

Home Message Center

I-564 Prototyping Class - Midterm Project

SUNG PIL MOON

VINAY KASHYAP

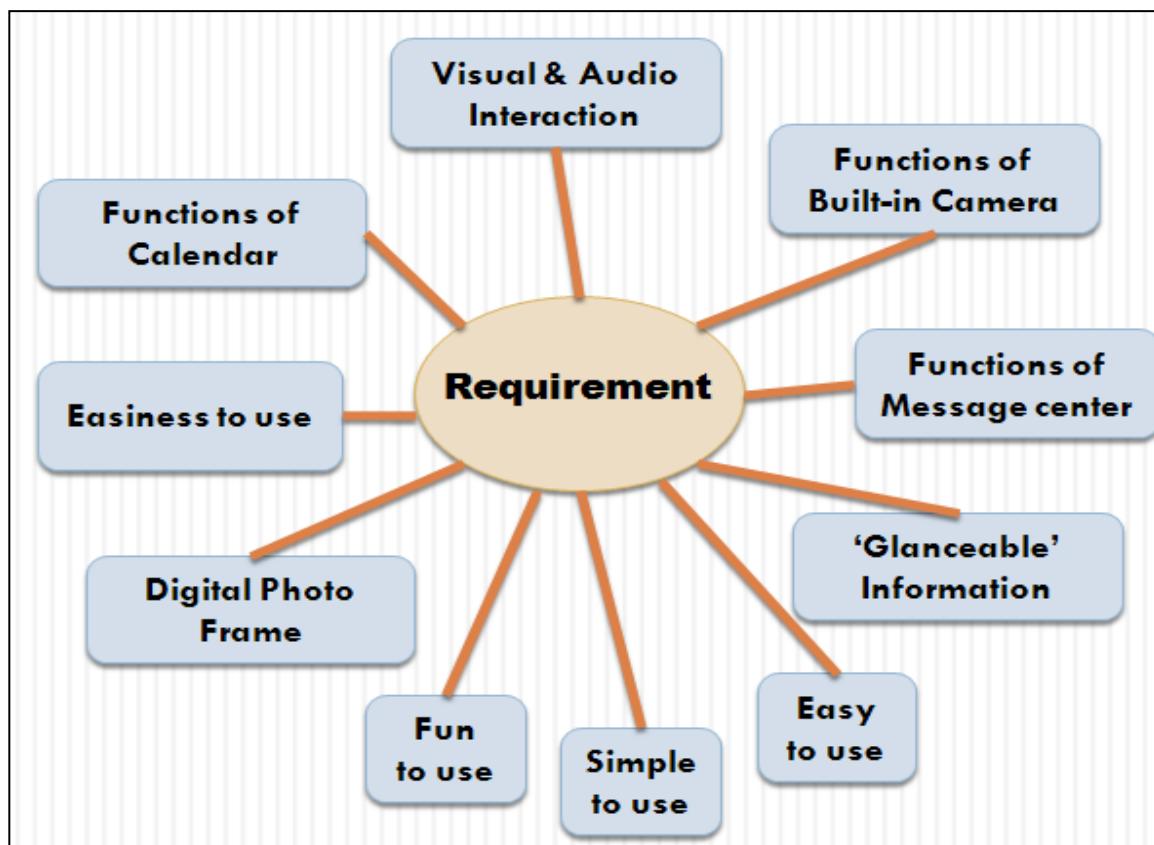
10/28/2009

Introduction

The vision of the Home Message Center is to build a message system which has ease of usability and which is portable to be used around anywhere at home. The message center should also take into consideration people of different age groups who could possibly use this system. The Home Message Center is mounted on the refrigerator, and it is heavily used as another way of communicating with people at home. It also works as a picture display in the form of a slideshow when not in use. Other than the main functionality of a message service, it can also be used to view pictures, video, audio, and also a calendar which can be used to store events and also reminders for anybody at home.

