Washington State
Department of Transportation

RideshareOnline and iCarpool iPhone Mobile Application

Usability Test Results

July 2011

Findings and Key Recommendations

The look and feel of the mobile site is clean and uncluttered. However, most participants overlooked the “Not a member? Sign up” link at the bottom of the startup screen. Once they found the link, they were sent to the RideshareOnline website to register. Participants discovered that navigation and page viewing on a “full” desktop website is hard to do on a small, mobile phone screen. The registration process was the most difficult task for them to start and finish.

Jakob Nielson, a well-known usability guru (www.useit.com) conducted testing on mobile phones with similar results. He suggests creating a mobile optimized website. When you access the website from the phone, it is configured for a mobile screen making navigation and viewing easier:

“When our test participants used sites that were designed specifically for **mobile devices, their success rate averaged 64%**, which is substantially higher than the **53% recorded for using ‘full’ sites** — that is, the same sites that desktop users see. Summary: In user testing, website use on mobile devices got very low scores, especially when users accessed ‘full’ sites that weren't designed for mobile.”

I recommend making minor adjustments to the placement of links on the startup screen and to create a mobile version of RideshareOnline website. It will allow iPhone app users to start and finish the registration process more quickly. It will enable them to move back and forth between the app and the website with greater ease for a more positive user experience.

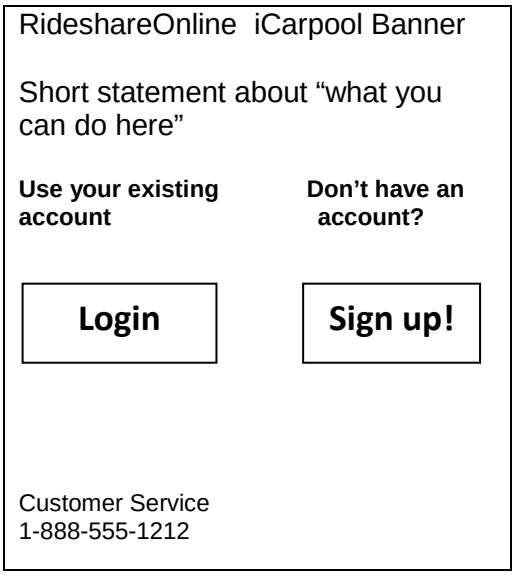
Observations and Solutions

Task 1 Sign Up

Startup Screen

Observation: Most participants missed the “Not a member? Sign up” link at the bottom.

Solution: Reorganize the startup screen as shown at the right. Placing buttons side by side reduces the possibility that users will overlook one and simply choose the first option. Put a contact number on the startup screen for additional help.



Observation: Some participants didn’t know what the RideshareOnline and iCarpool logos were for: “Are they one in the same or two separate systems? I’m not seeing a clear connection.” When participants touched the logos thinking they were linked, they discovered that the two logos were simply images.

Solution: Create a banner that shows the connection between RideshareOnline and iCarpool. Perhaps adding a tag line such as “Partners in ride match technology” would work. If it’s clearly a banner, participants are less likely to touch the image thinking it will lead them to more information.

Secondary Functions Screen

The icons (notifications, trips, inbox, settings) were intuitive and easy to understand especially with the text descriptions below each graphic.

Logout Button

Observation: Participants had trouble finding the logout button. They discovered they had to select the settings icon to locate the logout button and didn’t know why it was placed under settings.

Solution: Move the logout button to the functions screen where notifications, trips, inbox and settings are located.

Registration Process

Observation: Once participants began the registration process, it was difficult for them to navigate through all the fields. It was hard to see which fields were still blank and whether there was another column of fields. Only one person used the “next” function on the phone to navigate from field to field.

Solution: Optimize the RideshareOnline website for a mobile phone screen with fields in one column only.

Observation: Several participants stumbled on the security question thinking that a dropdown list would be available. It took awhile to realize that the security question could be anything which required a lot of typing on a touch screen.

Solution: Provide a dropdown list of security questions.

Observation: Several participants mentioned that it was difficult to see the Terms of Service check box, a required element for registration.

Solution: Optimize the RideshareOnline website for a mobile phone screen.

Observation: Several participants had to enter the magic word twice. They assumed it wasn’t case sensitive.

