

A hand holding a black smartphone with the Uber logo on the back. The background is a blurred street scene with a car.

UBER Demand Supply Case Study

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Synopsis

- The available data have the following characteristics.

Unique Possible Status

`['Trip Completed' 'Cancelled' 'No Cars Available']`

Data Spread across Month

`[7]`

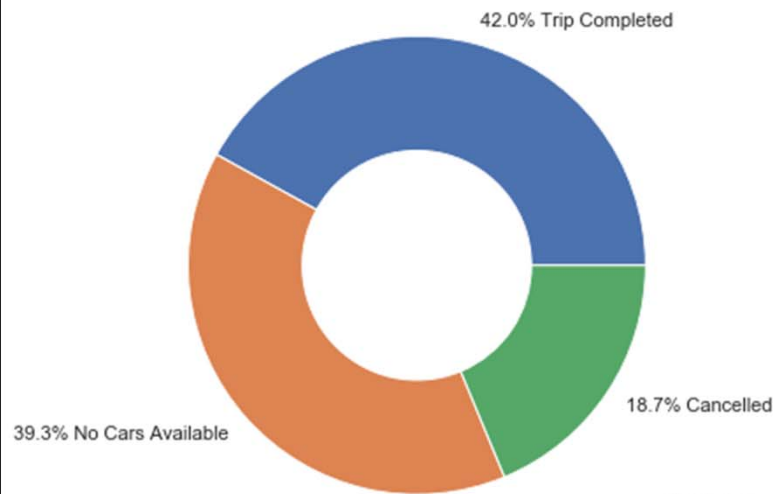
Data Spread across dates

`[11 12 13 14 15]`

- Five days of data from the month of July in 2016 , with 6745 Requests.
- After Cleaning the data and formatting the structure, we attempt to see any visible patterns in the data.

