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Midterm Report

The All-a-Board

Introduction (Vision)

The scope of the All-a-Board is that of a complete family messaging and organizing system. Its primary location is the refrigerator (fastened with magnets), since the fridge is an item that everyone in the household spends time around. Also, fridges are always next to power outlets, so we would most likely be assured a free outlet to power the device. While the All-a-Board has a multitude if messaging systems, we decided to focus on video as our main task, as video is the new standard of communication. Let's face the facts: a family is not going to spend $200+ on a glorified whiteboard or answering machine. While our device converges those media, its main focus is on facilitating family communication. Thus, because video is so fun, easy to create, and store nowadays, we wanted to upgrade the way that families interact within themselves beyond simple notes and voicemails.

Functional Design Concepts (Operative Image)

The functions for the All-a-Board are fairly simple, and will be described below.

When the user first sees the device, there is a montage of photographs being cycled through a la a slideshow. By touching the screen, the user is taken to the login screen. Here, they see the list of users currently stored in the system, as well as if anyone has a new message or not. This can expedite message retrieval, because if one person A has a message and person B is using the device, person B can tell person A there's a message waiting for them, which would have taken less time than person A interacting with the device at their own leisure.

In order to login to the device, the user will have to scan their thumbprint via a prompt that will pop up, so that they will be able to access their messages securely. Even though we are designing a family-oriented device, there may be certain degrees of privacy that users want, especially teenagers. Should the user have a prompt for new messages, they may touch that notification, and after logging in, they will be taken to their most recent message, should more than one message be new.

After a user has logged in, he or she will see their home page, showing them their messages, avatar pictures they have stored, their calendar, and various other options available to them, including the ability to log out of the system.
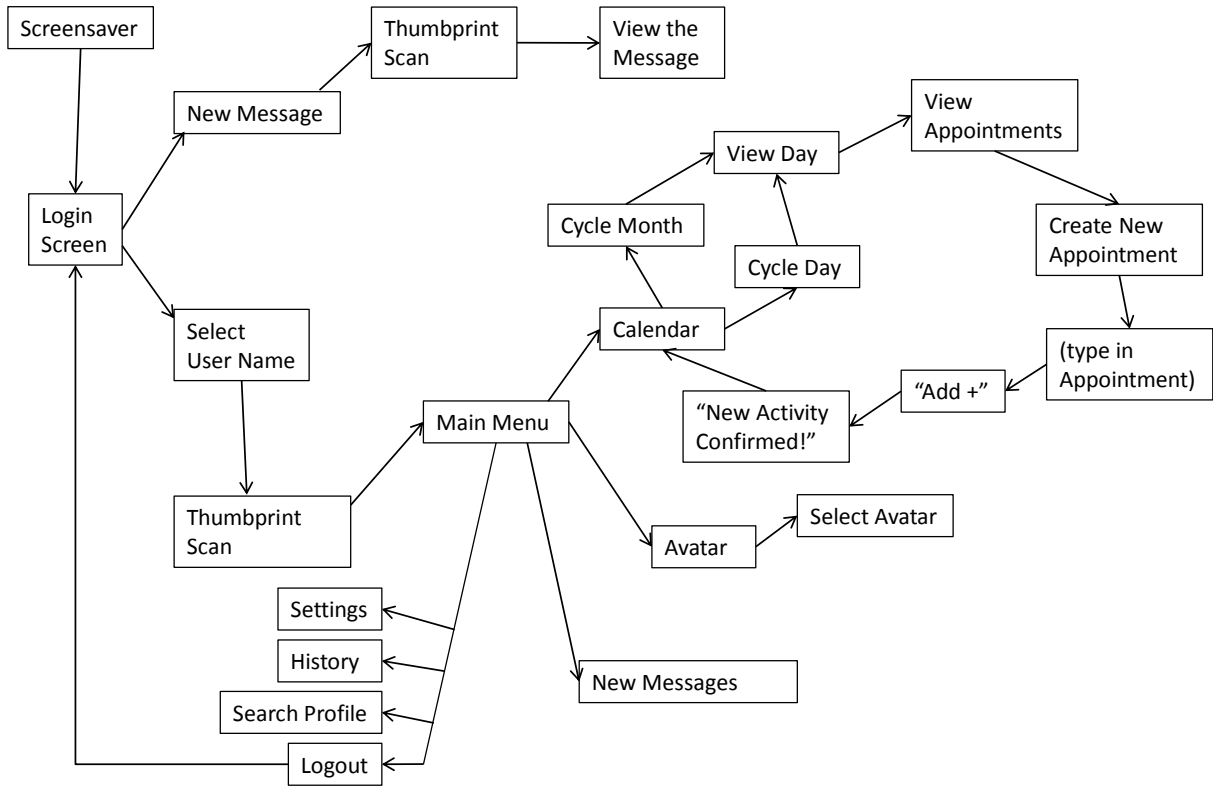
The messages are grouped according to the type of message that they are (photo, audio, video, or written). If the user has a new message, there is a number at the top-right of the icon, letting them know how many messages of that type are new. By touching the picture of the medium, the user is taken to a menu that shows them the newest message with signification in the top-right the message.
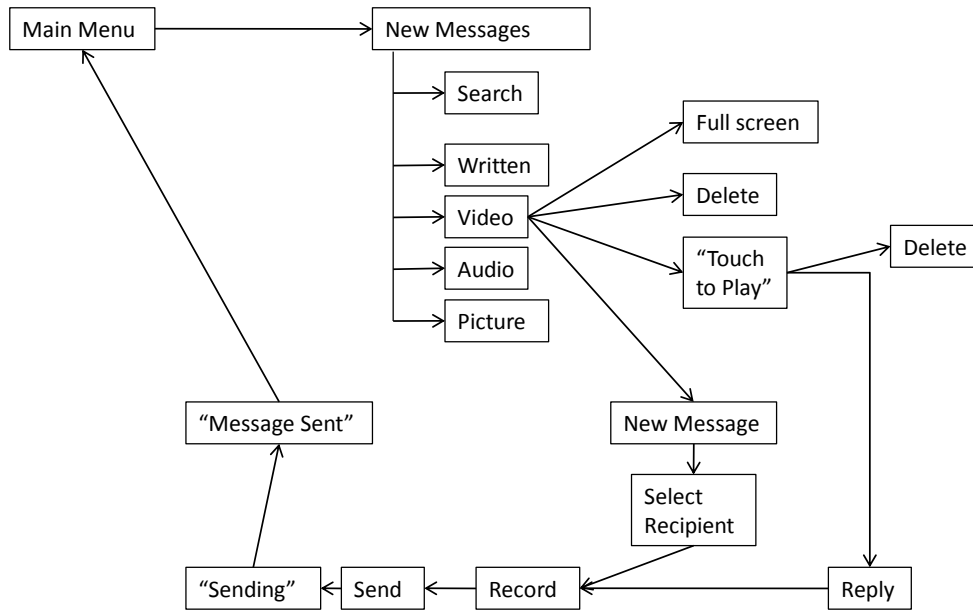
- For written messages, the message displayed is a sized-down version of the real message that the user can expand by touching the message
- For audio messages, a picture of a speaker emitting sound is shown to the user
- For picture messages, the ―message" displayed is a smaller version of the picture, which can be expanded to the full screen by the user touching the picture
- For video messages, the user will see a smaller version of the message paused at 00:00, which will play when the user touches the smaller message. The user may expand the message to be full-screen should they so choose

