PM Case Book
2023-24

SIGMA
PM & TECH CLUB

About this case book

Foreword

We are proud to present the PM Case Book by Sigma, the Product Management & Technology Club of IIM Bangalore. Leveraging interview experiences from alumni, the PM Case Book aims to give the readers a comprehensive view of the type of cases that form a major part of Product Management interviews. This case book covers Product Design, Diagnosis, Product improvement, guesstimates, Pricing and Miscellaneous cases. Throughout the PM Case Book, we have tried to ensure enhanced readability while retaining the comprehensiveness of the cases.

We have a heartfelt gratitude for stalwarts such as Lewis C Lin, Gayle Laakmann McDowell and other authors in the domain of Product Management. Most of the frameworks used in this casebook have been derived from their extensive work.

How to make the most of it?

While reading this Case Book, we would suggest that the reader use the interview transcripts to set up a case between 2 people (or groups). The group should engage in active discussion after solving the case to provide feedback to each other and suggest areas of improvement. The transcripts given in the casebook should be seen as a template to gain a broader understanding of the approach and not be taken as the solution per se.

Acknowledgements

We are grateful to all the people that have contributed by sharing their cases and interview experiences that has enabled us to put together a comprehensive preparation resource for the future batches. We would like to thank Stuti Jain (PGP 2022-24), the casebook team (Varsha Shetty, Abhilasha Gupta, Pranav A, Ayushman Singh, Ajeya Siddhartha) and Sigma Cohort (2022-24) for taking the initiative and putting together this edition of the Sigma PM Case Book.

We hope to get inputs and feedback from the students of IIM Bangalore on existing and new cases to further enhance the quality of the casebook in terms of breadth and depth.

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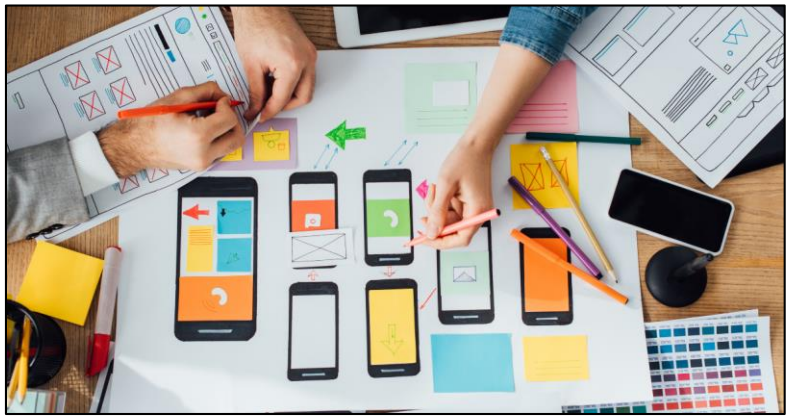


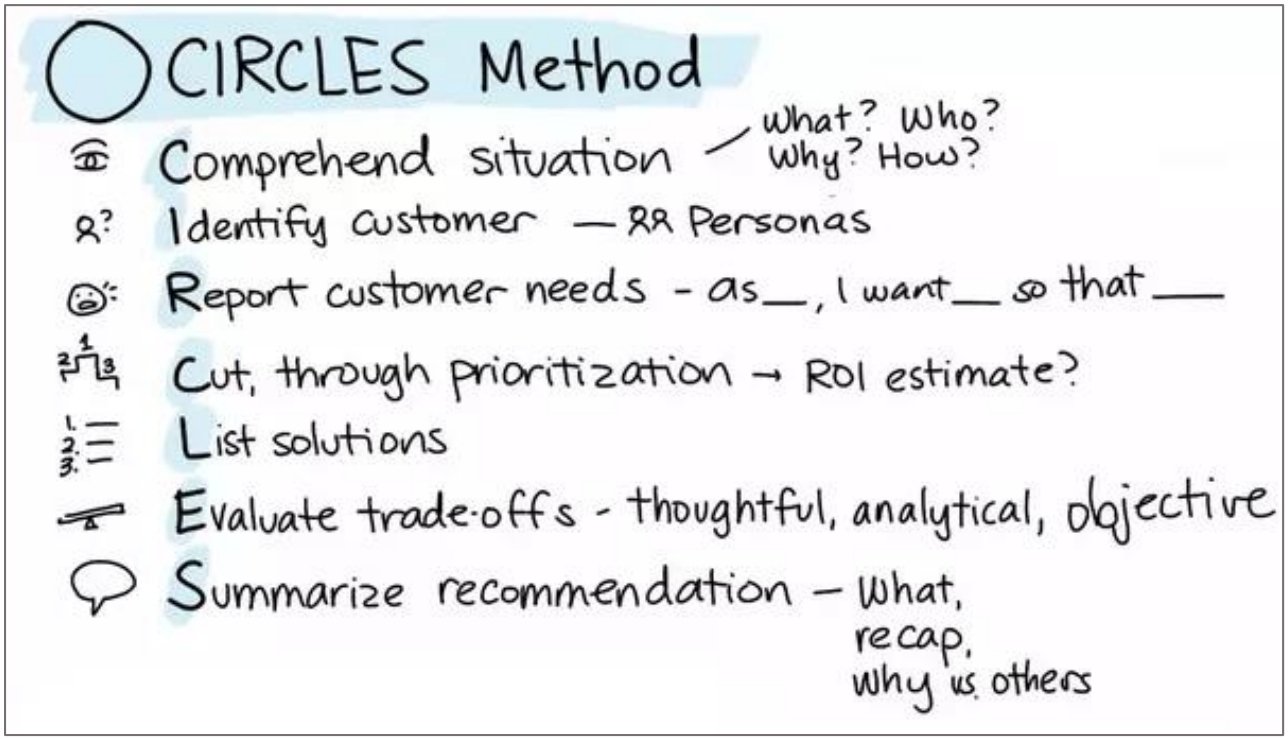
Product Design

Product Design – Approach (1/2)

How would you build a product for ABC use case?

How would you improve ABC product?

- Product design is generally asked in 2 ways – building a new product or improving an existing one. The approach for either type of question is the same – the **CIRCLES** method.



Source: Decode & Conquer

Product Design – Approach (2/2)

How would you build a product for ABC requirements?

How would you improve ABC product?

- **Context**: Start off by clarifying the context from the interviewer. What is the product? What is the objective? Which platform (website/mobile app) should we be targeting?

- **Target Segment**: Identify at least 3 user personas which could use your product. Tell the interviewer something about each persona – their demographics, psychographics and any other basic characteristics you would like to let the interviewer know. Select a persona you would like to build your product for. Give your reasons for selecting this persona to the interviewer. You could be asked to size the market at this stage. Explore more here.

- **User Needs**: You need to identify the needs and pain points for your selected persona. A great way of doing this is to build the user journey of how this persona currently carries out his or her requirements for ABC given in the question. This can also include points of the journey which currently happen outside the product. 5Es framework is a great way to build a user journey. Remember that all stages might not be valid for every question. Don't force fit!

Entice -> Enter -> Engage -> Exit -> Extend

- **Prioritize**: You would likely find a lot of needs and pain points across the user journey. Prioritize a few needs and pain points you would like to solve right now. Give your reasoning to the interviewer. The reasons could be reached, revenue, impact, cost, effort, and complexity of potentially solving this problem. You can get started here.

- **Solution**: Once you have finalized the needs and pain points you want to solve, come up with features. Try to be detailed with your solution. Clearly articulate each use case that would be solved. You can also build rough UI mocks to explain how your solution would look. Get started with defining features here.

(**Note**: Another valid approach for the prior two steps is using the pain points to develop features and then prioritizing the features themselves. In this case, you can define your features roughly, and once you have decided which ones to prioritize, you can then flesh them out)

- **KPIs**: Come up with metrics to measure your solution. There should be one north star metric to measure the overall objective of the product and a few metrics to measure the success of your features. You can also evaluate trade-offs by thinking of metrics that might go down due to this and whether the new feature is still worth it. Know more about KPIs here.

Self-Driving Car for Kids

You are a Product manager at Google, design a self-driving car for kids in India (Google PM)

Clarification questions: I would want to clarify the meaning of self-driving car here so that we are on the same page.

A car that has sensors and has previous sensor data also live maps for driving on the road with human intellect or support.

Yes, you are right please proceed.

Does the business have a certain goal in mind?

No, you are free to define the goal

I would like to define the goal as adoption and engagement, as the use of self- driving is still in the growing stage. Is there a location that we are targeting in India?

No, you are free to choose a location

I would like to keep metro cities and some non-metro cities like Pune in the consideration set. I will proceed further to define the user persona, followed by identifying pain points and moving ahead by prioritizing pain points and defining a solution for them.

Sure, go ahead

To carve the scope, I would say that the service is essentially a ride service that starts once the identity of the rider is confirmed by adult and ends when the drop-off is confirmed at the designation by a designated adult.

I also thing that this service can be of two types of personal cars as well as cabs. I would like to choose cabs so that impact of the service can be maximised by making it available to more users

Sure.

Following are the basic used cases for which this service can be used

- A child needs to be transported from point A to B periodically

For example, home to school or sports center and vice versa

- Infrequent trips to grandparent's house
- One-time trips – for example visiting a friend's house

I can think of the following user personas. As a part of scoping, I would like to focus on younger children whose parents would need more safety features

1. Adults:
   - Primary caregivers
   - Responsible Adults
   - Institutions – schools, etc.
2. Children – Riders

I would like to focus on the persona of adult parents and caregivers to maximize impact and safety. The needs of this persona are:

Safety

1. They want to be aware of where the child is during travel
2. They want to monitor the child while he is in the cab
3. Safety procedures in case of an accident or car breakdown
4. Child handover: The child was dropped off and picked by an authorized person

Convenience

1. Easy accessibility of the car and hassle-free booking
2. Advanced booking should be allowed to plan the travel better
3. Different models like personal or call pools
4. Reliability after booking and should not get canceled right before the ride

Ride

1. Car should be hygienic and safe
2. Car should be able to entertain the kids
3. It should monitor that the kid is not engaging in any hazardous activity
4. Supplies of food and water
5. Content moderation on the car's infotainment system

Great. Can you prioritize the pain points?

I would like to prioritize the pain points. Prioritizing based on Value and Complexity (RICE/ ICE framework can also be followed).

Self-Driving Car for Kids

Pain Point	Value	Complexity
Registration of authorised user	High	Low
Booking a trip	High	Low
Content moderation	Medium	Medium
Safety and accidental fallback	High	High
Trip Monitoring	High	High

Sounds good please proceed

Registration and ride-booking are must-have features, this will allow caregivers to have peace of mind. Defining features for each of these pain points:

1. **Registration of authorized user**: Allowing the user to register for the service and Registering for the person responsible for drop off and pick up for each trip. The person should be verified with legal ID proof, and the photo of the same should be uploaded during registration.
2. **Booking a trip**: Select start and endpoints. Mark of responsible adults on both points of the trip. Even allowing to keep a list of adults responsible, which can be reused in different trips
3. **Content Moderation**: Link to entertainment accounts that the rider is allowed to view, such as Netflix and YouTube. Allowed interactive games or select shows.
4. **Safety and Accidental fallback**: Create an interface or get off-the-shelf hardware with familiar interfaces
5. **Trip monitoring**: In-vehicle trip monitoring via monitors and trip tracking using analytics from the vehicle

Can you identify some metrics to evaluate the success of your product?

I will define success metrics as

1. Daily Active users
2. Number of trips completed in a day

Sounds good. Can you identify some potential risks?

I can think of the following risks. The inherent assumption is that being able to scale the service to pool and subscription models has been made, but there is no consideration and control mechanism for things going wrong with multiple riders, such as bullying on a school-bound car. These need to be thought out for long-term existence

Gen AI features in Google

You are a PM at Google and are asked to introduce Gen AI based features in any google app of your choice.

I would like to begin by asking a few clarifying questions. What is the business objective we are trying to achieve here? Do I have the liberty to pick across both B2B and B2C products?

User Productivity. We intend to leverage our capabilities in Gen AI to increase user productivity across the Google Suite followed by improving user engagement. As for the kind of product. You can pick any product of your choice.

Great, in that case, I would like to focus on the B2C segment as I feel the introduction of features in this area would have more customer exposure as compared to B2B segment.

Google is already one of the key players in the AI race and introducing such a feature in an app that's used extensively would solidify its position in the market. Google in its IO conference this year announced exciting features for Bard as well as Magic Editor that works like existing Gen AI applications like Adobe Firefly.

Keeping that in mind, I have 3 apps in mind that I would like to consider to add these features.

1. Google Photos: Available on all Android devices. It is the go to image repository for over a billion users.
2. Google Meets: A meeting platform that Google has been attempting to improve to compete with the likes of MS teams and Zoom.
3. Gmail: used by around 2 billion people for e-mail correspondence. Most Gen AI solutions are text-based and hence features can be easily deployed on this app.

You have narrowed down your options from a long list. I want you to pick only of these 3 and justify your choice.

Out of the 3 apps, I feel that Google Photos would be the most ideal candidate to pick for introducing this feature.

I have eliminated Google Meets because it caters to a relatively lesser audience, and because the feature implementation for real-time video inputs is difficult to execute.

Between Gmail and Photos, I feel that introducing Gen AI features in Photos would greatly increase productivity since the effort involved in editing or enhancing images is higher than pure text.

In terms of customer value, I feel that features in Google Photos would be more impactful.

(Note: PMs love data-backed responses, If you can tabulate your justifications using a scoring system = = brownie points. For instance, in the above case, the selection criteria could be "# users", "Customer value", "# of features possible", or "alignment of thought features with biz objective")

Your justification seems valid. Please go ahead.

Perfect, rather than jumping straight to the feature I would like to go step-by-step here. I will first try and identify the various pain points that users face and areas where Gen AI can be leveraged to add value.

1. **Panoramic photos:** Clicking such photos requires the user to hold and move the camera steadily. Staggered movement or slight deviation from the movement path leads to a bad panorama. Gen AI can be used to fix these issues.
2. **Changing facial perspective:** In instances like group photos, there might be cases where a person might be looking away from the camera. Facial orientation could be adjusted in that case.
3. **Captions:** Writing interesting captions for Instagram/LinkedIn posts can be tricky, and conversely, so is choosing the right set of photos that convey a story.
4. **Misc. image content:** Photos of say class notes, bills, and documents from where data needs to be extracted and used elsewhere, can use Gen AI for this purpose.

I have been able to list these for the time being, lets move on to the features associated with these issues and if I identify more pain points, I will cover those too in the solution

Sure. Continue.

Based on what I have identified, I have the following feature suggestions.

Gen AI features in Google

1. Smart Panorama: This feature would make use of the Generative Fill capability/ or alternatively use image expansion to generate a Panorama. Suppose a user clicks 2/3 separate images at different angles from a single point, these images can be merged using Gen AI to create a panorama, Image metadata containing location and gyroscope values can be used to improve image accuracy involving orientation and accuracy of filler content added.
2. Changing object perspective: Google keeps track of people it has identified in the user's gallery. Using that information, it can change the facial orientation in situations highlighted earlier. In extreme cases, it can also be used to add missing people in group photos.
3. Caption suggestions: Image interpretation combined with image metadata can be leveraged to give creative captions for LinkedIn. Additionally, if a user selects multiple images to share, the AI can try to identify the context behind those images and formulate appropriate drafts. These drafts would also vary depending on the target pf. E.g.: for LinkedIn, a more professional tone would be used.
4. Summarization: Info from images that have notes, bills, etc can be extracted using OCR and summarization of the data can be performed and extracted to a different type of file like a doc or sheet.

Sounds interesting. Explain me very briefly how these would be implemented Photos

Certainly. Using generative AI in Photos would be impactful if it is interfaced across the rest of the applications in the suite. An ideal way to implement this would be to include a button like that of a "magic wand" which opens a text box where user prompts can be given. It would be somewhat like that of Microsoft's Copilot implementation. Prompts can then be executed using APIs that link it to Bard or Magic Editor to perform desired tasks.

Fair enough. Please go ahead and tell me what metric you would be tracking here

To gauge productivity, one would like to track time and effort savings. Since image editing using generative AI replaces other image editing software, One metric to identify impact would be to check the amount of time saved in editing an image. This can be compared by conducting research to check how much time it usually takes to edit using external software.

We also need to gauge the number of edits/enhancements performed per user per month. This gives us information about the scale of usage.

Another metric that we must track is output accuracy. This can be gauged in multiple ways using feedback, the number of prompts given to edit an image, the number of redrafts for a caption and the number of corrections made.

Engagement with the feature can also be tracked here using conversation length, and session time.

These should be enough for now. You had shortlisted Google Meet as one of the apps and I was curious as to how you would use Generative AI there. Can you simply list down what features you had thought of?

Sure, I had thought of the following features for Google Meet

1. Meeting summarization using highlights: Meeting transcripts can be checked to identify key moments and corresponding timestamps can be used to create a video highlight.
2. Video quality enhancement in fluctuating internet speed: Generative Fill can be leveraged in real-time to deliver a high-resolution video output despite distortion due to low/ fluctuating internet speeds.
3. Create recordings in different languages.
4. Background monitoring and filtering out objects/onlookers from the feed to reduce distraction.

That will be all, thank you for your time.

Financial App for Teenagers

Suppose you are a product manager for a financial services firm, and you have to build a financial app for teenagers. Design a solution and walk me through it. (Pine Labs)

Sure, before I proceed with the solution, can I ask a few questions? Is the app limited to financial education and market simulation, or can it also involve opening bank accounts as such for teenagers? And secondly, what is the goal of the app? Is it to increase penetration amongst the youth or for monetization?

The app can provide real-world banking services. The firm wants to increase its presence amongst youth, allowing them to open bank accounts so that they stick with the firm when they are adults.

Okay, thank you for setting the context. I will now proceed to talk about the two main stakeholders in the app and list down their pain points

1.Teenagers: These will be the primary users of the app. Currently, only about 17% of teenagers have a basic sense of financial literacy. An even lesser percentage has bank accounts. Some of the problems that they face are:

- Disparate channels of financial information coupled with a general apathy towards the subject, leading to a lack of financial literacy.
- They do not have tools for managing their current finances.
- They are not aware of financial services they can use to store their pocket money

2.Parents: In most cases, they will be the primary providers of the children's finances. Some of the problems faced by them are:

- They do not have access to their children's finances, especially what they are spending on.
- They cannot limit the spending of their children.

Okay, would you prioritize one of these personas, or are you going to solve for both?

I feel that solutions for both of these personas would work in conjunction, and hence, we need to solve for both. Should I go ahead with the proposed features?

Yeah sure.

Okay, so some of the features are:

1. **Gamified Financial Learning Platform**: Teenagers can be taught about basic concepts, such as compounding to advanced concepts, such as financial instruments, through a reading and quiz-based platform with a gamified quiz, which will keep them invested.
2. **Banking Service with Transaction Analyzer**: Teenagers can use this to store this money while also using the transaction analyzer to see their spending breakdown, evaluate where they are spending more, and what expenses they can cut down on. Finally, they can also set savings goals, which will help them to save up for specific targets.
3. **Parental Controls**: Parents can see the transactions being done by their kids, as well as set limits on transactions.
4. **Financial Instruments Simulations**: Teenagers can be taught the stock markets through simulations based on actual financial markets, allowing them to experience investing without the risk of loss of financial capital.

Okay, and which of these features would you prioritize?

Prioritizing on the basis of a simple Value vs Complexity Analysis,

Feature	Value	Complexity
Learning Platform	High	Medium
Banking Service	High	High
Parental Control	Medium	Low
Financial Instruments Simulation	Medium	Medium

Financial App for Teenagers

I would prioritize the Learning Platform, followed by Banking Service, which will be a precursor to the parental control feature, and then finally Financial Instruments Simulation.

Okay, and can you give me some success metrics for your app?

Yeah, some of the metrics would be:

1. Daily Active User on the Learning Platform
2. Number of Bank Accounts opened

Finally, do you see some issues with your solution?

Yes, there are two ethical issues,

1. First, giving parents an account of transactions violates the privacy of teenagers.
2. Second, a financial instruments simulation might serve as a gateway to bad financial decisions in the future, without the safety net of only losing fake money.

Product for Delhi Metro

Assume you are a product manager at Google, design a product for Delhi metro. Do analyse all stakeholders and choose one. (Google PM)

Before we begin, could I ask a couple of questions to clarify on some aspects of the product? Does the product need to be digital or physical? Is it supposed to be designed for people riding the metro or people at the stations? And finally, do we have a goal in mind? Is it adoption or monetization?

The tangibility of the product as well as the location you are free to choose. And for now, we want to create a base of users for the product, so you can say the goal is adoption.

