
Aybar

HIGHLIGHTS AND INSIGHTS

IDEATION

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MVP BOUNDS

PRODUCT OBJECTIVE

KPI AND OKR

FEATURE SET

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IDEATION : DEFINING THE CURRENT SOLUTION

Flying Taxi is a novel idea and a massive undertaking. Hence MVP will focus on a particular customer group, i.e. **focus groups** who will become early adopters to give valuable feedback to improve our service.

- Taxis are means of transport from one location to another, by a single passenger or a group of passengers sharing the ride. In big cities like New York it is a substitute for a private vehicle by people who either want convenience or they do not own a car.
- Most taxi services are used by people with 9-5 jobs. So the average age of the customer will be between 25 - 50 typically.
- Since these users are in a rush, hence they would not want to share the ride with others.

PAIN POINTS WITH THE CURRENT SOLUTION

Availability: customer has no control over the booking of taxi. They could get lucky and find taxi immediately.

Anxiety: Even with the availability, they might get stuck in traffic and get anxious about reaching their destination on time.

Price point: Taxis can get really expensive for short duration as it depends on the traffic situation. During peak hours, this is almost double of what you would pay for the same distance in the non-peak hours.

Inconvenient payment system: Currently most taxis only accept payment in cash, this can be inconvenient for most passengers as they might not have spare cash or drive might not have spare change.

Lack of customer service: Customer have no way of reporting abuse or overcharging taxi since there is no direct authority to control them.

PAIN POINTS WITH THE CURRENT SOLUTION CONTD.

Here, one may assume that digitization and shared rides can resolve some of the problems above like payment and customer service, however the reality is far from true. Even with digital rides, some of the challenges still remain unsolved and they have also introduced new variables in problem space that did not previously existed.

Pain points of digital ride services

Avg. wait time is higher for digital ride sharing services: In the peak hours, shared rides means the passengers have to wait until the ride is in full capacity. This may also mean that the passengers might have to wait longer if the routes are uncertain and it is dependant on the driver.
Safety: Uncertainty around whom you might share your ride with might cause unease especially in women.

OPPORTUNITIES ASSESSMENT

- Can **reduce the time** lost by customers spend in traffic.
- Customers will reach their destinations faster, even during the rush hour, which will reduce the **anxiety and unease.**
- Customer will have **simplified payment** through digital payment model and can avail higher benefits with our subscription plans.
- With an introduction of **feedback loop**, customer will have an option to provide their experience, which will inturn help us improving our product offerings.

MARKET IMPROVEMENTS WITH FLYBER

Since they are, well flying, they will reduce traffic congestions on the roads
Key emotional element that tie back to the have early adopters is : Trust, money and frustration

DATA EXPLORATION

Location: Analyze the hot spots for pick up locations for MVP
Timing: Analyze what will be hot spots for pick up times for MVP
Capacity: Analyze the optimum number of passengers for MVP
Focus Group: which group is the most likely contender of our MVP

GENERAL DATA GRANULARITY

- Total number of records in data set: 1048429
- Each record represents a taxi ride
- Primary Key is Id
- Date range of the current data set is Jan - July 2016
- Although most of the rides are clustered around New York and Manhattan region. Some rides do originate from Brooklyn area. However there are some outlier cities like region near East Elmhurst. Staten Island and Bronx are not included.
- Since there are some fields that will be required to understand the full scope of MVP, calculated fields are introduced Price and Distance_to_Duration ratio.
- An initial data cleaning is done using the following filter criteria:
    - Removing passenger count = 0 and greater than 5
    - Removing distance < 0.1 and greater than 25 km; since we want to focus on passengers that travel shorter distances

https://public.tableau.com/app/profile/shreya.sharma7839/viz/PickupDistance_to_durationDensityPlot/Sheet1

GENERAL DATA GRANULARITY CONTD.