Once the message has been viewed, the user may opt to reply to that message by clicking the Reply button, which will send a message of the same medium to the sender of their ―replied" message. Should the user want to send a new message, they must first designate who the recipient will be, then they may record their message and send it.

The calendar menu shows the user which appointments they have scheduled for various days. On their main menu, the calendar is set to the current day. The user may cycle through days or months by clicking the appropriate arrow, or they may touch the day in the smaller virtual calendar shown in the bottom-left of their screen to immediately jump to that day. From a selected day, users will have the option of viewing appointments set for that day, or they may add their own to that day. To add an appointment, the user will click on the ―Add Activity" button, then type in the appointment using the QWERTY keyboard and the number pad. Once they have completed the task, they will press the ―Add +" button and the appointment will be saved, while simultaneously letting the user know that they activity was confirmed.

Flowcharts to illustrate the flow of activity:

Screensaver

Thumbprint Scan → View the Message

New Message

Login Screen

Select User Name

Thumbprint Scan

Main Menu

Calendar

Cycle Month → View Day

Cycle Day → View Day

View Appointments

Create New Appointment

(type in Appointment)

"Add +"

"New Activity Confirmed!"

Avatar → Select Avatar

Settings

History

Search Profile

Logout

New Messages

Early Prototypes:

Pictured is the original frame of the prototype. It had physical buttons lining the bottom of the frame. At the time, there were buttons for each type of message and basically every other major action (users, options, calendar, slideshow).
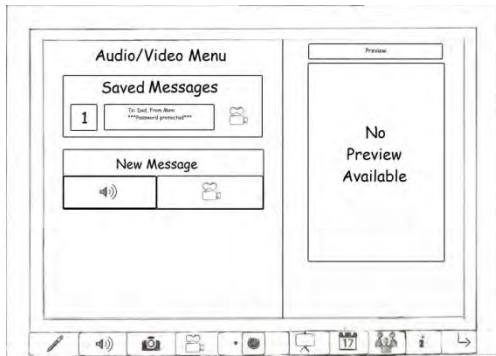
Clicking the Video or Audio button would take you to a joint menu screen. It was thought that because both audio and video —record" it would make sense to put them together. There was the idea also to have a preview of each video available should the sender of that message so choose it.
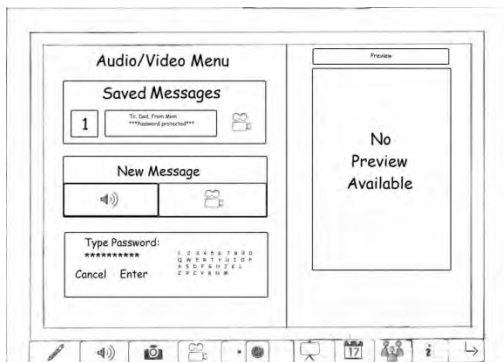

In this case the sender did not want to have a preview, but she did password protect the message. This prototype operated under the idea that anyone could walk up to the device and use it. As such it was much more device-centered than user-centered. Using a crude QWERTY keyboard, the recipient entered his password and found this video message from his wife.