Alright, so I will try to create both physical and digital solutions to leverage the capabilities of the firm. First, I will proceed to list out various stakeholders with their pain points,

You have:

1. Commuters: These are people across ages using the metro for daily transportation needs. Some of their problems are:

- Ticketing issues for people without smart cards during peak hours.
- Problems of crowding and rushing again during peak hours.
- Navigation issues for people who are new to the city or the metro network

2. Administrative Staff: They are people manning the ticketing booth at the stations or who are working on services across the network. Some of their responsibilities are:

- Ensuring the functioning and repair of components across the metro network.
- Ensuring optimal utilization rates of the different routes.

3. Safety Staff: They are responsible for safety checks at the stations. Some of their problems are:

- Ensuring fast movement of queues during peak hours.
- Handling security checks with new passengers who are unaware of the norms and hold up the queue.

You chose to identify all commuters under one persona, instead of grouping by age or technological literacy. Any specific reasons? And which of these would you prioritize?

Yeah, since you mentioned evaluating all stakeholders, I figured this was the more appropriate approach. And out of these, I feel that since the biggest user base is of commuters, and since we need to drive adoption, that is the customer persona that I would like to prioritize. Should I move on to some of the features?

Sure, go ahead.

Some of the features that I would like to provide would be:

1. **Mobile Ticketing**: We could integrate the Delhi Metro System with QR scanners and then use app-based ticketing so as to reduce queues at the ticketing booth. The payment for the same could be using the Google Pay app, just requiring onboarding of the Delhi Metro Rail Corporation.
2. **Real-Time Crowd Analysis**: The geolocation of users at the station and inside the metro cabins can give us an analysis of the crowd. This can help users to decide which stations to board the trains from and which cabins to hop into.
3. **Navigation Support**: The solution will feature an interactive map, giving details of the different lines, the stations on each of the lines, as well as important places connected by each of these stations. In addition to this, the users will also be able to specify a start and end destination, and then our app will give the itinerary for the same, along with line changes, the expected total journey time, as well as the cost.

Okay, and what would be the order of prioritization for these features?

I would like to prioritize on the basis of Value vs Complexity matrix,

Feature	Value	Complexity
Mobile Ticketing	High	High
Real-Time Crowd Analysis	Low	Medium
Navigation Support	Medium	Low

Product for Delhi Metro

On the basis, of the table, I feel that Navigation Support should be prioritized, followed by Mobile Ticketing and Real-Time Crowd Analysis.

Okay, and can you provide me with a few metrics for your application.

Yeah sure, some of the metrics will be:

1. Number of Navigation Support Requests
2. Number of Tickets booked

Thank You, that will be all.

Tablet For Kids

Design a tablet for kids.(Google PM)

Thank you for the question. Can I ask you some questions to set the context?

Yeah sure.

What is the age range of kids that we are looking to cater to?

Let's say it's for 4 to 6 years

Ok, great, should I further segment this group into different age ranges to better understand their needs, preferences, and developmental stages. For instance, younger kids might need simpler interfaces, while older ones could handle more complex features.

For this example, consider this 4-6 age group having similar capabilities. Can you identify some more stakeholders?

There are other stakeholders involved like the parents and teachers considering it might be used for learning content. Essentially, these stakeholders have a say in the purchase of the product. So, their needs are to be identified too.

Which among the stakeholder you mentioned you would want to cater more to?

Majorly it's the parents and the kids. We can keep educators out for now as we plan to develop a more general-purpose yet customized experience for kids.

Ok what would be the product requirements you think?

Before jumping into it, I would like to categorize the pain points from kids' POV and parents' POV.

Kids:
- Wants a good display and sound to watch content and to interact with it.
- Might get overwhelmed with a lot of apps that they do not require.
- Is not able to write/ type properly with all the correct spellings as might be at initial stage of learning and development.
- Tired eyes

Parents:
- Privacy and safety concerns
- Screen time
- Control over the content

List out a few solutions

Based on the user journey we talked about; we need to think of hardware as well as software solutions.
These might include a durable and child-friendly design, like for example tactile buttons. Simplified UI with minimalistic bloatware. The screen should be of high quality and have a good speaker as the content for young kids is mostly visual-based.
We can also bundle in YouTube Kids and make Google Assistant one of our major modes of interaction with the app.
We also require a safe browsing environment, some educational content, parental controls for managing usage, and robust security measures to protect kids' privacy. The security features might have certain restrictions on opening and usage of certain apps, while denying the installation of age-restricted apps altogether.
We can also prioritize our screen timing options as well as blue-eye filter for kids' eyes

Tell me one priority feature from both POVs.

For Kids that would be simplified UI with durable hardware. And for Parents' concerns, it would be parental control

Any potential drawbacks or constraints?

Considering potential constraints, I'd think about factors such as budget, technical feasibility, and legal regulations around data privacy for children. These constraints will play a role in shaping the final product.

How would you test these features out?

With the requirements and constraints in mind, I'd start creating prototypes. These could be simple sketches or interactive wireframes that illustrate the user interface, navigation, and key features. This step helps visualize the concept and gather early feedback.

SMS Analyser

Design an application which would go through SMSs and analyse expenditure of users. Include innovative features to ensure widespread adoption. (Microsoft)

Since, we are talking about SMS, I am assuming this is a mobile app. By spend analyser, I believe we are talking about reading financial transactions linked to digital wallets, internet banking and credit or debit cards within the SMSs.

Fair enough. You can proceed with that.

Sure, let me list down the user personas who currently go through SMS on mobile phones.

- **Digital Payment enthusiasts**: These include 23-35 year olds who use multiple digital wallets for daily payments.
- **Technophobic Middle aged adults**: These are people older than 36 years who mostly use cash for transactions. They are not comfortable with technology and prefer to do things in the traditional way.
- **Students**: These are undergrad and post-grad students. Although they are comfortable with technology, most of the transactions happen within the university campus which are predominantly cash based.

Among these, it is most sensible to target the digital payment enthusiasts.

Sounds fine! Please go ahead.

I would like to define the pain points these users face during their journey. The first part of the journey is receiving SMS on the phones. Among these, I would ignore non-transaction SMS such as OTP, payment requests and service requests. Our app would only analyse SMS regarding debit or credit from the digital wallets, accounts or credit cards. Next the users would want to have a greater understanding of their financial transactions. Currently they can see the list of transactions but don't have any pivots to know how they are spending across categories or days of the month or year. Lastly, the users would want to know if there is something wrong with their spending - too much, too little, fraudulent transactions. They would like to have some actionable tasks to carry out when their spending meets a certain criterion. Can I go ahead and build the features of my app with these pain points?

Yeah, please go ahead!

Right so I would have the following features for the pain points I listed.

- **Category Tabs**: Bifurcate the SMS into different tabs such as food, travel, investments, health, etc.
- **Transaction Statistics**: Trends/graphs of transaction amounts with pivots of category as well as time – daily, weekly, monthly. These category pivots can be customized by the users as well.
- **Alerts**: Allow users to set alerts manually when there e xpenditure reaches or fails to reach a certain amount in a category during a time period. Also have automated alerts in case of fraud detection. For e xa mple, if we can e xtract geographical location data, transactions from multiple locations in a short duration should trigger a red flag.

You have listed a few features. Could you draw a wireframe and show me how your app would look like?

(Candidate draws a mock UI of several screens of the app. The mocks contain simple UI with a few elements like tabs, buttons, graphs and expla ins the flow of the app and the function each buttons and other components provide.)

The wireframe looks great! I love that you used different pen colours for different UI elements. Let's say a few other apps with the features you listed are already available on the PlayStore or AppStore. What additional feature could you provide as the USP of your product?

We could help the users save money through a promotional SMS feature. Since we have the transaction history of the users, we could help target promotional discounts. For e xa mple, we would send the Zomato discount coupons to the users who have a history of ordering food online.

This would be beneficial for the users as well as firms such as Zomato. Zomato would be able to reduce their marketing e xpense and reach customers who order food online.

Looks good. Let's go over the GTM strategy. How would you ship this product? Think about who your users are and how you would charge them.

Since, this is a brand new app, I would do a phased roll-out of the M VP. Start off with a few percent users and gradually increase to more and more users while scaling the servers. Do we have data on the split of users on Android and iOS? I believe most of the people in India use Android smartphones so I would first launch on Android. Once the adoption increases, we can introduce the iOS app. As far as pricing is concerned, I would suggest a freemium model. I would keep SMS Category Tabs and Transaction Statistics free and charge for the alert services. As we are solving new use cases, we would need the users to start using our app, get hooked and ultimately pay for it. Apart from the Freemium model, we can also have a 1 month free trial to let the users get accustomed to the app. Truecaller too organises SMS to a certain extent and has additional features for identifying numbers, blocking spam and recording phone calls. It is priced at Rs 250/year. Since our app works on just SMS organisation, I would price it at Rs 99/year.

How would you integrate this with the Microsoft apps?

I have 3 apps in my mind for this – Outlook for viewing and categorising the SMS, OneNote to mention any additional information regarding transactions and Microsoft To Do to make SMS actionable by setting reminders and alerts as well as track progress. The richness of the Microsoft ecosystem enables seamless transfer of information between the apps.

You talked about launching the MVP. How would you arrive at what features are P0 and what are P1?

I would look at the following factors:

- The number of users which would use this feature. This can be estimated using user surveys and market research.
- The impact it would create on the users. We can do this on a 3 tier scale of High, Medium and Low.
- Difficulty of implementation in terms of technology and stakeholder alignment.
- Amount of resources needed – human resources, computing power, storage capacity, etc.

A lot of the above might be difficult for a PM to estimate. How would you go about ensuring that your estimates are accurate and you make a correct decision?

For gauging the difficulty in implementation and resources needed, I would work with the engineering team to understand the complexity of technology and the kind of personnelneeded (frontend, backend, data scientists, analytics, etc).

Measuring the potential impact on users is a bit tricky, especially for B2C products. A great way to go about this would be to take the opinion of e xperts and leaders within the company. Making data driven decisions using insights from user surveys and market research is also important. I really love the way Microsoft handles this through its 'Feature Request' forums. These forums allow users to request for new functionalities as well upvote what others suggest. This gives the PMs the voice of the users and helps them move important features forward for development.

That would be all! Thank you.

Car for the deaf

How would you design a car for the deaf? (Flipkart)

Before we start, I want to ask a few clarifying questions. Are we building a new car from scratch or are we making changes to an existing one? Can we bundle other devices along with the car?

Let's assume we already have a car in the market. We need to modify it to suit the new segment. You can add any devices or software to the car.

Another clarification. Do the deaf include only people with full hearing loss or do we also think about partial hearing loss? A majority of the deaf people are also dumb. Do we have any information on this?

Just think about completely deaf users. Assume they are not dumb.

Got it! Let me think about a few deaf users who would be interested in such a car.

- **Young bachelors**: These are students or young professionals who need to commute to office or college and social gatherings with friends. For them cars are also a symbol of social status.
- **Middle aged professionals** : These are 35-50 year olds who use cars to commute to work everyday, for long distance travel and outings within the city. They tend to travel with their family who might not be deaf.
- **El derly folks**: These are 60+ years old who need to use the car to travel to nearby locations for household chores. They would also be visiting hospitals and pharmacies.

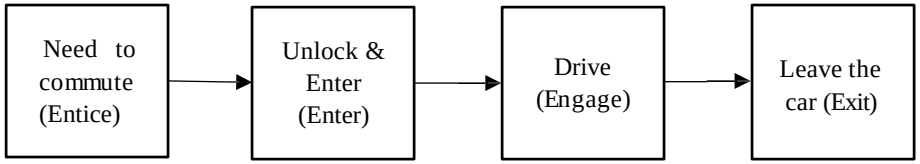
Among these I find middle aged professionals the most suitable target segment. Young bachelors lack the financial resources to purchase such a car. They mostly use public transport and cabs to commute from one place to another. Elderly folks too are not the right target segment since they would rarely travel alone. Their family takes care of them and ensures that they accompany them during their t ravels. Hence a younger person in the family would likely be driving and taking them to the nearby locations.

Middle aged professionals form a significant chunk of the population and have the buying power to purchase this car. Can I go ahead with this target segment?

Yeah, please go ahead!

Right. Let me go through the typical user journey of such a user and list down some needs and pain points.

Sure!



- Household chores - Office work - Outing plans	- Unlock car - Check tires, fuel, battery, etc	- Navigation - React to traffic - Listen to music - Talk to family	- Park - Lock car

Here is the user journey of the usage of a car. For a deaf user in my segment, I can come up with the following pain points:

- While unlocking and locking, a major pain point for this segment is that they are unable to hear the beep sound for feedback. They need to look at the lights as a visual cue which could be a challenge especially during the day time.
- Deaf drivers have other issues such as lack of music and difficulty in conversations with passengers.

Car for the deaf

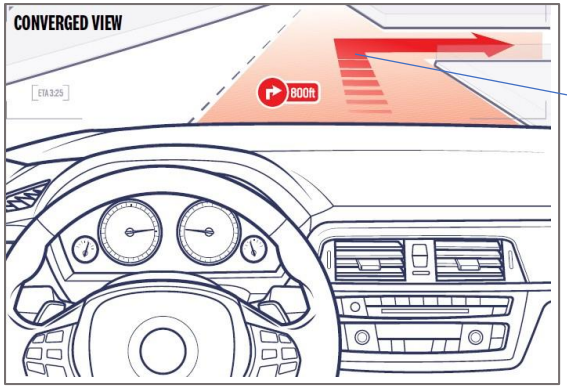
- Drivers usually rely on the audio map directions for navigation. Deaf drivers would need to constantly look at their mobile screens during navigation which could be distracting and compromise on safety.
- A huge pain point for deaf drivers is that they are unable to hear the car horns. This could prove to be a problem at intersections, in overtaking lanes and when a police car or ambulance is nearby.

Among these pain points, what I want to prioritize is sorting out navigation and enabling reacting to car horns for deaf drivers. Solutions to other problems are good to have but these are must have since they would ensure a safe ride. Can I go ahead and think about the features for these?

I like your reasoning for all this. Please go ahead with the features.

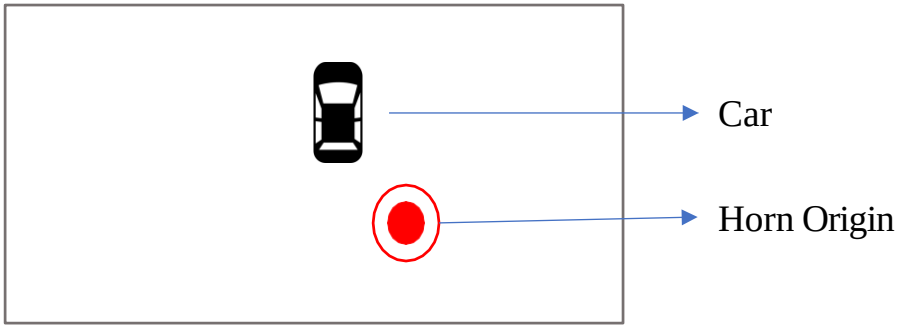
I have come up with two features:

AR Navigation: To make navigation easier, I would like to have directions on the windshield itself using Augmented Reality. The directions would be superimposed on actual roads to make it easier to navigate while driving without relying for audio cues. It would look something like this. (Candidate draws on a piece of paper)



Windshield Navigation

Horn Detection Dashboard: A sensor would detect when a sound greater than a particular decibel threshold happens around the car. This would generate a vibration on the steering wheel of the car and show the origin of the sound on a dashboard as a hotspot on a screen near the steering wheel. The driver can check the origin of the sound, look that the back view or sideview mirror and react accordingly. This is how it would look. (Candidate draws on a piece of paper)



These features look really cool. But how would you measure whether they are indeed making the car safer?

Ideally, it would be great if our analytics team could install a device in the car which could detect accidents. Through this we can compare the number of accident per car per month in this new car. However, it might be difficult to define the benchmark for this metric.

Another metric we could look at is NPS. We can send a survey to users after 6 months of their purchase and ask whether they would recommend this car to another deaf person keeping its safety in mind.

That makes sense. That would be all. Thank you.

Ecommerce for the elderly

How would you design an e-commerce platform for senior citizens? (Flipkart)

Before we start, I want to ask a few clarifying questions. Firstly, are we building a new ecommerce platform from scratch or are we making changes to an existing one? Secondly, how do we define a 'senior citizen'?

We already have an e-commerce platform. We have a website as well as apps for Android and iOS. Senior citizens are folks above the age of 60.

Sure, let me list down the user personas who might have a need for using e-commerce.

- **Urban elites**: These are tech savvy senior citizens who order frequently through e-commerce platforms for their needs. They are comfortable in using computers and mobile phone apps.
- **Joint family elders**: These are senior citizens who live in a jo int family, mostly in towns and villages. Whenever they need something, they mention it to their children or grandkids who either get the things needed from the nearby stores or order it online for them. The senior citizens rarely use the e-commerce platforms themselves.
- **El ders living away from kids**: These senior citizens live in cities or towns away from their children who are working in big cities. They don't get help for ordering online that easily. They sometimes try to order things themselves from online platforms but find it quite challenging. As a result, they often call or te xt their kids to buy a particular item for them. It is for this reason that I think we should target this segment.

I think that's a fair assessment. You can go ahead with this.

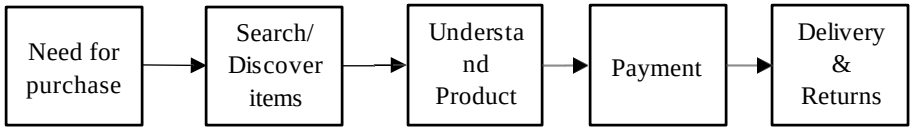
Do we have any platform specific usage data on senior citizens? In my opinion we should target the Android app. The users owning computers and iOS phone would likely be urban elites who would be much more comfortable in using e-commerce platforms.

Close to 90% of our users above 60 are on Android. Your logic sounds good! Let's go ahead with Android.

Great! Just give me a couple of minutes to gather my thoughts.

Sure.

This is the journey of a typical senior citizen using an e-commerce app.



Within this I have identified a few pain points in their journey.

1. **Trust**: Having shopped through physical stores all their lives, senior citizens look at e-commerce platforms with a lot of apprehension. They are scared about being duped and losing their money.
2. **Eyesight**: Senior citizens often have near sightedness which prevents them from readings small te xt in e-commerce apps. They are attracted to the product pages by the images on the home or browse page but read the product description thoroughly before completing the checkout.
3. **Difficulty with apps**: Senior cit izens have great difficulty in discovering features which can be used. For e xa mple, they would rarely use filters or sort and instead just scroll through the list on the browse page.
4. **Payments**: Since senior citizens are not comfortable with online payments, Cash on delivery is the preferred option. However, having cash available after each delivery is a tough ask. They also have to heckle about having change.

Should I think about more pain points or should I go ahead with the ones I came up with?

I think these look good. You can go ahead with the solution to solve these.

Ecommerce for the elderly

Sure! Let me describe the features which can solve these pain points.

1. **UI Changes**: Before any new features, I would want to introduce basic UI tweaks to improve the experience for senior citizens. We should have larger texts, pictures, icons and buttons to ensure users don't face any usability issues. Buttons should have colours contrasting with the background colour to attract the attention of users. We should also show tips on pages to guide the users.

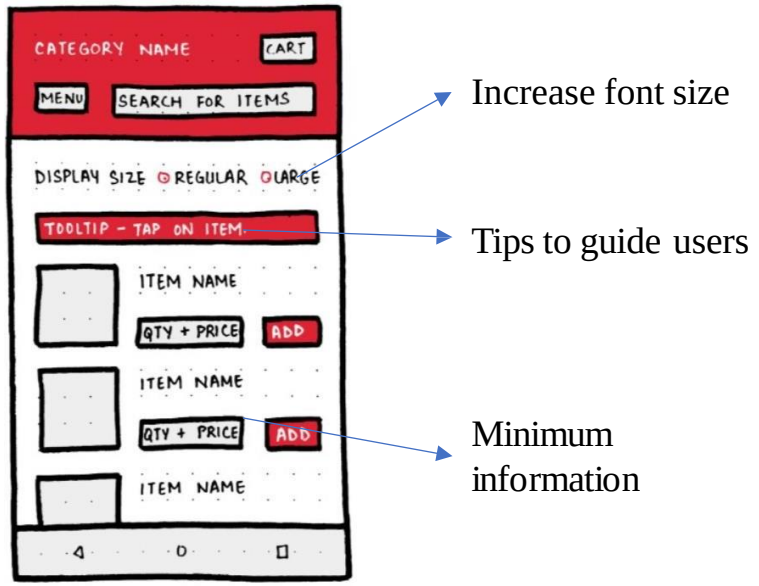
2. **Minimal layout**: We should not overload the pages with features, hidden menus (hamburger menus, dialogue boxes which appear after tapping) and information (seller details, multitude of offers). Only the information which is absolutely necessary should be displayed.