- On the final data description analysis is done which yielded the following results:

	passenger	duration	distance	distancetoduration	price
count	1.04	1.05	1.04	1.04	1.04
mean	1.66	9.62	3.44	4.00	7.86
std	1.31	5.85	4.38	3.95	6.83
min	0	1.67	0	0	2.50
max	9.00	5.8	1.24	1.91	1.93
1st std	1.00	6.61	1.2	2.53	4.42
2nd std	1.00	1.1	2.1	3.55	5.76

DATA INFERENCE FROM DISTRIBUTION ANALYSIS

PASSENGER COUNT

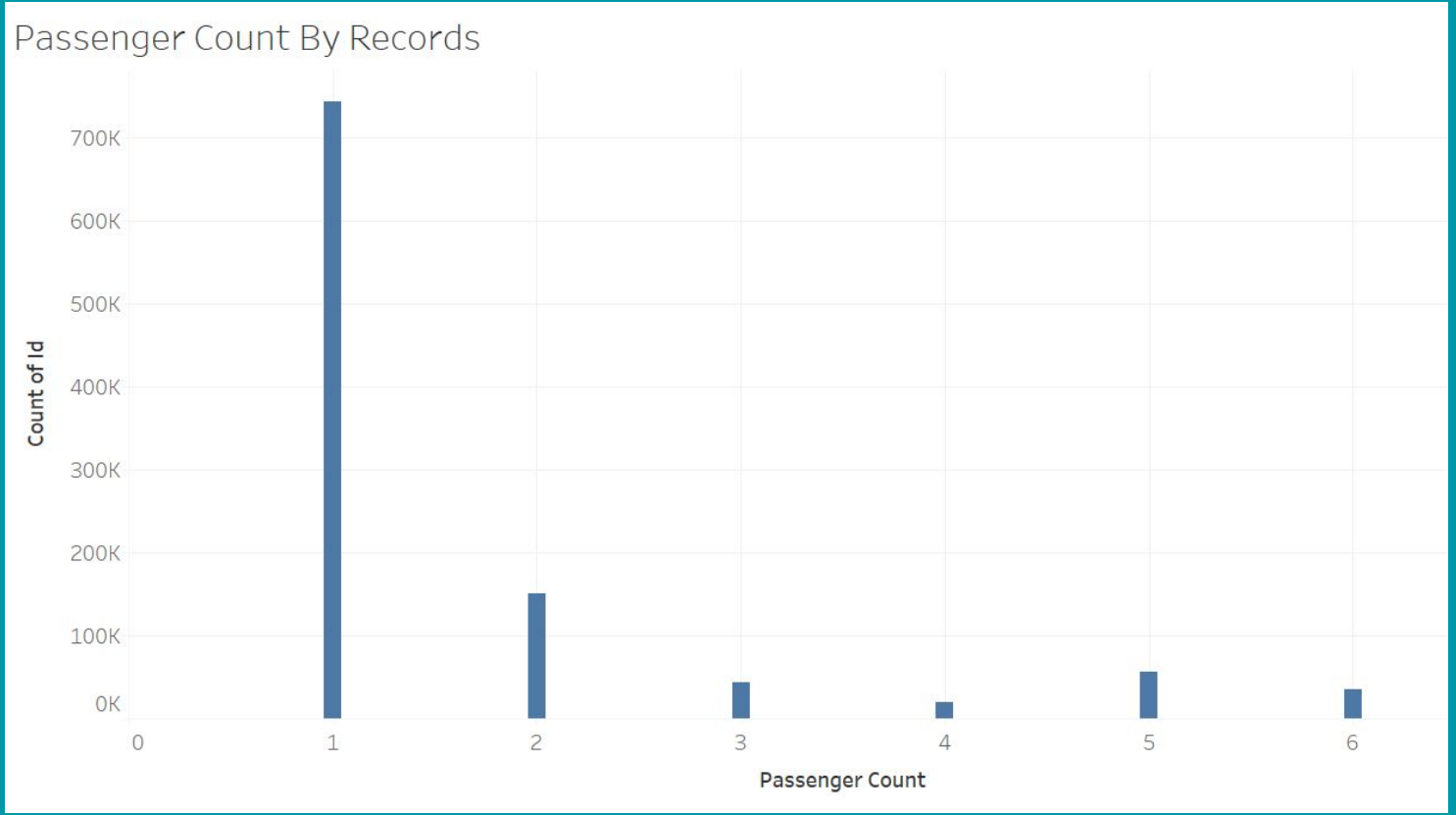
Looking at the statistics we can conclude that 50% of the taxi rides have only 1 passenger. Hence on an average most taxi rides have 1-2 passenger.

