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Fresh Graduate

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Hi !

I am Proteeti , recently graduated. When I saw this opening at Pathao, I was immediately drawn to the opportunity.

In response to the aforestated questions in the post, my answers are given below:

- **A few Pathao specific issues/problems which I believe I can address as a data scientist**

1. **Ratings of both driver & passenger:**
   The driver rating data can be used to track down the efficient driver in terms of city and traffic knowledge, driving skills, behaviour and others. Thus necessary follow-ups can be taken. On the other hand, the passenger ratings can be used to prioritize the ride allocations according to their requests and facilitating promo codes. Therefore, ratings help to build up trust and allow both parties to make informed decisions about who they want to share a car with.

2. **Demand for cars/bikes:**
   Storing and analyzing the data on every single trip the users take which is aftermaths leveraged to predict the demand for cars. This data can also be used for setting fares and allocating sufficient resources.

3. **Public transport analysis for vehicle positioning:**
   In-depth analysis of the public transport network across different areas in the city so that Pathao can focus on the areas which has a bit less public transport facility.

Heat maps can be used on driver positioning. This can also be applied for Pathao Parcels and Pathao Food, in the areas where other delivery service and food deliveries don't cover.

4. **Drawing traffic pattern inferences:**
   Pathao drivers can also generate data while not carrying any passengers, while roaming around the city for requests. This data can be used to get an idea about the traffic condition about a particular area hence a general traffic pattern can be inferred.

5. **Ride timing :**
   The information generated during the ride can be used to build predictive models where Pathao can predict how long it will take for a driver to cover that distance.

6. **Collaborating data with Pathao Food:**
   There are other food deliveries available, but Pathao can make the difference by inheriting customer details with food ordering habits. Thus Pathao Food can give customized recommendations to every customer.
   Pathao Food can track the office area /student mess where people order takeaways the most. Also, there must be a significant change in ordering food while Ramadan, Pathao can use that data to optimize the efficiency as well as availability.

7. **Using customer information :**
   Information gathered from customers' accounts, order information and their used location allows Pathao Rides, Foods and Parcels to track major trends — popular choices about eateries, traffic patterns of cities and workplaces of their employees, popular places to visit during the weekend etc.

8. **Vehicle allocation in maps:**
   It is very normal that the demand for transportation is high around offices, airports, railway stations and bus terminals. Pathao can use this data from map to allocate an optimal number of drivers in that area.

- ## Data science question

Problem Statement No #1

Determining the most difficult areas in the city to travel through based on the trend of common routes.

Why do I think that's an interesting problem?

While Pathao offers both motorcycles and cars, the distribution of the vehicle type should be in such a way so that Pathao can get the most profit out of its business.

Attack approach

- Positioning the Pathao motorcycles in the areas where the traffic is congested so the availability of bikes will be at the congestion hours and users will take the most of it.
- Distributing the cars in the routes where the traffic is less.

Communicating the findings with stakeholders

I'll explain how positioning cars and bike depending on the traffic congestion will help, then drawing the line that how that will help achieving our expected goal. The working methodology and

- ***With the business intelligence team***: Asking for the traffic data of a certain period of time in an area and analysing the traffic effect on choosing bikes over cars and vice versa.
- ***With the data science team***: Adjusting the model by changing the variants of vehicle distribution based on the training traffic data. Handling the factor like : changing the positioning of bikes and cars according to the traffic throughout the city.
- ***With the marketing team:*** Branding and promoting this idea in a way so that Pathao can reach the customers about this fact.

Problem Statement No #2

Long term effect of surge on customer retention as well as short term effect of surge on customer demand.

Why do I think that's an interesting problem?

Although surge pricing is well-known among the customers, still they can be bothered by the amount of extra money he/she is paying due to this. Which may lead that the customer is losing trust as it seems excessive and choosing other ride sharing apps instead or using Pathao very less.

Whilst, during the peak hour switching to other ride sharing apps regardless of having adequate drivers available can be a big problem, which is due to surge pricing.

Both of these cases can affect the business of Pathao.

Attack approach

- Choosing a reasonable multiplier (beyond which the customers start getting upset) and stating that the surge pricing will be no higher. That can be a long term solution for the customer who are bothered by surge pricing as well as building trust.
- Another way to maintain customer retention is to maintaining predictability of price change. The frequency of changing into surge pricing should be predictable(i.e higher in peak hour & normal in morning from afternoon), so that customers get used to it.

Communicating the findings with stakeholders

- ***With the business intelligence team***: Asking for the percentage of Pathao subscribers who has lessened/ left using the service and finding out if higher-surge is somehow responsible for the churn rate.
- ***With the data science team***: Adjust the multiplier in a way so that the surge is understable and reasonable for the customers.
- ***With the shareholders:*** If the customers has the clear concept, the amount of money they are paying in the peak hour won't seem excessive to them, represent in a way that it's fair by building trust.

Problem Statement No #3

How many drivers are enough to drive for a certain amount of passengers in an area.

Why do I think that's an interesting problem?

It's very obvious that the demand for Pathao will not be the same in every area, but while allocating the vehicles, it is a must to keep in mind that the supplied vehicles can meet the demand of the amount of customers. Otherwise, Pathao will lose the grip easily.

Attack approach

- Determining different performance matrices like: how many drivers pass through a particular area, how many customers book in that area, how many customers ride from that area and based on all these.
- By examining the data we can identify the pattern by which we can identify key areas that are constantly under-performing , Pathao can increase the number of drivers there.

Communicating the findings with stakeholders

- ***With the business intelligence team***: Asking for the data for different performance matrices as mentioned above. Discuss if any other factors are affecting or not.
- ***With the data science team***: Design a model for allocating the maximum number of vehicles in the area, optimizing from the booking time and riding time.
- ***With the shareholders:*** Asking to increase invest more so that more vehicle can cover that leftout user group.

- **Why do I want to work with Pathao**

When I discovered this opportunity in Pathao, I was immediately drawn to the opportunity to get the experience here.

As a fresher It has always been my dream to intern in a well-known startup company like yours and I am very much enthusiastic and eager to learn . I am eager to gain a more detailed understanding of the field by collaborating with an experienced team, that's what makes me want to experience Pathao and its environment especially !

Thank you for your time and consideration. I look forward to hearing from you soon.

Best Regards ,
Proteeti Prova Rawshan