3. **Send order updates on WhatsApp**: Senior citizens rarely open e-commerce apps after ordering but they are constantly going through their WhatsApp messages. Updates on their order (packed, shipped, out for delivery) should be sent on their mobile number on WhatsApp. This helps them trust the platform since they are able to view constant updates regarding their order.

4. **Bulk post-paid**: Instead of asking the users to pay after each delivery, senior citizens should only be asked to pay after a certain amount, let's say INR 5K is reached. This reduces the hassle of having money with change ready during each delivery. This also recreates their current relationship with the kirana store on the e-commerce platform. For this feature we would definitely need to collect details on users by making them upload pictures of their identification card. This process would be somewhat similar to KYC for banks since we are also extending credit.

Here is a wireframe of the browse page to visualize my UI and layout changes.

Although these are some interesting features, how do you plan to launch it? Will it be a new app?



No, this experience will be present on the existing app itself. No new app needs to be downloaded. We would show a toggle option on the homepage targeted to senior citizens. This toggle will change the UI and the layout. Senior citizens who are comfortable with the existing UI and layout can opt out of this experience. Similarly, users can opt out of receiving updates on their WhatsApp. Bulk post-paid will be a payment option during checkout.

That is a well thought solution. Thank you!

Supermarket application

Design a product to solve the problem of long queues at Supermarkets (DP World)

Before we start, I want to ask a few clarifying questions. Are we looking to design a physical product or digital to solve this problem?

You can choose either.

I'll design a digital product and list the user personas that I can think of.

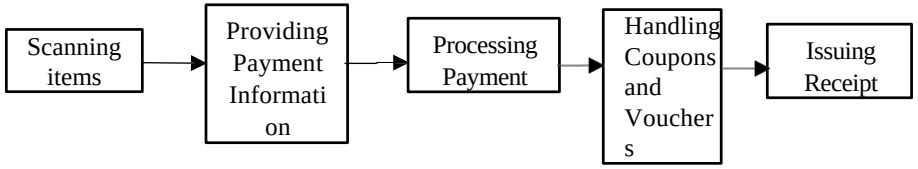
Cashier : 25-40. years old. Would like to process customer orders quickly.
Bulk buyer: 30-55 years old. Purchases groceries for a couple of weeks at a time
.
Out of these do you want me to prioritize any one persona?

No, you can consider both

Great! Just give me a couple of minutes to gather my thoughts. I will describe the user journeys of the cashier and bulk buyer.

Sure.

Journey of a cashier in a supermarket.



Journey of a bulk buyer in a supermarket.

For these two personas I have identified a few pain points in their journey –

1. **Cash Handling:** Often customers pay with cash. The cashier must find the exact change, which can increase waiting times.
2. **Payment failure:** Sometimes payments via digital channels enter a pending state for an indefinite amount of time, in which case the customer waits for 5-10 min before making another payment.
3. **Finding Items:** The buyer has to spend a lot of time to search all the different items that he/she needs.
4. **Long Checkout Lines:** Waiting in long checkout lines can be time-consuming and frustrating

I think these look good. You can go ahead with the solution to solve these.

Sure! Let me describe the features which can solve these pain points.

1. **Smart wallet linked to the payments feature in the ap**p. Users can directly top up the wallet and use it for shopping. They can also keep a reserve balance in the wallet which will be used in case of a pending transaction. If the pending transaction was successful after some time the reserve balance will be refunded.
2. **Virtual map for supermarkets** which gives users the directions for any product that they want.
3. **Quick Error Correction:** An app feature could allow cashiers to quickly correct mistakes, such as voiding an incorrect item or adjusting quantities, without disrupting the workflow.
4. **QR Code Scanning:** Integrate QR codes on product labels. Buyers can scan these codes with their smartphones to access detailed product information, including manufacturing dates, expiry dates, and quality assurance details.

Sounds good. Thanks

In-Car Entertainment Device

Design an in-car entertainment device (Google PM)

Before we start, I want to ask a few clarifying questions. Since some forms of in-car devices exist, are you considering changes to any of these devices, or you want to design a device from scratch?

You can choose either.

I'll go with the design of a new physical entertainment device that would be mounted in the car. I'll now go ahead with listing the user personas that I can think of.

Business traveler (in a chauffeur driven car): Age group 35-55 years, would like to make maximum use of their idle time by catching up on business news or their work

Regular traveler (in a chauffeur driven car): Age 21-45 years, would like to use their idle time watching entertaining content

Parents of young children: Age 21-27 years, would like to keep their children engaged while they are driving and reduce their distractions

Person driving his own car: Age 18-45 years, would like to perform ancillary tasks like answering phone calls, listening to music, navigating maps without losing focus on driving. Would you like me to consider any other persona or prioritize a specific one?

You can choose

Based on the needs of the user personas, I would like to prioritize the regular traveler who is travelling in a chauffeur driven car. This user would have most needs that could be addressed by our product. Understanding that these users are usually idle and are left to their own devices to keep themselves occupied, I can think of a few features:

1. **Interface with OTT platforms**: Users can utilize their existing subscriptions and continue watching their watchlist

2. **Home screen with options based on topics and areas of interest**: The home screen would display varied content with options to navigate based on the interest of the user. Content can be in the form of news, entertainment videos, radio, etc.

3. **Incorporate abilities to create drawings, documents, notes**: Existing Google apps can be leveraged (e.g., Google Drawings integration for drawings). The user would have a provision to email the content to themselves without the need to log in, to ensure security. We could design the device to be detachable, to enable drawing or reading mode.

Would you like me to prioritize a specific feature?

You could choose which feature to prioritize

I would focus on the feature with most value for the target user persona and least effort in implementation. I would like to prioritize the third feature i.e ability to create drawings, documents, notes; since this would give users more entertainment options than currently available on their phones. Also, we would be able to leverage the existing capabilities of Google, like Google Drawings.

This is interesting. What metrics would you use to evaluate the success of the product?

Considering its a new device for entertainment, I would evaluate metrics like
•Number of users using the device more than a minimum threshold time
•Increase in the usage time of the device
•Increase in the customer satisfaction of the entertainment device over time
Would you like me to elaborate further on any of this?

No, this should be good. Thank you

Classroom in the Metaverse

Design a classroom in the Metaverse (Google PM)

Before we start, I want to ask a few clarifying questions. Do we have a goal in mind while building this?

It should tackle the issue of missing human connection faced by users of video-based solutions.

I'll now go ahead with listing the user personas that I can think of.

Teachers: Age 25-45 years, familiar with technology but has concerns about maintaining student engagement.

Pain points:

- Find it challenging to maintain student engagement during virtual lectures, as the personal connection and interactive aspects are reduced.
- Providing one-on-one assistance to students during virtual office hours can be challenging, leading to reduced interaction with students who need extra help.
- Can be difficult to check instances of proxy attendance

Students: Age 15-30 years, tech-savvy and enjoy exploring new technologies and virtual experiences, often attend online lectures and collaborate with peers on group projects.

Pain points:

- Unable to access college infrastructure from home like labs etc
- Online classes sometimes lack the engagement and interactivity of traditional classroom settings, making it harder for her to stay focused.
- Coordinating with team members for group projects is challenging, as current tools don't fully capture the essence of face-to-face collaboration.
- Concerns about privacy

Would you like me to consider any other persona or prioritize a specific one?

Take both of them

Sure! Let me describe the features which can solve these pain points.

Teachers:

- Interactive whiteboards
- Dashboards to monitor student engagement level
- Authenticate entry and exit

Students:

- Virtual trips
- Collaborative note-making
- Virtual lab.
- Avenues where students can interact informally with other students. Create chatrooms, games & music rooms.
- Privacy should be airtight, no one else should be able to log in to the classroom without proper credentials, and students' data should be secure.

How can you ensure that some other large company won't copy your feature?

Large companies have a lot of resources at their disposal & can easily copy the feature. We could try creating hardware dependencies and patent the IP.

In the case of HW, It cannot be quickly modified, how will you decide what should go into the HW?

Most features should be allowed to be upgraded via software. Even at the hardware level, we can try pushing firmware updates that will improve the device.

What would be the North Star metric for this feature?

I think no. of hours spent learning could be a good North Star metric. It also takes into account the number of users indirectly.

Laterals Questions

Design a product for live speech to text conversion. (Microsoft)

Design a chat app for sports enthusiasts. (Microsoft)

Design a social media app for families. (Microsoft)

Design a product to upskill citizens from tier 2 and 3 cities of India. (Microsoft)

Design a search engine for kids. (Microsoft)

Design a travel app. What would be your GTM strategy for it? (Microsoft)

Design a coffee machine. (Microsoft)

How will you revamp the in-flight entertainment system? (Microsoft)

How would you increase average user screen time on Netflix? (Amagi)

How would you increase market share of Netflix in India? (Amagi)

Design some additional features to enhance WhatsApp. (Atlassian)

How would you improve Uber? (Razorpay)

Design Facebook for people who do not know how to read or write any language. (Razorpay)

How will you improve conversion rate in an e-commerce app? (Razorpay)

How will you improve the online flight booking experience prevalent today? (Razorpay)

Design the homepage of an ecommerce website. (Flipkart)

How would you improve search experience on Flipkart? (Myntra)

How would you design a shuttle sharing service for Uber? (Myntra)

Root Cause Analysis(RCA)

RCA Questions – Approach

Metric ABC has seen a X% drop. What would you do?

- **Define the metric**: Be sure you understand what metric has been affected. Tell your interviewer what you think the metric means. Let your interviewer confirm before you proceed to solve the question.
- **Context**: Ask clarifying questions about the time duration in which the metric has been down, platform affected (mobile app/website), OS affected (Android/iOS), demographics affected & geographical region affected (international/India/regions within India).
- **Drop Rate**: Is this drop sudden or gradual? Both internal and external factors need to be evaluated either way, but the kind of suggestions you make should take this into account. For example, sudden declines are quite likely to be caused by new releases on our user facing platforms or servers which have introduced bugs, errors or crashes.
- **External factors:** These can be a new competitor entering the market, bad PR for our product, seasonality, a government regulation or legislation or a major temporary event (such as Covid-19, strikes).
- **Internal factors**: To evaluate these, create a user journey of your platform, ask for whether there has been any change in metrics at each stage of the user journey from the interviewer and understand the point at which the user behaviour has changed. This would help you zoom in on one stage of the user journey and understand the root cause of the change.
- **Solution**: After identifying the root cause you need to come up with a solution to address it. If the issue is within our platform or server, we should fix it immediately through a hotfix or new version release. If it is caused by some external factors, it will take more time to solve. We need to escalate it, involve more stakeholders in the organisation and devise a strategy to deal with it.

Flipkart UGC

Flipkart has seen a 20% drop in engagement on UGC. What could be done?

Okay. There are a couple of clarifications I want to make. From what I understand, UGC is User Gene rated Content. What all formats are present within Flipkart to support UGC?

UGC is supported in 3 formats – Reviews & Ratings, Questions & Answers and curated product collections by users.

Right. Is this drop across all formats?

No. Just Questions & Answers seem to have been impacted.

Another clarification. What exactly do you mean by engagement when it comes to Questions & Answers (Q&As)?

Engagement is defined by the metric – number of upvotes + downvotes per Q&A. Both are down.

Thanks. We know Flipkart works across mobile app & website. Is this issue platform specific?

No, we are seeing a drop across platforms.

Have we seen this drop pan India or is it specific to a particular region of users?

The metric is down for all users throughout India.

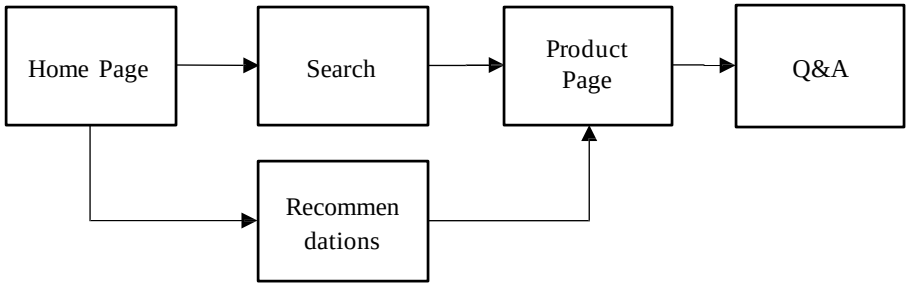
How long have we seen this issue? Was there a sudden drop or has there been a gradual decrease?

We have seen a gradual decrease over the last 2 months. It is likely due to some new release that we did. But Flipkart launches a multitude of features in each release. It is difficult to go through all of them to check what has happened.

I can also think of some e xterna l factors like some launch by competitors or some regulation changes which could have impacted e-commerce usage. But let's focus on our internal factors first.

That seems fair. You can go ahead with the analysis of our internal factors

Sure, let me build a user journey to understand how a user would typically use the Flipkart platform.



Homepage
- # sessions/day
- Bounce rate

Search
- # searches/session
- CTR on browse page

Recommendation
- CTR on recos on home page

Product Page
- # landings/session
- Bounce rate

Q&A
- # Q&A section impressions/session
- # Q&As viewed /session

Flipkart UGC

Here is the user journey of a typical user on the Flipkart platform. I have listed metrics I would check at each stage to ensure that things are alright at that stage of the journey. A drop in a metric at a stage before the Q&A stage might indicate that the root cause lies outside the Q&A construct. Have any of the listed metrics across the user journey been impacted over the last 2 months?

Interesting thought! None of the metrics before the user reaches the Q&A section have been impacted. Within the Q&A we have observed that the impressions per session and CTR of the overall Q&A section is stable. However, within the section, the number of Q&As viewed per session has decreased.

Since, impressions of the Q&A section hasn't changed, we can assume that the visibility and accessibility of the section is still the same. However, something must have changed within the Q&A construct in the release around 2 months ago. I can think of 3 factors – functionality which changed the process through which users browse the Q&As, new UI which changed the look and feel of the Q&As or some technical back-end change which might have impacted error rates, crashes or latency.

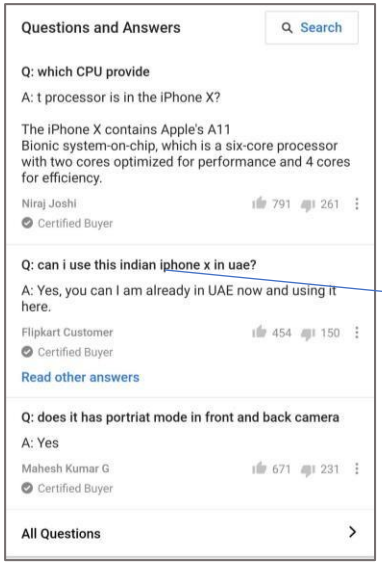
Now that I think of it, we did introduce the text search capability within the Q&A section. This allows to type in keywords and look for a question.

That makes a lot of sense. The fact that users can directly search for specific questions means that they no longer scroll through a multitude of questions like they used to earlier. This naturally means that the overall engagement goes down. It is more important to understand whether the users are able to locate the information they need. If the conversion rate has not dropped it essentially means we have made the purchase easier for users.

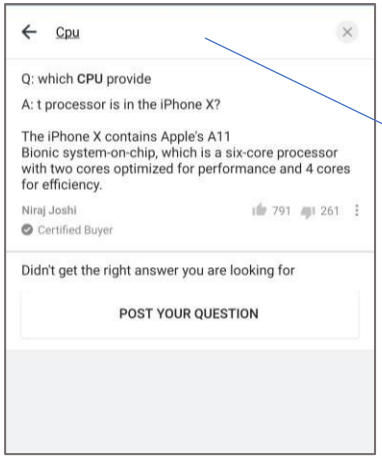
We ran an A/B with the Q&A search feature. The conversion rate in fact improved.

Great! I don't think we need to do anything then. The search feature has improved the user e xpe rience. We should move away from tracking engagement per Q&A and instead track engagement per Q&A viewed by the user.

That's a great solution! Thank you.



Q&A Section



Search Feature

Uber Drivers

Drivers on Uber have fallen down by 2%. What would you do?

Ok. I would like to ask a few clarifying questions before proceeding. What does 'drivers falling' mean? Is it the number of drivers signed up on the platform or is it the number of active drivers during a period?

Take the metric impacted to be active drivers per day. Active driver is someone who is logged in and willing to accept rides for at least 2 hours in a day.

Alright. For how long have we seen this adverse impact?

This drop started around 2 months back.

Was this drop sudden or has it been gradually going down for 2 months?

It has been gradual.

I am assuming we are debugging this for India. Has this metric dropped throughout India? Or has just a particular geographic region been affected?

We have just seen this drop in Hyderabad.

Has this affected drivers across different mobile devices and OS?

Yes.

Alright. I will state the facts of the case once. Active drivers on Uber have been gradually falling for the last 2 months. This drop is limited to Hyderabad. Drivers using all different mobile devices and OS have been impacted by this. Can I proceed with this?

Yes. Please go ahead.

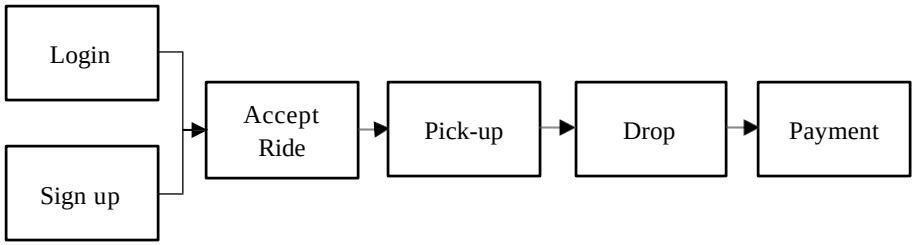
Alright. I am assuming that our releases are not localised to particular regions. Since this issue is limited to Hyderabad, I think that it is unlikely to be caused by any server deployments or new app releases.

That is correct. We don't have releases for specific regions.

One thing I can think of is some changes to our vernacular support but even that should have impacted all the Telugu speaking regions, not just Hyderabad. So, I would be constructing the user journey of drivers using our platform and see if any metric is down for the drivers operating from Hyderabad.

Sure. We can put a filter of the Hyderabad pin code on our analytics dashboard.

Here is the user journey for our drivers.



Login
- # Login failures per day
- Avg. time for login

Sign Up
-# Sign-up drop offs per day
- Avg. time for each sign up

Accept Ride
- # trip requests per day
- Avg. idle time
- Acceptance rate per driver

Pick-up
- Avg. distance to pick-up per trip
- Avg. time to pick-up per trip

Drop
- Avg. trip distance
- Avg. trip duration

Payment
- Avg. income per month per driver
- Avg. earning per trip
- Avg. base fare per trip
-Avg. tip received per fare
- Avg. surcharge per trip
- Avg. time to receive income from Uber

Uber Drivers

Starting off with logins and sign-ups, have we seen any issues there? An increase in failures, drop-offs or time taken to complete the process might frustrate drivers into leaving the platform.

All these are fine. We have observed no problems in our login or sign-up flow.

Ne xt step in the journey is the driver accepting a ride. Is there any change in the number of trip requests per day? This could be due to a demand side issue. The reduced requests for trips could be forcing drivers away from the platform as second order effects.

The number of trips requested per day has not gone down in this period. It is just the drivers which have reduced.

Have we seen any change in driver behaviour? Increase in idle time or reduction in trip acceptance rates would suggest that drivers are slacking off or feel that the trip is not worth taking.

We have observed no significant change in these metrics.

The next stage in the journey for drivers is pick-up and drop. I am looking at metrics of distance and duration for pick-up as well as the trip. An increase in these metrics might make the trip more tedious for drivers.

This metrics are fine as well. What else could be the reason?

The last stage in my funnel is the payment to the drivers. Have we seen a decrease in average monthly driver income?

Yes, we have seen a decrease in this.

Since the number of requests and acceptance rate is unaffected, the total trips must still be the same for drivers. Hence this reduction must also have led to a decrease of earnings being received per trip.

Correct! Average earning per trip has indeed reduced.

Further, this can be attributed to earnings through the base fare or tip from customers. Have we seen a change in either?

Tips are unaffected. They have always been low. However, the fare given by Uber to drivers are come down.

Have we made any specific changes to our payment policy in Hyderabad?

Yes! Now that you mention it, we did change the incentive structure. We have a component called ‘late night safety fee’ for our drivers in many cit ies driving between 10PM – 6AM. As per our policies, Hyderabad has now been declared as a safe city. As a result, this incentive has been removed.

Got it! Just to validate this, is the drop in active drivers much more significant during late night (10PM – 6AM) as compared to the peak hours (8AM – 12PM & 5PM – 9PM)?