DISTANCE

Average distance is 3 KM. Data shows that 68% of rides range from 1 to 7 KM with 50% of the rides being for less than 2 KM. This helps us conclude that our MVP will focus on rides that happen for shorter distance.

DURATION

Statistically, most of the rides take 16 minutes. Further 68% of the rides take between 7 to 25 minutes. This concludes that we will focus our services for passengers travelling for longer time in shorter distance.


Passenger Count By Records
700K
600K
500K
400K
300K
200K
100K
0K
Count of Id
0
1
2
3
4
5
6
Passenger Count

PICK-UP AND DROP-OFF NODES

There are **3 main clusters** for pickup:

- One around Koreatown; zip codes 10123 and 10001 (Penn Central Station)
- One around Midtown West ; zip code 10018 (Bus Terminal in proximity)
- One around Murray Hill; zip code 10178 (this is near Grand Central Station)

Based on the passenger count. We can draw the following inference:

- Most taxi pickup have 1 to 2 passengers, hence the market size for rides with 1 - 2 passengers is high
- However, considering the high building cost we might need to start with a smaller version of our flying taxi like some rideshare or copters
- Also from the above data we can see that most of the rides are clustered around Trains and bus stations

PEAK TIME

It may not make operational sense to have the service running 24/7, for now.

- Based on the graphs plotted, we have three peaks during the day where the pickups are high:
  - 7–8 AM — Morning Commuters
  - 6–7 PM — Evening Commuters
  - 1–2 PM — Lunch Time commuters
- Pickup time seems to be steadily increasing from Monday-Friday. It is comparatively higher on Fridays and Saturdays.
- There seems to be a spike in March. However hourly spikes month-wise, are consistent

Linked work in tableau Public:
https://public.tableau.com/app/profile/shreya.sharma7839

DEMOGRAPHIC EXPLORATION

Based on the demographic assessment, following is the conclusion:

- Females are more likely to adopt to the idea of flying cars.
- Age group of above 50 seems to be likely candidates for our MVP
- Since these are middle aged women, the income range tier of $40,000 - $80,000. This suggests that middle aged women with high earning potential will be most likely target group.
- Based on the sentiment analysis and gender diversion, we see that most of them have Safety and Trust issues which could be addressed through our initial launch phase.
- Further, most men had concerns around pricing, hence we should also focus on this to have more diverse set of audience in the future.

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https://public.tableau.com/app/profile/shreya.sharma7839

CONCLUSION : MVP BOUNDS

3
pick-up
nodes

2
peak times
7 - 8 AM and 7 - 8 PM

1 -2
passenger count

WOMEN
middle aged (50)

SAFETY and TRUST
sentiment

PRODUCT OBJECTIVE

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While it is important to have an engaging user experience and profitable business model, these can only be achieved when we have determined the product market fit by having acquired enough customer base to prove our earlier hypothesis to launch a flying taxi.

- Flying taxi is new concept, hence we will have to focus more on acquiring new customers. All of our feature set and decision should drive this objective.
- Through our user research it is clear that women will most likely be our target audience and for them naturally safety and trust for the driver will be a concern. Therefore, when we build our marketing plan we might be able to address these using some demo session, free rides, referral and or discount plan for more than 2 rides booked together.
- In our initial hypothesis we proposed that anxiety due to non availability and usability, hence we need to focus on usability of the our product and reduce the average waiting time to address these concerns.

Keeping in mind the above points we can now state the primary objective for FLYBER:

Improve user adoption by 20 % within first 3 months of launch

KEY RESULTS AND OKRs

KEY RESULTS	KPI
For women with age ranging between 30 - 50, establish trust and safety	- No. Of Customer per Day - Time taken for each ride - Customer satisfaction Score
Reduce average wait time for improved customer experience.	- Average wait time - No. of passengers in each ride

In order to know if the KPIs are meeting our objective, we must set a baseline i.e. threshold for each of them and see how this changes in the **3 months.** To do the same we will do go back to the data and calculate some key numbers.