Solution: Remove the case sensitive requirement on the magic word. It’s easier for iPhone users to enter it without having to capitalize some of the letters.

Observation: One participant entered a password and then saw the “too short” notification.

Solution: State the minimum password length clearly on the screen. Users will know how many characters to enter and avoid having to create a second, longer password.

Observation: If a participant made a mistake entering data into a field, the password entered previously would disappear. In the words of a participant, “One of the most annoying things about applications is when it clears out your password after you’ve made a mistake on something else because then you have to go back and do both passwords again.” Also regarding the password, a participant said: “It’s annoying to have the password blocked on an iPhone because you can’t see what you’re typing …It’s harder to catch a mistake.”

Solution: If a password is entered correctly twice, make sure it stays entered even if another field must be updated or changed. Also, on the iPhone, it’s rare that someone would be looking over your shoulder to see your password. With a tiny screen, it’s hard to know if you’ve entered the password correctly when all you see is a brief visual of the letter you selected. During the registration process, it would help iPhone users to see what they’ve entered in the password field instead of a row of bullets.

Observation: It was somewhat confusing to have Facebook pop up when most didn't expect it. Participants wanted to close the Facebook screen when it appeared. The links at the bottom ("not now" or "never ask again") wouldn't work so they ended up using the X in the upper right corner to remove it.

Solution: Consider adding a Facebook icon to the functions screen where notification, trips, inbox and settings are listed.

Task 2 Enter Ride Details

Observation: Adding a location was difficult for some participants. They thought they could use the map to find a location by zooming in. Instead, participants were supposed to enter the address or a nearby landmark like "Tacoma Mall." When participants entered "Nordstrom" instead of getting a list of Nordstrom stores to choose from, they received a message that the location wasn't found.

Solution: Provide some instructions (enter an address) in the search box.

Observation: It was possible to enter a time in the past, but not a date (those were grayed out).

Solution: Gray out the time and date if they are in the past.

Observation: Some participants found the "include" options to be unclear: "Everyone," "My networks," "None." When one participant selected "None", she asked "What does that (none) mean? No people in the car or?"

Solution: Choose a few words to describe each selection more clearly, perhaps something like "All rideshare members" "My rideshare network only", "No one – I will contact others."

Task 3 Locate Matches

Observation: When asked to locate matches, several participants went to notifications and email. Participants did not recognize the blue icon on the trips screen. One participant said, "I don't see where the matches are." Then he tried notifications and didn't find any matches. He said, "I'm kinda stuck." He eventually found the button but it took him awhile.

Solution: Add text to each icon on the trips screen similar to how it's done on the functions screen (notifications, trips, inbox, settings icons).

Observation: The red and green push pins on the map had different meanings to different participants depending on their perspectives. One thought green meant it was the closest match. Then he discovered the green push pin marked his current location.

Solution: Indicate "your location" in a tooltip or text in addition to the green push pin.

Observation: Most selected the first match. However, it wasn't clear where the ride match trip started. "I'm assuming they're coming from the same area…because it doesn't say that. It just says there's an 80% match." The participant went to the map to see where they are actually

coming from. “You can sort of tell that way if you look on the map but once you go to the list, it’s not there anymore.”

Solution: Add the start location to the ride match details list.

Task 4 Edit Trip

Observation: Most did well with this unless it was a recurring trip. Participants saw the message to go to the website to make this type of change. However, no one actually went to the website because it wasn’t clear how to get there.

Solution: Add functionality to the app where people can create and edit a recurring trip. Or lead users to the website where the recurring trip can be changed by adding an “edit” button. Then make it easy for them to return to the app.

Task 5 Get Notifications

Most found the notifications and read through them. “That’s pretty easy.”

Observation: Some expected to find ride matches in notifications or the inbox.

Solution: Add text descriptions to the icons on the trips screen. The blue icon for getting ride match information is easy to miss.

Task 6 Review Profile

Observation: Participants easily located the profile, but had no idea how to update it or change it. It was difficult for them to ascertain if they could update the profile from the website. They did not see a way to get to the website from the settings screen or the profile screen. One participant thought the facilitator had “locked him out” assuming that he could update the profile from that screen but was prevented from doing so.