It indeed is. The drop is severe late at night. Other times of the day are relatively unaffected. How can we solve this?

Since the active drivers per day is the metric impacted by this, there must be drivers in Hyderabad who drive exclusively at night. Losing these drivers is an issue. I believe there should be some incentive for drivers to work late at night.

Firstly, instead of a binary classification of safety, I propose a safety index for cities. Fares late at night should be a function of this inde x. When cit ies become safer, there would be a relatively lesser reduction in revenue for drivers rather than the huge decrease which happened right now. We can run a few experiments with different incentive levels to get an estimate of price elasticity.

Secondly, we can change the incentive structure and provide this incentive bundled after n rides rather than on each ride. This would encourage drivers to take more trips while limiting the costs for Uber.

Thirdly, we could pass on some of this cost to users by surging prices during late at night. These are my recommendations.

Sounds good! That would be all. Thank you.

Flipkart Notifications

The open rate of Flipkart notifications is down. What would you do? (Flipkart)

I would like to ask a few clarifying questions before proceeding. Which notifications are we referring to? From my e xpe rience of using Flipkart, I have noticed push notifications on app, in-app notifications and chrome browser notifications. Is it one of them or am I missing something?

We are referring to push notifications.

Can you tell me what an open means for a push notification? Does this refer to the action of viewing the notification, clicking on the notification or actually going through with the purchase after opening the app?

Open rate is defined by the number of notifications opened per 100 notifications sent by us. Opening a notification is the user seeing the notification and clicking on it to reach the landing page. That's where the job of our team ends. Rest of the funnel is handled by the other teams.

Got it. Is this drop across Android and iOS?

Yes, it is.

And is it limited to any geographical region or demographic segment?

Nope. We are seeing this drop across India with all sorts of users.

How long have we seen this drop? Was this drop sudden or gradual?

We saw a sudden drop right when lockdown ended. Assume that was yesterday.

Understood. I will just reiterate everything we have discussed until now. We have seen a sudden drop in the open rate of push notifications. This drop occurred yesterday around the time lockdown ended and is seen across OS, geographies and demographics.

That is correct. You can proceed with this.

Sure! To debug this problem I would go through both the external and internal factors might have caused this issue. Once we get to the root cause, I will ideate on what steps could be taken to rectify this issue. Does that seem okay?

Absolutely. Please proceed with that.

I will go through the externa l factors first. The first factor to consider is a change to our competitive landscape. Did we have a new e-commerce platform emerging? Or did a competitor launch a major new feature? Or did local brick and mortar stores start offering free home delivery services? These events might have made Flipkart the less preferred shopping destination for users.

I don't think this is an issue. There was no major change in our competitors.

Ok. The ne xt factor to consider is PR. Did we have any negative PR? Maybe some sort of news in the media that our warehouses are not safe? Any delivery guy who might have spread Covid? There was also a push towards boycotting Chinese goods, so something on those lines?

None at all. In fact, public sentiment towards Flipkart has improved. We are widely seen as having a safe supply chain. More and more people want to start buying online rather than go to physical stores during the pandemic. These were some good points but why don't you move on to the internal factors now.

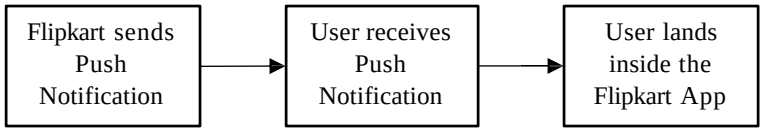
Sure! Let's brainstorm some internal factors. Since, this was a sudden drop, did we have a new app release or deployment which coincided with the end of the lockdown? There might be bugs in the release or deployment which might be causing this issue.

Nope, we did not have any new roll-outs recently.

Alright. I would then go ahead and analyse the journey of our users receiving push notifications and acting on it. This will help us identify the root cause.

Sounds good. Please go ahead.

Flipkart Notifications



- # Push Notifications sent by our servers per user per day

-# Push Notifications received per user per day
- # CTR on Push Notifications

- # landings per user per day

Here is the journey for a Push Notification(PN) sent to a user. At the first step, PNs are sent to users from our servers. Have we seen any change in the number of PNs sent per user per day?

Yes! We have actually seen a drastic increase in the number of PNs pushed out to users.

Got it! The ne xt stage is the user receiving the PN and clicking on it. Is the metric of number of PNs received per user per day consistent with PNs sent by our servers? This is just to make sure that we are not facing an issue in which the server is facing some errors and resulting in PNs not being received by the user.

We measure this through acknowledgement rate. The server gets an 'ack' when the user receives the PN. Acknowledgement rate's increase is consistent with the increase of PNs being pushed out. We don't see any errors or issues in our server bugs. You can assume that the PNs are reaching the users without any problem.

Have we seen a change in the CTR for PNs? Does it coincide with the time of the increase in PNs being pushed out from our servers?

Yes, we have seen a decrease in CTR from around the same time when our PNs increased.

The decrease in CTR could be as a result of the increase in PNs sent. The users might be feeling spammed or the notifications might not be relevant. Do we know why there has been an increase in PNs recently?

As you know, lockdown just ended. What do you think could have been the reasons why we could be increasing PNs right now?

With the lockdown ending, we might be informing users that we are resuming our operations. Since there is an immediate need for essentials, we might be sending PNs to let users know that we have all essentials available on our app. Also, users are really worried about their safety during the pandemic. So, we might be informing them about our safe practices and Covid protocols taken in the supply chain. Should I brainstorm further for more reasons?

You came up with some good reasons. However, our increase has been due to the wishlist additions. During the lockdown, products were not deliverable. Since people could not purchase the products, they added it to their wishlists to buy it at a later time. When the lockdown ended and the items in the wishlist became deliverable, our systems automatically generated and sent PNs to the users telling them that the product is in stock now. This is the reason the number of PNs increased.

Got it ! And this sudden barrage of PNs must have felt like spam to the users. Or folks might have needed it earlier and added it to their wishlist but no longer found it relevant.

Correct! What can we do to fix this?

One obvious way to do this is to limit the number of PNs sent to a user. However, having an arbitrary upper cap would mean that we are unable to send across important in formation to the users. We can also limit the PNs by prioritizing products based on the history of shopping for the user. For exa mple, if they have been historically more interested in electronics, we can send PNs for this category and hold other PNs for now.

A more measured approach would be to bundle the products for which we send PNs. These bundles can be created on the basis of product category. For e xa mple, the PN can be "X phone, Y TV and Z laptop are now back in stock". This PN combines all items in the electronics category. The trade-off would be that we won't be sending immediate PNs. However, this would be less of a nuisance to the users.

That would be all. Thank you!

LinkedIn Messages

The response rate of LinkedIn messages is down. What would you do? (Flipkart)

Before I start, I would like to ask a few preliminary questions. What do you mean by response rate? Does it include both the text message responses as well as the emoji reactions?

It doesn't include emojis. Response rate can be defined the number of text message responses per message received.

What do we mean when we say down? Do we have a number?

Response rate has seen a decrease of 5%.

How long have we seen this decline? And has this decline been gradual or was it sudden?

The decline has been gradual over a period of 3 months.

Has this decrease been across geographical regions and platforms? By platforms, I refer to website, Android and iOS.

This has been consistent across geographies and platforms.

Got it. This decrease can be attributed to external or internal factors. Let me go over the potential external factors first.

There could be a competitor who introduced an improved chat experience which is pushing professionals to have conversations on that platform instead.

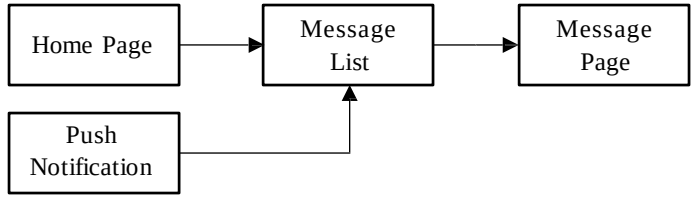
This could be a seasonal occurrence. For e xa mple, the response rate might go down every year after the placement season in universities and colleges since the students already have jobs and would be less likely to reply to the recruiters who approach them.

This could also be due to changing user trends due to Covid. During this time, users are not looking to switch jobs and hence rarely look at messages. Should I explore more external factors or move to internal factors?

You can go ahead with internal factors.

Sure, let me build a user journey and try to understand the points where things could be going wrong.

Sure.



Homepage
- # sessions
- CTR on messaging icon

Push Notifications
- # notifications
-CTR on notifications

Message List
-Message impressions per session
- # CTR on individual messages

Message Page
-# typed responses per landing
- # autosuggested responses per landing

Here is the user journey of a typical user reading a message on LinkedIn. I have listed metrics I would check at each stage to ensure that things are alright at that stage of the journey. For Individual messages I am looking at landings to only include the people who land on this page. Has any of the listed metrics across the user journey been impacted over the last 3 months?

The metrics you mentioned for the Home Page and Push Notifications are fine. In the message list, message impressions/session is unaffected but CTR on messages is down. We have no data per landing for Message Page.

LinkedIn Messages

Got it. This means that users are able to reach the message list but don't click on it to go to the message page

Why don't you dig deeper into this. Why could the users not be clicking on messages?

Before I dig deeper, I want to ask one thing. Is CTR on messages down for messages from connections or unknown people or both?

That's an interesting thought. It is down for messages from unknown profiles.

This means users are wary of new profiles. This could be because they receive a lot of spam messages from new profiles or they simple not trust unknown profiles.

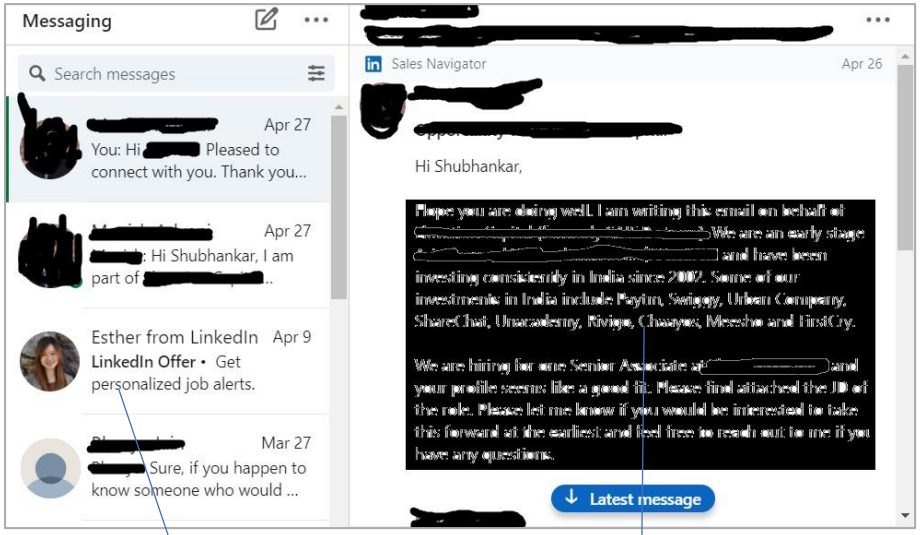
Let's assume that trust is the issue. What factors could be causing users to not trust the profiles they come across?

Lack of t rust can happen due to profiles being incomplete or incorrect. Linked In gives a metric of percent completion for profile to encourage users to fill various information. Have we seen a change in the number of users having incomplete profiles?

No. But you are spot on about profiles having incorrect information. We have received a lot of complaints of fake profiles from users.

That solves it. Having encountered a lot of fake accounts in the past, users are apprehensive about responding to unknown profiles. My recommendation would be to verify the information being input by the users. For e xa mple we can ask users to upload id card, transcripts, degree certificates and work-ex proof to validate the information input by them. LinkedIn can verify this information using image processing. After verification, the profiles can show a verified tag.

That is a pretty good recommendation. Thank you!



Messages List

Message Page

The video views on Prime Video has gone down. What should we do? (Microsoft)

Sure. Before I begin, I would like to ask some clarifying questions. What counts as a video view on Prime?

A video is counted as been viewed if at least 70% of the video is watched by the user. Views per day is the metric affected.

Okay. How much has the decline been? For how long have we seen this issue? Has the decrease been gradual or sudden?

We have seen a 20% decrease. This has been gradual, over the last month.

Is this issue prevalent across website and mobile apps on Android and iOS?

Yes, we are noticing this across all platforms, OS versions and devices.

Is this issue happening in a particular geographical region in India? Or to a specific demographic group?

No. This is happening across India for all demographic segments.

Understood. I will just reiterate the problem at hand. Video views on Prime Video is down by 20%. This has been gradual over the last month. We are seeing this issue on both website and mobile apps for all geographies and user segments in India. Can I proceed with this?

Yes. Please go ahead.

Alright. I would first analyse some e xterna l factors that might have impacted our users. For internal factors, I would understand the journey of our user while watching videos on our platform. Does this seem okay to you?

The structure looks good. Please go ahead and list all the external and internal factors which you can think of.

Sure! I will go over the externa l factors. Is there any major event going on currently which is being broadcasted? Something like the IPL or any football championships? This would have resulted in people shifting over there and spending less time on our application.

No. Nothing of that sort is happening.

What about a competitor related change? This change could be due to the entrance of a new competitor or some changes introduced by an existing one. If the new entrant is a big player, users could be moving to them due to their reputation or some e xc lusive content. For an existing competitor, they could have introduced some discounts, new features or content to lure users.

Can you think of some other factors?

Anything related to the government? Has any new legislation or regulation been introduced in India in this domain?

Nope. Nothing from the government side.

Has there been some bad PR? The company's name being dragged through a scam or scandal.

No, nothing like that.

Has this drop occurred earlier as well? Around the same time last year? This is just to make sure it is not a seasonal change.

No. This has happened for the first time.

Okay. Since none of the externa l factors have affected, I am shifting to internal factors. Has there been any new app release or server deployment around the time when the decline started?

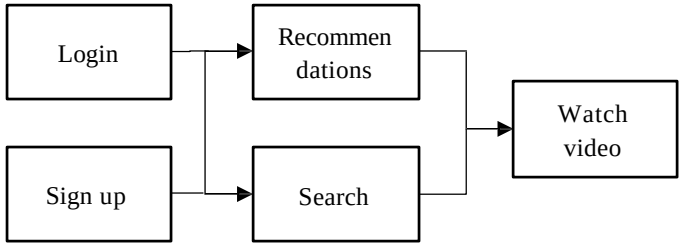
If it were a new release or deployment, wouldn't the change then have been sudden and not a gradual one?

If this new release was rolled out gradually, its adverse impact would be gradual too.

Well pointed out. All our new releases and deployments are stable.

If all these do not seem to be the issue I would go through the user journey and look at metrics at each step of the journey to see where things start to go wrong.

Please go ahead.



Here is the user journey for a typical user using our platform. I would list a few metrics at each stage of the journey and ask whether they have deviated significantly from the baseline over the last month.

No need. I think the diagnosis has been quite comprehensive. In this case, as you had mentioned earlier, there is a new application which is offering free content. People are spending their time over there. Now give me some recommendations to address this issue.

Sure. The value proposition that people who migrated are looking for is value for money. This is understandable for the Indian market where people are price sensitive. So, we need to come up with an innovative way of pricing such as sachet pricing.

How would this sachet pricing work? Take the example of a series. How would it work?

Okay. Sachet pricing would be for the whole movie and per season for a TV show.

For illustration let us suppose we take the series Lupin. It has 5 episodes, and it has a season 2 which would get released ne xt quarter. I would recommend that we price Lupin's entire season 1 and not do it per episode. Enabling payment per episode would mean that the users would need to pay again and again. This can result in a lot of dropouts in the user journey. Doing it season wise makes a lot of sense. Lupin season 1 ended on a cliff-hanger so people would be eager to comeback and pay for the next season when it arrives.

Coming to putting the actual number to the price, it would again depend on the type of content. If more people are interested in particular content, it could be priced high. But the price should not be so dynamic that it changes every few hours or days. This would discourage the viewers from paying if they would see the price rising for the content. Or they might be anticipating that the price might go down in the future.

Okay. This was quite interesting. The approach was very thorough. Thank you so much.

Flipkart Hyperlocal

Flipkart's hyperlocal business in Bangalore is observing breaches. Can you please diagnose the issue? (Flipkart)

Sure. Before I begin, I would like to ask some clarifying questions. What do we mean by breaches here? How do we measure these breaches in a hyperlocal business at Flipkart?

For our hyperlocal business, we measure average delivery time per order. We are seeing a rise in the same.

Okay. How much is the rise observed in average delivery time per order?

We are seeing about 10% increase in the delivery times.

What categories are we observing these breaches in? Is it in a particular category like grocery, stationery, etc. or across all categories?

The rise is seen across all categories.

Is there a specific region of Bangalore in which we are seeing this increase or is it across Bangalore?

Good question. We are observing this in few parts of Bangalore. Other regions seem to be doing fine.

Alright. Lastly, for how long have we seen these breaches? Are these gradual or sudden?

We have seen this increase for a month now. Apparently, our dashboards show a step increase all of a sudden.

Okay. To begin with, I would first like to analyse some broad external factors that might impact our delivery commitments. I would then go ahead and understand the user journey of our delivery system to look for any issues at any of the steps. Does this seem okay to you?

Yes. The structure looks good. Please go ahead.

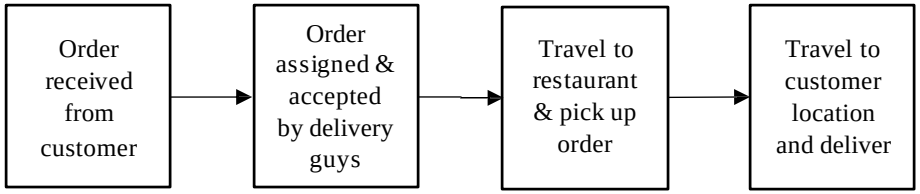
Thinking of seasonality as an external factor, we might see this rise because of rains or bad weather conditions in particularly our affected areas of Bangalore. Do we have any such observation?

No. The weather is good and there has been no drastic change compared to last month across Bangalore.

Okay. There are a few other factors that come to my mind. There can be some government interference affecting regional small stores that we serve from, impacting our supply chain. This rise could also be due to closing of some stores in those regions making our delivery guys take longer to procure items. Does any of this seem to be a probable reason?

These are interesting factors. But there are no such issues that have been observed and everything looks good.

Alright. I would then go ahead and analyse the user journey of our delivery systemto root cause the issue further.



Orders received
Error rate at server

Order assignment & acceptance
- Average time to accept / order

Travel
- # stores covered /delivery guy/ day
- Avg. distance travelled / store
-Avg. time of travel / store

Pick up
-Avg. time to confirm pickup / store

Travel & deliver
-Avg. distance travelled/ order
-Avg. time from pickup till delivery / order

Flipkart Hyperlocal

I have broken down the entire journey into 4 steps and listed a few metrics that I would check to see which part might be causing delays in delivery. Before we check the metrics, I would like to clarify the context of an order pickup. Delivery people might either go first to a restaurant to pick up the order and then straight to the customer location, or pick up orders from multiple restaurants by optimizing their route and then proceed towards end delivery. Should I consider multiple orders or a single order delivery for this problem?

Great question. For simplicity, let us assume the use case of a single order delivery.

Okay. So I will keep the journey simplistic with respect to order pickup and analyse the metrics. Since the issue is observed in only a few parts of Bangalore, server side error rates or any technical issues should not be the problem. Has any of the listed metrics across the journey been impacted for that particular region over the last month?

All the metrics look fine on the dashboard except the last one which you talked about. The average time from pickup till delivery per order has gone up.

Okay. With this understanding, I would like to deep dive into just this part of the journey to find the root cause. Also, I would like to get an idea of the kind of increase in delivery time we are observing. From what I know, Flipkart's hyperlocal gives a 90-minute delivery assurance. So, a breach of 10% means the deliveries are delayed by 9 minutes on an average. Does my approach seem okay?

It's great that you brought out some numbers in the discussion. The approach is okay. Please go ahead.

Sure. Now, the time spent from pickup till delivery can be further split up into two parts – pickup till landmark of the location and landmark to exact address. For the first part, I can think of a few factors responsible. There might be some construction work in progress in these regions causing traffic to slow down. It might also be possible that drivers have started stopping enroute for some refuelling or refreshments. Does any of this seem to be the reason?

Good points. But, all these do not seem to be a problem in these regions. Think about how a typical end user location is in Bangalore and then analyse.

Sure. I'll analyse the second part of this delivery time keeping a typical Bangalore customer in mind. From my experience in Bangalore, a significant number of people live in mid-to-large-sized apartments with security guards at the main gate. These apartments might be on the main road or somewhere inside. Should I go ahead with these kind of customers to analyse it further?

