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EECS 598 - Human Computer Interaction

Assignment 2: Interactive System Design and Prototyping

Assignment Summary

My focus in my investigation is the process of receiving and sending a text message with one hand while in the process of walking. This focus assumes the prospective stakeholder is in a socio-economic situation in which they can afford a touch screen cell phone which may or may not have special features for inputting text with one hand. It also assumes the prospective stakeholder has the physical ability to use the mobile device with the intended controls. The specific goal I am interested in is sending a text message using one hand, without errors and without running into physical barriers.

My contextual inquiry was illuminating in a variety of ways. The user reported that the choice between using one hand versus two hands to input text is largely made in response to environmental variables such as motion, cleanliness, and body position. He related that the choice is not conscious, and it is not influenced by a desire for speed or efficiency. The user experienced frustration with existing technologies and reoccurring errors, and he expressed a desire for features that are easy to learn and adopt.

User Requirements

1. The user must be as effective in sending accurate text messages while inputting text to respond to a text message with one hand as with two hands.
 - This is grounded in my interpretation that speed with one hand over two is not necessarily something he pays attention to (T01-1), but he often finds himself restricted to using one hand. For example, when walking between classes (T01-2) and needing to perform physical tasks (T01-3). He also experiences the same “general effectiveness” with either configuration; therefore, a new product should not make the effectiveness change greatly between the two configurations (T01-411).
2. The user must be able to access either the entirety of the screen or the necessary targets needed to send the message with less adjustment compared to the current method or none at all.
 - This is grounded in the interpretation that it can be difficult to reach the top of the screen and the current solutions are unwieldy, so he doesn’t use them. (T01-4, T01-5, T01-6).
3. The user must not endure (report) any more pain or discomfort from using one hand than with using two with the new proposed design in comparison to the old method.
 - This is grounded in the interpretation that using one hand or two hands is not a conscious choice, and it shouldn’t be a choice that is influenced by discomfort (T01-10).
4. The user must be able to learn and execute sending a text message effectively (without error), using the new proposed design, such that they desire to use the new proposed design again.

- This is grounded in my interpretation that existing technologies seem “clunky,” and “gimmicky” and have an “initial hurdle of getting used to [the existing method]” that is “offputting.” (T01-5, T01-7, T01-9).
5. The user must be able to correct errors as or more effectively as the old method, using the newly proposed method.
- This is grounded in my interpretation that he had to go out of his way to implement keyboard shortcuts to avoid his own common typos, because of the process of correcting his errors, due to a lack of proofreading. (T01-13, T01-14, T01-15)

Persona

Robert: Mobile Phone User

Grad Student

Age: 25

Location: Ann Arbor, MI

Quote: “I value effectiveness. Features should go beyond gimmicks: I could care less if they look neat, they need to be useful.”

Summary: Robert cares about efficiency but not just speed. He wants to appear professional, and it bothers him when he sends a text that contains a typo because it is embarrassing to correct. In this way, efficiency is being able to send a correct message without a lot of perceived effort.

Behavioral Considerations:

- Expects features to deliver on their promise and be easy to use
- Takes advantage of customization to make the product match his personal needs
- Communicates often with various audiences (friends, family, significant others, advisors, peers, under-graduates, etc)

Frustrations/Breakpoints:

- Thinks using more than minimal effort to learn something new is offputting
- Believes the auto-correction systems are robust, but dislikes how correction can happen automatically as a message is being sent

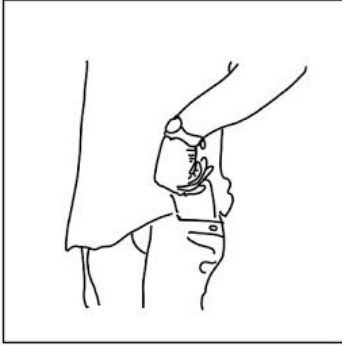
Goal:

- Communicate clearly and effectively via text message without error

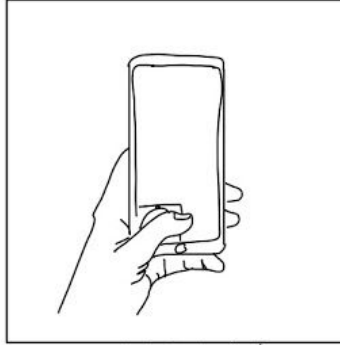
Tasks:

- Avoid physical obstacles
- Learn new proposed features
- Physically execute screen manipulations to send message

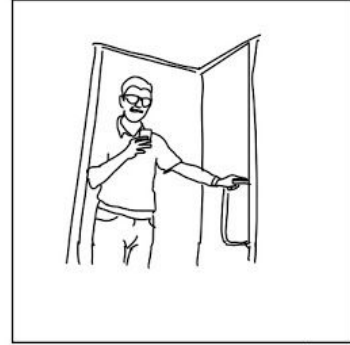
Storyboard



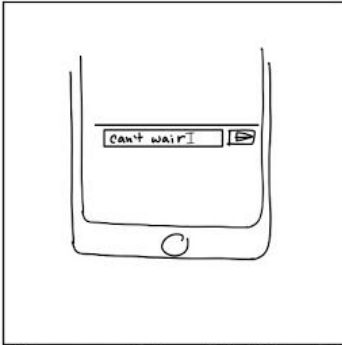
Robert feels his phone vibrate: it's a message from Anna. He grabs his phone from his back pocket.



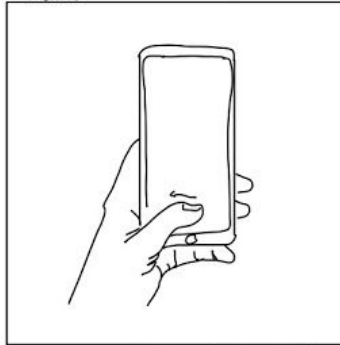
A new update included a new "single-hand aware" feature, that allows him to open the notification easily w/o reaching w/ his thumb.



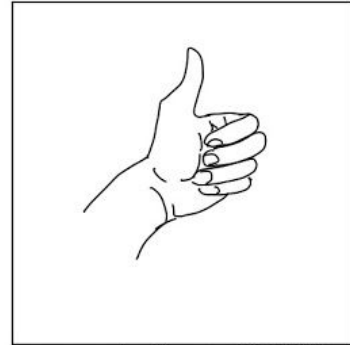
He's able to easily type a response despite physical obstacles.



He reaches his thumb across his screen to send the message, but in the time of the reach he sees a typo.



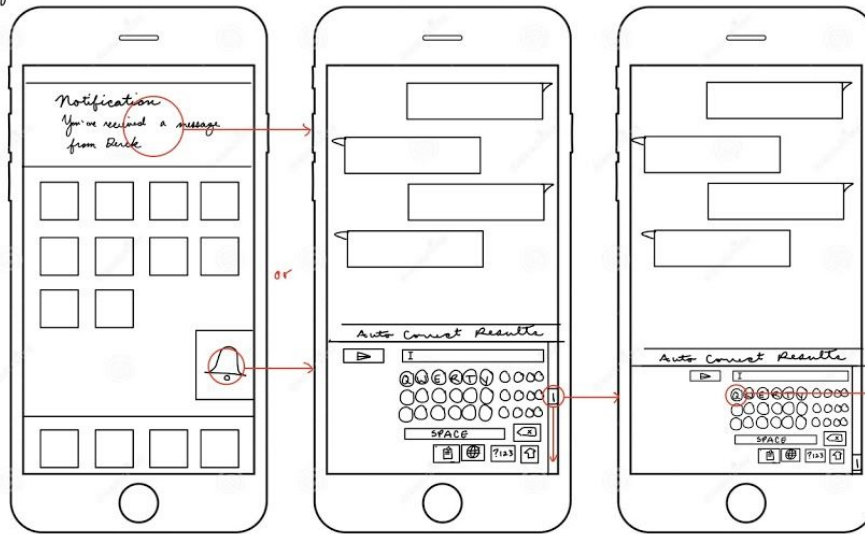
He easily deletes the wrong character with a swipe across his screen or tapping the back button near his thumb.



He sends the message successfully!

Paper Prototype

Detect: →
Right hand



Left hand