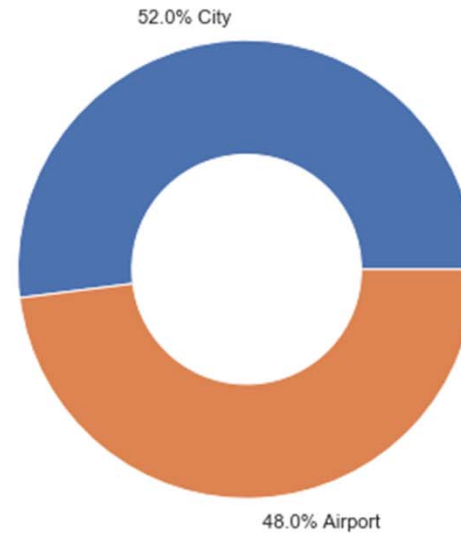
The Big Picture

Trip Results



6745 Requisitions

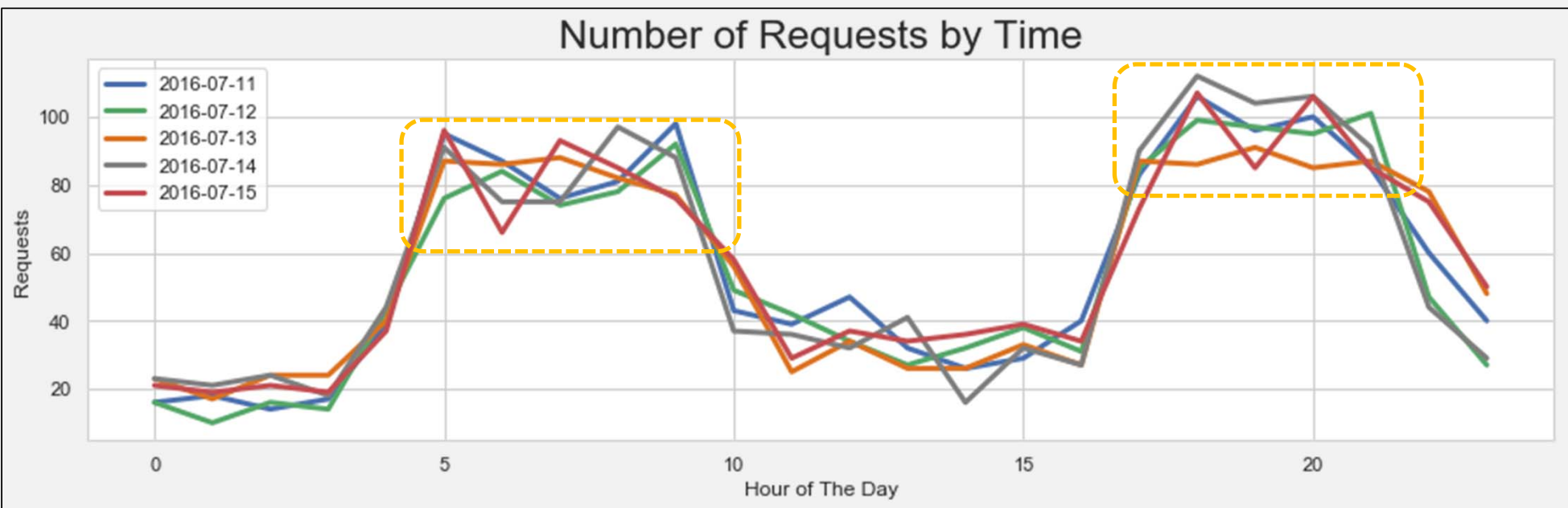
Pickup Point



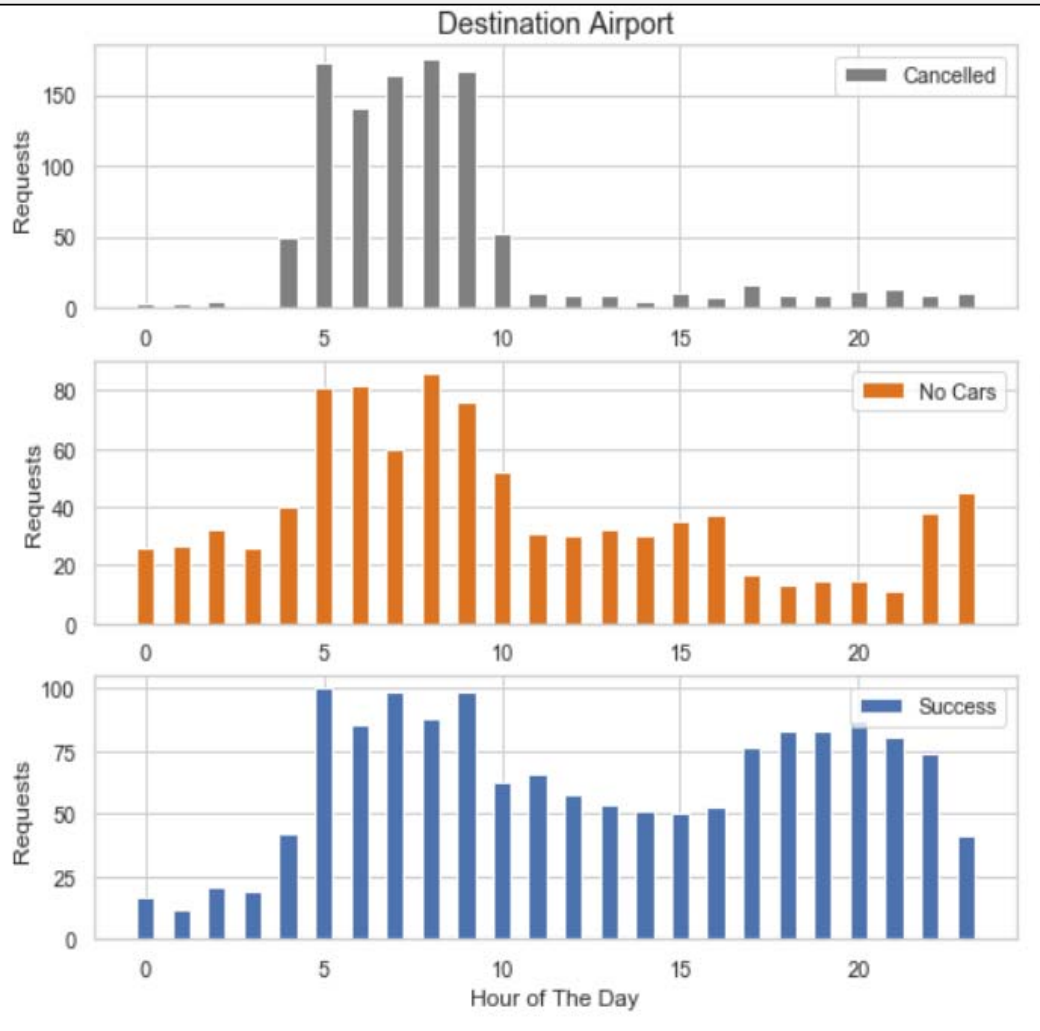
- There's a uniform volume towards and from Airport.
- The Success Rate is only 42% and failures are dominated by ***No Cars Available !!***
- ***So we ask, how these failures are distributed ?***
- ***Do they have any correlation with pick up point or time of the day ?***

Request Volume

- There are two peaks in the entire day.
- Early morning from **0500 hrs to 0900 hrs** and another from **1800 hrs to 2100 hrs**.
- During these windows , there are almost 400-500 requests registered per hour.
- Interestingly , mid-day traffic is almost same as early morning.
- What is the distribution of this traffic based on destination ?