Yes. This looks good. Please go ahead.

Okay. Now, it is possible that these 9 minutes get wasted just to find the e xact address of the customer. This might be due to delivery guys either themselves searching or calling the customer for the same. Are we seeing an issue with respect to the customer addresses in these affected regions?

No, the addresses and locations are okay.

Cool. So, once the location is reached, delivery guys would talk to the guard, enter the apartment and finally reach the flat or house of the customer. Are we seeing any delays with respect to dealing with guards and reaching the customer?

Yes, we are. We came to know that the apartments in these regions do not have a smooth entry process for delivery agents. Hence, our guys waste about 5-10 minutes in the formalities with the guards and get delayed reaching the customer. That was a very thorough analysis from your side. Thank you so much.

Facebook Users

Declining monthly average users of Facebook (DP World)

You are the PM at Facebook. The monthly average users of Facebook is going down. What could be the possible reason?

That's an interesting question. Before I delve into identifying the potential reasons, could you please provide me with some more context? Are we observing the decline in a specific region, or is it a global trend? What is the time-frame?

The decline in monthly average users is primarily happening in US for the last 6 months.

Understood. Is it specific to any set of users? Also, do we have any recent changes in our product, marketing strategies, or external factors that might be influencing this decline in the number of monthly average users?

The problem is seen only with the existing users. The new user onboarding rate is unaffected. In terms of recent changes, we haven't made any significant updates to the platform in the past few months. However, there has been increased competition from other social media platforms and growing concerns about user privacy.

Thank you for the context. The decline in user engagement in US could be due to multiple factors. Let's explore a few possibilities:

1. **Competition:** The increased competition could be attracting users away from Facebook. Have we conducted any competitive analysis to understand how our user experience compare to these competitors?
2. **User Privacy concerns:** You mentioned growing concerns about user privacy. It's possible that recent regulatory changes related to data privacy have caused users to be more cautious about using our platform. Have we communicated our privacy improvements to our users?
3. **Content relevance:** The decline could also be linked to the relevance of content on our platform. Are users finding the content in newsfeed engaging and tailored to their interests? Have we conducted any surveys or analysed user engagement metrics to address this issue?
4. **User Experience:** Finally, a poor UX can lead to declining users as well. Have we conducted any usability testing to identify any pain points in our app?

Great. These are indeed valid points to consider. We have conducted few surveys, and users have mentioned that they feel overwhelmed by the amount of content on their newsfeed and that the platform has become less enjoyable to use. How would you address this issue?

Addressing the issue of overwhelming content and user dissatisfaction required a multi-faced approach:

1. **Algorithm refinement:** We could fine tune our content recommendation algorithms to prioritize posts from close friends and favorite content creators, which would make the content more relevant and personal to each user.
2. **Personalized filter:** Introducing a personalized filter that allows users to customize their newsfeed according to their preferences, such as topics, friends, etc. This could help users reduce the noise and clutter on their newsfeed and focus on content that matters to them.
3. **Gamification:** Introduce gamified features that tap into US's love for gaming. Users could earn rewards by participating in quizzes, daily spin-wheels, challenges or other interactive games.
4. **VR Engagement:** Leverage VR allowing users to interact with their family and friends in a more immersive and realistic way. This could help users feel more connected and engaged with their social network.

By implementing a combination of these suggestions, we can work towards regaining user trust and address the issue of declining monthly average users of Facebook.

These are some insightful suggestions. Your approach was very comprehensive. Thank you for sharing your thoughts. That would be it!

Addressing Discrepancies in Google Maps ETA (Just Dial)

You are the PM for Google Maps. Google Maps is showing a shorter ETA than is actually required to travel between two points. Users are reporting that they are arriving at their destination later than expected, even when they follow the directions provided by Google Maps.

Sure. To better understand the issue, could you provide me with more details about when and where this problem is occurring? Is there any specific area where users have reported experiencing this problem more frequently? Is this problem present across all platforms, Android/iOS, Mobile/Web?

Yes, this is present across all platforms and has been only seen in the last couple of days. Additionally, the users are reporting from various regions and routes, so it doesn't appear to be isolated to a particular area. We have also noticed that the ETA inaccuracies are more prevalent during peak traffic hours.

That's definitely concerning. I would like to understand if there have been any recent updates to the algorithm or data source that could have caused this. Can you confirm if any updates were made to the routing algorithm or the data used for traffic predictions?

The data sources for traffic information remain the same as before. We did roll out a few updates to improve routing algorithm. It's worth noting that some users have mentioned that the ETA often remains the same regardless of the time of the day, leading to unrealistic expectations during heavy traffic periods.

Understood. It seems that the recent algorithm changes could be the likely cause of the ETA discrepancies. To address this, my next step would be to analyze the specific changes that were made to the routing algorithm. Could you provide more details about the nature of these updates and how they were expected to improve accuracy?

Certainly. The updates were intended to take into account more real-time traffic data and road closures due to construction. The idea was to provide users with more dynamic routing based on current traffic conditions and roadblocks.

Got it. While the intention behind these updates is commendable, it's possible that the algorithm is now overestimating the impact of road closures or underestimating the time required for specific traffic conditions.

To address this, I would propose conducting a thorough analysis of the algorithm's performance before and after the update. This analysis should involve comparing the ETA predictions with actual travel times for a wide range of routes and traffic scenarios.

That sounds like a reasonable approach. How would you proceed if the analysis confirms that the algorithm changes are indeed causing the ETA discrepancies?

If the analysis confirms that the algorithm changes are the root cause, I would recommend a two-fold approach. Firstly, I would work with the development team to fine-tune the algorithm parameters related to road closures and traffic data integration. This could involve adjusting the weightage given to different data sources.
Secondly, I would initiate a communication plan to inform users about the issue and the steps we are taking to resolve it. Transparency is crucial in maintaining user trust. We would provide regular updates through the app informing users about the progress and expected timeline for the fix.

Those are solid steps to take. One last question. How would you prevent similar issues from occurring in the future, considering the potential impact on user experience?

To prevent similar issues, I would recommend implementing a more robust testing and validation process for algorithm updates. Additionally, establishing a feedback loop from users, allowing them to report any discrepancies they encounter, would help us identify issues more quickly.

Great. We can stop it here. Thank you.

Pricing

Pricing - Approach

How would you price ABC product?

- **Product Clarity**: What is the product? Don't hesitate to ask the interviewer clarifying questions. You should be sure about the product and its capabilities before answering the question.
- **Business Goal**: Your business goal determines the kind of pricing strategy you should use. Is the objective of setting a price to increase market share or profit or something else? A lower price increases market share, while a higher price increases profit. Having said that, do keep the characteristics of the product or company brand in mind. If ABC is a premium product, you shouldn't be slashing prices suddenly.
- **Market Evolution**: Is the market still forming (emerging), have dominant players already emerged (growing and mature), or is the market already in decline?
- **Pricing Strategy**: There are 3 main strategies for pricing – cost plus pricing, value-based pricing and competitor-based pricing. When the market is still forming, customers have not yet formed an opinion of the products, therefore companies can set prices based on cost and value perception. Once major players have formed, pricing will need to be benchmarked from the competitors.
- **Cost Advantage**: If you are looking to reduce the prices, be sure to think of whether the company has cost advantages over competitors? If no, is this a temporary measure to attract users? Without cost advantages, a company cannot compete by continuing with lower prices, because this would just continue to erode profits.
- **Product Differentiation**: If you are looking to increase prices, what are the additional features that the product already has, or you would offer in the future to justify the higher prices?
- **Risks**: How will all the stakeholders respond to your pricing? For analysing the impact of price changes on customers, knowing the elasticity of demand would be a great tool. Also think of what the reaction of your suppliers and competitors would be.

Smart Speaker

How would you price Apple Home, the smart speaker from Apple?

Just to be clear, Apple Home is a s mart speaker which in addition to its music playing capabilities, has an AI assistant which can take voice commands and fetch data over the internet. Am I correct with this?

Yes, you are correct. One thing I would like to point out – Apple Home can also connect with and control the smart home devices in the house.

Got it. From what I understand, these capabilities make it a competitor to smart speakers such as Ale xa and Google Home. Is Apple Home a new launch by Apple or is it already present in the market?

We are looking to launch Apple Home in the ne xt quarter. We hope to wrestle away at least 20-30% market share from other players in the market.

Got it! Since this is a new product launch, one strategy could be to price Apple Home lower than our competitors to capture market share. However, historically, Apple's strategy in pricing has been to maintain high differentiation in their products in order to ask for premium prices. Consumers associate Apple's brand with high-premium prices because they are used to Apple's innovative product designs and quality. Therefore, pricing a future Apple Home device should follow this same high-differentiation-premium price strategy to preserve the brand's leverage.

To come up with the numbers, can you help with the products and prices our competitors Google and Amazon offer?

Sure, let me give you the prices of our competitor products. Google Home is priced at Rs 10K while Google Home Mini is priced at Rs 5K. For Alexa, we again have multiple versions ranging from at Rs 4K to Rs 9K.

Got it. First of all, just like our competitors, I would introduce 2 variants of Apple Home in the market. Offering a lower priced device would allow us to hit competitors both in the low end and high end of the market. This strategy is especially useful in India where most of the users are price sensitive. This would entice customers who want a premium Apple product at a lower price.

Secondly, I want to calculate the premium Apple charges for its products to arrive at the e xact price point. Just to have an estimate of the kind of premium Apple charges, let's compare the Google Pixel and Apple iPhone 12. Now they have comparable specs but from the prices I remember the iPhone price is 15% more. So, we can take around 15% as the premium for Apple products over similar Google products. Using this we come at the price level of Rs 5.75K for Apple Home Mini and Rs 11.5K for Apple Home.

I love the fact that you brought in so many numbers into the analysis. You mentioned that Apple justifies its higher price through product differentiation. What are the features you would offer as differentiation?

First let's talk about the key features of Ale xa and Google Home. According to me, Alexa's key value proposition is its integration to Amazon's online store. This makes online shopping with Ale xa seamless. For Google Home, the integration with Google 's search engine is the key highlight. I would not want to compete with these devices on their strong points.

1) For Apple iPhone, the voice assistant Siri has been a huge success and hence becomes an obvious place where we can innovate. I would enhance personalisation in Apple Home. Usually, the device is used by multiple people in the house. Apple Home should store data mapped to different users and give personalised replies. These different users should be identified by their voice.

For example, let's take two users in a house who have had a historical interest in sports and politics respectively. When they get up in the morning and ask Apple Home to "Tell me the latest news", they should be given different answers.

2) Another of Apple's strong points has been its innovative design. There are numerous stories of Steve Jobs not going ahead with the design of iPhone and iPod until it was absolutely perfect. We should do something similar in Apple Home as well.

That was a thorough analysis. I really liked your approach. Thank you!

How would you price the family subscription pack for JioSaavn?

Just to clarify, JioSaavn is an already existing music streaming service in India. They already have individual subscriptions and are looking to introduce a family pack. Am I understanding this correctly?

Yes.

How many accounts would be present in the family pack?

We would adhere to 5 accounts in a family pack just like others in the industry.

Got it. We are playing in a mature market consisting of major players such as Spotify, Gaana and YouTube Music. Do we have a specific goal in mind? Do we want to wrestle users away from our competitors? Are we trying to increase our revenue? Or is there something else we are working on?

We want to increase our market share.

Got it ! Since we want to increase market share, one strategy could be to price our subscription lower than our competitors to entice users. This also synergises with Jio's historical approach of cost leadership. We should keep a reduced price initially, attract a lot of users and then increase prices. Music streaming has some lock-in characteristics because users create their customized playlists on the app. Moving to a different app would mean doing a tedious job of creating these playlist again.

To come up with the numbers, can you help me with the prices of individual and family subscription packs of our competitors. I would also like to know the price of our own individual subscription pack.

JioSaavn's individual subscription price is Rs 100/month. Why don't you try to estimate the prices of our competitors.

Alright. I will take the competitor Spotify. Spotify should be priced at a premium as compare to JioSaavn due to its superior brand reputation as well as cutting edge recommendation algorithm. Let's assume that Spotify's individual pack is priced at Rs 120/ month. There are generally 4-5 people in the family. Hence, buying accounts for all of them would incur 4-5 times the cost. However, for the family pack to be appealing, its price would be significantly lower than that.

My estimate would be that the family pack price would be around 2 times the price of the individual pack. Does that make sense?

Your estimate of Spotify's individual pack is pretty close. I liked your reasoning for Spotify's family pack too. However, in reality, the family pack is priced around 1.5 times the individual pack.

Understood. Using this conversion factor of 1.5 times, are pricing for JioSaavn's family pack should be Rs 150/ month. However, since we want to wrestle away users from our competitors, we can also go for an aggressive strategy by pricing the family pack even lower.

At the same time, we wouldn't want to compromise too much on our potential revenues. Is there a prior research on the price elasticity in the market for music streaming? This would help us understand the price range in which we would still be able to earn a marginal profit from each additional user.

There has been no such analysis done prior to this.

In my opinion, before setting the exact price level, we should conduct a user survey to have a better understanding of how the market would react to our price.

Another thing we can look at is how we could reduce our costs to justify the lower prices. This can be done by optimising data storage and computing costs, making changes to human resources or by having partnerships with music series and record labels.

You followed a good approach for this question. Thank you!

App Improvement

Spotify

Critique and Improve an application you like (Atlassian)

I would like to choose Spotify which a music streaming app . Elaborating a little more on the problems spotify addresses. As a music lover, I wish for unlimited song access without buying, discover new music aligned with my tastes, and match my mood with the music I listen to.

Sure .Please go ahead. Can you start by mentioning some use cases of Spotify

When I have a particular thing in mind, like a specific genre, artist, podcast, or my favorite songs, I simply open Spotify and go straight to it. On the other hand, when I'm in the mood to explore and discover new music, I use Spotify to find something fresh or to come across a new favorite artist.

That sounds good enough. Now please move ahead

Spotify has many different kind of users before I go ahead and critique it, I would like to define different users and their goals and pain points. After that I would prioritize one of the personas and eventually solve for it. Does this is sound fair or should I include something else

That is a fair approach. Please proceed

Sure. I would like to define 3 personas along with their goals and pain points

Persona 1: Music Enthusiast - Emily

Background: Emily is a 24-year-old music enthusiast who loves discovering new artists and genres. She spends several hours a day listening to music on Spotify during her commute, work breaks, and leisure time.

Goals: Emily seeks a seamless and personalized music experience. She wants to explore a wide variety of music and discover new tracks and playlists tailored to her taste.

Pain Points: Emily finds the ads on the free-tier version disruptive and considers upgrading to Premium for an uninterrupted listening experience. She also wants more effective ways to discover lesser-known artists and emerging music trends.

Persona 2: Casual Listener - Alex

Background: Alex is a 30-year-old casual listener who enjoys music but doesn't have much time to explore extensively. He mostly uses Spotify during workouts and while doing household chores.

Goals: Alex wants a simple and user-friendly app that allows him to quickly access his favorite playlists and play music without much hassle.

Pain Points: Alex occasionally finds the app overwhelming with its extensive features. He sometimes struggles to find specific playlists or songs he added previously and desires an intuitive search and navigation system.

Persona 3: Independent Artist - Sarah

Background: Sarah is a 28-year-old independent musician who uses Spotify to share her original music with a wider audience. She relies on the platform to gain exposure and connect with potential fans.

Goals: Sarah aims for greater visibility and engagement for her music. She wants fair compensation for her streams and opportunities to feature in Spotify's playlists to reach a broader audience.

Pain Points: Sarah finds it challenging to get her music noticed among millions of tracks on the platform. She's uncertain about how to promote her music effectively and desires more insights into her audience's preferences.

That was a thorough approach. Please proceed to the next step

I would like to choose Sarah as there as very less apps that focuses on content creators. The budding artist as she could gain a lot by Spotify providing her a platform to collaborate, engage and promote her art journey thereby increasing her reach among people

That is fair .

Now I will be defining features to solve Sarah's issues. I would like to define 3 features.

Personalized Artist Dashboard: Create a dedicated artist dashboard within the Spotify for Artists platform. This dashboard will provide Sarah with valuable insights into her audience, including demographics, listening behaviors, and geographic distribution. It will also highlight the performance of her tracks and playlists, helping her identify which content resonates the most with her listeners.

Promotion & Discovery Opportunities: Introduce a new program called "Spotify Spotlight" that showcases hand-picked independent artists to a wider audience. Spotify's editorial team and AI-driven algorithms will curate these selections based on the quality of music and listener engagement. Artists like Sarah, who demonstrate promising talent and engagement, will have a chance to be featured in Spotify's official playlists and in-app banners.

Spotify

Collaborative Playlists & Artist Features: Enable independent artists to collaborate on playlists, allowing them to cross-promote each other's work and increase visibility. Additionally, introduce "Artist Features," where established artists can highlight and recommend tracks from lesser-known artists they admire. This feature will foster a sense of community among artists and give Sarah and others like her an opportunity to gain recognition from established musicians.

Those were interesting features. Thank you for your time

We would like you to take a lead on improving OLA. How would you proceed with it (InfoEdge)

Of course, but before diving into the solutions, I'd like to clarify what exactly you mean by "improve." Could you please elaborate on the specific aspects of user engagement you're looking to enhance?

Sure, by improvement, we mean increasing user interactions, app usage, and overall satisfaction with the OLA platform.

Thank you for the clarification. In that case, I would use the CIRCLES method to brainstorm and produce some potential solutions. One idea that comes to mind is to enhance accessibility for specially abled personals. For instance, we could introduce a product viability feature for the visually impaired, making it easier for them to use OLA's services independently.

That sounds interesting! Can you explain how this feature would work and how it fits into the customer journey?

Absolutely! I would like to use AI for this feature. The AI-driven product viability feature could use image recognition technology to identify nearby vehicles and read out relevant details like car type, license plate number, and driver information. This feature would be particularly helpful during the booking process, enabling visually impaired users to locate and identify the right vehicle, improving their overall experience with OLA. By ensuring inclusivity and accessibility, this feature would create a positive impact on the customer journey, fostering customer satisfaction and loyalty.

That's a great initiative. How do you plan to implement it, and what other features do you have in mind

To implement this AI feature, we would collaborate with accessibility experts and organizations for the visually impaired to ensure the technology meets their specific needs. Additionally, we would conduct user testing and feedback sessions to refine and optimize the feature before rolling it out to a wider audience.

As for other features, I would focus on enhancing the overall user experience throughout the customer journey. For example, we could introduce personalized notifications and offers based on user preferences and behavior, ensuring users feel valued and engaged with the app. Additionally, implementing a seamless in-app support system and proactive customer service would address any concerns or issues promptly, thereby fostering a positive perception of OLA.

Those sound like excellent additions. How would you prioritize these features, and what metrics would you use to measure their impact?

Prioritizing these features would involve considering both their potential impact on user engagement and the resources required for implementation. I would suggest starting with the AI-driven product viability feature, given its significant positive impact on inclusivity and accessibility, aligning with OLA's commitment to a customer-centric approach.

To measure the impact of these features, we could track various metrics. For the product viability feature, we could measure the increase in app usage and customer satisfaction among visually impaired users. For personalized notifications and offers, we could monitor the click-through rates and conversion rates to gauge their effectiveness. Similarly, for the in-app support system, we could track the average response time and resolution rate to assess customer service efficiency.

Your approach seems well-thought-out and customer-focused. We appreciate your insights and look forward to seeing these improvements in action. Thank you for your thoughtful response

Thank you! I'm excited about the opportunity to contribute to the improvement of OLA and enhance user engagement. I believe that by focusing on the customer journey and incorporating AI-driven features, we can make a meaningful impact on the overall user experience.

Note: This was non-standard approach of solving product cases. This was majorly guided by the questions of the interviewer , which is subjective. Treat this as a practice for guided interviews. Whereas follow other cases to practice for self-guided interviews

Food Delivery App

We would like you to pick a food delivery app and focus on improving it. (Infoedge)

I would like to choose *Swiggy*. It is a food delivery app which focuses on elevating the quality of life of Urban consumers by providing them convenience through food delivery. It has recently started it's grocery delivery service too. It is considered to have a duopoly in the market and covid has led to changing habits of people which an overall increase in the piece of the pie. This phenomena along with regulations has led to new players trying to enter the market.

That was comprehensive. Please proceed further

Is there a specific goal I should be able to achieve through the improvement features.

No, you are free to define the goal.

Swiggy is a three way marketplace with 3 types of users that is restaurants/grocery stores, end consumers and delivery partners. I would want to focus on end consumers, will that be okay?

Sure. Please proceed

It has verticals of food delivery, instamart and Swiggy Genie, are we specifically looking for one of these?