Functional Design Concepts

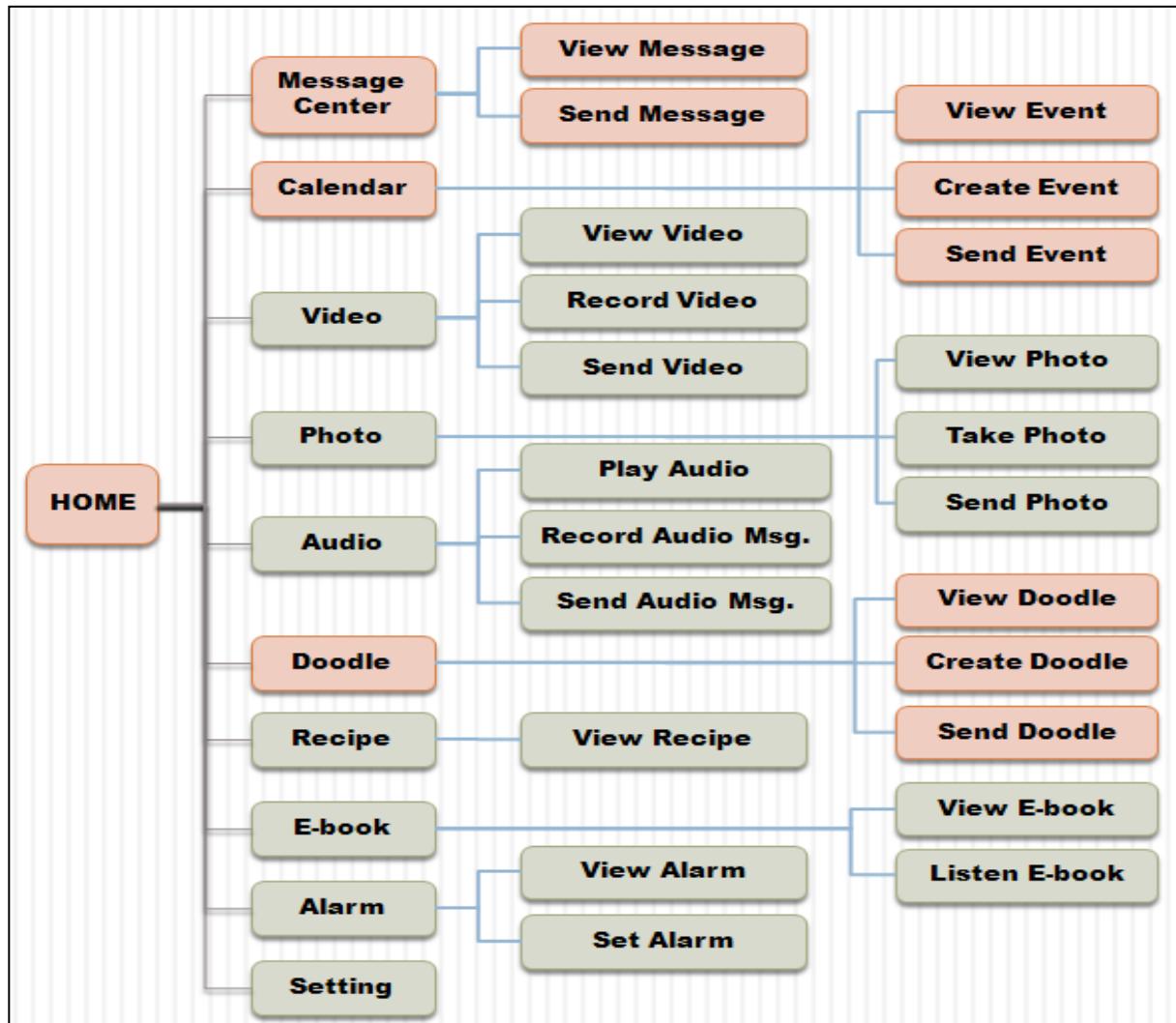
1. Requirements Set



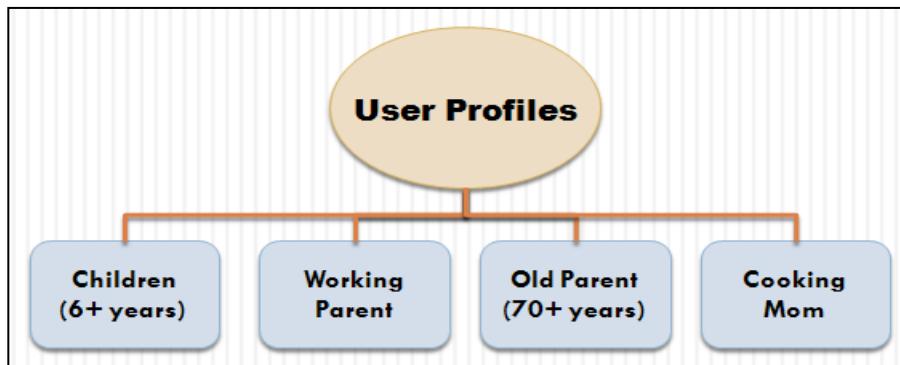
2. Design concept

The design of the Message Center is to have functions which are simple, easy and fun to understand and to use for any user from a young kid to old family member. This will be done with visualization features, minimal design, and a wide range of interactions such as touch screen-based, voice and video input. So, our home message center will be developed in such a way that, it can be easily used by anybody from a 7 year old kid, who wants to show Mamma his painting when she comes back home from work, to even a 70 year old grandfather informing his son that he would not be back for dinner because he had to be at the senior center. The different features of this system include sending messages in the form of audio or video or even handwritten, what we call 'Doodle'. Since this device would be placed on the refrigerator in the kitchen, we also have a recipe feature where you can upload recipes and recipe videos which can be used while cooking. The e-book feature reads you books while cooking which could turn out very handy giving people company while cooking at home.

3. Flow diagram



4. User Profiles



5. Main Functions

● Calendar

Calendar organization is one of the main features of Home Message Center. This is used to add an event and add reminders for that event. This can also be used to remind any family events and act as a reminder for everyone at home. The calendar feature would show the current month of the year along with any events stored for this month. The + symbol at the right allows to create a new event after clicking on a particular date. You can create a new event and provide details about the event like the location, the date, and a brief description. You can also change the event priority of the event based on color codes. Clicking on the send button, allows the user to choose the recipients of this event.

To view new messages sent, the user can click on his name on the homepage, i.e. Dad or Mom or Son or Daughter. You may also assign yourself a password so that you need not allow others to see your messages. This may be important because there may be a few things which the parents would not want their children to know, and this may arise the need for security. But this is entirely optional and need not be used in not necessary.

● Doodle

This aspect of our device is metaphorically similar to the ‘post-it’ notes which we are all familiar. With ‘post-its’, we scribble up something and stick it on a location which can act as a reminder. The concept of quick scribbling is used in our Doodle, which allows the user to say something quick and which would not need a lot of time at all. Under Doodle, you have the option of choosing the color, or even a text type and send it to the desired recipients.

● Picture:

When the device is not in use, there would be an image slideshow which would continue until someone touches the display. The pictures can be loaded through an external memory card or USB port located at the back of the device. The users have the option of taking a picture through this device, manually view the pictures or just start a slideshow.

● Audio

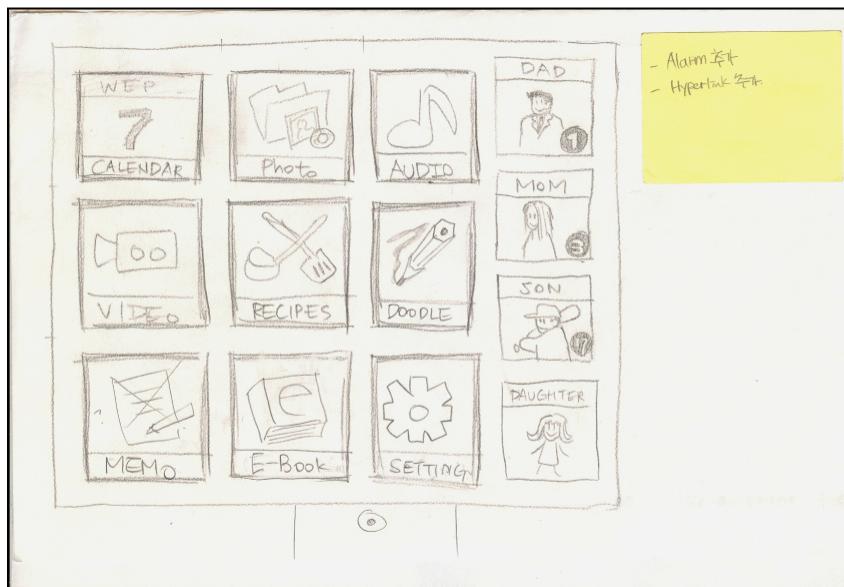
This main feature involves sending audio messages to any recipients. The other option for users would be to listen to some of their favorite audio tracks. Both these features can be accessed under the Audio section on the homepage. The 'record audio' button allows the user to start recording an audio clip, and then clicking on the send button, would allow the user to choose the recipients to whom the message was intended.