At this point, the device's target user was anyone, thus it was observed that the device might be used for more —kinky" applications.
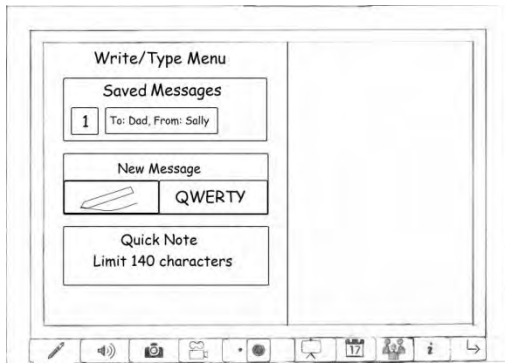
In the write menu, we thought that the user might be intimidated by video, and thus prefer the —old-fashioned" messaging. On this screen we had options to read each message (which would be seen on the right) and perhaps edit/add to that message. We also wanted a compose message option using either a stylus or QWERTY, as well as a —tweet" like quick note option for something specific.
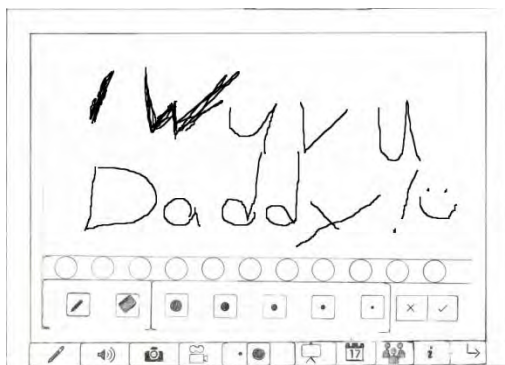

This was the message left in the write menu. The empty circles are supposed to be colors to which one can change the ink.
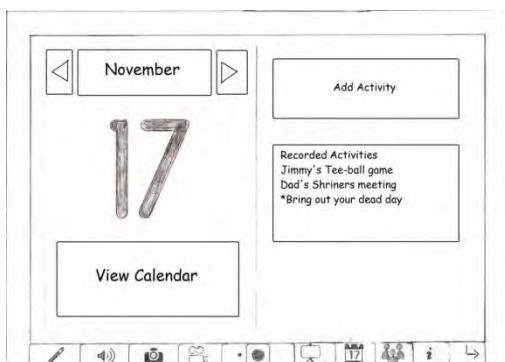
The Calendar feature remained largely untouched throughout the process. We did put arrows next to the date so a person could change to the next day without opening the full calendar. We also included the means to add an activity (final version).
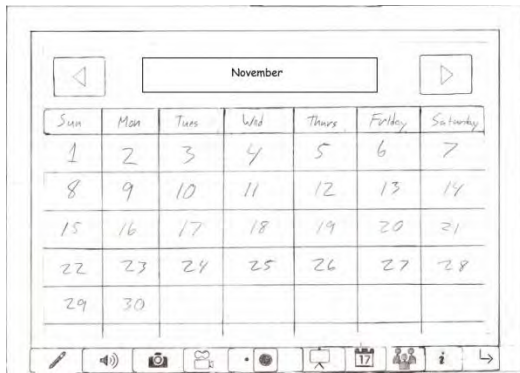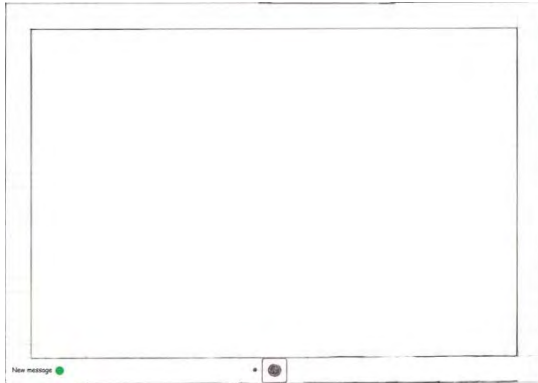
November
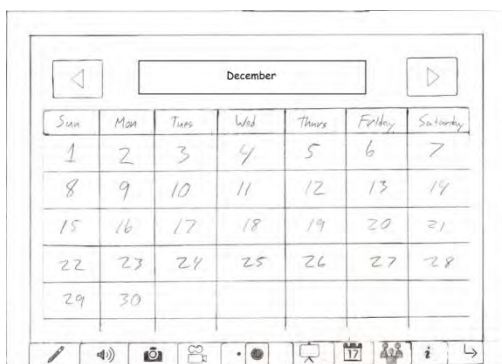
December

And finally the next date screen. The reason we did —17over again was because of a web design stencil Matt bought that had a calendar icon on it. However, the icon only had the number 17 within it, thus to connect the screen with the icon we kept the —17 theme.