One attempted to go to Facebook thinking he could make changes there. When that didn’t work out, he simply gave up. Others stated: “It appears as though these fields are editable, but it’s not letting me do it.” “It seems to be locked.” “I don’t see an edit button on here so I don’t know how to change it.” “I can get to it but I have no idea how to edit it.”

Solution: Create this functionality within the app. Or lead users to the website where the profile can be changed by adding an “edit” button. Then make it easy for them to return to the app.

Task 7 Delete Trip

Most were able to delete a trip using the trash icon. “That was easy…the trash icon!” However, if it was a recurring trip, they could not delete it.

Observation: One participant went to “add trips” in an attempt to delete a recurring trip. He tried settings then went back to trips, then to settings again. He said, “It seems to be a circular process; so I think at this point I may decide to use my laptop instead of my iPhone.”

Solution: Create this functionality within the app. Or lead users to the website where the trip can be deleted. Add text descriptions to the icons similar to the icons on the functions screen to make it clear what the icons represent.

Usability Test Participant Profile (pre-test questions)

Job Title	Rideshare Online account?	iPhone hours/week	Downloaded apps before?	Favorite apps
Engineer 4 Emerging Technologies	No	20-25	Yes	None
IT Specialist Help Desk	No	40 (uses it on the job)	Yes	None
Hydrologist	No	5	Yes	One Bus Away – real time bus tracking
Transportation Specialist 4 Climate Change	Yes	10	Yes	One Bus Away – real time bus tracking

Usability Testing Details

Site: iCarpool iPhone application

Test Manager: Martha Dickens
WSDOT Interactive Communications
360-705-6876
dickenm@wsdot.wa.gov

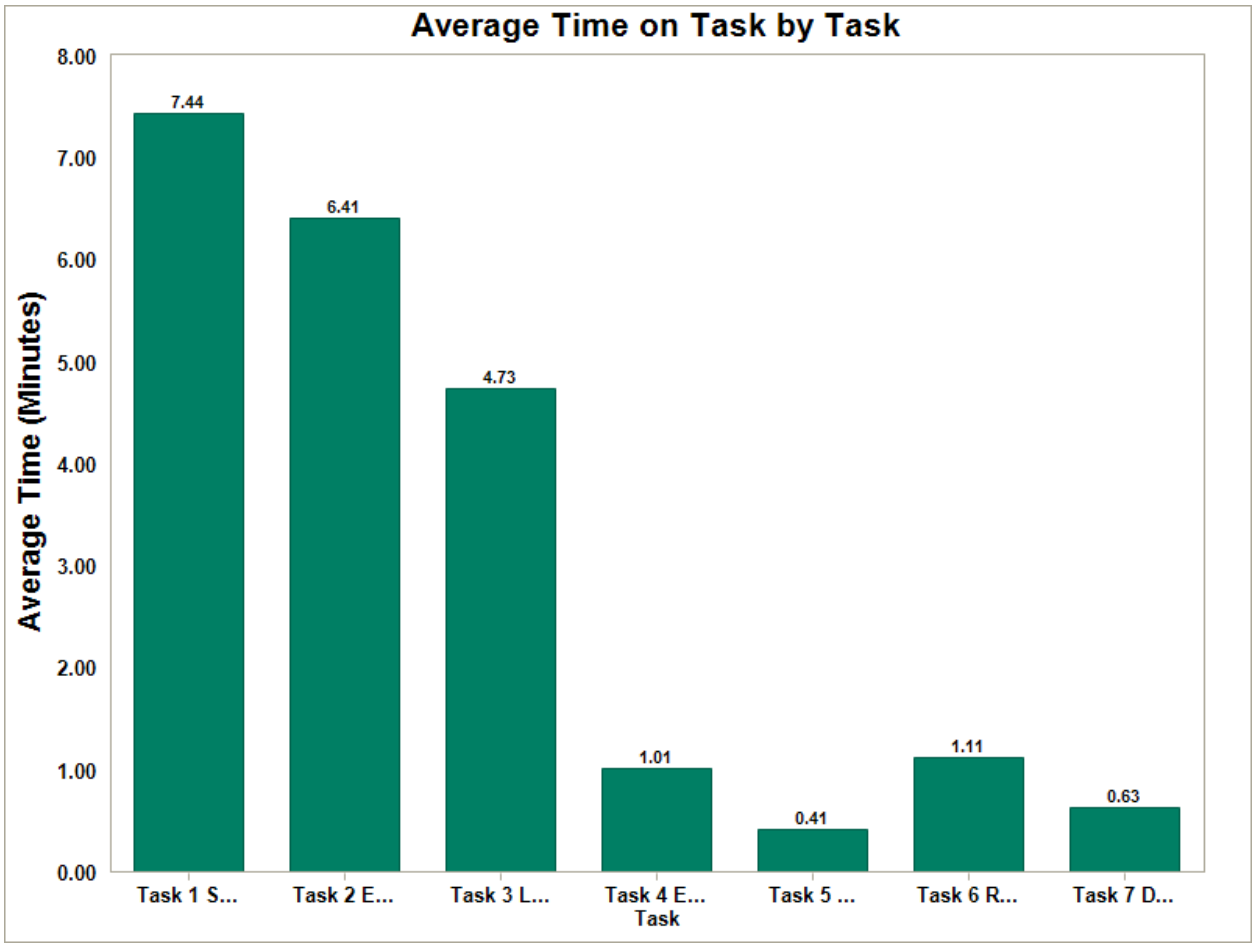
Usability Team: Kimberly Colburn
Bruce Ikenberry

