Taylor Blaine Startin
Assignment M1
CS 6750 – Human-Computer Interaction
Georgia Institute of Technology – OMSCS – Fall 2016
10/11/2016

The project that my group and I will be working on is Redesigning ATMs (Automatic Teller Machines). For my problem space, I am going to assume that a user is purchasing goods at some sort of physical marketplace. The user has also forgotten their identification, checks, and debit/credit cards. Furthermore, they don't have any cash on them. The marketplace does, however, have an ATM available. They also take checks, but only with proof of identification. In order for the user to purchase their goods, they will need to access an ATM to get cash from their bank account without having their debit card.

For my user type, nearly any individual can be identified. A user could use an ATM for many reasons; whether it's to inquire about their current balance, withdrawal cash from an account, or even deposit money on the fly. The user type in this instance is a person who needs to withdrawal funds without having their debit card available. Their motivation is to be able to pay for their goods without the hassle of returning home to retrieve the items they forgot such as their identification, check book, or debit card. Their expertise is mid to high level; they use ATM's frequently, but mostly only for withdrawing cash or making a check deposit occasionally. They have memorized their account numbers and other pertinent information such as social security number, pin number, and other personal identifiers. The demographical range for the person is broad, as this could happen to just about anyone. For the purposes of this paper, we can assume they are an adult over the age of 21 that lives and works within the United States. Gender, ethnicity, and other distinguishing traits about the user need not be classified. One thing to note is that each user usually performs these tasks on their own. Accessing your account information through an ATM is not typically a group activity.

The first low-level intervention method will be to conduct naturalistic observation. This is easily done by going to banks, shopping centers, and other areas to view how interactions take place at the ATM. There are many places here in Montana that only accept cash but also have an ATM available for consumers. This gives me the opportunity to be able to take notes during my observations. My biggest concern here is getting into some sort of trouble for simply watching people at the ATM, but I also don't plan on peaking over their shoulders. Perhaps I can expand on the naturalistic observation and ask users to perform "think out loud" exercises while accessing the ATM. This would allow me to understand and quantify the user's cognition process during their experience. I might encounter participant bias, though. The first and strongest may be that they don't know me. Why they should they let some stranger simply listen, watch, and take notes while they access their personal account information? Another bias may be the insecurities and questions as to why I'm even doing this in the first place. This could influence them to make the process sound easier or harder depending on how they feel towards me or the interface in general.

The next intervention method I chose is the method of participant observation. As someone who frequents the ATM on a monthly basis, I'm fairly comfortable in taking on this task. Since there are many different ATMs with many different interfaces, I hope to visit as many ATM locations as possible. I plan on taking notes on the different interfaces currently available, as well as the different functionality available at each one. This way, I can better understand the interactions between the user and the ATM. The problem space has to do with being able to withdrawal money without a debit card. However, I know that as an experienced user I often will check my balance before withdrawing money.

Unfortunately, I can experience a bias here as well. In order to avoid ATM fees and other charges, I typically stick to the same ATM's offered by my bank. I will often even drive out of my way to go to an ATM associated with my bank so that I can avoid these additional charges. Another bias could occur as I also typically go to my favorite restaurants or stores. Because I shop at locations that carry products that I am partial to, this doesn't allow me to experience other interfaces at other locations. For this reason, ATMs I frequent for purposes of my study may not be representative of ATMs nationally, and certainly not internationally.

In my third, and most important, low-level intervention, I will be analyzing current user interfaces. I should have a good start from what I've taken in both the naturalistic and participant observations. I hope to view and experience different color schemes, button layouts, screen settings, method progression, and more. By already viewing different interfaces by using as many interfaces as my bank account will allow, I will hope to have enough background information about the interfaces. I mentioned above that the ATMs where I live could cause bias as they don't represent ATMs across the country. So to handle this, I also plan on researching online different interfaces in different parts of the country. What really makes the ATM tick? Through the interface research, I can begin to plan out my changes to it in order to help a person who has forgotten the necessary items in order to complete a typical ATM transaction. I will also use surveys given to friends and family asking about their ATM experiences. Survey questions will address things such as; what parts of the ATM are a nuisance and what parts of it are easy to use and understand? What hacks have they used in order to create shortcuts to access their information and withdrawal money? These surveys will help in my exploration of current interfaces of ATMs. I need to make sure that these surveys are not bias. I will use a small amount of questions as well as having short questions such as how often do you use ATMs? Have you ever gone to an ATM without having your debit card? Without looking at your checkbook or bank statement, can you remember your account number? Do you know the pin number for your debit card? These questions will help me to evaluate the experiences users have while at the ATM.

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Due: Sunday, October 16th, 2016, by 11:59PM UTC-12 (Anywhere on Earth). This assignment is based on lesson 3.3 (Needfinding), and focuses on planning your needfinding process.

Assignment Instructions

Answer the following prompt in a maximum of 1200 words, with a recommended length of 1000 words; if you supply more than 1200 words, the grader will stop reading at the 1200th word, and you will not receive credit for anything written after that. You are encouraged but not required to complement your responses with diagrams, drawings, pictures, etc.; these do not count against the word limit, though any captions, text in tables, etc. does.

Compile a plan for your initial needfinding exercise for the project you've selected. First, define the problem space (~100 words). Define the location in which the problem takes place, including elements of the environment surrounding the problem. This is also where you'll define the segment of the target domain for which you're interested in developing (e.g. the turning alerts for a navigation app or the search function for a Netflix app). You'll develop this more when you actually carry out the needfinding exercises, but you need to have some rough idea to know where to start looking. Then, outline your user types (~100 words). For whom are you interested in designing? Make sure to include their demographic information, their levels of expertise, and their motivations for engaging in the task. It is fine to have a broad, diverse audience rather than a narrowly targeted one, but that diversity needs to be defined explicitly.

With that foundation, select three low-intervention methods of needfinding, such as:

- Naturalistic observation.
- Participant observation.
- Analysis of existing user interfaces.
- Analysis of product reviews.
- Analysis of existing data logs.

It is also acceptable to perform higher-intervention methods with friends, family, or classmates; however, you should not recruit participants publicly without IRB approval. If you choose to talk with friends, family, or classmates, you could:

- Conduct short interviews
- Send surveys
- Perform think-aloud exercises or post-event protocols
- Apprentice with them on the task

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Select three of the above nine methods of needfinding. For each method, lay out a clear plan for that needfinding exercise (~150 words per method). The nature of the plan will differ based on the type of needfinding you select; in naturalistic observation, for example, you would specifically outline where you will observe, when, what data you will gather, etc. For interviews, you would write the loose interview script you would follow. For existing interfaces or product reviews, you would outline the number of other resources, where you would access them, and what methods you would employ to evaluate them. Make sure to connect each of these needfinding methods to the items from the data inventory. Then, for each plan, specifically outline the potential biases you might encounter and your plans for controlling for them (~100 words per method).