

# Using Technology as a Mobility Device

July 1, 2013

### **Topics/Agenda for Presentation**

- What Gaps Can Technology Fill
- Smartphones and Transportation
  - Real-time Taxi Services
  - Real-time Carpooling
  - Real-time Ride Services
- Driverless Cars



## Seniors, People with Disabilities and Technology

- More that half of 65+ adults use the Internet and email
- One third use Facebook or other social media
- 69% of seniors have a mobile phone
- Going forward, online technology will play a larger role in solving mobility problems
- Younger persons with disabilities more likely to embrace technology





### Seniors, People with Disabilities and Technology

#### **U.S. Smartphone Penetration**



Read as: During February 2012, 50 percent of US mobile subscribers owned a smartphone



NELSON Nygaard

Source: Nielsen

- Most important factors for Seniors and People with Disabilities
  - Mobility: Access destinations and eliminate social isolation
  - Certainty: E.g. Arrive at doctor's appointment on time
  - Flexibility: Ability to schedule a same-day ride
  - Safety/Trust: Vehicle and trip is safe, driver is trustworthy
  - Quality: Ride will be comfortable, driver will be personable



- Transportation Options for Seniors and People with Disabilities in Alameda County
  - Fixed Route Transit
  - ADA Paratransit
  - City-based Door-to-Door Paratransit
  - City-Based Accessible Fixed Route Shuttles
  - Taxis and Wheelchair Van Programs
  - Other complementary services, e.g. group trips, volunteer driver



### Which niche does each service fill?

- East Bay Paratransit: Core of system, bulk of trips
- City-based Door-to-Door systems: Offer higher customer service, but cannot meet all trip requests
- Shuttles and Group Trips: Supplemental, meets certain needs at certain times, not flexible
- Volunteer Driver: Highest need populations and harder trips, e.g. long-distance medical
- Taxis: Fills gaps, meets same day needs, most flexible









## What Gaps Could Technology Fill?

#### What Needs Improvement

- Advance time needed to book a ride
- Sometimes the taxi doesn't show up
- Customer service doesn't always meet expectations
- Difficulty communicating with drivers and dispatchers
- Difficulty with accessibility
- Cost

#### Could Technology Help?

- Broadens pool of available ondemand vehicles
- Encourages the community to help itself
- Direct relationship between rider and driver
- The ultimate eliminate need for a driver altogether!



#### **Example of Real-time Taxi Services**





### **Example of Real-time Taxi Services**





Real-time Carpooling (or "Dynamic Ridesharing") provides a way for people to share rides without setting up regular carpools.

- Allows people to get a ride who can't or don't want to drive
- Reduces costs for the driver: As they fill empty seats, they may get paid a small amount for the ride
- Allows door-to-door service
- Offer opportunity for riders to socialize





#### How does Real-time Carpooling work?

- One-time rides rather than regular carpools
- Riders and drivers set up accounts
- Rides are arranged using the internet and a computer or an internet-connected phone ("smart" phone)
- Multiple companies providing technology you can only arrange rides within your "app"









## **Applicability to Seniors and People with Disabilities**

- Opportunities for seniors and people with disabilities
  - If a group of people are going to the same place at the same time
  - Regular or one-time trips to common destinations
  - Riders can "track" their ride and stay in text communication
  - Can start small; pilot program using available vehicles, e.g. fleets of vans from senior living communities





## **Example of Real-time Carpooling**

- Mary lives at Piedmont Gardens. She wants a ride to the Senior Center for lunch on Tuesday.
- Using her computer or smart phone, Mary logs onto the ridesharing app and enters the date, time, and start and end points for her trip.
- She will see a list of drivers (perhaps others at Piedmont Gardens) taking the same trip.
- She chooses the person she wants to ride with, and calls them to set up a meeting place.





### **Example of Real-time Carpooling**

- They meet and she gives the driver a PIN that lets the driver know she is the right person.
- Once they get to their destination, they tell the app that the ride is over.
- The driver gets paid a small amount out of Mary's account for driving.
- Both Mary and the driver rate each other.





#### **Real-time Ride Services**

- Slightly different than previous services, but many similarities
- Rides provided by part-time "everyday drivers"
- Ability to see driver ratings
- Allows door-to-door service
- Focus on "driver-rider community"
- Potentially larger supply of drivers who are "in the neighborhood"









## **Example of Real-time Ride Services**





#### Challenges

- Rides are set up on the internet or using a smart phone.
  - Access to the internet or a phone
  - Knowledge of how to use technology
- There have to be enough people on the same system so that riders and drivers are matched reliably.
- Concern for personal safety if riding with strangers
- May need to set up a return ride at the same time





RideScheduler is a program that provides online management of volunteer driver programs.

- Volunteer Driver agency serves as the broker for rides
  - People wanting a ride call the dispatcher, who enters the ride request into the software.
  - Volunteer drivers who have been authorized to log in can see rides being requested, and can sign up to provide them.

Welcome Steve Ewart			Available Appointments				
1			82 Appts	Date	How Long	Round Trip?	
	Appointments 🔕		<u>Details</u>	Fri May 2 - 9:30 AM Pick-up time	1 hr	Yes	collapsible meet rider a floorrider out of the c for this ride
	☆ Available ☆ Assigned						
				Eni Marro			
			Details	11:30 AM	N/A	No	walkerric
	People 🙁			Pickup			to her hust



#### Volunteer Driver Programs: RideScheduler

- The Dispatcher can manage all riders and drivers
- Drivers can log on 24/7 to volunteer and can see all ride requests
- Drivers are sent email reminders of trips
- Provides program agency with complete reports on number of rides, types of rides, drivers' license expiry dates, etc.





#### **Driverless Cars**





#### **Driverless Cars**

Currently under development from numerous manufacturers





### Driverless Cars – When Can I Buy One?

- Numerous state/federal legal and policy hurdles
  - Ownership
  - Insurance
  - Safety
- Google has suggested within one decade
- Self-driving "elements" already exist within some vehicles
  - Steering "self-correct"
  - Parking assist





# QUESTIONS AND DISCUSSION