Test Participants: Four WSDOT staff members with iPhone experience

Process: Using a document camera, web cam, microphone, laptop and Morae software, we recorded four test participants as they completed seven tasks. We also asked them to complete a standard satisfaction survey at the end of the test.

Test Dates: July 19, 21, and 25, 2011

Time on Tasks



Task 1 – Sign up as a new member

Task 2 – Enter ride match details to start the ride match process

Task 3 – Locate ride matches and choose the best one for you

Task 4 – Edit your trip

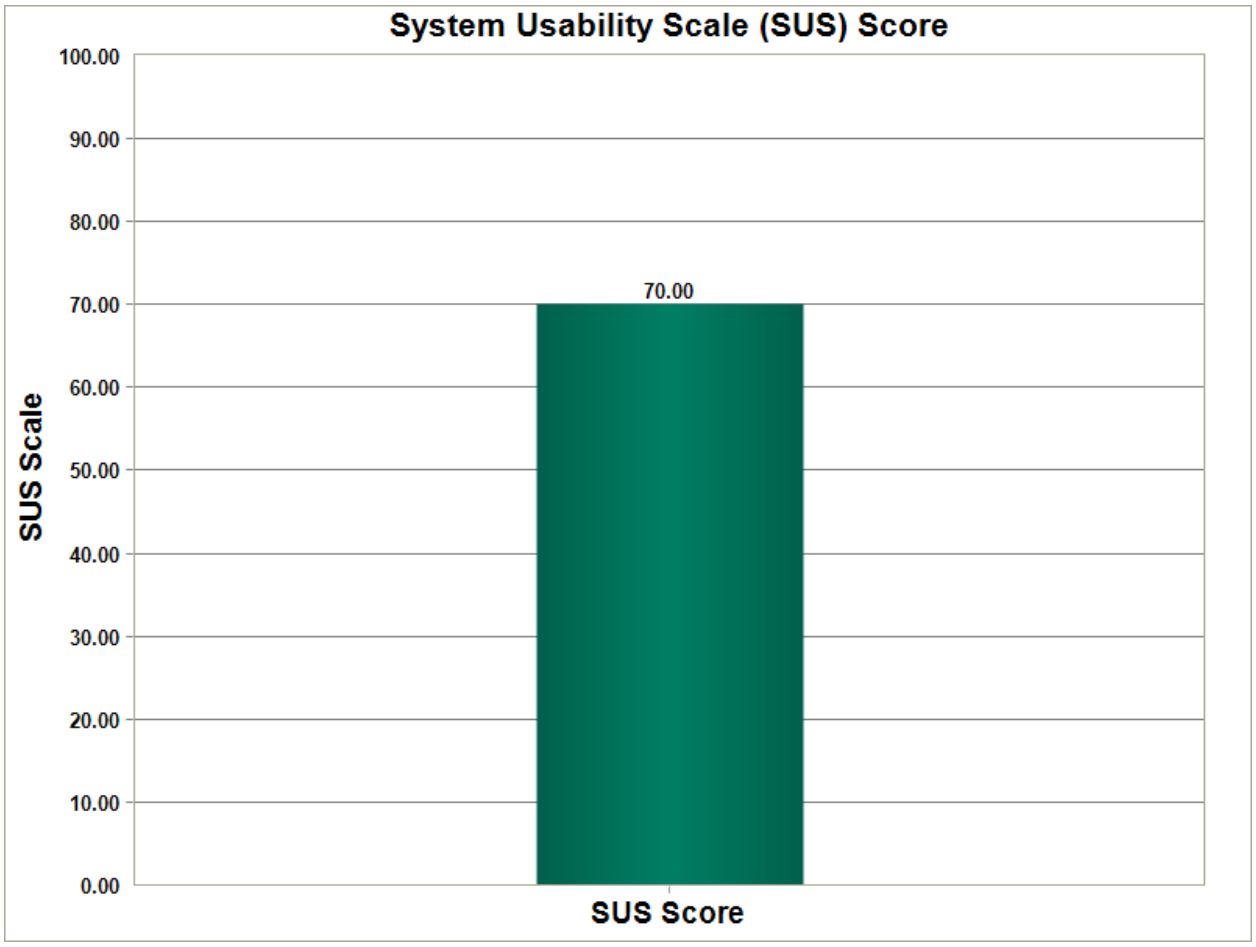
Task 5 – Get notifications and/or email

Task 6 – Review your profile

Task 7 – Delete your trips

System Usability Scale (SUS)

Overall satisfaction was 70% (0% = very dissatisfied; 100% = highly satisfied).



Acknowledgement: SUS was developed as part of the usability engineering program in integrated office systems development at Digital Equipment Co Ltd., Reading, United Kingdom.

SUS Questions

(Scale: Strongly disagree 1 2 3 4 5 Strongly agree)

1. I think that I would like to use this system frequently.

2. I found the system unnecessarily complex.

3. I thought that the system was easy to use.

4. I think that I would need the support of a technical person to be able to use this system.

5. I found the various functions in the system were well-integrated.

6. I thought there was too much inconsistency in the system.

7. I would imagine that most people would learn to use this system very quickly.

8. I found the system very cumbersome to use.

9. I felt confident using the system.

10. I needed to learn a lot of things before I could get going with this system.

Task Scenarios

Task 1 – Sign up as a new member

You recently got a new job at the Tacoma Mall Nordstrom store. You live in Olympia and want to find a carpool or vanpool to reduce your commute costs. Since you haven't used this app before, enter your personal information into the system.