You can focus on one or more, it is solely your choice.

Thank you for answering all the clarifying questions. I would like to define the scope of the problem before I proceed. I would like to focus on customer retention metrics and revenue . Since it is a popular name in the market with increased demand for delivery customer acquisition doesn't seem to be a problem anymore. While defining improvements ,I would also like to focus on enhancements which would serve as a competitive advantage. Will that be okay?

Sure. Go for it

Since we have defined the goal. Now I would like to define user personas with their needs, goals and pain points. I would also like to focus on how and when do they really use our product. This is important to create value according to the context

Sounds fair.

User Personas can be defined as follows:

Families at Home: These are families with grandparents, parents, and kids – usually around 4 to 6 people. They usually cook their own meals and rarely order food, except for special occasions or when they want a break once a week. They like food that's good for both kids and older family members. They can afford to spend a bit more for high-quality and healthy food.

College Students: These are students who live away from home in college hostels. They get a fixed amount of money each month. The hostel food isn't the best, so they often try different food options. They're influenced by their friends and tend to eat at cheap stalls near the college to save money and hang out with friends.

Busy Professionals: These are people with busy jobs and big goals. They either don't like cooking or don't have time for it. They earn good salaries and don't have many responsibilities. They often order food about four times a week and go out to eat on weekends. They rely on recommendations from friends and colleagues for food choices.

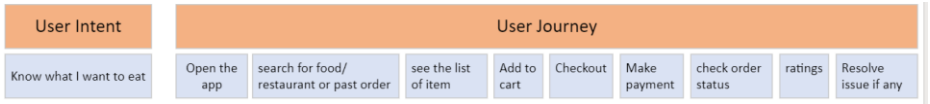
Great! Please proceed

According to the context I would like to prioritize the user according to customer life time value.

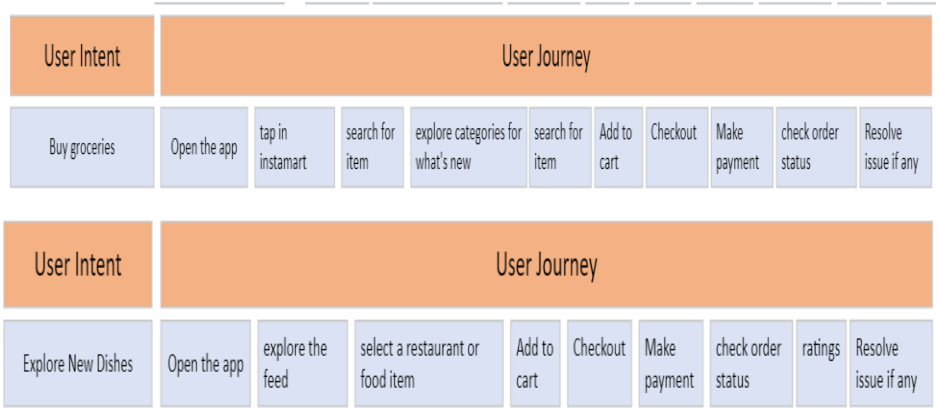
Households don't frequently order food, but their orders are usually larger. This presents a chance to offer them additional grocery items, increasing their long-term value. On the other hand, working individuals tend to order food frequently and prefer the convenience of not going to local stores for daily essentials. Given these insights into user preferences and behaviors, I would like to prioritize **households and working individuals** as the target audience. Is that fine?

Sure. Please proceed

Defining the user journey in various paths to identify the pain points



Food Delivery App



Here are some **challenges** users face and certain beliefs they currently hold, which are affecting their optimal use of our product. Our aim is to transform these existing beliefs into more favorable ones:

- **Perception of Grocery Quality and Cost**: Some users consider buying groceries through Swiggy to be pricey and worry that the freshness might not be up to the mark.
- **Discovering New Places**: Users feel that Swiggy lacks information about recently opened restaurants in their vicinity, especially those offering the types of dishes they usually enjoy.
- **Hesitation due to Hunger**: Users are reluctant to place orders when they're very hungry, as browsing through options takes a significant amount of time.
- **Emotional Connection with Food**: The platform is perceived as lacking the emotional connection that fancy restaurants provide, appearing more transactional in nature.
- **Complex Ordering for Households**: In households, the process of taking everyone's food preferences becomes a hassle, leading to longer ordering times. This problem escalates when hosting parties or having friends over.
- **Reliability of Ratings**: Users find it hard to trust restaurant ratings since nearly all establishments seem to have high ratings, making the authenticity of these ratings questionable.

You can focus on one or more, it is solely your choice.

First I would like to define solution to these problems and then prioritize using RICE framework

- **Sampling and Grocery Incentives**: To engage households who order from restaurants, we could offer a complimentary Instamart sample. Coupled with coupons, this could encourage them to explore Swiggy's grocery offerings. After delivery, a push notification can inquire about their experience with the sample and nudge them to visit Instamart for groceries. This might require delivery partners to pick up samples during downtimes, with extra compensation.
- **Restaurant Collaborations and Emotional Content**: Collaborating with new or recently opened restaurants presents an opportunity. Short videos could provide insights into the food, chefs' stories, and even delivery partner experiences. Such content, along with brief restaurant descriptions in menus, fosters an emotional connection. Users could also share this content with their social circles.

- **Enhancing Restaurant Ratings**: Instead of broad ratings, showcasing ratings for individual menu items could provide more accurate insights. Another approach is displaying the recent order count as a measure of popularity, creating a bandwagon effect.
- **Group Ordering and Scheduled Deliveries**: Introducing a group order button on menu pages, generating a time-limited link for shared orders, adds a sense of urgency. Implementing scheduling features, although complex, would enhance convenience. Balancing item availability, restaurant timing, and delivery partners' schedules is crucial.
- **Variable Rewards for Engagement**: Utilizing a variable reward concept post-order could maintain user engagement. Random coupon or scratch card rewards provide personalized discounts and offers, deviating from generic promotions.

In the next step I would like to prioritize these features

Prioritization using the **RICE framework** is a logical step. Ensuring win-win-win situations, where consumers, restaurants, and delivery partners all benefit, aligns with Swiggy's approach. Each proposed project or feature will be assessed based on its potential positive impact on all stakeholders.

Sure. Sounds good. Please proceed with the roadmap.

Food Delivery App

Objectives:

18 Months: Vision for Evolving Key Levers in Food Delivery Business Model

Over the span of 18 months, we will be focusing on understanding and shaping the fundamental drivers of our food delivery business model. These key levers will evolve to adapt to changing market dynamics and customer needs. During this period, we will also strategize around competition and navigate regulatory considerations related to commission charges and customer data sharing.

6 Months: Business Metrics and Objectives in Focus

Within 6 months, we will have clear visibility on our business metrics and set goals. This step is pivotal in aligning our efforts towards achieving growth and sustainability. By monitoring these metrics closely, we can gauge our progress and make informed decisions.

3 Months: Product Roadmap and Immediate Enhancements

In the shorter term, spanning 3 months, our product roadmap will come into sharper focus.

Actions

3 Months: This will include introducing user-friendly ratings for each menu item and providing concise yet impactful descriptions of restaurants. This effort will be complemented by curating engaging content showcasing newly opened restaurants, sharing chef and delivery partner stories.

6 Months: Boosting User Engagement and Revenue: As we approach the 6-month mark, our attention will shift towards enhancing user engagement and revenue generation. Exciting features such as scheduled orders, complimentary items, and scratch cards will be integrated. These additions are aligned with our core objective of retaining users and driving increased revenue.

18 Months: In-depth Exploration and Potential Group Orders Feature: At the 18-month juncture, we will delve deeper into understanding customer needs. An exploration phase, involving customer feedback and possibly a landing page, will help us determine the demand for a Group Orders feature. Given its potential impact, this feature will be a long-term consideration.

Throughout this roadmap, we are committed to maintaining a balanced approach. We will incorporate quick wins, strategies to move key metrics, significant initiatives, delightful user experiences, well-considered experiments, and the ongoing evolution of our technological capabilities. By following this comprehensive approach, we will ensure our roadmap caters to a holistic range of objectives and aspirations.

That was an elaborate and comprehensive solution thank you for your time

Note: This kind of questions might require success metrics as well, Please ask the interviewer if he/she wants you to define success metrics. Keep the success metrics both a mix of negative and positive metrics.

YouTube

We would like you to focus on improving your favorite app.(EightfoldAI)

My favorite app is YouTube. Before I go to improvements I would like to mention a few things about YouTube.

I greatly appreciate YouTube for two main reasons: entertainment and education. Within this versatile platform, I can easily switch between watching Super Smash Bros gameplay and guitar tutorials, and even prepare for my linear algebra exam using channels like 3Blue1Brown. This has allowed me to explore diverse concepts from various viewpoints and empower my own achievements, all thanks to the wealth of free online videos. My heartfelt gratitude goes to YouTube and the dedicated content creators who make this incredible resource possible.

The feature I find most captivating on YouTube is its recommender system. It intrigues me how people are, in a way, "integrated into the code." We, as a community and as individuals, contribute to enhancing this algorithm's intelligence. As I engage with it, the algorithm evolves, providing me with increasingly relevant video recommendations – a mutual progression. An understated elegance lies in the algorithm's seamless grouping of videos in the same language, eliminating the need for us to specify it in our searches. In essence, I admire YouTube for the remarkable opportunity it offers for people to create, share, and enjoy valuable content in both entertainment and education.

Thank you for answering all the clarifying questions. I would like to define the scope of the problem before I proceed. I would like to focus on customer retention metrics and revenue . Since it is a popular name in the market with increased demand for delivery customer acquisition doesn't seem to be a problem anymore. While defining improvements ,I would also like to focus on enhancements which would serve as a competitive advantage. Will that be okay?

That was insightful and comprehensive

In context of improvement. Would you like me improve the platform as a whole or I should focus on some specific features. Do you want me to solve for specific users? Are there any constraints on resources

You should focus on YouTube's free website platform, you can solve for any user group. You should focus on retention metrics . There are no constraints .

Thanks for your inputs. I would start by defining the user personas.
A: **Content Creators** - These are users who upload videos regularly or occasionally, driven by either monetary gains or personal enjoyment. They form the foundation of the platform's value. However, due to YouTube's exceptional success as a content-sharing platform, creators might find limited alternatives.

B: **Content Viewers** - These individuals engage with YouTube for diverse purposes, including education, entertainment, news, and gaming. Their presence generates revenue, which serves as a crucial incentive for creators to continue using YouTube as a platform to share their content.

C: **Live Streamers** - This group comprises both individuals and groups who live-stream activities like gaming, news, sports, and national events. The popularity of this media form has surged recently. While YouTube faces competition from platforms like Twitch & Mixer, which have gained prominence in the live streaming realm, my primary goal is to prioritize user retention over new user acquisition.

Great! Let's go ahead

Prioritizing user groups against two criteria on a scale of 1 (lowest) to 3 (highest)
User Impact — How beneficial is it going to be for the user group? Can we make their experience significantly better?
Potential Monetization/size — Looking at the broader scope to think about which segment has more users. For example: if we had 100 users on our platform and segment A had 95 users, and B had 5, we would probably target the 95 users first.

User group	User Impact	Potential size
Content creator	2	2
Content Viewer	3	3
Live streamer	1	2

Understanding the Viewers' Perspective
Pain Points:
- Viewers often find themselves navigating both learning and entertainment under a single account, leading to potential distractions.
- Users frequently rely on the platform's recommender system to unearth content aligned with their interests, as they struggle to pinpoint their desired watch.
- The challenge arises in uncovering emerging channels that haven't yet gained popularity. Such channels often remain unnoticed due to limited clicks, affecting the algorithm's attention

Evaluation:
The concept of separate accounts to cater to distinct needs could hold potential benefits. However, thorough user surveys and A/B testing are necessary to determine whether allowing users to create additional profiles within an account is genuinely beneficial or introduces unnecessary UI complexity.

While the algorithm aids discovery, it might overlook topics that users haven't previously engaged with. To address this, viewers might need to actively select their areas of interest before receiving recommendations.

The challenge is intertwined with the second pain point, reflecting the algorithm's mirroring effect. It often favors mainstream and trending content, thereby sidelining newer, smaller channels. Addressing this issue involves surfacing and promoting lesser-known creators.

In terms of prioritization, utilizing the same 1 to 3 scale as earlier:

Enabling Separate Accounts: A careful evaluation, including user feedback and testing, will determine the viability of this feature.
Enhancing Interest Selection: Empowering users to express their interests upfront could significantly enhance recommendation accuracy.
Elevating Emerging Channels: Finding ways to showcase lesser-known creators should be explored to mitigate the dominance of mainstream content.
Paint Point 3 is prioritized

That was a logical approach. Please proceed with features

Discovering Solutions
1. Allow viewers to see all the activity of the content creators they're subscribed to. This can create more transparency in where information is coming from within different community groups.
2. Allow creators to be like a personal/crowd recommender system. For example, if I'm subscribed to 3Blue1Brown (math channel) and they like a video from a smaller math/statistics channel, I can see that activity, and this can create a stronger math community. New perspectives and ideas can be brought into the mainstream, by the mainstream. "A rising tide floats all boats"
3. Tweaks to the recommender system on both the human and computer end. Perhaps asking questions before or after videos to determine if the algorithm performed "to its best". This will need humans to review content and preventing biases can lead to long term challenges.
To breakdown potential solutions for this pain point, I like to use the following metrics
User Impact — How beneficial is it going to be for the user? Can we significantly make their experience better with this solution?
Ease of Implementation — Compare the trade-offs for the time and resources that could be necessary to bring the solution to users.
On the basis of the above parameters solution 2 has been prioritised

Those were interesting solutions can you also define the success metrics for us

I would like to define the success metrics as follows
Retention — # of monthly minutes, Net Promoter Score (NPS)
If monthly minutes increase within a community, it can be evaluated whether or not the increase in content from new creators into the feed of viewers had any impact on their behavior. If my favorite Youtuber only uploads once a week, but he like/comments on a smaller channel that I become interested in, and they upload on another day of the week, then happy me:)
If the feature is a success, both content creators and viewers will be more satisfied with the overall platform. Surveying for NPS can gauge satisfaction before and after the feature is implemented in communities.
Monetization — revenue per user, lifetime value of user
If the feature hits home and increases user satisfaction, that can lead to more time spent on the platform and in turn more ads watched. Long term users will lead to long term revenue.

That was good. Thank you for your time

UPI Payments App

What is your favourite UPI App and how could you improve it? (App Dynamics)

I'll start with clarifying my understanding of the PhonePe product so that we are on the same page.

PhonePe is a payments app that meets all payment, investment, mutual funds, insurance and banking needs. They have moved from being a payments app to being a complete financial services platform, recently adding wealth management solutions to their portfolio. It has a super app platform called Switch with integration across multiple merchants related to food, travel, lifestyle, etc.

Another interesting product is an interactive website called PhonePe Pulse showing data, insights, and trends on digital payments done through its app.

Their major competitors would be GooglePay, PayTM, etc. Though the company considers cash as its major competitor.

(Note : You can focus on what the product does, the mission of the product, who uses it, pain points it solves for the users, competitors, etc)

Sounds good

I like the fact that they have not restricted themselves to only UPI payments and are making financial services products accessible to people, be it insurance, mutual funds, gold, etc. This connects to their goal of progressing the economy and supporting every stakeholder.

For investing needs, they have interesting features like the SIP and wealth calculator, Super Funds and multiple educative resources

In terms of UI, I find it very intuitive and clean. The buttons and icons are also well spaced out with a big font.

In terms of the home page, I noticed a difference between Google Pay and PhonePe. In the case of Google Pay, the focus seems to be on sending and receiving money and the frequent people we've transacted with being on the top of the home page. On PhonePe, the home page has multiple sections - Recharge, Insurance, Switch, Investment.

Also, in comparison to Google Pay, I find PhonePe has a higher payment success rate

I hope we are on the same page. Can I now proceed with analyzing how they can improve their product?

This is good, you can proceed

I would like to know what is the goal of improvement? Improve user engagement? Increase market share? Increase user retention? Increase revenue?

You are free to choose

The digital payments market is mature but has less customer loyalty and stickiness. Considering this, I would like to consider user retention as the goal of improvement, which would ultimately translate to an increase in revenue. Can I proceed with this?

Yes

I'll now move on to identifying the user personas for the product. The personas I can think of are:

1. ***Students*** **:**
   a. Age group 15-21, tech savvy, usually transact using online payment channels, use the app to send money or split expenses among friends. Saving money is their primary objective and they are attracted to cashbacks and discounts
   b. Pain point : They are most affected when they face payment failures if bank servers are down, since they don't usually have cash on hand and are in a hurry to complete transactions. They don't find the current offers on PhonePe lucrative.
2. ***Young Curious Investors*****:**
   a. Age group 21-25 years, have disposable income which they are looking to invest, are new to the investment world and would like to know how and where to invest
   b. Pain Point : They don't know which funds to invest in. Also, trust on making investments using PhonePe is low.

3. ***Working Professionals*** **:**
    a. Age group 25-40, comparatively loyal to the app, use the app to pay bills, for recharges, buying insurance, booking travel tickets, etc
    b. Pain Point : Amidst their schedule, they forget due dates for utility bills. They have to use multiple apps for recharge, bill payment and booking needs.
4. ***Parents / Grandparents*** **:**
    a. Aged 55+, not comfortable with using mobile apps, use the app to send and receive money
    b. Pain Point : They tend to forget the sequence of steps to make a transaction. Also, trust on online payments is low.

Do these personas look fine to you or do you want me to consider anything else?

This seems good, you can go ahead and prioritize a persona.

Sure. Though the parents segment has a differentiated need and might present as a lucrative segment, the trust issue requires a different approach and the app features wouldn't be able to contribute much to this. I would not prioritize this segment for now.
Based on my understanding of the needs of the other users, I would prioritize the Students persona due to the market size and potential for improving the user retention metric.
Are you fine with me proceeding with this or would you like me to prioritize a different persona?

This should be good. Please quickly give me 1-2 features that we could have for this persona

1. ***Credit system*** **:** A base credit of Rs 500 would be available for use if bank servers are down. A credit score can be generated based on time taken by the user to pay back. PhonePe wallet can be leveraged for recharge and storage of credit. However, this is a capital intensive feature.
2. ***Assured*** *points* after a certain transaction amount and vouchers across more categories (like Cred). The points can be redeemed at a certain conversion rate. However, this would need capital & collaborations with brands.

I think we are running out of time, could you quickly tell me the parameters you would consider to prioritize features?

I would consider the impact of the features on the business and customers, and the effort needed to build it, while prioritizing.

Fair enough, I think we are good with the case

Facebook Newsfeed

How would you improve Facebook Newsfeed?

Before I start, I would like to ask a few clarifying questions. What do you mean when you say 'improve'? Do we want to enhance engagement, acquire more users or are we trying to monetize the Newsfeed?

Target engagement. We see that a lot of users just scroll through the Newsfeed without interacting with posts.

And do we have a specific platform in mind? iOS app, Android app, website? Or is it across all platforms?

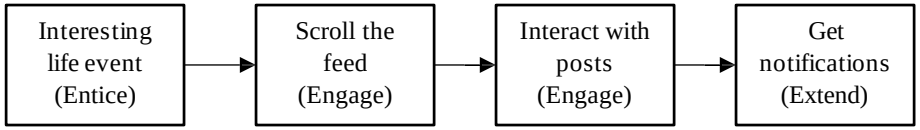
We wouldn't want any users to miss out on the features. We are looking to launch across all platforms.

Great! Let me list down a few users who use Facebook.

- **Urban millennials**: These are young folks in the age group of 20-35 years. They are tech savvy, have high end phones and good internet connectivity. They have a lot of friends and socializing is on the top of their list.
- **Influencers**: They want to reach a wide audience through Facebook. They create well thought out posts with high quality pictures and videos. They also connect with brands and leverage the marketplace to sell products.
- **Middle aged professionals**: These are people in the age group of 36-50 who want to connect with their long list of friends with whom they have lost contact. However, they struggle with technology and this deters them from using the app to a certain extent.

Among these, urban millennials are the most appropriate target segment. They spend a lot of time on Facebook and want to socialize with a lot of people online. Influencers want to reach a lot of users but don't themselves interact with a lot of posts by other people. Middle aged professionals are busy with their hectic work lives and prefer to talk to their friends using the easier to use messaging apps, talking over phone or meeting in person. Hence, I would be going ahead with the urban millennials as my target users. Does that seem okay?

That sounds great. Please go ahead!