KPI AND THRESHOLD

HYPOTHESIS FOR KPI

1. **No. of Customers per day**: From the data we have established that our pick up times with be on an hourly basis, hence we must establish the total number of passengers per ride per day. Looking at the hourly calculation we know that we have 30 to 40 rides during our peak hours. With initial conclusion of 1 passenger per rides, we can say that we will have **30 customers during peak hour**
2. **Time taken for each ride**: Descriptive statistics show that 98% of our rides take 19 minutes, therefore it is a good option to reduce this time to exactly half. I.e. our threshold here is **10 minutes**
3. **Customer satisfaction score:** On a scale of 1 to 5, we should aim at least a **3** for starting and then move up gradually. This will also help us filter down Referral feature in our next iteration as we will know that consumers with higher CSAT will refer more.
4. **Average wait time:** Generally we can wait for taxi or ride for 5 minutes, hence for this service we can aim for **3 minutes.** Also we have established that we can offer discount for new customers hence we can provide them an ability to book rides in advance.
5. **No. of Passenger per ride:** We have initially concluded that this number be **1 -2** to start with. As our services grow we can look at the data and do some research to increase this number. This will help our profitability goal.

THRESHOLD FOR EACH KPI

1. **No. of Customers per day**: 30 customers during peak hour
2. **Time taken for each ride**: 10 minutes
3. **Customer satisfaction score: 3** for initial roll out
4. **Average wait time:** 3 minutes
5. **No. of Passenger per ride:** 1 per ride

FEATURE SET

THRESHOLD FOR EACH KPI

Referring back to our Data exploration exercise we can answer the following:

- What times/days of operation should the service run for?
  - Weekend (Friday and Saturday) Morning: 7 to 8 AM
  - Weekend (Friday and Saturday) Evening: 7 to 8 PM
- Where the nodes for pick up will be located:
  - 2 around Koreatown near Penn Central Station
  - 1 around Midtown West
  - 2 around Murray Hill near Grand Central Station
- Should we initially use copters or homegrown hardware?
  - Based on passenger count of 1 -2, is it economical to have copters as our initial go.
- Should the pricing be fixed or dynamic? At what rates?
  - One of the main challenges with the current solution was frustration of flexible prices; hence we would want to have fixed prices to reduce the frustrations.

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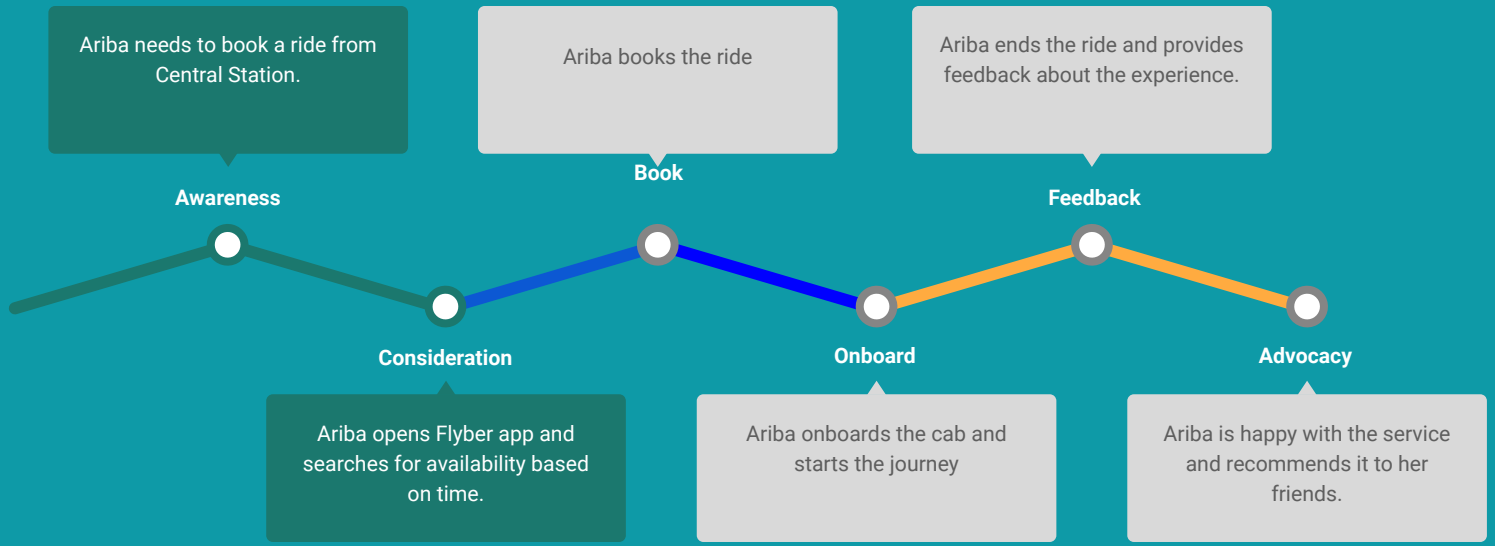
INSTRUMENTATION PLAN

THRESHOLD FOR EACH KPI

Once we have identified the KPIs, we will now figure out the events and its corresponding properties. In order to figure out the events we first map a customer journey for our persona Ariba as described above. Let us assume a made up persona called Ariba. Following will be a rough user journey for Ariba.