Digital sketch:

Here is the digital frame sketch. As you might notice, all of the physical buttons have been removed. Only the webcam and a —new Message" light appears. Ideally, the screen would have a slideshow on it, deactivated by simple touch
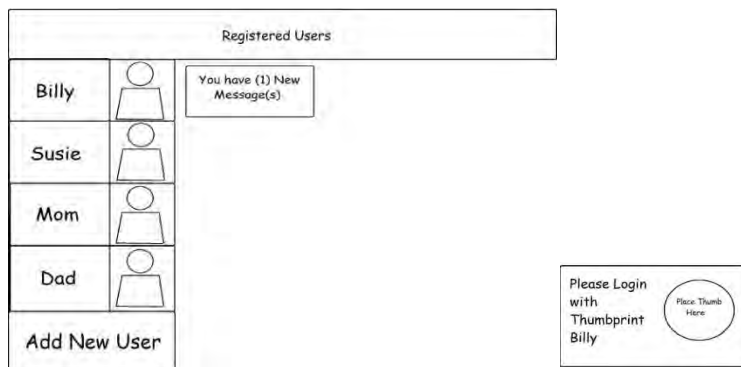
This is the redesigned interface, instead of centering the design around the device, we focused instead on the users, as well as choosing the family as our target users. To login, one must choose their user account (in this scenario, Billy).
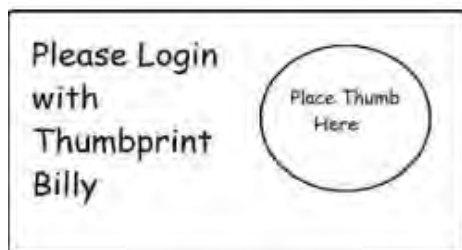
We chose to do a thumbprint here because it was thought at the time that touchscreens could do that. While this —misconception" was not uncovered in time for Sepideh's flash version, we did correct it for this paper.
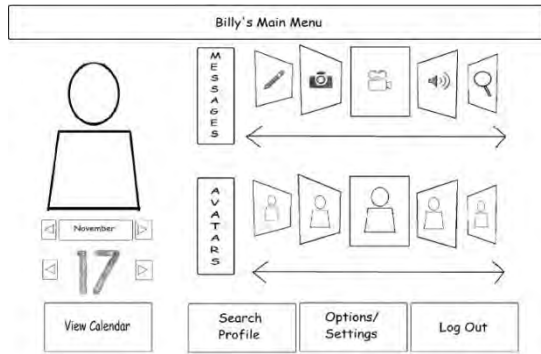
This is the user's main menu. As you may notice, it has a picture of the user, the calendar below it, the ability to search his profile, options menu, and a log out feature. It also uses coverflows for the message and avatar menu items. This was inspired by iTunes which uses a coverflow to show off album artwork in a person's music library. We felt using a coverflow made the menu more playful than simply listing the icons. The coverflow motif was extended to the video menu as well:
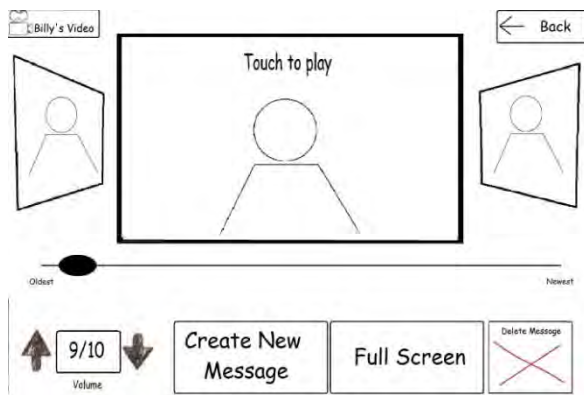
One of the main reasons we used coverflow was as a means to show thumbnails of videos without listing them all, but also to play the video within each thumbnail (saving the user having to go to a separate screen. This slide also highlights our choice to move to video as the intended use. We did keep in the write, audio, and picture menus to give users more choice, but we decided that our main focus would be video mainly because it's fast and much more fun.

Walkthroughs

Walkthroughs were conducted with four users, and the user had four tasks:
1. Log in to the system
2. Check new messages
3. Leave a video message
4. Interact with the calendar to view appointments for December 17, as well as add an appointment

User A was an elderly woman who openly admitted that she had very little to no computer experience. This user is one that we should consider, because in order to create a family-oriented product, there may be some family members who are not as adept at using a computer as others. The test for this user was conducted using the revised paper prototype. This user thought that in order to wake up the device from the slide show, the "New Messages" light should be pressed, and there was some confusion of how to check the most recent message. In terms of viewing a message, the user questioned the Erase feature and instead wondered if a Reply button would be more applicable. The user thought that in order to record a message, she was to touch the screen and not press the record button. Also, she did not initially see the Send button. However, once she did, it was very easy for her to send the message. She did not know how to get to the main menu from the video menu, so she requested assistance. Once at the main menu, she navigated to the calendar and proceeded through the task without any difficulties.

User B was an elderly man with some computer experience that showed in terms of how he interacted with the device, as well as some of the functionalities he expected from it, as well as some of the paradigms that were present within the interface. He instinctively knew how to wake up the device from the slideshow and he also understood the video interface, as well as how to play a video. The screen present for playing a video was easily understood by him. Since there was not a Reply button, he wondered if the only way to leave a reply was to send a new message entirely, after going back a few steps. He also had a little trouble finding the Record button. For the calendar task, he did not have any trouble at all.

User C was a computer savvy man who liked the idea of the product from the start of the usability test. He thought that the "new message" notification was too small, and to check messages, he was not sure if he should press a button or touch the screen. He also thought that the thumbprint scan should show a thumbprint instead of a circle in which the user should place their thumb. This user wanted to see the messages right away after logging in, and the main menu layout was confusing to him. When the user was viewing the video message, he thought that the "Erase" button should instead say "Delete," and that instead of the pop up saying "Message Saved," it should say "Message Sent." This user had no difficulty using the calendar feature as well.