- Want to know what is happening in friends' life
- Want to share updates in their life

- Go through the feed to find good posts of friends

- Post comments on friends' posts
- Share their own posts

- Get notified when friends comment or like their post or comment

Here is the journey for a typical urban millennial user. Within this I have identified a few pain points

1. **Irrelevant posts**: It is irritating to go through all type of posts, especially categories in which we have no interest in. For example, during Covid-19, there were a lot of cooking posts by people which might not be of interest to several users. On the other hand, some people really like travel posts. Within the Facebook Newsfeed all these posts appear together. There is no segregation between these posts.
2. **Conscious about posting**: Urban millennials want to share updates of their lives on social media but are hesitant since they feel the caption might not be captivating enough or have poor grammar.
3. **No privacy**: These users want to comment on posts of close friends but are apprehensive since their comments are visible in the public domain. They are not able to crack internal jokes and resort to personal messaging for this.

Facebook Newsfeed

Among these, solving 1 and 2 would need te xt and image analytics and thus would score high in complexity and effort. 3 would be easier to implement and create a huge impact among the users by encouraging them to start private conversations. As a result, I would be coming up with a solution for 3. Does that sound okay?

Yeah, that sounds reasonable.

Great. So I have thought of a **Private Thread** feature in the comments section.

- While commenting on a post, any user can "Start a private thread". This thread would just be visible to the commenter, person who made the original post and any other friends added by this person.
- Others who look at the post will not be able to see any of the messages. All they will see is "XYZ started a personal thread with Friend 1, Friend 2 & n other friends"
- Friends can "Join" this private thread if allowed by the person who made the original post.

I would track certain metrics to measure the success of this feature.

- My key metric to track the overall engagement would be average time spent/user/month in the Newsfeed.
- For the Private Thread feature I would track percentage of Facebook users using Private Thread feature per month, number of comments per Private Thread and number of friends in each Private Thread.

Do you think we could have any adverse effects with the introduction of this feature? What metrics should we be on the lookout for?

Basically this feature allows users to transition from a 'community style' interaction in the Newsfeed to a 'liv ing room discussion' with friends in the 'Private Thread'. However, this could potentially move people away from Direct Messages (DMs) on Messenger.

Hence the number of DMs per user per month might reduce. But this should not be a problem since we are still meeting Facebook's core value proposition of connecting people. If the overall engagement metrics are fine, we should go ahead with the roll-out of the new feature.

That sounds interesting! Thank you.

Amazon Kindle

How would you improve Kindle?

Before I start, I would like to ask a few clarifying questions. What do you mean when you say 'improve'? Do we want to enhance engagement by making users read more, acquire more users or increase sales of kindle books?

Target engagement. We have noticed that a lot of users make the purchase and start reading books on Kindle. However, we see a large number of drop-offs. People stop reading and never finish their books.

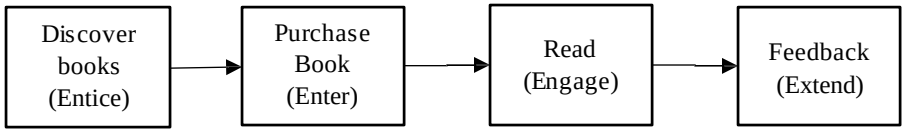
Great! Let me list down a few users who could be using Kindle.

- **Passionate readers**: These are people who have been avid readers for a long time. They actively look for new books to read by looking at online lists and reviews and take suggestions from their friends.
- **Educational readers**: These are school or university students who have got the digital copy of their course book on Kindle. They go through specific chapters as per their syllabus, highlight important portions and make notes in a physical copy.
- **Occasional readers**: These are either people who have lost the habit of reading books and want to start again or new readers altogether. They might lose concentration or interest while reading.

Among these, occasional readers are the most appropriate target segment. They would find reading for a long duration difficult and would need a push from us to go on. Passionate readers don't need any external motivation to continue to read. They are constantly looking for new books, but this is solved to a large e xtent through Goodreads which is already integrated with Kindle. Goodreads provides a social network, where people can read and post reviews and ratings for books and look for what others are reading. Although Kindle can potentially have a lot of new features for educational readers, I feel the market is really small. Hence, I would be going ahead with the occasional readers as my target segment. Does that seem okay or should I think more on user segments?

These segments and your logic for the target segment sounds good to me. Please go ahead!

Sure. Just give me a moment to think through the user journey for this segment.



- Search for popular books in favourite genre
- Ask friends

- Read summary
- Purchase through Amazon or Goodreads

- Track progress
- Explore meaning of difficult words
- Bookmark for reading later

- Share reviews, ratings with fellow readers
- Get recommendation

Within this journey, for an occasional reader, I have identified a couple of pain points

1. **Unsure about purchase**: Since this segment rarely reads books, the users think a lot before making a purchase. Often times, ratings, reviews and a summaries might not be enough to convince them to purchase the book. We could provide a preview of all books on Kindle which has the first couple of chapters of the book.
2. **Lack of motivation**: New readers can find reading books cumbersome. Books can have portions where the author is setting up the story and hence a lot of action might not be happening. This can cause users to drop-off since they are not used to reading books.

Sorry to interrupt you but the first pain point you mentioned is already being solved. If you go to Amazon, you can download a "sample" for your Kindle. Can you continue to brainstorm and come up with some other pain point?

3. Sure. Another issue is the fact that these users might have gaps in between reading. When they start reading the book after such a gap they would need a summary of what happened up until now before they continue reading. This would be similar to the recaps we have before TV episodes. However, the content creation for this would be really tricky.

Fair enough. Let's focus on motivation. How can we encourage users to comeback to read?

What I propose is a form of **gamification** to make it interesting for the readers. We can have badges which need to be earned by the users. These badges could reward users for their reading speed, streaks such as number of consecutive days read or number of novels read by an author or in a genre, reading at a particular time of the day (early riser for morning readers or night owls for those reading late at night). We can use the integration with Goodreads to create a leader board in which the users can see where they stand with their friends or globally.

Interesting. Do you think this could encourage users to not actually read and just go through books for the sake of appearing higher on the leader boards?

That is something which I believe would not be a widespread problem. These scores and streaks are just for the personal satisfaction of users, they don't bring any monetary or other benefits. So, I think most of the users would not be gaming the system. Additionally we would be tracking the metrics such as reading speed and hours taken to complete the book. If they differ significantly from the usual data (let's say beyond 2 or 3 standard deviations from the mean) we would flag this and not give any points or streaks to the user.

Fair enough. What other metrics would you look at to measure the success of the gamification feature?

The most important thing to measure is engagement. For this I would look at the time spent per user per month on Kindle. For ensuring that this increase in time spent is due to the gamification feature, I would also track the number of badges and points earned per user.

I noticed that you are using time spent as the north star metric for engagement. Why not metrics such as words read per user per month or pages read per user per month?

Since we are encouraging a lot of new readers to read more on Kindle, metrics such as words or pages read per month per user might actually go down since these new readers would be relatively slower readers.

That's a great analysis! Thank you.

Google Maps

How would you improve Google Maps? (VMock)

Let me start off with a few clarifying questions. What do you mean when you say 'improve'? Do we want to enhance engagement, acquire more users or are we trying to generate more revenue?

Let's go for revenue. We want to monetize Google Maps.

And do we have a specific platform in mind? iOS app, Android app, website? Or is it across all platforms?

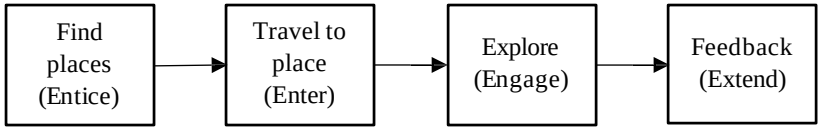
Around 80% of our users are on Android. Let's start with that. Once we successfully solve it on our Android App we can e xpand to the iOS app and website.

Great! Let me list down a few users who use Google Maps.

- **Urban millennials**: These are young folks in the age group of 20-35 years who are tech savvy, have high end phones and good connectivity. They are always on the lookout to explore new places within the city.
- **Middle aged professionals**: These are people in the age group of 36-50. They commute to the office every day using their car. They visit restaurants and recreational places with their families.
- **Travellers**: These are tourists who are new in the city. They are looking for tourist hotspots they should visit and to find their way in the unfamiliar city.

Among these, I would like to go ahead with the travellers. They rely a lot on maps since they are new to the city and looking to visit a lot of places in a limited time. Urban millennials don't need maps for navigation since they mostly use cabs for travelling. The capability of booking cabs is already present on Google Maps. Their need of finding new places is served by the community feed which gives updates on new places in the area. Middle aged professionals don't need Google Maps as much since they already know their way to their office as well as malls and restaurants in the city.

That sounds great. Please go ahead!



Here is the journey for a typical tourist. Within this I have identified a few pain points

1. **Planning the trip**: It is difficult to narrow down the places to visit while travelling. We can find lists of "Top 10 places" but this is not curated to the interests, location and period of stay of the user. For e xa mple, if a tourist is interested in history and has a really short stay, he or she would ideally only want to visit the museums nearby.
2. **Managing bookings**: Tourists need to buy tickets for museums, palaces, gardens, ferries, public t ransport, etc from different websites or stand in queue at the counters. This is very cumbersome.

These are the primary pain points I can think of for a tourist. Do you want me to ideate further?

No, we can look at more pain points later. Why don't you go ahead and tell me the solution for these.

Google Maps

Sure. The solution in my mind is a **Travel Planner**. Travel planner takes the following as input from the user

- Location of the user: This will be auto-detected in Google Maps.
- Interests of the user: This will be explicitly asked through checkbox options.
- Duration of stay: This will be explicitly asked through a dropdown consisting of 1-7 days.

Using these inputs the Travel Planner would create an itinerary for the user. Once the users start their trip, they would be able to navigate to the next destination in the it inerary. After reaching the destination, Google Maps would display some information about the places such as historical facts and trivia. This feature would be free. However, to help users manage bookings Google Maps would allow users to buy all tickets – museums, palaces, public transport, etc with a single click. This would be customizable. Users can buy the tickets they need and leave the others. For example, a user might want to avoid public transport and use a cab. Or decide to purchase a ticket after reaching the venue. Google Maps would earn revenue with a commission of the transaction value.

Interesting. How would you measure the success of your solution after launch?

The metric I would look at to measure the overall objective of monetization would be revenue per user per month. Google Maps also generates revenue from other sources such as cab bookings and location API usage. I would need to work with the analytics team to understand how much the increase from the baseline should be to deem it to be a success.

Apart from the overall objective, I would also like to measure the success of the new features. Firstly, I would measure the number of users per month using the Travel Planner to generate an it inerary. Secondly, I would track the percentage of these users per month who manage bookings using Google Maps.

Sounds good. Do you think this new feature could impact any existing feature? What would the trade-offs be?

Currently tourists look for places to visit by clicking on 'More categories' and going through category tabs such as Museums, Attractions, Nightlife, etc. Since many tourists would now be using the Travel Planner, the click through rate (CTR) on 'More Categories' would decrease. However, this shouldn't be a problem. We are still helping users find the places they are looking for through a different and better route.

That's great. Thank you.

Guesstimates

Guesstimate 1

You are starting a bike taxi company. How many bikes would you require?(Google PM)

So first, we need to determine the scope of our operations. Are we starting in a single city or planning to expand to multiple cities simultaneously, like pan-India?

We are at the first stage and are concentrating only in Bangalore.

Great. The next step would be to analyse the demand in that city, so first and foremost it includes population of the city. Bangalore's population is around 1.3 crores.

Sounds about right, but is it one single factor? Are there any more factors

We'll need to consider factors like population density, traffic patterns, and the existing options. Also maybe we can identify peak hours and areas with high footfall, such as commercial districts and other popular spots.

Oh okay, so how are you going to use to calculate?

One thing I would like to add is the people using the bike services, are using it generally for short to medium distances. This would generally mean office and college commutes. Also, not all of the population would be using our services, due to other means of transportation and if I had to make an assumption, let's say that initially, around 0.5% of the population would use our bike taxi service (since it is in initial stages and people using a lot of other transportations), and each bike would be able to complete an average of 12-13 rides per day. This estimation accounts for factors like traffic time, waiting time, distance travelled
Based on this,
Number of rides = Population*0.005= 65000
No. of bikes = No. of rides / Rides per day = 65000/13= 5000 bikes.

That's a good estimate. But what about maintenance, repairs, and having some bikes as backups?

Oh absolutely, those are important factors as well. I'd recommend adding around 10% to the estimated number of bikes to account for maintenance, repairs, and backup bikes.

That sounds reasonable. So, including the buffer, how many bikes would you suggest in total?

Taking the buffer into account, I'd suggest starting with around 5500 bikes for our bike taxi company.

Seems practical. That would be it. Thanks!

Guesstimate 2

Can you quick estimate on how many uber drivers are there in Bangalore?(Samsung R&D)

Sure. I'm assuming we are estimating the total number of uber drivers that serve Bangalore in a day. Is that correct?

Yes you are right please proceed.

Estimating the number of drivers at peak hours (mostly in the morning, people leaving to office) will be a good ball park number for estimating the total number of uber drivers in Bangalore.

Sounds about right.

Total population of Bangalore is slightly more than 1 crore.
Total population of working class (Age: 21-60) in Bangalore is >50% = 50L

Sounds like a fair estimate, go ahead

Around 1/10 people work for a corporate = 5L
Around 1/10 people use Ola/Uber/Auto = 50k

That's a good approach

Let's assume 40% of market share by Uber = 20k
Assuming, at peak hours, a driver is able to complete 2 rides per hour.
Therefore, number of drivers = 20k/2 = 10k drivers.

Seems practical. That would be it. Thanks!

Guesstimate 3

Can you quick estimate on how much storage is needed by Google Photos? (Google PM)

Sure. I would like to clarify a few things before I begin. Are we focusing on just phots or we are considering videos as well?

You can consider only photos

Are we considering only clicked photos or we are looking at received photos too?

Consider both

Should I consider gmail users or only Android user. Some gmail users might not be using Android

You can consider only Android

The approach I will be following is . I will be estimating the size of the phot which would have estimated segments. I will multiply that by number of photos. Then multiply it with total population, multiplied number of Android users

That's a good approach

Total users = 2.4 Billion
Average photos per user : 3 segments

- Heavy User = 5 clicks/ week
- Medium User = 2 clicks/weeks
- Low end user = 1 click/week

Assuming Heavy users are 20%, medium users are 50 % and low users are 30%

Seems practical. Go ahead

Now lets assume 1:3 ratio for click to receive photos
Hence for clicked pictures = (.2*5+.5*2+.3*1)*52 = 260
No of photos received = 260*3 = 780
Average photos per person = 780+260 = 1040

That was comprehensive. Go ahead

No of photos = 2.4 Billion * 1040
we can take 1:3 ratio above to estimate photos received are smaller
Smaller = 200Kb, average photos clicked = 2Mb

Sure. Go ahead

No of photos = 2.4 Billion * 1040 ~ 2.5 Trillion
we can take 1:3 ratio above to estimate photos received are smaller
Smaller = 200Kb, average photos clicked = 2MB
Dividing 2.5 Trillion in ratio 1: 3 and multiplying by .2MB and 2MB
= 2.5*.25*.2 + 2.5*.75*2 ~ 3750 petabytes

Seems practical. That would be it. Thanks!

Note : If historical photos is considered it will be a lot higher , this is only for this year

Guesstimate 4

Estimate the number of airplanes flying currently?(Infoedge)

Sure. I would like to clarify a few things before I begin. Do I need to consider planes that are flying in a particular time interval?

You can decide

Should I consider all kinds of planes like a commercial, cargo, or private ?

Focus only on commercial planes

Should I go ahead with finding planes that flew from Indian airports only?

Sure

I'm assuming we're talking about the pre-covid situation only.

Yes you can make that assumption

Now, I would like to build an equation first, the equation would go like this - **Number of planes currently in air in India** = No. of airports * No. of runways per airport * No. of planes flying the whole day.

Seems practical. Go ahead

To first calculate the number of airports in India, I would divide all the airports into 3 categories - **Major, Medium & Small.**

Types of Airports	Number of airports	Number of runways	Total runways
Major	5	3	5*(3) = 15
Medium	20	2	20*(2) = 40
Small	50	1	50*(1) = 50

Calculated total number of runways

Logical. -Go ahead

Now, need to figure out how many of the planes take off from those runways, to do this we can divide again it into two segments, one could be **peak hours** and the other as **non-peak hours**.

Fly hours	Total time	Fly Behaviour	No. of planes per hour	Total no. of planes
Peak	9 AM to 6 PM = 9 hours	Planes fly after every 5 min	60/5 = 12	12*9 = 108
Non-peak	6 PM to 9 AM = 15 hours	Planes fly after every 20 min	60/20 = 3	3*15 = 45

Sounds good.

Finally, we have to calculate the total number of planes flying in a day from all the airports. To do this we'll multiply the total no. of planes with the total no. of runways for both peak and non-peak hours. Below table shows total no.of planes flying in a day in India

Types of Airports	No of runways	Total planes on peak days	Total planes on non-peak days	Total planes per day
Major	15	15*108 = 1620	15*45 = 675	1620+675 = 2295
Medium	40	40*108 = 4320	40*45 = 1800	4320+1800 =6120
Small	50	50*108 = 5400	50*45 = 2250	5400+2250 = 7650
Total planes flying per day in India				= 16,065

Guesstimate 4

After doing all the calculations, the number comes out to be **16,065** but this is actually **not the number of planes flying currently**, but this is the total no of planes that fly in a whole day.

Can you find planes flying at current point of time?

I'll assume that a flight avg duration is of 3hours, and for the whole day it would be 24/3 = 8 times. Consider it like this, there are a total of **8 instances** where a plane either land or flies from its runway. So, if we simply divide the total planes flying by 8, it would give us avg no of planes in the air currently at any point of time.

Thus by this way, avg no of planes that are in the air right now is = 16,065/8 ~=**2000 Planes**

Seems practical. That would be it. Thanks!

Miscellaneous

Assessing Viability of Amazon's Entry into Food Delivery

To establish our focus, are we considering solely restaurant-based food delivery or should we also encompass on-demand grocery delivery à la Instacart?

Our initial focus will be on restaurant food delivery. It's important to note that we already offer groceries on our platform. We can revisit grocery delivery timeframes later if needed. Our present focus is on the US market.

Understood. Amazon did launch a food delivery pilot in Bangalore, which was subsequently discontinued. In India, labor costs are economical, potentially diminishing Amazon's last-mile advantage. Moreover, from a macroeconomic standpoint, Amazon's emphasis is on minimizing losses. I propose a SWOT analysis, analyze competition and customer preferences, leading to actionable suggestions. Subsequently, we'll assess the advantages and drawbacks of each recommendation to chart the most suitable course. Are you onboard with this approach?

Agreed

The US food delivery market, valued at approximately $200 billion USD, demonstrates consistent growth as consumers increasingly prioritize convenience. Amazon's success in engaging and retaining Prime members through supplementary services is noteworthy. By augmenting existing perks with complimentary food delivery, Amazon could entice users to opt for Prime membership, considering the heightened frequency of food orders, contributing to top-of-mind recall. These factors could be prompting Amazon to contemplate this move.

Having addressed the "why," let's proceed to assess Amazon's strengths and vulnerabilities within the context of the food delivery sector.

Amazon boasts an extensive delivery network, encompassing both long-haul and last-mile logistics. Its expansive fulfilment network is complemented by partnerships with numerous delivery providers. Amazon's adeptness at managing low-margin operations, possibly stemming from its principle of frugality, is also evident.

Nonetheless, Amazon's setback in India, where food delivery was discontinued, signifies a vulnerability. Dissecting the reasons behind this failure is crucial, and it's essential to ascertain whether these factors are isolated to India or could be replicated elsewhere.

One plausible explanation is the prevalence of inexpensive labor in developing countries, offsetting one of Amazon's key advantages. Moreover, Amazon lacks established relationships with restaurants, necessitating the inclusion of popular eateries on its platform for successful implementation.

The potential lies in converting non-Prime members into Prime subscribers, given the well-established pattern of increased spending among Prime users. The overlap between Amazon's customer base and online food consumers, both valuing technology-driven convenience, is significant. Competition is fierce, with major players like Doordash and Uber Eats catering to different demographics.

This outlines Amazon's current standing. Is there anything else to consider before we proceed to explore potential strategies?

No, let's proceed to the next steps.

Considering the red ocean strategy, Amazon's entry into the food delivery realm entails either reducing delivery costs and operating independently or forming alliances, which could involve acquiring a competitor. The following three paths present themselves:

1. Independent Operation with Lowered Delivery Costs

2. Strategic Alliances (Possibly through Acquisition)

3. No Pursuit, Given Potentially Limited ROI

Let's delve into the merits and demerits of each approach:

Product Entry

Approach 1: **Independent Operation with Lowered Delivery Costs**

Upon a comprehensive evaluation, I'm inclined toward the first option for the following reasons:

- The food delivery market still exhibits growth potential, with competitors serving distinct urban and suburban segments. Amazon's mastery of last-mile delivery could be effectively leveraged, benefiting both the proposed food delivery service and the existing Prime network.