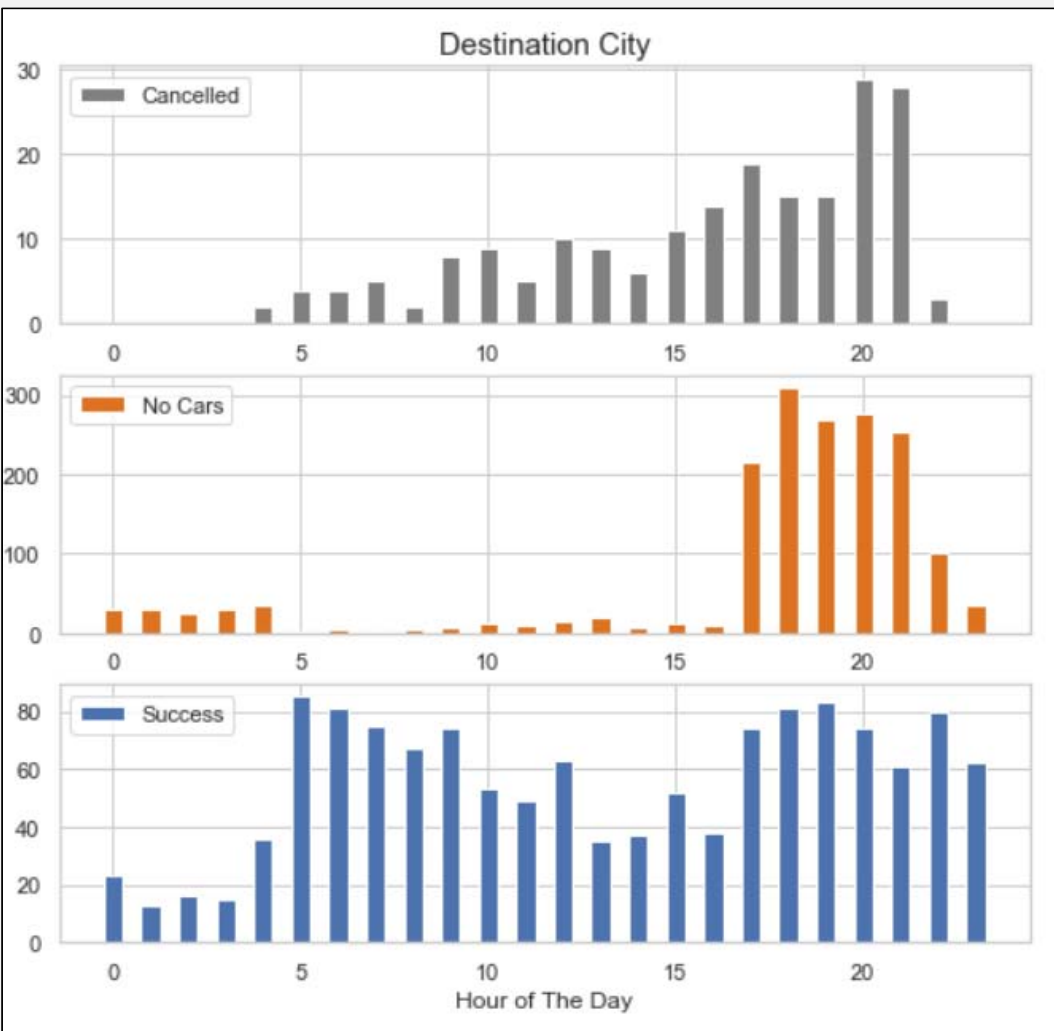


Destination Airport



- We have added all the hourly requests across 5 days.
- For destination Airport, there's a massive cancellation during the 1st peak of the day.
- **No Cars** also spikes at the first peak.
- **No Cars** is a persistent problem throughout the day.
- It will be a prudent investigation to check the cancellation source, **Driver or Initiator** ?