● Video

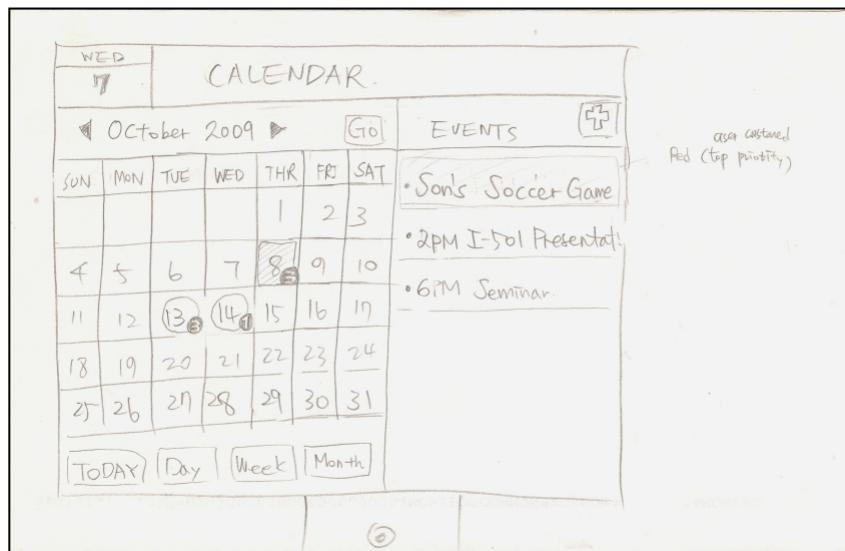
Similar to the audio section, we have also built a video feature which includes the sending video messages to the recipients and also watch your favorite videos. The 'record video' button under the Video option activates the camera located below the device. Now, the user can look at him/herself on the screen and start recording a video clip. Once complete, the user can stop and send the video to the desired recipients. Again, this is similar to the audio feature explained earlier.

Early Prototypes

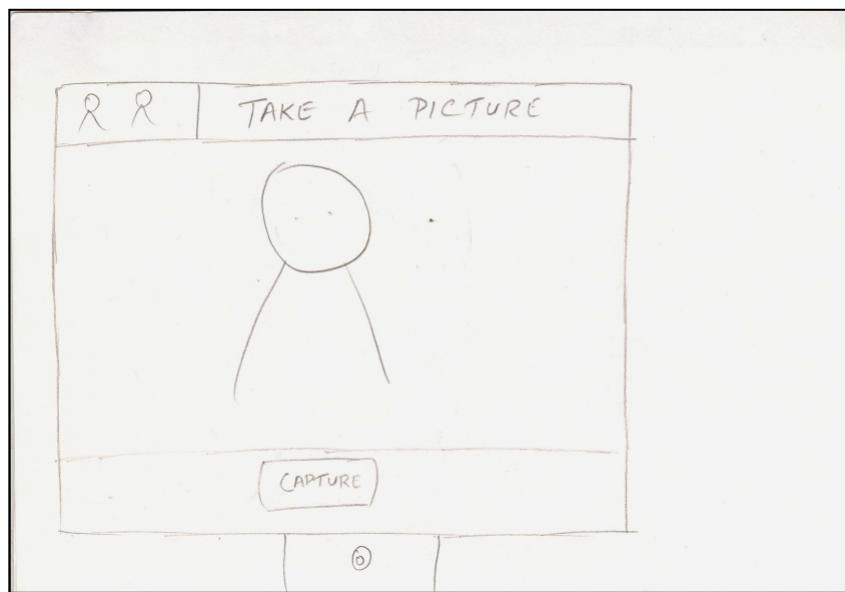
1. First screen, we initially thought first screen should have lots of icon-based menus instead of written texts, so that users can easily recognize the number of messages they got.



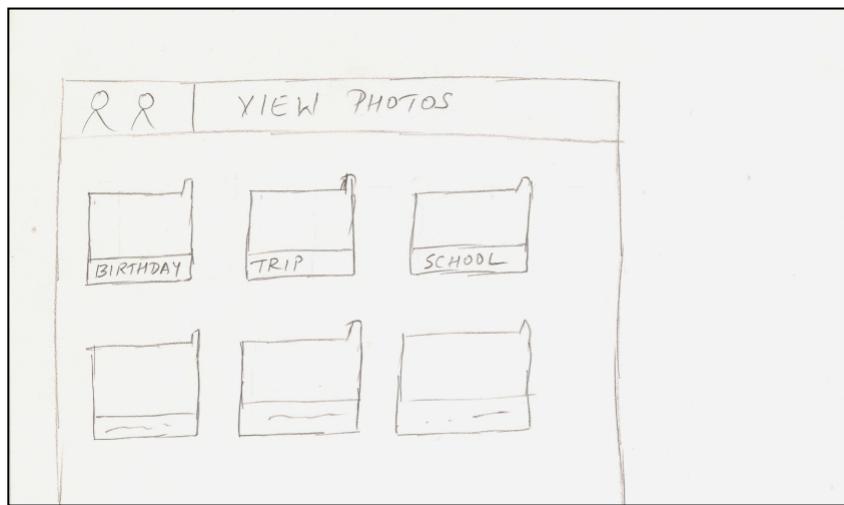
2. Initial idea of calendar. We thought that because calendar has lots of information, it is required to separate sections such as event, calendar itself, and rows of buttons and so on.



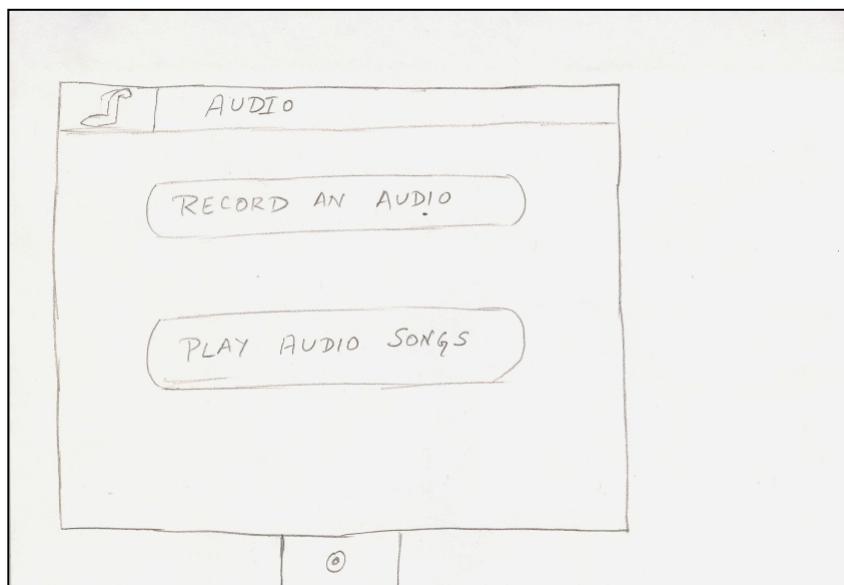
3. Feature of taking a picture. This has minimal set of buttons so that users can easily and intuitively recognize how to use. Screen of viewing a photo is the same screen.