User D was an elderly male who had a medium amount of computer experience, but would not consider himself to be "computer savvy." When this user had to record a video message, the icon on the record button was not recognizable to him. When the user finished adding an appointment, he thought that it would be useful to have a logout button on the main screen of the calendar. These instances aside, everything else in the test progressed smoothly.

The difficulty in viewing new messages alerted us that it would be more convenient to have the newest messages at the default "selection" so that the user would not have to scroll through all of their messages to see the newest one. Also, the difficulty in replying to a message was a concern—the process should be more streamlined, especially

since a reply is only to one other person. Making the Send button easier to see or having a more explicit way of letting the user know that they can send their message would be useful as well. The possibility of having a Home button (which would return the user to their main menu) was also considered. User C in particular thought that the device could use some Wi-Fi capabilities, so that other things could be done while viewing messages, such as watching TV.

High Fidelity Prototype:

This red light indicates a new message

Finger/Thumb print scanner – ideally equipped with a confirming feedback sound like: beep!

This is a slightly modified version of the Flash model Sepideh made. We added the finger/thumb print scanner because our original design of an on screen scanner did not actually exist. For the presentation, we kept the scanner out to save confusion and keep continuity. However, this version is the ideal appearance of our physical interface. The first screen opens with like this:

User login Screen: Each registered user has their own account, with its own pictures, videos, etc. For this scenario, we will be playing the role of Billy who wants to check his messages as he has a new video message! Billy can either click on his name and go straight to his personal menu, or he can click on —You have 1 New Message" that will play instantly after he logs in. He clicks his name:
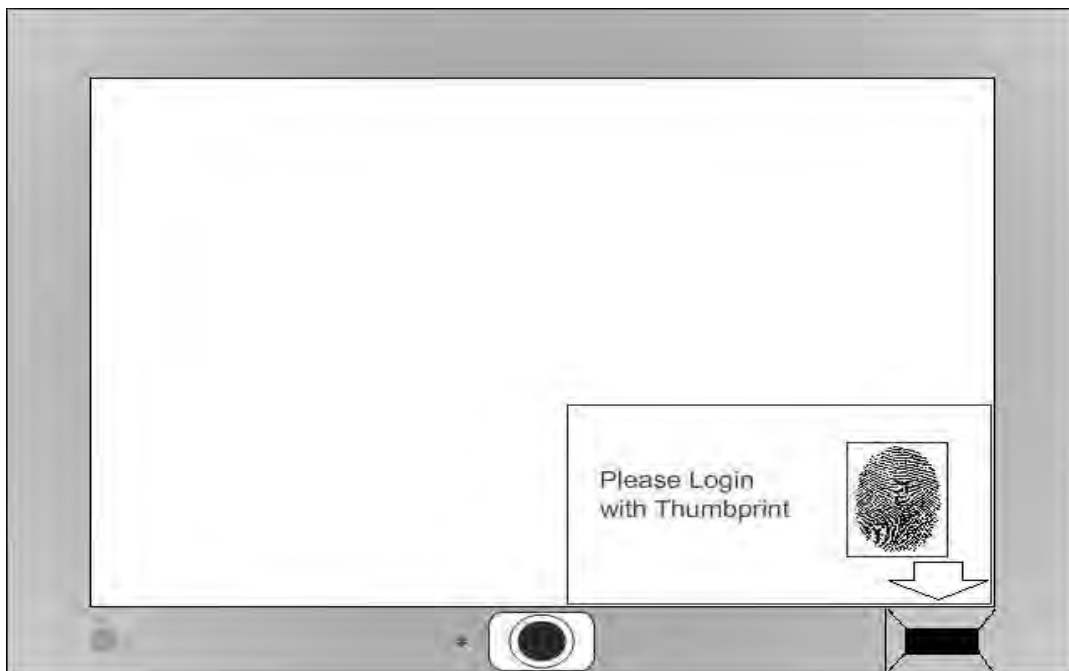
Here he is asked for a thumbprint, he swipes his thumb, the computer goes —beep!" as it recognizes his thumbprint and takes him to:


Billy's main menu. Here Billy has several options. He can choose to view his new video message, change his Avatar, and look at his history of what actions he has taken (uploading media, sending messages, etc). He can also do a search of his profile, change his settings, or log out. He is also able to write a note, or make a voice recording, but he doesn't want to do those because videos are more fun and much easier. Finally he can check his calendar or look at pictures in his picture message folder (they count as messages because Billy sends them to the computer). Billy decides to look at his new video message:

It's from his sister Susie. As it is the newest message, his scroll bar goes right to it. At this point he could flip through other previews of other videos shown through the coverflow, but he decides to watch his sister's movie instead:

Billy watches the video. At this point Billy can either reply directly to Susie's message, or create a new message which he can send her or any other registered user.
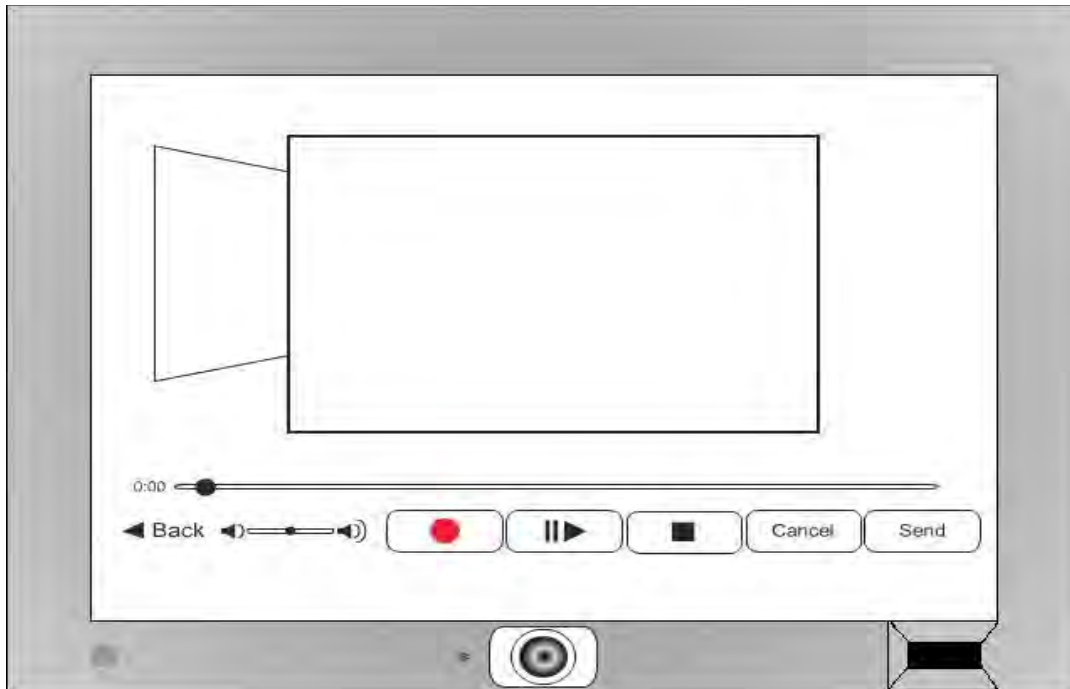
He chooses to reply directly and is taken to the record video menu. Here he can record a message over and over until he's satisfied he has said the right things. Re-recording can be simply achieved by pressing the record button after a video has stopped recording. Or Billy can preview his new video by pushing play, and can advance to any segment by manipulating the scroll ball with his finger. He can also adjust volume, or cancel the new reply entirely.
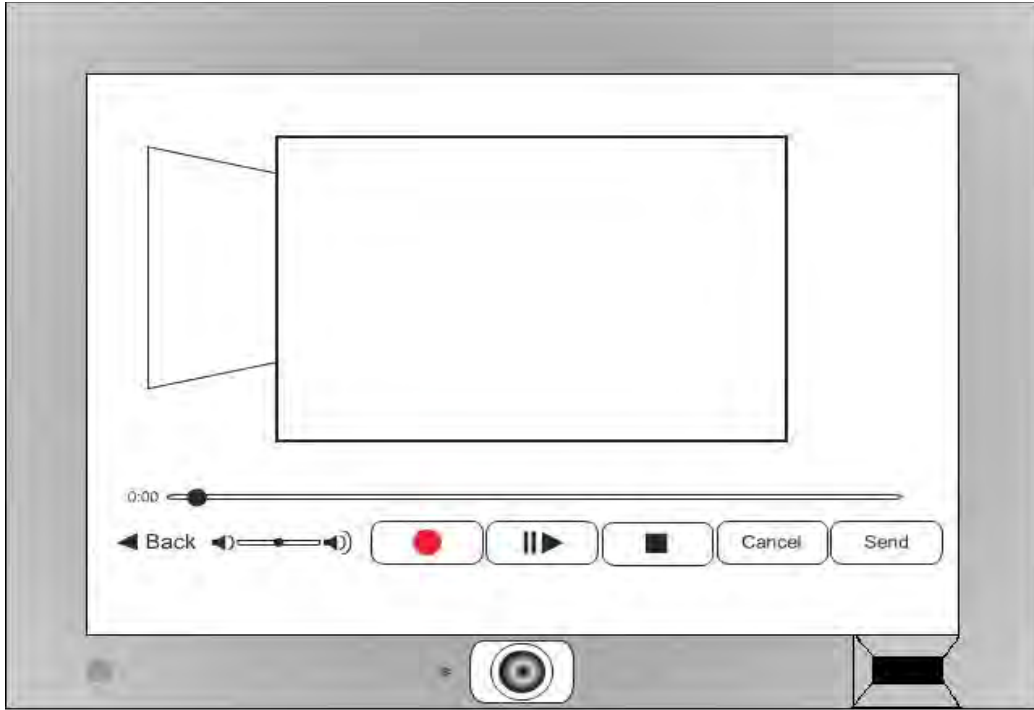
Message Sent!

Billy decides that he has recorded an acceptable video and decides to click ―Send.‖ Since it is a reply, the message already has a recipient, thus it sends immediately. Had Billy chosen to create a new message he would have been greeted by the following screens:

Billy just watched his sister's video and went —back" to the thumbnail coverflow screen. Here he has the option of choosing —New Message" which he pushes.