- Offering discounts or free food deliveries could elevate Prime membership to an irresistible proposition for users.

- To counter potential risks, Amazon could provide restaurants with ingredients at reduced rates, drawing upon existing access to wholesalers. Moreover, Amazon's robust delivery network could allow for higher restaurant commissions, optimizing the delivery process's efficiency.

- Revenue streams in the delivery sector encompass restaurant commissions, customer delivery fees, service charges, in-app advertising, and potential subscriptions. Amazon's sophisticated ad model could incentivize restaurants to participate.

- Harnessing the capabilities of Amazon AWS, incorporating machine learning models to facilitate personalized menus and recommendations, could lead to increased sales and higher average order values (AOV).

- A unique opportunity arises in smaller US cities where multiple restaurants cluster, allowing for efficient order stacking, a tactic that optimizes delivery efficiency while accounting for varying delivery speeds, a pivotal of customer satisfaction. determinant

Given Amazon's wealth of data and delivery infrastructure, a renewed attempt seems justified

Approach 2: Strategic Alliances (Possibly through Acquisition)

- Speed to Market: Partnering with an existing player or acquiring a competitor allows Amazon to quickly enter the market and tap into their existing customer base.

- Market Knowledge: Partnering with or acquiring an established player provides Amazon with insights into the industry, customer behavior, and operational best practices.

- Reduced Risk: Joining forces with an existing player can help mitigate some of the risks associated with entering a new market.

- Integration Challenges: Integrating a new entity into Amazon's ecosystem, especially if it's an acquisition, can be complex and may lead to cultural clashes

- Loss of Control: Depending on the nature of the partnership or acquisition, Amazon might have to compromise on its brand image or control over certain aspects of the service.

- Dependency: Relying on a partner's capabilities can leave Amazon vulnerable to any changes or issues on the partner's side.

Approach 3: No Pursuit, Given Potentially Limited ROI

- Resource Allocation: Amazon could avoid investing resources in a venture with potentially limited returns, focusing on areas where they can achieve higher ROI.

- Risk Mitigation: By not pursuing the food delivery market, Amazon avoids the associated risks and uncertainties.

- Missed Opportunity: If the food delivery market turns out to be profitable and Amazon refrains from entering, they might miss out on a significant revenue stream and potential growth.

- Competitive Disadvantage: Not entering the food delivery realm might allow competitors to gain an edge in terms of market share and customer engagement.

Excellent

Customer Journey and Success Metrics for Swiggy (Samsung R&D)

Let's assume a new startup like Swiggy and not much sales is happening. Explain about each stage of customer journey. Tell me about the possible reasons for less sales in each stage of the customer journey and relevant success metrics for the same

The customer journey for an online food delivery platform like Swiggy can be broken down into several stages**: Awareness, Consideration, Purchase, Retention, and Referral.**

1. **Awareness**: In this stage, potential customers become aware of the online food delivery platform and its services.
    - Possible reasons for less sales in this stage could be due to ineffective marketing strategies, low brand recognition, or strong competition from other food delivery platforms.
    - Relevant success metrics for this stage could include the number of app visits, the number of new customers acquired, and the cost per acquisition.
2. **Consideration**: In this stage, potential customers evaluate the online food delivery platform and its services to determine if it is a good fit for them.
    - Possible reasons for less sales in this stage could be due to a lack of variety in the food options available, poor user experience on the app, or negative reviews/ratings.
    - Relevant success metrics for this stage could include the conversion rate from app visits to orders placed, the average time spent on the app, and the bounce rate.
3. **Purchase**: In this stage, customers place an order on the online food delivery platform.
    - Possible reasons for less sales in this stage could be due to a complicated or confusing ordering process, technical issues with the app, or a lack of trust in the platform's payment security.
    - Relevant success metrics for this stage could include the average order value, the number of orders placed per day/week/month, and the percentage of orders that are successfully delivered.
1. **Retention**: In this stage, the online food delivery platform aims to retain its customers by providing a high-quality service and encouraging repeat orders.
    - Possible reasons for less sales in this stage could be due to poor food quality or delivery service, a lack of incentives for repeat orders, or strong competition from other food delivery platforms.
    - Relevant success metrics for this stage could include the customer retention rate, the average number of orders placed by repeat customers, and the lifetime value of a customer.
2. **Referral**: In this stage, satisfied customers become advocates for the online food delivery platform by recommending it to their friends and family, leaving positive reviews and ratings, and sharing their experiences on social media.
    - Possible reasons for less sales in this stage could be due to a lack of engagement with customers on social media or other channels, poor handling of customer complaints or feedback, or a lack of incentives for customers to refer others to the platform.
    - Relevant success metrics for this stage could include the Customer Satisfaction (CSAT) score, the number of positive reviews and ratings received, and the percentage of new customers acquired through referrals.

These are just possible reasons for less sales and it could depend on numerous other factors.

Excellent

Product Overview and Success Metrics for OLX and Quikr (InfoEdge)

Can you Provide me a product overview of online classified platforms like OLX and Quikr?

So, as you defined, these are online classified sites which provide a platform to majorly buy and sell mainly used products. Is my understanding correct?

Yes that's correct!

Ok great! So before jumping into it, lets us have a look at the User Persona and User Journey

So users are both the buyers and sellers over here, which is traditionally defined as a marketplace.

Speaking of buyer's user journey:

The buyer becomes aware of OLX and its products or services, logs into the website/ app, explores OLX to find products or services that meet their needs. They may use the search bar to find specific items, or they may browse through the different categories.

Transaction and negotiation: If the buyer decides to purchase a product or service from OLX. They contact the seller to negotiate the price and arrange a meeting.

Post-purchase: the buyer receives the product or service and evaluates their experience. They may leave a review on OLX to help other potential buy

Similarly for seller:

1. User logins: The seller researches OLX to learn more about how it works and what features it offers and logs into the system
2. Decision: The seller decides to create an account on OLX and post an ad for their product.
3. Engagement: The seller interacts with potential buyers through the OLX messaging system.
4. Transaction: The seller completes the transaction with the buyer.
5. Post-transaction: The seller leaves feedback for the buyer and reviews the buyer's feedback.

Give me any one key success metric for each part of your user journey you described

For Buyer:

1. Rate of user login abandonments / total visits to the app
2. Click-Through-Rate on listings
3. Searches per active user per month
4. Drop off rates to measures how many transactions are not successful
5. The number of customer complaints and Turn Around Time for resolutions.

For Seller:

1. Rate of user login abandonments / total visits to the app too since it's a common app
2. Quality listings per user (Customized metric: Say complete self and product details with at least 3 postings)
3. No of two-way conversations
4. Drop off rates to measures how many transactions are not successful
5. No of transactions completed/ day

Apart from CTR, any other metric for tracking why listings are not working?

Conversion rate and revenue per click, to get a better understanding of the overall impact of recommendations.

Would work! That would be it. Thanks!

Success Metrics - Gmail

Success for Gmail

First, I will start by going over Gmail as a product, the tasks that can be done and then define the success metric for the same,

Sure, go ahead

Gmail is an application for sending emails. Using this Gmail ID, users can also use other suits of products provided by Google like *Chrome, Maps, Youtube, Calendar, Drive, Photos, etc.* The users can be of two types the consumers who use gmail for personal use, these users utilize the application for free for upto 15 GB of storage space. The second type of users are the G-suite or corporate users which pay for the whole package of the G-suite and hence for the Gmail corporate service as well.

Some tasks that a user over Gmail can do are:

1. Send/Receive emails.
2. Delete/Archive emails.
3. Snooze or set a Reminder for emails.
4. Categorize, Organize and Prioritize emails using Tags/Folders.
5. Integrate with other Google products/services.

- Send invites for a virtual meetup or meeting via integrating Google Calendar and Google Meet links in the email.
- Send files(audio/image/video) attachments in the emails via Google Drive.
- Chat with other Google users using text, voice, and video via Google Chat.

Should I be focusing on only email feature of the other features should be considered as well?

You can focus only on the mailing feature

I will be considering both web as well as app user on both Android and iOS. Will that be okay ?

Yes, that is the right approach please proceed

Is there a specific business goal on which I should focus.

No, please feel free to define the business goal

I would like to focus on Engagement and retention out the listed business goals (Reasons for choosing or not choosing certain metrics is given below)

1. Acquisition — Google has reached good user penetration. Gmail being an entry-level product, may have excellent acquisition metrics.
2. Revenue — As we are looking at the free version of the product, revenue is indirectly through advertising. Also, there is a paid option to get more storage, but that does not apply to large sections of the user base.
3. Engagement and Retention — The most critical goal for Gmail is to keep Google's users engaged so that they will stay with Google's app and services ecosystem and reoccurring engagement shows Retention.

Thus, Engagement and Retention are essential for this product. I am right or shall I consider some other parameters too.

Yes, that is correct please proceed.

: I would like to define the User journey to identify the metrics for retention

***User Journey (*Desktop)**

- **Acquisition**

1. Visit mail.google.com and click on "Create account".
2. Fill in personal details and set a strong password to sign up.
3. Send/Receive the first email.
4. Repeat the previous step multiple times (Loop)

Success Metrics - Gmail

- **Engagement and Retention**

1. Open Gmail on the browser organically.
2. Send emails.
3. Read emails from the Primary Inbox.
4. Read emails from Social, Promotions, Updates, Forums, and other categories.
5. Reply to emails.
6. Other actions — forward, delete, archive, sort, snooze.
7. Close tab/browser.

Mobile (Android/iOS)

- **Acquisition**

1. Download the Gmail App from Play Store/App Store.
2. Sign up and create a Gmail account.
3. Send/Receive the first email.
4. Repeat the previous step multiple times (Loop).

- **Engagement and Retention**

1. Open Gmail app Organically or via push notification.
2. Send emails.
3. Read emails from the Primary Inbox.
4. Read emails from Social, Promotions, Updates, Forums, and other categories.
5. Reply to emails.
6. Other actions — forward, delete, archive, sort, snooze.
7. Exit app.

You have defined the user journey correctly now tell me how exactly would you measure engagement and retention.

Broadly engagement and retention can be measured on the basis of mail sent , mails received , storage space utilised, No.of emails opened, emails deleted without opening

Specify metrics for engagement and retention

For engagement:

1. # emails sent/read per session, per day, per month.
2. # of searches in the mailbox per user.
3. Avg Time Spent/Session Duration per day.
4. % of users who checked their inbox organically or via notifications on *Day 1, Day 7, Day 15, Day 30.*
5. # of days the user was active in *30 days.*
6. # of users who read emails from Primary VS other categories *(Social, Promotions, Updates, Forums, etc.)*
7. % Split of total users who read emails from Primary and from different categories *(Social, Promotions, Updates, Forums, etc.)*
8. # of users who forward, delete, archive, sort, snooze their mails.
9. % Split of the total users who forward, delete, archive, sort, snooze their mails.
10. % of users who used other Google Services integrated inside Gmail.
11. # of other Google Services also used.

For Retention

1. *1 Day, 7 Day, 15 Day, 30 Day* Retention rate.
2. DAU, MAU.

That was a comprehensive answer. we can stop here it was nice talking to you

Product Roadmap for Lego's new digital product (DP World)

You are the PM at LEGO. Children's interest in Lego's bricks have been declining. Design a product roadmap to launch a new digital product for them

I wanted to understand what exactly we mean by a digital product

It can be any application or software where you can leverage Lego's existing brand to come up with a product.

I will be designing the product targeting kids in the age group 4-10 as they form the largest segment of users. Further, I would like to propose features that can be implemented in the short and medium term. Does that sound okay

Yeah, go ahead

In the short term we can build a mobile app that kids can play on their tablets or phones. It will basically be a puzzle game using Lego bricks as the building blocks, that can be rearranged to form different structures. We can also have an educational feature for kids where Legos can be rearranged to solve crosswords, puzzles etc.
In the longer term we can look to build a 3d app enabled by AR. It will have all the features proposed in the short-term plan. However, instead of a touch-based input, users can now use gestures to arrange the 3d bricks which will give them a more immersive experience.

How can Amazon beat Myntra in fashion segment? (Sprinklr)

Before I start, I would like to ask a few clarifying questions. When we say 'beat Myntra', do we have a particular metric in mind? And do we need to achieve this in a specific time frame?

Good questions. We want to beat Myntra in revenue. We don't have any time frame in mind. Why don't you think about a feature which can create immediate impact and also a solution with a long term horizon

Sure. Should we focus on a particular geography (north or south India) or platform (iOS/android/website)?

The solution you propose should work throughout India and across all platforms you mentioned.

Great! Let me take a minute to gather my thoughts and then we can work through the potential ideas.

Sure!

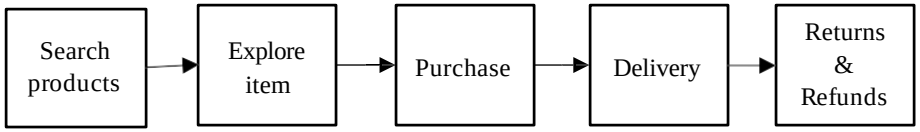
I have identified three potential segments.

- **Urban millennials**: Form a major portion of the pie. They make the market very competitive since they can easily switch to competitors. The are comfortable with technology and order seamlessly online. Their e xposure to the latest fashion trends means that they are hard to please but can result in high returns if we have the right catalogue.
- **Young rural as pirers**: This is a rising segment. They have low purchasing power and are hence price sensitive. However, they are becoming increasingly brand conscious and are e xpected to grow exponentially in ne xt 3-4 years. Moreover, since they don't trust online shopping yet, once we rope them in they would be less likely to move to our competitors.
- **Middle aged**: These are people who prefer the traditional way of shopping. They prefer to get the look and feel of products in a store before buying them. Within this segment, even those who are comfortable with technology, browse products online but finally make the purchase offline in a physical store.

If we plan to overcome Myntra in ne xt 3-4 years, we should ideally look at a market where we can build our niche and make loyal customers. Rural aspirers seems to be an attractive segment with high promise and low competition.

This sounds good. Please go ahead with this segment.

Sure! This is the journey of a typical user in the rural aspirer segment.



Within this I have identified a few pain points along with their solutions:

1. **Not sure what to search**: Rural aspirers might not be able to specify what e xactly they need. However, they can recollect an actor from a movie or serial who they look to as inspiration for their fashion sense. To fulfil this, we can show banners with stills from a latest movie or serial and allow users to purchase all the items so that they can get the look of the actor.
2. **Language barrier**: Searching products is an issue as users are not comfortable with the English language – terms and spellings. This can be solved by introducing voice search in vernacular languages.
3. **Lack of trust in the product or seller**: To solve this we can consider two angles. Firstly, people would be more likely to buy the product if more people in their locality have purchased this product. So, we can show a message of 'X number of people in your pin code also purchased this'. Secondly, there is a huge push to purchase products made in India. We can ride on this Make In India wave and show a special tag when products are domestically sourced.

4. **Lack of clarity on product usage**: Rural aspirers are interested in purchasing products but hesitate because they are not sure about the product or how to use it. To solve this, we can have videos by sellers on the product page. These videos should be in vernacular languages and try to recreate the offline e xplanations by shopkeeper gives to customers in a physical shop.

These solutions sound interesting. And you went in depth into several factors. What do you think about the refunds that you mentioned in the user journey. Do you think there might be some pain points there?

Now that I think of it, there is a pain point. I believe most users in this segment would be using Cash on Delivery as the payment method since they don't trust online payments. Now, since most of them don't have accounts, they can't get the money back via standard refund procedure. Therefore, we should provide them with Amazon credits so that they can immediately use it to buy something else on Amazon. These credits can be retained for a period of 3 months. If users still want their money back, they can ask for cash refund any time. This way they will have full t rust that they can always get their money back. Of course, the hope would be that they spend it in the three months.

Good observation. Since Amazon Pay was introduced, there is a mechanism to refund the amount to the Amazon Pay wallet. Coming back to the question, you suggested some good solutions. How would you prioritize among them?

I would be considering the e xtent of increase in revenue the solution can bring. Since we are looking at features which can create both short term and long term impact, the time taken to take the feature to market is another factor we should be considering. The time taken to implement the feature would depend on its technical complexity, man-hours investment and dependencies on other teams.

On the basis of these factors what are your short and long term recommendations?

I have the following things in mind. First of all let's decide the features we can push out immediately to increase our revenue in the short term:

- **Buyers in pin code and domestically sourced tag**: Showing users how many people in their locality have purchased a product and adding a special tag to locally sourced products can be done immediately as it should not be too difficult to implement by the engineering team. Since it would create a Medium impact, I would prioritize this to be developed, tested and rolled out quickly.

- **Shop The Look**: Taking stills from movies and serials and finding products similar to the ones worn by the actors can create a High impact by assisting users to get inspirations for outfits. This feature should significantly increase conversion rates. We can start content creation by making a few banners from just a few popular movies and serials and roll it out. Since, this is High impact and can be rolled out quickly, this would be the top of my list of features.

Now let's decide the feature we can target in our long term roadmap:

- **Voice search in vernacular languages**: This has a huge potential. However, since it requires advanced NLP tech, we can push its timeline and target this feature in the long run. We can start with Hindi and gradually add other vernacular languages.

Finally this is the feature I would be dropping:

- **Vernacular seller vi deos**: Pushing sellers to make product description videos in vernacular languages will be a big task. This might not be complicated in terms of engineering work but requires a lot of effort from the business teams. While it would create a Medium impact, the value derived from it doesn't justify the amount of effort involved. Hence, I would be dropping this feature right now.

Should I go ahead with listing the metrics I would look at to track the success of these features?

No, that would be all. Thank you for the thorough analysis!

Appendices

Appendix 1 - Frameworks at a Glance

CIRCLES Method

Comprehend Situation – What? Who? Why? How?
Identify customer – User Personas
Report customer needs – As a [user], I want [task], so that [goal].
Cut through prioritization
List solutions – Features, wireframes, metrics
Evaluate trade-offs
Summarize your recommendation

5Es Framework for User Journey

Entice – What event triggers a user to enter into the product?
Enter – What are the first few steps while using the product?
Engage – What task(s) is the user trying to accomplish?
Exit – How does the user complete the task?
Extend – What follow-up actions occur after the user completes the task?

RICE Prioritization Framework

Reach – How many users will use your feature?
Impact – Measure of user need or potential delight from the feature.
Confidence – Technical & financial feasibility, ability to meet deadlines
Effort – Estimate of human resources needed, measured in man-hours or person-months

HEART Framework for Metrics

Happiness – How users feel about the product? (NPS, App Ratings, CSAT scores)
Engagement – How often are people using your product? (DAU, session length, activity (# comments on Instagram))
Adoption – How easy is it to complete the onboarding process? (New users, drop-offs during onboarding)
Retention – How many users are returning to your product? (Churn rate, customer lifetime value)
Task Success – Are users achieving their goal? (Conversion rate in Flipkart, time taken to book a ride in Uber)

Appendix 2 - Datasheet for Guesstimates

India's Digital Context

Population	1.3 Billion
Internet Penetration	50%
Smartphone Penetration	40%
% internet users on mobile	90%
Urban internet users	300 million
Rural internet users	350 million

India's Internet Usage Pattern

Internet Users	650 million
Chatting and Social Media Users	400 million
Video Content Consumers	300 million
Financial Transactors	200 million
Online Shoppers	100 million
Avg. time spent online per day	4 hrs

Advertising Benchmarks

Avg. CTR for a display ad	0.5%
Avg. CTR for a search ad	3%
Avg. Cost per Click(CPC) for search ads	$2
Avg. CPC for display ads	$0.5

E-commerce Benchmarks

Avg. conversion rate	1%
Avg. order value	Rs 1400
Avg. cart abandonment rate	70%

Additional resources for common data points

https://www.mypminterview.com/p/guess-estimation-data-to-remember

https://www.tryexponent.com/courses/estimation/product-management-estimation

Appendix 3 - Resources

Books

Cracking the PM Interview by Gayle Laakmann McDowell
Decode & Conquer by Lewis C. Lin
The Product Manager Interview – 167 Actual Questions & Answers by Lewis C. Lin

Online Resources

Interview Questions - **https://www.productmanagementexercises.com/interview-questions**
Interview Preparation - **https://zapupp.com/**
Exponent - **https://www.tryexponent.com/** Exponent YouTube Channel - **https://www.youtube.com/channel/UCjm_qVkCPjOVDz9BWjNqO9A**