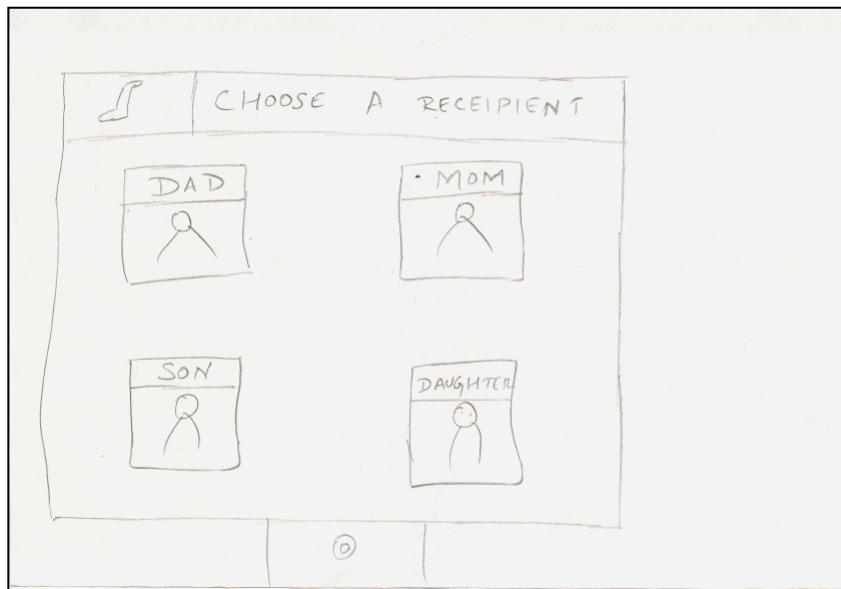
4. Screen of viewing photo files. This follows a basic file view metaphor with big icons. Other file view screens follow this concept.



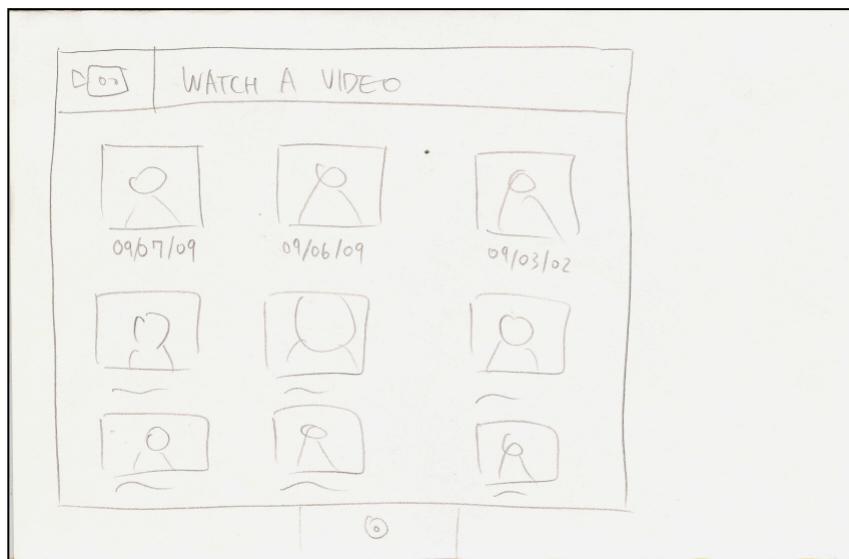
5. First screen of audio function. We intentionally put only two buttons for minimal design.



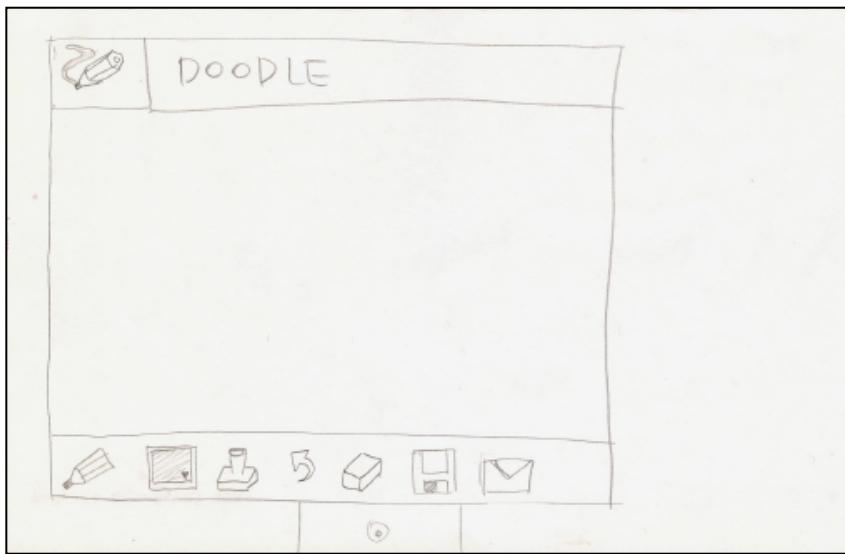
6. Screen of choosing recipient. We also tried to make this as simple as possible. All target objects are represented as icons. Other sending and choosing a recipient screens have the same screen and flow.



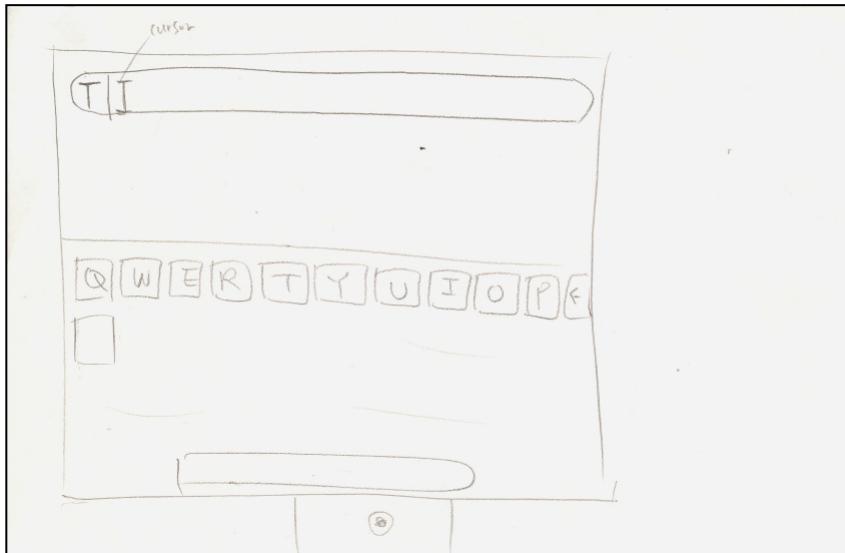
7. File structure is also represented with big icons. Each file is represented with a first screenshot so that users can easily conjecture its content.



