Forest Cover	20%
Built Up Area	10%
Misc	10%

Sector	GDP Growth Rate (as of 2019)	Distribution of workforce
Agriculture	16%	42.4%
Industries	25.2%	25.6%
Services	48.8%	32%

Appendix: Datasheet - Delhi NCR & DTU

DTU Demographics	
Student Teacher Ratio	30:1
Student Staff Ratio	20:1
Area of DTU	165 Acres
Perimeter of DTU	2.5 KM
Boys Hostels	8
Girls Hostels	5
Enrollment in DTU	10,000
No of Hostellers	2000
No. of Departmental Blocks	5 + DSM + 14 SPS
No. of Canteens	4
Girls : Boys	1:5

Demographics of Delhi	
Total Population	2 Crores
Literacy Rate	86%
Work Participation Rate	32%
BPL Household	18%
GDP	₹7.80 lakh crore

Delhi Metro	
Number of lines	10 (6 major)
Average Stations	30 per line
Number of Trains	310
Coach length	20 m
Daily Ridership	30 Lakh
Average distance Between 2 stations	2 KM
Average distance between 2 pillars	100 m

Delhi Constituencies	
Lok Sabha	7
Districts	11
Assembly	70
Wards	372

Area Distribution (1600 Sq. KM)	
Residential	25%
Commercial	20%
Roads	20%
Green Cover	25%
Misc	10%

180Degrees
DTU

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