Smart Electric Scooter

Experience Design

Dec 2016 | 2 Days

Introduction

The idea behind this project is to consider an electric scooter as a companion rather than a utility. The experience is designed by considering all the daily use cases of Indian customer.

User Research

Secondary Research

The secondary research was done to understand the scope and design strategy behind smart vehicles and electric scooters.

I went on to read a couple of research papers which talks about the current scope of electric vehicles, its limitations, a variety of electric scooters and major use cases of electric scooters around the country.

Primary Research

Primary research was mostly to understand user sentiments and needs with respect to electric scooters.

The snapshot of the chats with various users is provided at the end of this document.

User Segmentation

User segmentation is done based on two major factors. One is **vehicle use case** and another is **daily distance covered**.

User Persona

After user interviews over call and chat, I finalized on 3 different user personas.

Rahul Ranjan

20 years old | Commerce Student | Bangalore

~ 65 km
Daily Commute Distance

- Current Scooter : **Honda Activa**
- Uses Scooter as **Primary Vehicle**
- **Owned** an electric scooter earlier

I cannot compromise with pickup of the electric scooter and it should look good unlike other baby electric scooters.

Karan Rao

29 years old | Owns a supermarket | Chennai

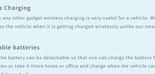
~ 25 km
Daily Commute Distance

- Current Scooter : **Suzuki Access**
- Uses Scooter as **Primary Vehicle**
- **Never owned** an electric scooter

The electric scooter should do what my current scooter does without any hindrance and should be very cost effective than my existing vehicle.

User Experiences

Following are the experience during the course of user journey using a smart electric scooter considering majority of touch points



Experiences while riding the scooter

Put those stands back

Many times people forget put back the vehicle stand when riding the bike which unquestionably is a dangerous thing. Traditional bikes give indicators when the stand is not put back, but **how about just automatically moving back the stand if it is not moved back by the user after starting the ride.**

Indicate the indicators

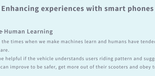
There are many times that we forget put turn off our indicators after making a turn. **How about turning off the indicators after taking the turn just like a car?**

Feel the handle

Haptic **feedback on the handlebar to indicate something is unusual,** which can be displayed on the dashboard. Often the indications on the dashboard get overlooked.

Design for disability, we all benefit.

Provide a customized vehicle for handicapped users. Let disabled user order a customized electric scooter depending on their leg or hand disability.



Enhancing experiences with batteries

Reserve power backup

Just like how traditional motorcycles have reserve fuel option. A small part of the battery is used as reserve power backup.
This will help user run their scooter that extra mile when they are short of power.

Wireless Charging

More than any other gadget wireless charging is very useful for a vehicle. We don't have to use the vehicle when it is getting charged wirelessly unlike our smartphones.

Detachable batteries

A part of the battery can be detachable so that one can charge the battery for emergencies or take it there home or office and charge when the vehicle cannot be charged while parked.

Battery Health and Status

Provide clear details of battery health and real-time distance that it can cover. This feature will help the user know when the battery has to be replaced and will help the user know how many kilometers he/she can actually ride.

Charging station infrastructure

Work with most the parks and parking lots and build a charging point infrastructure. This will help in easy & quick adoption of the electric vehicles.

Enhancing experiences with helmet

New scooter deserves a new helmet

The vehicles should a new helmet along with the vehicle. This way we can build some experiences combining vehicles and helmets

Give them some space

The vehicle should have enough storage to keep 2 helmets in it and if there is something else to store in the storage container, the vehicle should have easy to use helmet locks.

Don't break the rules

The vehicles should simply indicate the user if he/she is not wearing their helmets just like how cars indicate when seat belts are not fastened.

Enhancing experiences with smart phones

Machine Human Learning

These are the times when we make machines learn and humans have tended to be how they are.
It would be helpful if the vehicle understands users riding pattern and suggest them how they can improve to be safer, get more out of their scooters and obey traffic rules.
For example, if the user uses a lot of breaks while riding the bike, the dashboard or app can suggest them to use it less as it will improve vehicle performance.
Or if the user drives rashly on the roads, an app can suggest them to drive more carefully.

You are saving the planet earth

Users can get monthly or weekly reports on to how much they have contributed to improve the environment by using electric vehicles.
For example, if users ride 50km in a month the dashboard or app can show them their contribution towards bringing down the carbon footprints.

Where is my scooter?

It often happens that we forget where we parked our vehicle or are trying to find the vehicle among 100s of other vehicles.
A quick guide as to where exactly the vehicle is and direction to reach there would help a lot.
Or a sound from the scooter to easily find where it is.

Anti Theft Support

Loud notification to user and burglar sound from the scooter if someone tries to steal the scooter.

Easy Dock

An easy phone dock option which helps you navigate when you need. Also once the phone is docked you can download an app which shows you critical information which you may need while driving.

User Interviews

Following are the snapshot of the discussion I had with the people about electric scooters and their thoughts about it, pain points,

Let's Talk

Thank you for reading till the end. You can know more about me and my work or get in touch with me using following mediums.

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