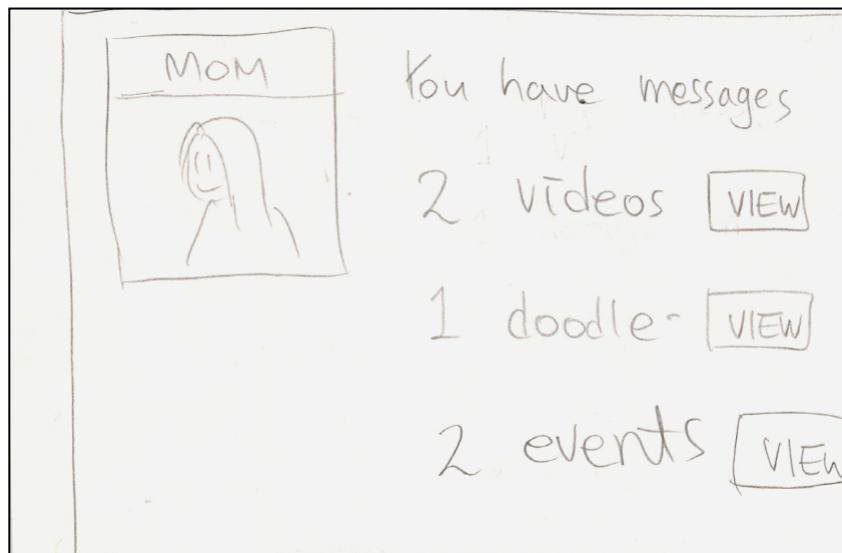
8. Screen of doodle function. Because interaction of our home message center is different from normal interactions for desktop pc, phone or other device, we put the doodle feature so that users can draw doodle messages.



9. Keyboard input screen. If users want to put text instead of drawing doodle message, they can use virtual keyboard like one of iphone.



10. Screen of message center for mom. Mom can recognize how many message and which message she got. Then she can view those files easily.



11. Screen of creating an event. There are multiple columns and rows so that users would not be confused about somehow complex information.

What	I-501 Presentation		
When	Starts:	10/08/2009	2:00 PM
	Ends:	10/08/2009	4:00 PM
	Repeats:	Weekly S <input checked="" type="checkbox"/> M <input type="checkbox"/> T <input type="checkbox"/> W <input type="checkbox"/> Th <input type="checkbox"/> F <input type="checkbox"/> S	on every
	Range	Start: 09/01/2009	until: 12/02/2009
Where	@ IT 355		
Alert	15 minutes before		

Walkthrough

Demographic of Participants

- Female, 43 years, low to moderate technical experience using computer devices
- Female, 7 years, very low technical experience using computer devices
- Male, 26 years, mediate level of technical experience using computer devices
- Male, 37 years, very high level of technical experience using computer devices.
- Female, 73 years, very low level of technical skill using computer devices.

Tasks

- Task1: Send any type of messages (audio, video, doodle) to any recipient at home
- Task 2: Check for new doodle messages that you have received from other members at home, and send a reply message.
- Task 3: Check the scheduled events for today and Create a new event and send it to any family member.

Summary of key findings across the users

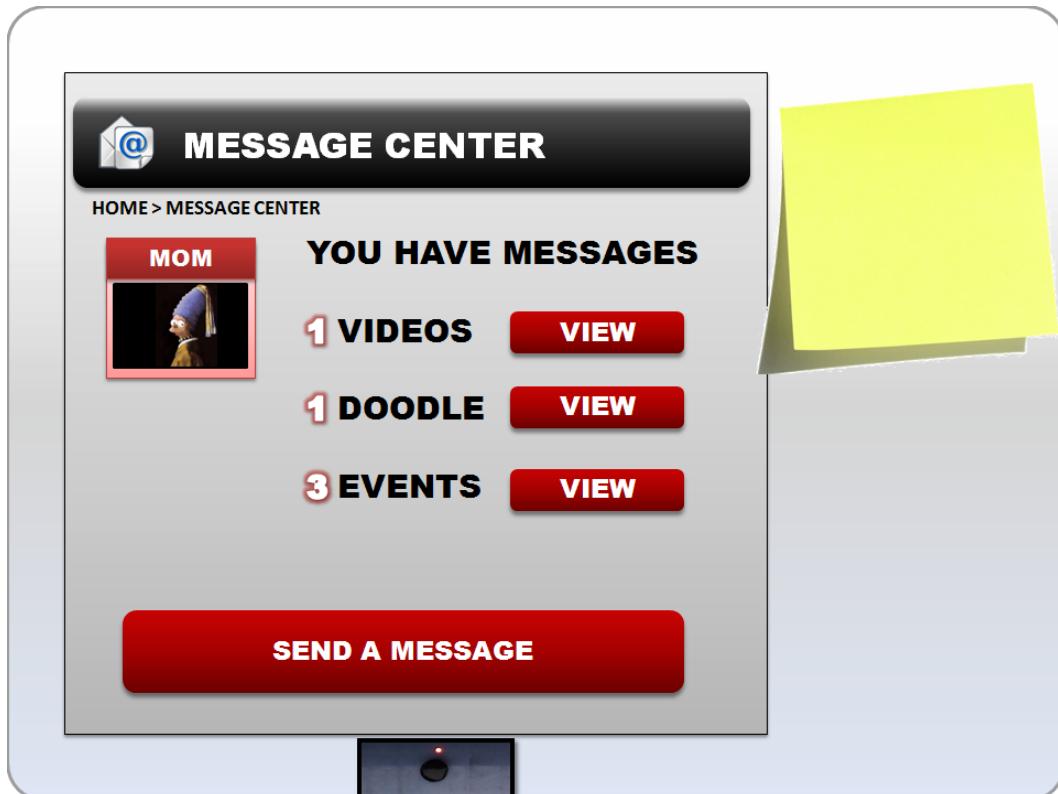
- Most of them really like the concept of visualized, icon-based menus and interactions with minimal design. They successfully did 3 tasks.
- One of the users expected something like a 'Send Message' or 'Leave Message' button on the home screen. Because main keyword for users is 'message', they wanted to have buttons in the home page.
- The other common issue was not having an option to delete a message. The users could not find a way to re-record a message and delete the earlier recorded message.
- There was also common misunderstanding about the Doodle. They just wanted to start writing on the screen before clicking on the brush or the pen buttons found below.
- Two of the users also felt the need to move easily from one section to another without having to start all over again from the homepage. When they changed their minds from recording a video message to recording an audio message, they had to first go back to the home page and then go the audio section.