The —New Message" button takes him to the recipient page where he chooses who to send his message to. For the scenario, he wants to send it to Susie.
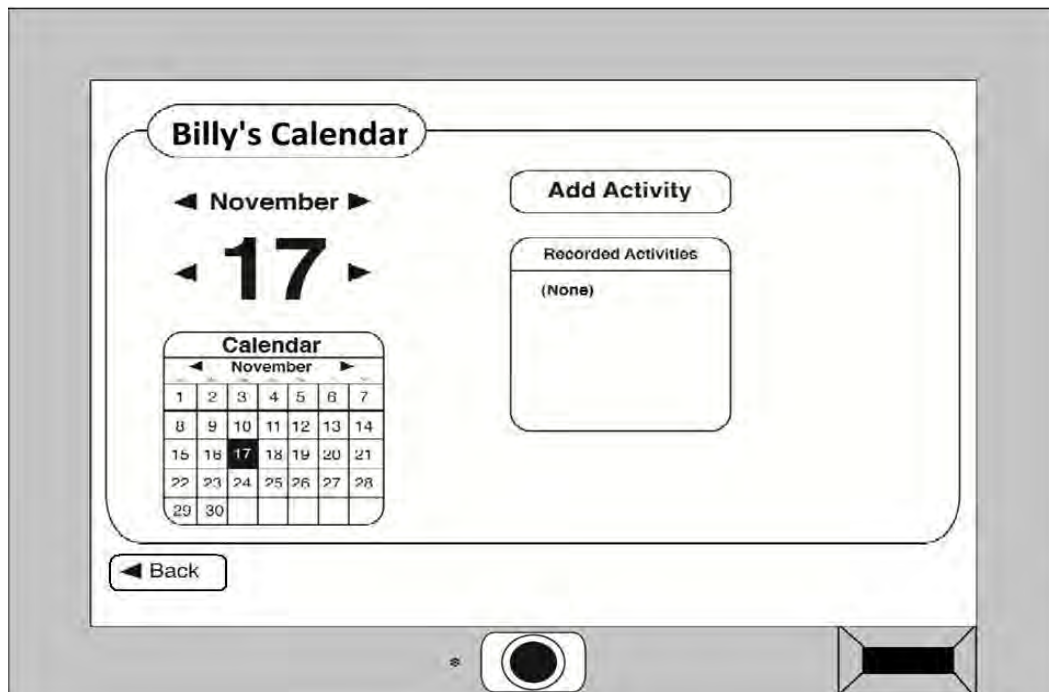
Much like the reply screen, Billy can record/ re-record his new message until he is satisfied with it. He then pushes —Send"
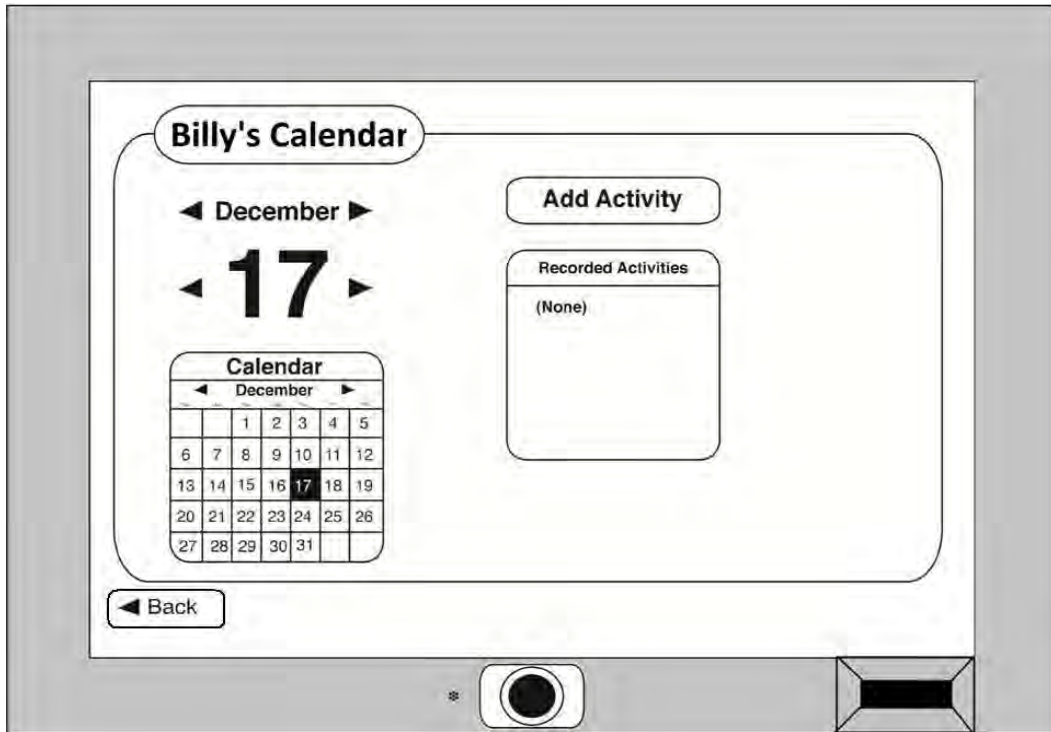
Message Sent!

The Calendar

From Billy's main menu,

The Calendar Task is very simple. It uses a QWERTY-like interface to input Data, simple arrows to change either day or month, and a miniature representation of the monthly calendar. For this Task, Billy wants to have a Haircut on the 17th of December at 8:30am.   So Billy pushes the right arrow next to November.

