Problem Statement for JoyRide®

Transportation is the second largest source of the greenhouse gas (GHG) emissions in the United States. Transportation accounts for 28 percent of the total GHG emissions, and two thirds of the emissions are from cars, SUVs, and pickups in the United States in 2009. The primary mode of transportation in the U.S. is single occupancy vehicles. One way to address this problem on a small scale is to encourage carpooling within the university community. In addition, many offices have limited parking spaces for the excess of single-occupancy vehicles each day. Implementing a formalized carpool system to facilitate and encourage carpooling will reduce GHG emissions and the number of vehicles traveling to campus each day.

Background and Context:

With an effort to reduce traffic congestion on roads and saving time looking for parking spaces during higher traffic densities, personal carpooling allows car owners to share their rides with other passengers. It is a sustainable way of sharing your fuel costs and tolls. Also, it is an environmentally friendly way of reducing air pollution.

Scope:

Personal carpooling provides the car owners to use their own car to pool with other passengers to destinations and drop them off to locations on the driver's route. It helps the drivers to share the expenses and provides the riders with the comfortable commuting to distant locations. The drivers and the riders also get credit points each time they carpool, which can be redeemed with different franchises. The drivers and riders can make groups or communities who daily commute to the same location e.g. to a university or a workplace.

Function and Form:

- A major function of this application being developed will be concentrating on the security, be it the driver and rider verification or the payment gateway.
- The function that makes this application stand out among the others is that user can request a ride when there are no posts available in that particular route.
- There will be a support system that works on the maintenance/improvement of the application.
- This application is for mobiles as it is feasible to use the features like GPS on mobile rather than a desktop.
- The application will require some HTML no matter what, and if we have a PHP backend, the two technologies will interface to bring the dynamic application to life.
- Load balancer/reverse proxy server in this case due to few reasons:
  - Enables horizontal scaling; environmental capacity can be scaled by adding more servers to it.
  - Can protect against DDOS attacks by limiting client connections to a sensible amount and frequency.
  - Improves performance and reliability by distributing the workload across multiple servers.
  - This also limits the lags when there are multiple users using the application at the same time.

Economy:

- **Resources:**
  - Capital: $3,000
  - Investors: Expected revenue $10,000 – $12,000 per year
- **Time:**
  - Time taken to develop an application: 2-3 months (approx.)
- **Scope:**
  - Deployment: 37.45%
  - Integration: 13.4%
  - Debugging: 6.70%
  - Quality control: 9.36%
  - Publishing fees: $100+$100 (publication fees by Google Playstore® and AppStore®)
  - Salaries: 28.77%
  - Third party apps: 3.54%
  - Support: 7.19%

Note: All percentages given in terms of the total financial resources.

Time:

As long as cab services like Uber or Lyft are in business, our application would be running. We don't find a reason for a carpooling application to shut down anytime soon. Carpooling has long been promoted by cities and countries. But it was until the carpooling apps came into limelight that sharing a commute seemed possible and easy.

Especially along with the additional features offered by JoyRide®, the expectation that within the first 2 – 3 months after the initial release, there will be a good amount of visibility.

Organization Constraints:

This application doesn't have any such constraints as everyone in the scrum team is available locally and they have the skill sets to develop the application with all of its intended features.

Summary of Primary Success Criteria:

- Ease of access: The application is to be developed for both iOS and Android. So, it would be easy to access and use the application.
- User-friendly: The application will be easy to operate even by a technologically challenged.
- Privacy and security: There are two third-party apps being involved one for payment gateway and another for the customer detail verifications.
- Low costs: It is being taken care that it should not be heavy on everyone's pocket.
- No bugs: there is a support team that'll work on the maintenance of the application

Key Stakeholders:

- **External:**
  - Corporate offices

- Outlets that want to advertise on our application – coffee houses, eateries, gas stations, etc.
- Users – Drivers and riders

➢ **Internal:**

- The project team – Sadhana, Shivadhar, Poojitha, Rachana, Sankalp.