INSTRUMENTATION

From the diagram above we are able to deduce the following events: rideBooked, rideStarted, rideCompleted and rideCancelled. For this instrumentation plan, we would want to focus on rideStarted and rideCompleted.

KPI	Event	Event Metadata	Trigger	Formula for KPI
No. of Customers	rideBooked	ride_ID, passenger_ID, bookedTime	when the customer clicks on Book Ride	Unique passenger within each ride
	rideStarted	ride_ID, passenger_ID, startTime	when the rider clicks on Start ride. This will be available for the Rider only	
Time taken for each ride	rideBooked	ride_ID, passenger_ID, bookedTime	When the passenger clicks on Book My ride	
	rideStarted	ride_ID, passenger_ID, startTime		
	rideCompleted	ride_ID, passenger_ID, completionTime		duration between startTime and completionTime
Customer Satisfaction	feedbackRes	passenger_ID, Ratings, Remarks	when the passenger Submits the feedback	Rating Score
Average wait time	rideBooked	passenger_ID, bookedTime	when the passenger clicks on Book Now	Duration between the bookedTime and startTime. Here if we have rides that are prebooked, then the calculation should start the moment we hit Start time and should measure the time until the rider starts the journec

USER FEEDBACK

FEEDBACK QUESTIONAIRE

In order to understand the changing customer needs and align our product in the right direction we need to have a mechanism to gather feedback. This will be a simple form that the customer can fill up when they have completed their ride.

We must also be careful as to not exceed 5 question in our feedback.

PROPOSAL SUMMARY

PROPOSAL SUMMARY

- WHO: Using the answers gathered from our user research in Data Exploration we conclude that,
  - Although Men did show interest however their main concern was Money.
  - Hence power user group will be Women in the mid age range with an earning potential of ranging between $40K and $50K
- WHAT: Based on the data exploration we figured out Location, Time, and Passenger count
  - Since we aim to reduce the traffic congestion in New york based on our location analysis we will offer a seamless booking service.
  - Also we aim to reduce the average duration by 50%
- USER IMPACT
  - Our produce will appeal to the emotional side of our target customers like anxiety, fear of safety.
  - With our pre-booking facility we will be able to reduce the uncertainty.
  - Fixed pricing will give a chance to have a fair pricing and not have the customer worry about having enough cash. At first we can move it using cash only, and later once we have enough momentum this can be moved to digital payments like in-app wallets etc,

PROPOSAL SUMMARY CONTD.

- **MARKET IMPACT**
  - Since this is our first **Flying taxi** service, hence we have an unfair advantage over our competitors.
  - The product also aligns with the mission to address a critical and exiting need of the customers, and this is also evident with our approach of selecting our target segment and nodes.

- **STAKEHOLDER**:
  - Tech : Developers ,Product Designers, Data Science Team
  - Marketing Team
  - Finance Team
  - Government bodies: To establish the infrastructure
  - HR: Recruiting of the pilots to fly the copters
  - Training: To train the riders

RISKS TO BE ADDRESSED

- Flying taxi is a novel concepts, hence it will take some time to get the trust of our target customers. For this we must always strive to give them safer ride at all costs.
- Since we need to fly, hence we will need to have some measures in place to ensure that the pilots have required credentials.
- We also need to be vary of the city regulation like air and noise pollution and air traffic
- Manufacturing cost is major risk, because we want to be able to have copter that run on battery to reduce the air pollution and if we do not have enough traction during our first run months, then we could potentially fail.
- We must also be vary of an misguided givings by those who are a part of existing cab services in the selected regions. Since any new change will disrupt the market we need to be aware of any problematic elements before hand to ensure the safety of passengers, riders, as well as our initiative.

THANK YOU