The Calendar now reads December, and Billy wants to add an activity (getting a haircut) so he pushes ―Add Activity"
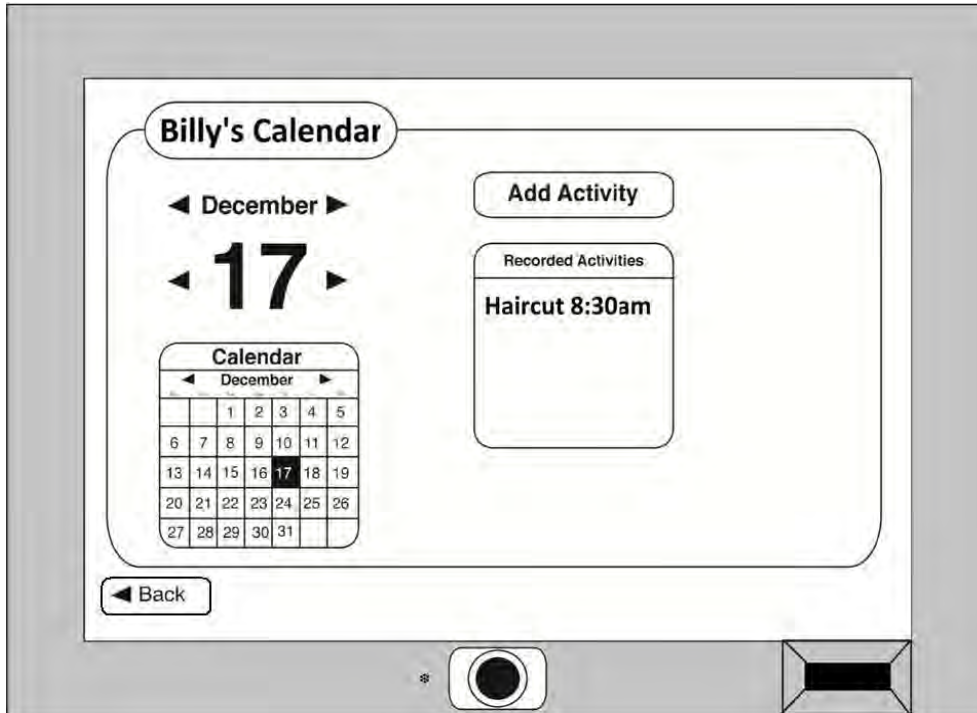
He is taken to the Add/Edit screen. These screens are combined because the data entry for each is the same, and editing an existing activity means putting new information in, thus it becomes a new activity.

Billy types in ―Haircut 8:30am" and clicks ―add +"

The feedback screen comes up saying he successfully added an activity

And now it is on his schedule for December 17

Billy goes —back" to his main menu, logs out and returns to the registered user screen

Cognitive Walkthrough Findings

- The ability to login with a thumbprint scan was easier than our first suggested idea of typing in a password
- The main menu may have been slightly confusing, but the "four corners" approach was well represented:
  - Top-left: user's picture
  - Top-right: new messages
  - Bottom-left: calendar
  - Bottom-right: Logout
- Checking new messages and having to slide a slider bar was slightly inconvenient in the paper prototype used for testing, especially since the user would not initially see their newest messages first
- Upon recording a message (when using the paper prototype), the Erase and Cancel buttons inherently should have done the same thing—this was fixed in the digital prototype
- Checking the calendar to see activities was very straightforward

The thumbprint scan was a favored approach to establishing security as opposed to the idea of typing in a password as was suggested in our early paper prototype stages. Should the main menu be considered "too complex," as long as the four corners are still occupied, the core design would remain unchanged, minus the exclusion of the Avatar pictures. Getting rid of the slider bar to view messages was a good move. Note that the slider bar would still be present when lots of messages would be available, but the list would default to the newest message (or the "oldest of the newest" should more than one message of a particular type be present). The "Erase" button had been removed so that the redundancy of seeing two buttons with the same feature was eliminated. The calendar was very straightforward, and the process itself was fairly streamlined without a lot of snags to trip up the user.

Suggested Changes

From the perspective of the cognitive walkthrough, a lot of the design decisions that were set forth were followed and improved upon by revising the prototype when it went digital. Being able to know if there were any appointments on a certain day from a glance would be a nice feature to implement. Since the device alerts users if they have a new message, having another box saying "You have (1) appointment today" would be useful, or signifying that there were appointments scheduled for days on the calendar, possibly by giving the day a red background, or an asterisk.

A clickable version of the device is an improvement over the paper version. During the usability tests, Users A and B had never taken part in a paper prototype test, so there may have been some elements that confused them based on the medium with which they were interacting. During the cognitive walkthrough, it was not difficult to know the present position in the design hierarchy, or how to navigate back up the hierarchy, so a

Home button did not seem as warranted. However, as mentioned in the Walkthroughs section, User A was not computer savvy, and having a Home button may be the sort of affordance that would simplify the experience for other users similar to User A.

Labels may need to be added to some of the buttons as well. While everyone in the group and all of our users grew up during a time when VCRs were present (with the circular ¬record" key), the amount of users who had difficulty understanding the record key in light of recording a message was rather astounding, since the icon itself should not have been alien to the user. Possibly adding a ¬Record" tag below the button may have alleviated this.

Design Wishlist

Ideally we would have a thumbprint scanner on screen that could replace the compromised scanner physically on the device. We also could have used an SD card slot for transferring camera contents onto the All-a-Board, as well as built in SD card for storing user data, etc. Finally, one user indicated the addition of TV, and while that may be impractical now, it's not unlikely that such a device could exist in the near future. We do feel though that if a person was watching TV, could someone else check their messages at the same time?