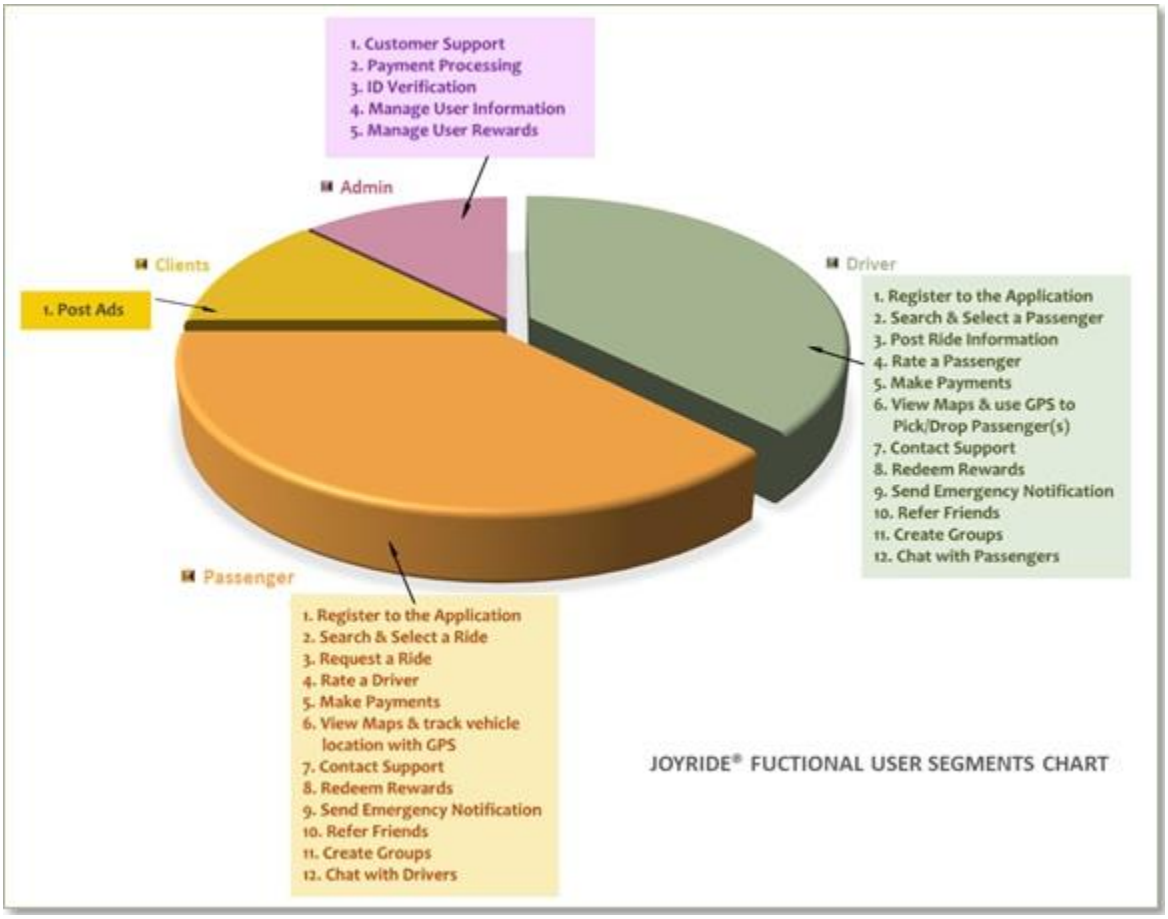
Revision History:

Date	Version	Reason for change	Edited By
09/20/2017	**0.1 Draft**		**Poojitha, Rachana**
09/25/2017	**1.0 Baseline**	**Updated the hardware and market research information.**	**Rachana**

Additional Background and Context Information (as available):

Current Customers & Contractual Commitments	**Users – consisting of the general public who registers with the application.**
Potential Customers	**Employees from corporate offices.**
Key Competitors	**Carma, Rideshare, Carpool-School Edition, Zimride, Scoop, BlaBlaCar**
Market Drivers	**If taxi services like Uber®, Lyft® decide to get into the carpooling, they pose to be strong potential competitors**
Future Direction	**Housing/ other facilities for the riders; Drivers being able to charge for the ride**
Current Assumptions	• **All users have a reliable internet connection and GPS** • **All users will act ethically and within legal limits.**

Appendix:



The figure above shows the planned usage of the application by various users.