High Fidelity Prototypes

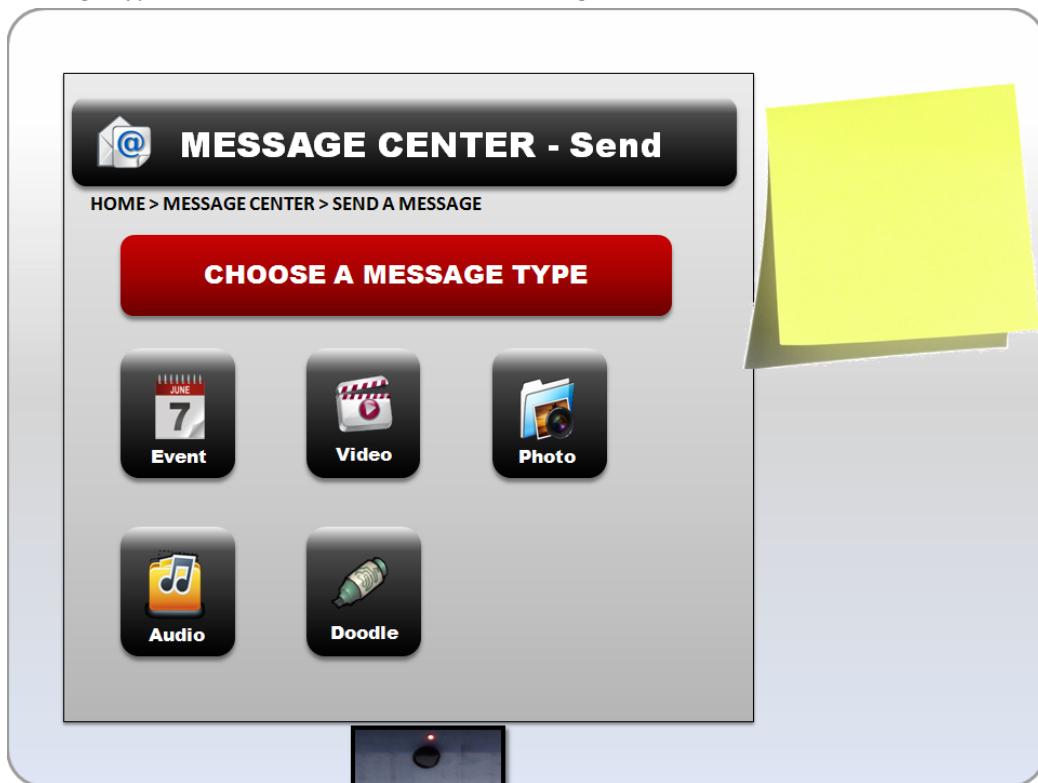
1. First screen of hi-fidelity prototype. As explained in the lo-fidelity prototype, it has colorful and iconic menus so that users can easily recognize the number of messages. And, users have different colors of their own, they can be easily and visually differentiated.



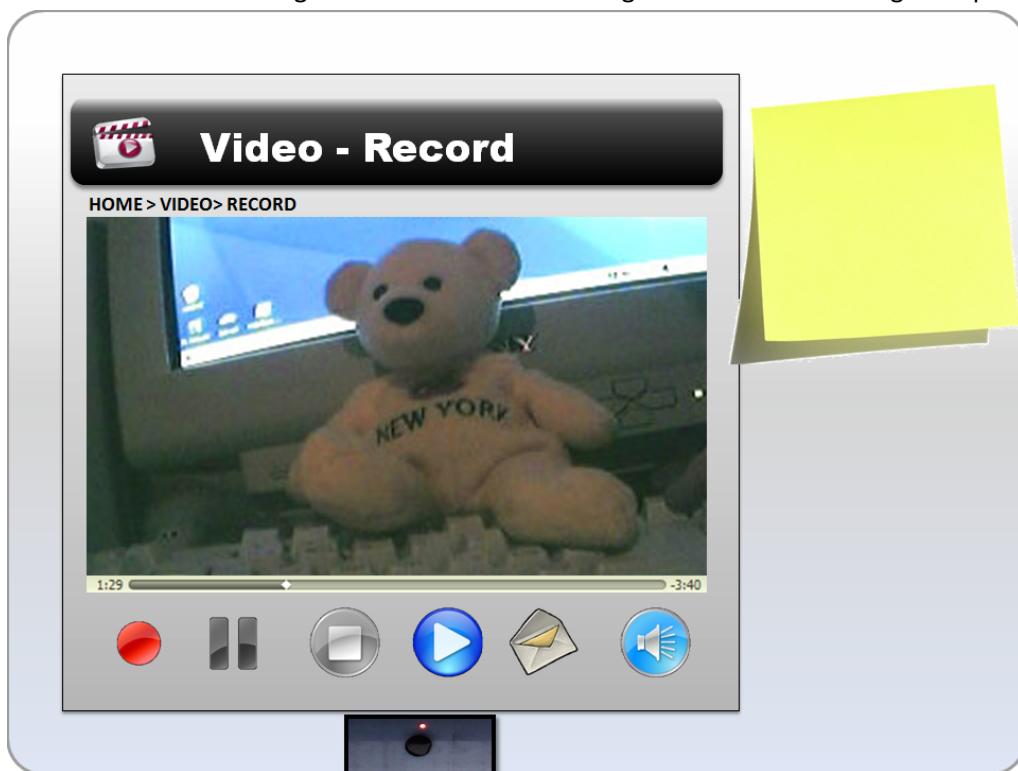
2. This is a screen of message center. We tried to put a minimal set of buttons so that users can intuitively know the functions provided, and can easily execute.