Note: The information you enter about yourself will remain in the database. I will make sure the system administrators deactivate your account after the test is finished. None of the information you enter will be available to other users unless the account is reactivated.

When you feel you have completed this task, please say so.

Task 2 – Enter ride match details to start the ride match process

Now you are ready to get your carpool and vanpool options. Use the following information as needed:

- You will travel round trip from home to work.
- Your work hours are 9:00 a.m. to 5:00 p.m.
- The first day you will commute is Monday, July 18.
- Enter your actual home address or use:

  310 Maple Park Ave. S.E.
  Olympia, WA

- Enter your work address at Nordstrom:

  4502 South Steele Street
  Tacoma, WA

When you feel you have completed this task, please say so.

Task 3 – Locate ride matches and choose the best one for you

Now you want to see how many matches the system found for you. View the matches. Which match you would choose? Why would you choose that one?

When you feel you have completed this task, please say so.

Task 4 – Edit your trip

Your new boss called and wants you to start on Friday, July 15 instead. Edit your trip.

When you feel you have completed this task, please say so.

Task 5 – Get notifications and/or email

Check to see if there is any new information for you about the system or your matches.

When you feel you have completed this task, please say so.

Task 6 – Review your profile

Check your profile to make sure the information you entered is correct. If not, how would you correct it?

When you feel you have completed this task, please say so.

Task 7 – Delete your trips

You just won the lottery and no longer need a job! Delete your trips from the system.

When you feel you have completed this task, please say so.