

RIDESHARE: CONNECTING TRAVELERS

EE 364: Problem Statement

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1.0 Introduction

Our goal is to create a product which can bring together people who are in need of a ride with those who own a car and are willing to participate in a rideshare. More importantly, it will do so in an efficient manner, which minimizes travel time and distance, as well as taking into account the preferences of the customers.

In a time when energy and fuel efficiency are of growing importance, people are increasingly encouraged to leave their car at home and seek alternatives. Our rideshare application can help people coordinate rideshare programs and plan trips efficiently and effectively. People who share rides regularly will significantly reduce their ecological footprint and save on travel expenses.

The target audiences can be divided into three types:

- Travelers who are interested in a regularly-scheduled rideshare to their place of work or school, or for their children.
- Travelers who seek one-time partners for longer trips (i.e. cross-state).
- Individuals interested in sending shipments/cargo via rideshare drivers, essentially substituting our service for standard shipping options (USPS, FedEx, etc.).

The problem originates in the tendency of many people to prefer private vehicles to mass transit. Subsequently, mass transit has taken a back seat to an ever-growing private-vehicle based travel paradigm. People who seek alternatives frequently find mass-transit to be unreliable and under-developed, and must resort to either using their own vehicle, or coordinating rideshares.

Our solution will enable individuals to communicate their travel needs and find others who are compatible with those needs. It will eliminate much of the coordinating tasks from the rideshare paradigm, and subsequently increase the likelihood that people will choose rideshare. Our hope is that this product will help facilitate a paradigm-shift from single-passenger travel to a ride sharing culture.

2.0 Needs Analysis

Our users need to quickly and easily find passengers or drivers that fit their schedule and preferences. Consequently, our product must include a secure and intuitive user-interface to facilitate creating and maintaining shared rides. Behind this interface, we need a map-based tool which can evaluate and recommend rideshare solutions to the users in a timely manner. This tool will need to use an existing map application (such as Google or Yahoo maps), and be able to repeatedly submit and receive results for different possible routes. It should be able to rank these results according to the users' preferences and rank them to facilitate easy choices. Physically, the product will also require a web server to host the application.

Assuming these needs are met, we will need a broad user-base in order to ensure that all users actually find ride-share solutions. In our application, the more people we have in our user base, the better the solution (in terms of cost, distance, compatibility) we will be able provide.

3.0 Input/Output Block Diagram and Description

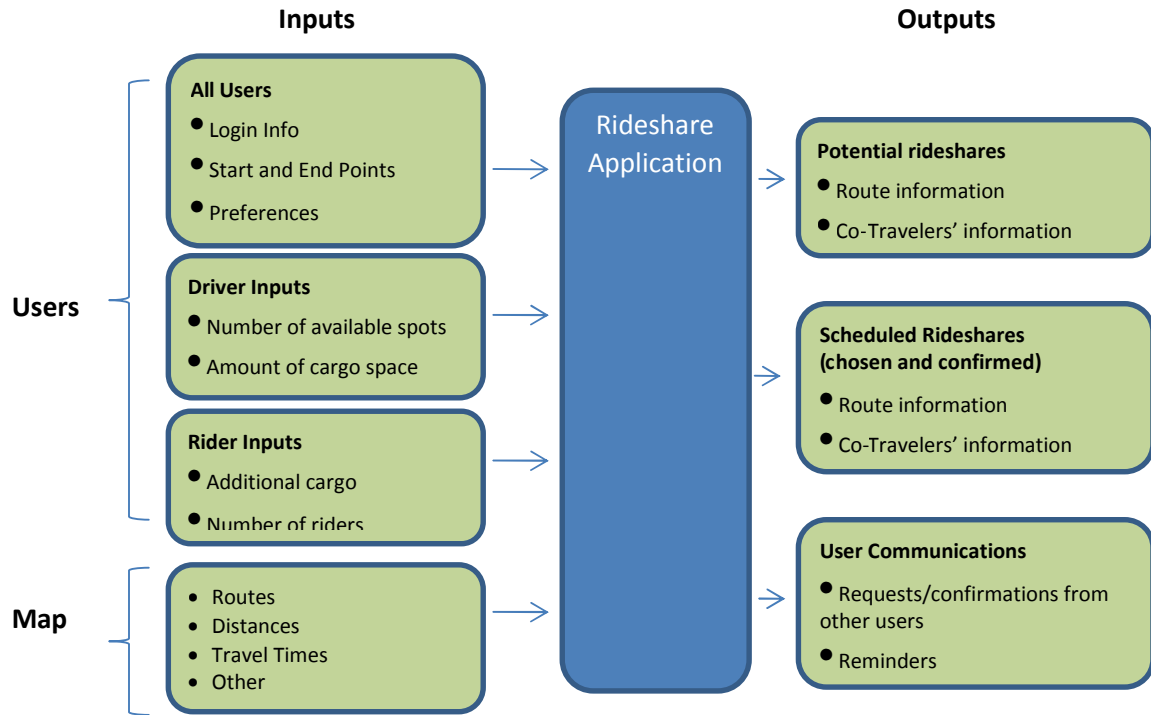


Figure 3.1: Input/Output Diagram

Our program will require different inputs from our two types of users, as a driver's needs are opposite those of a rider. Drivers will input how much space they have in their car, and riders will specify how much space they require, in terms of people and luggage. In addition, both types of users could include their preferences (age, gender, rating, history, distance, etc.) regarding the types of individuals they would find most compatible.

4.0 Operational Requirements

Due to the scope of our product, we must have a broad user-base. In addition, our requirement for delivering results quickly implies that the software must utilize a very efficient method of searching for possible routes.

Our software must be secure. Like eBay, people will rely on user ratings to determine who they should trust. We will require anti-bot measures such that we do not become flooded by spam or false users. In order to prevent impostors, we will require a secure login mechanism.

While other services such as RideshareOnline.com and iCarpool.com, [1] and [2], have created programs targeting the rideshare audience, we are confident that the advantages of our service be sufficient to attract users. We found no evidence of an existing graphical ride sharing website; ours will be an integrated map-based interface so that we can provide two new functionalities: automatically searching for the best routes using optimization methods, and visually displaying routes and travel times for various possible rideshares.

In addition, most ride share websites are limited in their scope: they offer only locations in specific cities, counties, or metropolitan areas. Our application will only be as limited as the map program we use; it could consequently apply on a much larger scale.

5.0 References

- [1] Unknown Author, "RideshareOnline.com," [Online document], 2007 Aug 29, [cited 2007 Oct 1], Available HTTP: <http://www.rideshareonline.com/index.htm>
- [2] Unknown Author, "iCarpool.com," [Online document], 2007, [cited 2007 Oct 1], Available HTTP: <http://www.icarpool.com/en/MainPage.aspx>