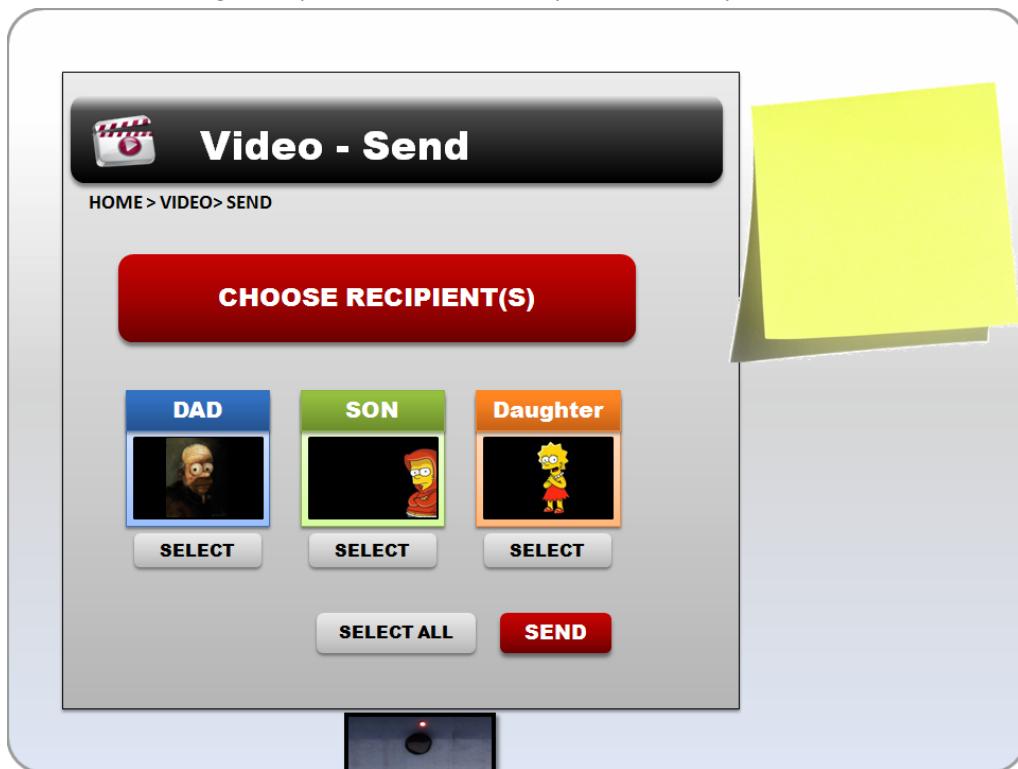
3. Screen of choosing types of a message. If users chose to send a message, users can select the message type. This screen has also minimal design of iconic based menu without other contents.



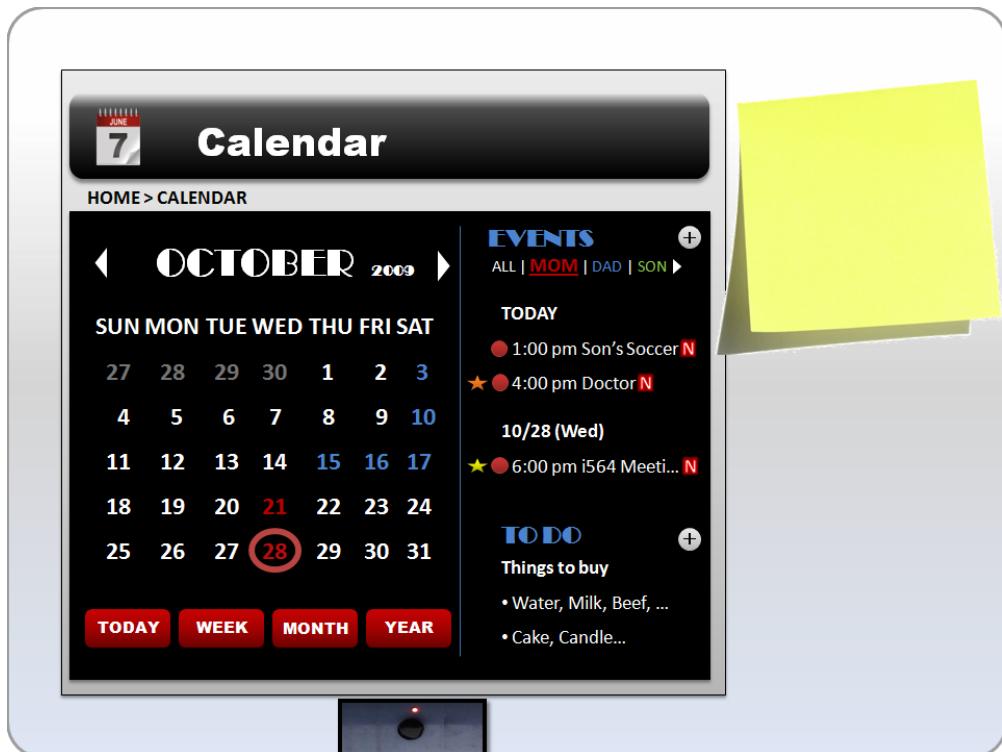
4. Screen of video recording. This function follows the general video recording metaphor.