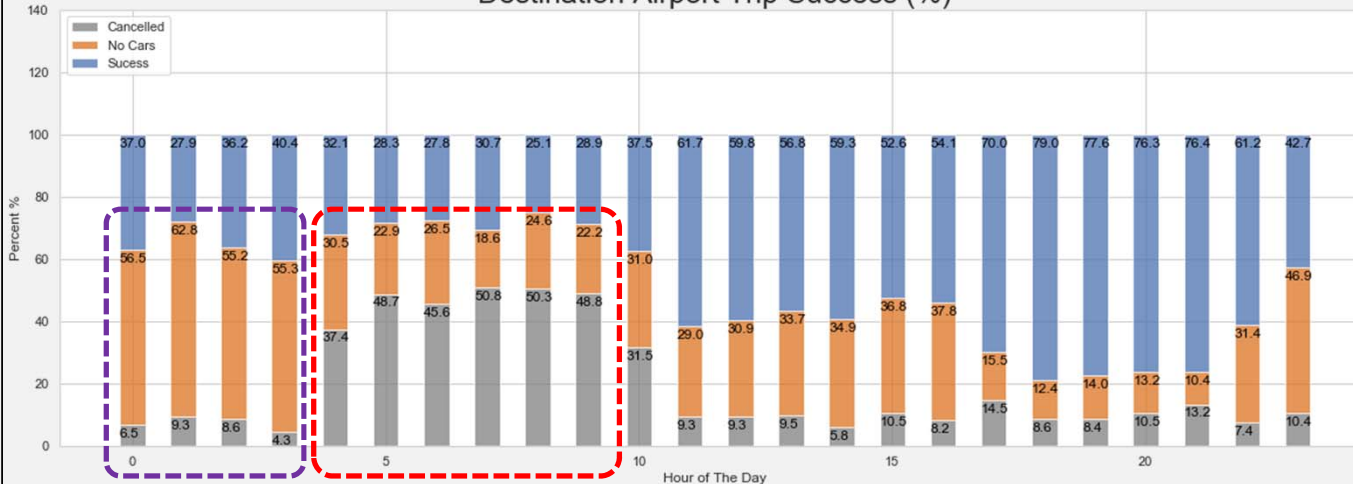
Destination City



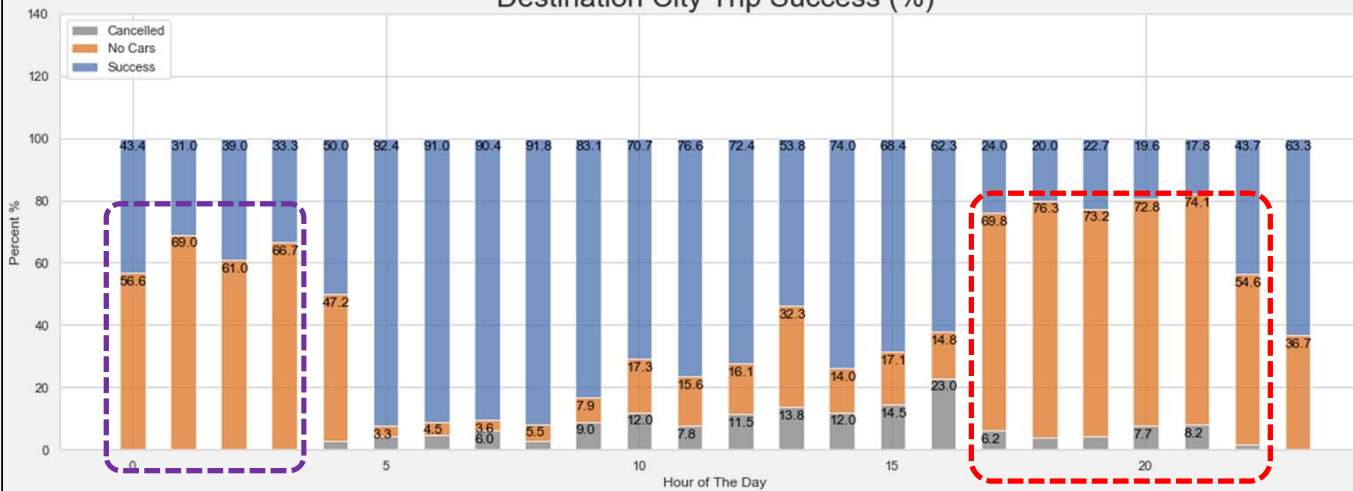
- For destination City, **No Cars** is a severe problem during the 2nd peak of the day.
- Curiously , cancellation climbs steadily from early morning.
- This also warrants further investigation of cancellation source.

Business Impact

Destination Airport Trip Success (%)



Destination City Trip Success (%)



Peak Hours

- In both the peak hours, **No Cars** seems to cause significant revenue loss.
- This is more dominant for arrival flights in the 2nd peak duration.
- A large number of **stranded passengers** at arrival!!!

Off-Peak Hours

- These hours do not have much volume, but sure affects Uber Reputation.
- On the contrary, despite being low volume hours, **success rate is barely 50% !!!**

Further Insights

- While, it is relatively straightforward to see No-Cars as a major Problem.
- Some introspection is needed for the '**Cancellation**' Problem.
- Further Questions that need to be answered
 - ✓ Are the Cancellation primarily by passengers or Drivers ?
 - ✓ From City to Airport , Cancellation plays a major role during 0600hrs to 1900hrs
 - ✓ This could be reluctance of drivers to avoid long waiting times in those hours.
 - ✓ However, why Airport to City causes a linear increase in cancellation ?
 - ✓ Are there specific destination in City which the drivers are reluctant to take.
- Further data collection pertaining to Cancellation is requested.