DCC 105: DC Metro Kiosk Redesign

Overview
One of the aims of DCC is to expose flawed design when we see it and then redesign the world for the better. On a small scale, you and your teams will accomplish this through a project to redesign the DC Metro SmarTrip Cark "Fare Vending Machine" kiosks. The goal of this project is to teach you how to design with people (your teams and your users) and for people (ethnography and usability testing). Through your various roles, you will learn how to be part of a larger design team as you work together to prototype your designs and test them.

Here are some Metro keywords to know before starting the project:
- WMATA: The Washington Metropolitan Area Transit Authority, commonly referred to as Metro, is the Washington D.C. Metro Area's public transportation system. It includes both rail and bus services; for our intents and purposes, we will be focusing on the rail services.
- SmarTrip Card: A plastic card that stores credit for riding either the WMATA buses or WMATA trains. Because it can be tapped rather than swiped, it is referred to as a smart card that uses an RFID tag to communicate with a sensor.

The Process
1. **Fieldwork:** Understand what works with the current metro kiosk design and what needs to be improved. This step will entail conducting fieldwork in the form of observations and interviews: these can be split into either two separate sections or one well-organized section. Keep a record of your findings to produce the first section of what will be your final "Usability Testing" Document. This portion should be around one page.
2. **Prototype:** Using Adobe XD, you will create a working prototype of a new Metro Kiosk based on the following constraints laid out by WMATA: WMATA wants to install new SmarTrip interfaces that are up-to-date and easy to use. These will run on iPad 11" interfaces embedded into displays that can have working RFID chip readers to read the SmarTrip card, a credit card stripe reader, and a cash bill acceptor (depending on the needs of your design).
   a) All relevant information and instructions should be presented on the prototype without relying on the display surrounding the interface. This means all feedback will take on screen despite card readers, chip readers, and bill acceptors being offscreen.
   b) At minimum, your prototype should allow for the following:
      - Checking SmarTrip card balance
      - Adding funds to SmarTrip card using both credit card and cash options
      - Know how much they should add to their cards for a specific trip (this does not need to be exhaustive; in other words, you can give prototype users a few options of what their trip will be to demonstrate how it will calculate the fare based on distance and time of day)
      - Solve at least one major problem you found in your data collection of the existing interfaces (beyond the trip fare issue in the point above). Please identify what this major problem was in your usability documents.

3. Usability Tests Once your prototype is complete, you must conduct usability tests with three people.
   o As a group and data collectors, ask 'What do you want to learn from usability testing?' What are some key features of the interface you hope to find out if they are intuitive or if they need work?
   o Recruit a diverse group to test your interface. Ideally, you'll want to include people from different age groups and experiences with SmarTrip.
   o Have participants sign consent forms, which creates agreed-on expectations for what information can be shared from the testing (see Canvas Files for sample consent forms)
   o Conduct a pre-testing interview
     ▪ Demographic details (gender identity, ethnicity, socio-economic status, age, education, etc.)
     ▪ Set a baseline for their use of and familiarity with the existing Metro SmarTrip cards and kiosk
   o Test
     ▪ Ask: What are their initial reactions to the prototype? What do they notice immediately? What are their impressions? What would they want to do first?
     ▪ Ask participants to complete several tasks and narrate their thought process as they complete these tasks.
     ▪ Take notes on their narration, assumptions, and physical actions with your prototype.
   o Post-test Interview (Use one or both of the following options)
     ▪ Option 1: ask them to answer two questions. First, "What are two things about this app that you really liked?" Second, "What are two things about this app that you didn't like?"
     ▪ Option 2: Use the System Usability Scale (see Canvas Files for SUS scale and scoring instructions)
- Analysis Combine these test results with your initial data collection. Then provide a short paragraph about the revisions your group will conduct to address the problems in your prototype.
- Revision and Presentation Revise prototype and present it in class.
   o Prototype shared with Jason by Product Manager. Usability testing document uploaded to Canvas by Product Manager only. In the document, list team members and their roles.
   o What to Turn in for the Final Project:
     1. Revised prototype
     2. Usability Document:
        a) Initial fieldwork notes
        b) Usability testing results of group's prototype
        c) Revisions needed
        d) All group members listed by role

- Suggested Timeline
  - Conduct fieldwork: Sept 14-19
  - Prototype design and build: Sept 19-23

- Usability testing: Sept 24-26
- Prototype revisions: Sept 26-Sept 30
- Turn in final prototype: Oct. 1

DCC 105: Metro SmarTrip Kiosk Redesign Rubric

1. Final prototype meets functionality requirements: checks SmarTrip card balance; Adds funds to SmarTrip card using both credit card and cash options
2. Final prototype is able to show users how much money they need to add for a specific trip
3. Final prototype solves at least one major problem you found in your data collection of the existing interfaces
4. Fieldwork notes include detailed ethnographic observations, including raw observations and interviews from people; Fieldwork Notes are organized and legible
5. Usability test conducted correctly and produced compelling results: Group of interviewees includes three or more people; Group of interviewees is diverse; Consent forms are signed and included in submission; Information from Pre-Testing, Test, and Post-Test are recorded clearly and included
6. Usability document has well-written paragraph detailing revisions is clear and concise about what needed to be done to improve prototype
7. All group members are assigned a role identified in the assignment; All group members are listed by full name. These notes include information that demonstrate how each member contributed in important and significant ways to the project.
8. Final prototype is well designed and draws on the principles of design we have discussed
9. Final prototype is usable and all links function
10. Final prototype is revised according to results from usability tests