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## Assignment A06 Market Characteristics

### **Task**

Urban sprawl has created many problems for modern society. One of the most significant problems is moving people from suburbs to downtown cores in a manner that is safe, efficient, and minimizes the effect on the environment.

### **Pains**

- Traffic can be slow, especially during rush hour
- Reckless drivers
- Pollution
- Frequent construction required to maintain roads

### **Gains**

- A new solution would cost commuters less
- A new solution would revitalize neighborhoods
- A new solution would restore green spaces

### **User Experience Chart**

Ease of Use- Should be the same or as easy to operate as a modern car.

Fast Commute- Commute times need to decrease.

Safe- Should be safer than a modern car.

Private- Everyone should have their own vehicle.

Always Ready- Can get around anytime the user desires, not at scheduled times like a train or bus.

Reliable- Vehicle and any related systems always need to work .

Low cost- Cost of ownership including purchasing, maintenance, fuel, licensing, etc. should not be more than a modern car.

Internet Connectivity- Vehicle connects to the internet to share travel status with family, run diagnostics, track the vehicle, etc.

Customizable- User should have a similar range of choices to the modern car market.

Environmentally Friendly- Vehicle should be carbon neutral.

### User Needs

User Need	Score(1-5)
Ease of Use	5
Fast Commute	5
Safe	5
Private	4
Always ready	4
Reliable	4
Low Cost	3
Internet connectivity	1
Customizable	2
Environmentally Friendly	2

The needs chart will be an essential piece of information when finalizing a project design. If a product does not need a user's needs, then he or she will be unlikely to purchase the project. The problem is that often times the end user does not know what their needs are, or how they would rank those needs if they conflict. A car buyer for example may put a high emphasis on having an expensive car that is a status symbol, but also have a need for a low cost of ownership due to budgetary restraints. The pairwise comparison allows to compare numerous needs at once and see how the user values each one over each other. This can yield very different results than simply asking people to give importance to each individual need without consideration of the others. This can yield surprising results such as ease of use, which users rank as an important need, only being normalized to a five.

### Pairwise Comparison

The Pairwise comparison chart shows how people actually value each of the user needs in comparison with each of the other needs. People may think they really value safety but what if they had to choose between safety and a fast commute. The pairwise chart below is an example of a reweighted user needs chart using the pairwise method.

### Persona

The graphic presented on page is an example of what we expect our typical user to be like. The persona includes things such as demographic information, hobbies, career info, etc. The persona helps clarify who the target audience is.

## Pairwise Comparison

	Ease of Use	Fast Commute	Safe	Private	Always Ready	Reliable	Low Cost	Internet Connectivity	Customizable	Environmentally Friendly	Total	Normalized	Original
Ease of Use		0	0	0	1	1	0	1	1	1	5	3.7	5
Fast Commute	1		1	0	1	1	0	1	1	1	7	5.0	5
Safe	1	0		1	1	1	0	1	1	1	7	5.0	5
Private	1	1	0		1	0	0	1	1	1	6	4.3	4
Always Ready	0	0	0	0		0	0	1	1	1	3	2.3	4
Reliable	0	0	0	1	1		1	1	1	1	6	4.3	4
Low Cost	1	1	1	1	1	0		1	0	1	7	5.0	3
Internet Connectivity	0	0	0	0	0	0	0		0	1	1	1.0	1
Customizable	0	0	0	0	0	0	1	1		1	3	2.3	2
Environmentally Friendly	0	0	0	0	0	0	0	0	0		0	-	2



## Ashley

- 34, Married with 3 chil/dren
- Nurse
- Columbus, OH



## Profile

- Commutes 45 minutes to OSU Medical Center
- Vice-President of the PTA
- Volunteers at Franklin County Animal Shelter

## Technology

- iPhone XR and iPad owner
- Drives Infiniti QX80
- Extensive PC usage at work
- Keeps family calendar electronically



## Hobbies

- Coaches Her Daughter's Soccer Team
- Rocking Climbing with her Husband

## **Research Plan**

We will be conducting an online survey in order to obtain research on what the needs of our potential users are. The survey will be spread online via Facebook, twitter, reddit, and discussion boards. The survey be anonymous so there are no concerns about using people's real names as we will not know what their names are. The survey data will not include any personally identifiable information but will include a few demographic questions such as age and gender. These questions as with all the others are optional and as it is online survey, survey takers may quit at anytime they choose. Each Team will contribute at least 10 questions to the survey and will post it publicly in at least two places online. The Questions will be presented in two different formats. First the survey takers will be asked to rate how important each of the user needs are to them, then they will be asked to select which need is more important between each need and each of the other needs. This will allow use to use a pairwise comparison to create a weighted average of the user needs. Please see Appendix for complete listing of survey questions and results.

### Question Type 1:

How important is USER NEED A to you?

Least Important

Most Important

1	2	3	4	5	6	7	8	9	10
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### Question Type 2

Which is more important to you, USER NEED A or USER NEED B?

User Need A

User Need B

1	2	3	4	5	6	7	8	9	10
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## **Market Characteristics**

The market for transportation is very broad because most everyone has to leave the house or have someone come to them in order to meet their basic needs. Transit has an affect on almost everything we do and thus almost everyone would be a stake holder to any significant changes to the transit system. If we take Columbus, Ohio as our market the stakeholders would include, but not limited too: Commuters, COTA bus system, small businesses, Ohio State University, Ohio Department of Transportation, large businesses, suburbanites, shipping companies, and many, many more. Virtually everyone in the area would be affected, some positively and unavoidably some negatively. Columbus represents an almost perfect to test in as it has demographics that almost perfectly represent the country as a whole. The Columbus market includes approximately 900,000 in the city proper and 2 million in the

metropolitan area. One must assume that essentially all of these people will make use of some form of transportation and thus number of potential users in the Columbus market is approximately 2 million.

The market in Columbus has a number of current alternative transit methods. These include cars, bikes, scooters, buses, taxis, ride hailing apps, and walking. Each of these have different characteristics which are shown in the competitive matrix below.

	Car	Bike	Scooter	Bus	Taxi	Uber	Walk
Ease of Use	✓	✗	✗	✓	✓	✓	✓
Fast Commute	✓	✗	✗	✗	✗	✓	✗
Safe	✓	✗	✗	✓	✓	✓	✓
Private	✓	✓	✓	✗	✓	✗	✗
Always ready	✓	✓	✗	✗	✗	✗	✓
Reliable	✗	✓	✗	✓	✓	✗	✓
Low Cost	✗	✓	✓	✓	✓	✓	✗
Internet connectivity	✗	✗	✓	✗	✗	✓	✗
Customizable	✓	✓		✗	✗	✗	✗
Environmentally Friendly	✗	✓	✓	✗	✗	✗	✓

Currently cars meet most of the needs of users but fall short in needs such as reliability and cost. Also, while cars generally have fastest commute of any of the current options in the local market, that changes quickly when there is heavy traffic. Bikes and scooters are good options part of the year, but their usefulness decreases as the weather gets cold or rainy. Buses in Columbus are generally reliable but have a stigma that would almost impossible to overcome. Ubers take often take too long to arrive and the cost is can vary wildly. Walking is easy and reliable but very slow and not always safe for a number of reasons.

## **Appendix**