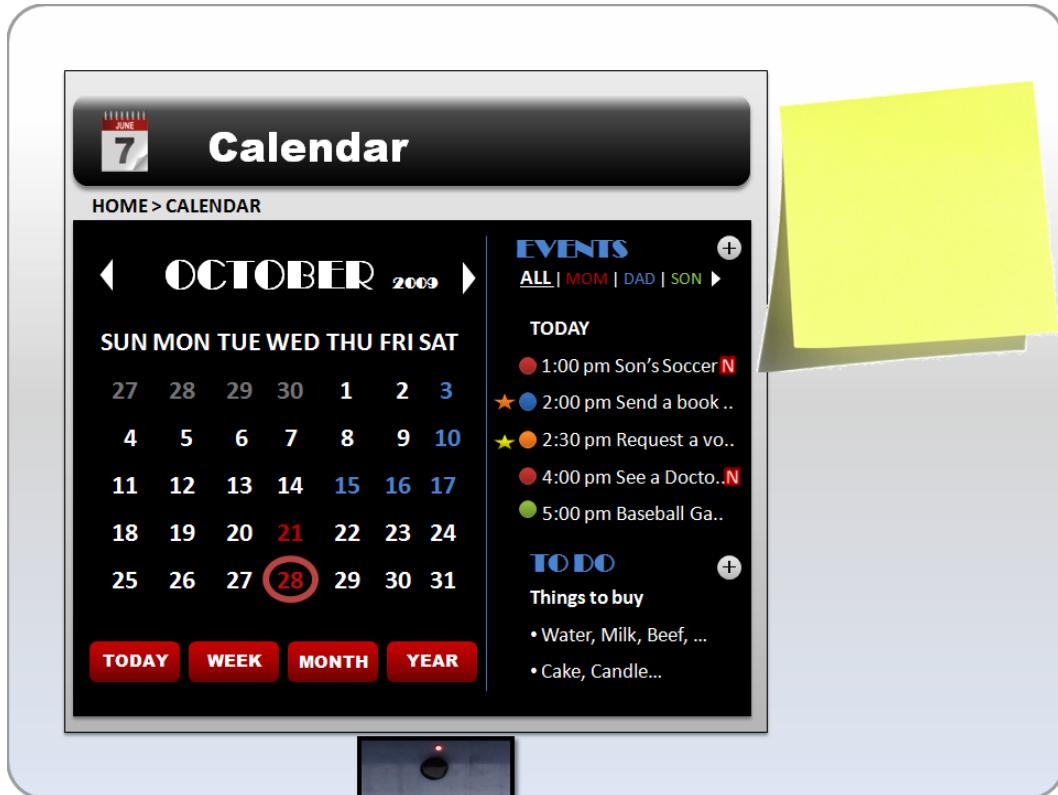


5. Screen of choosing a recipient. This screen only contains recipient icons to send.

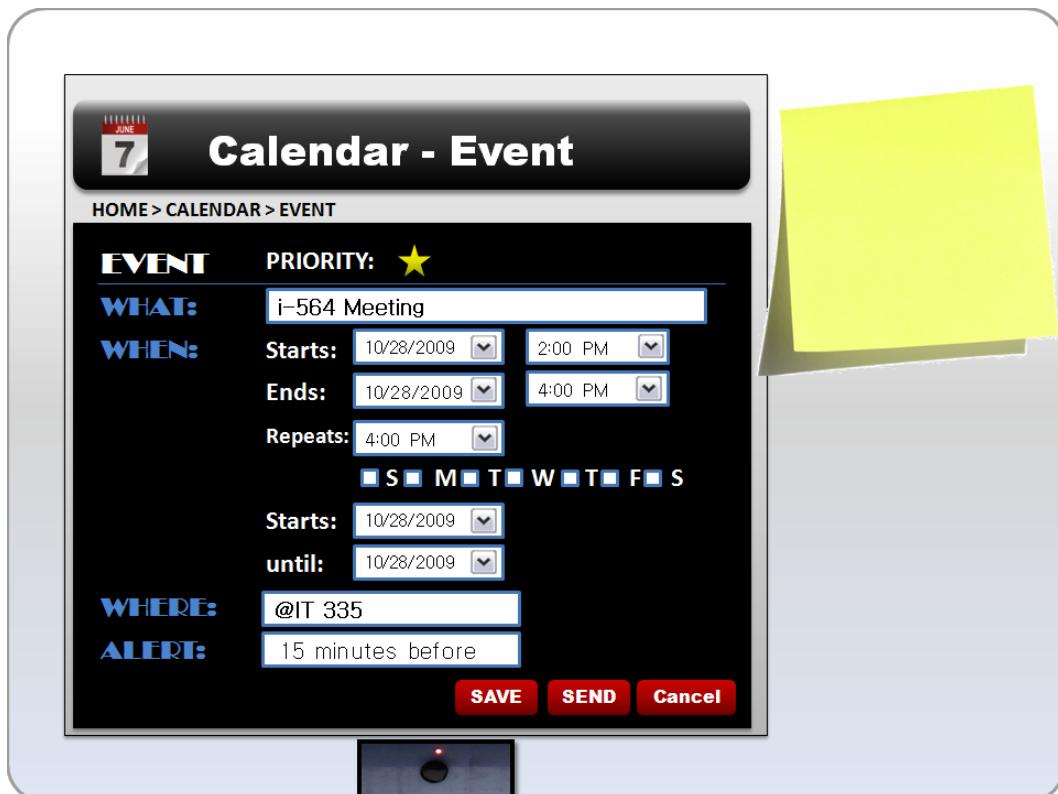


6. Screen of calendar. Because it contains lots of text-based information, we differentiated information with colors, icons, and straight bars. In this screen, users can see who has which events, what event has what priority, and so on.





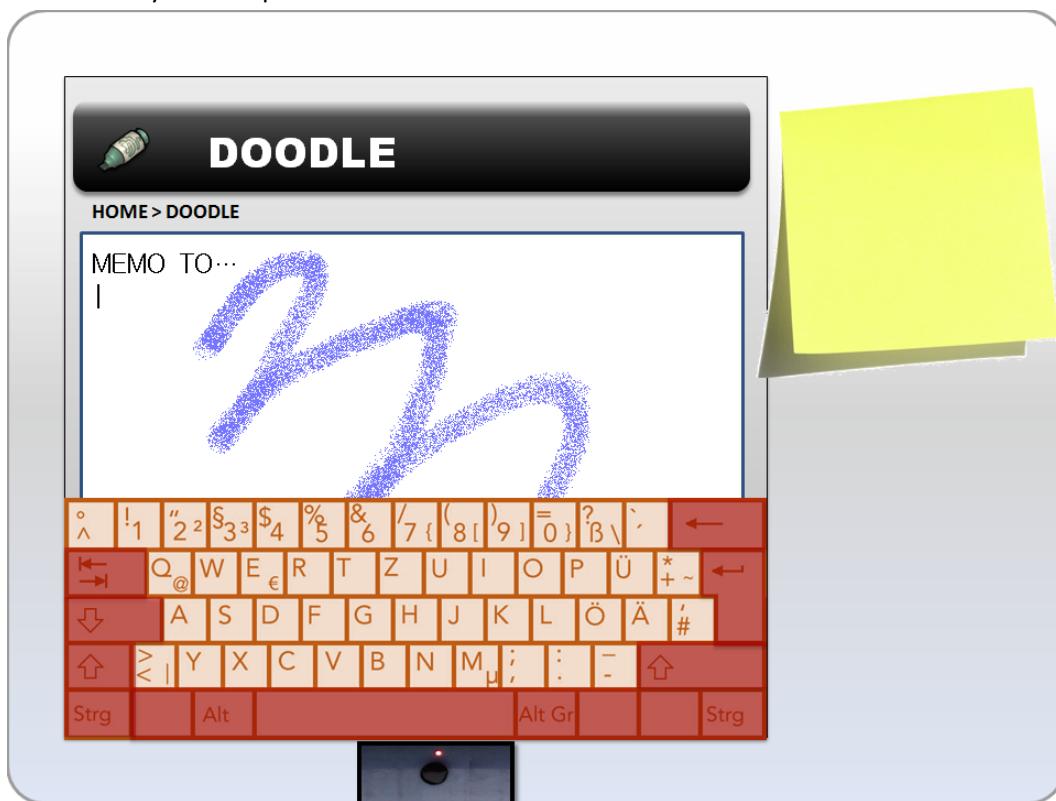
7. Screen of an event detail.



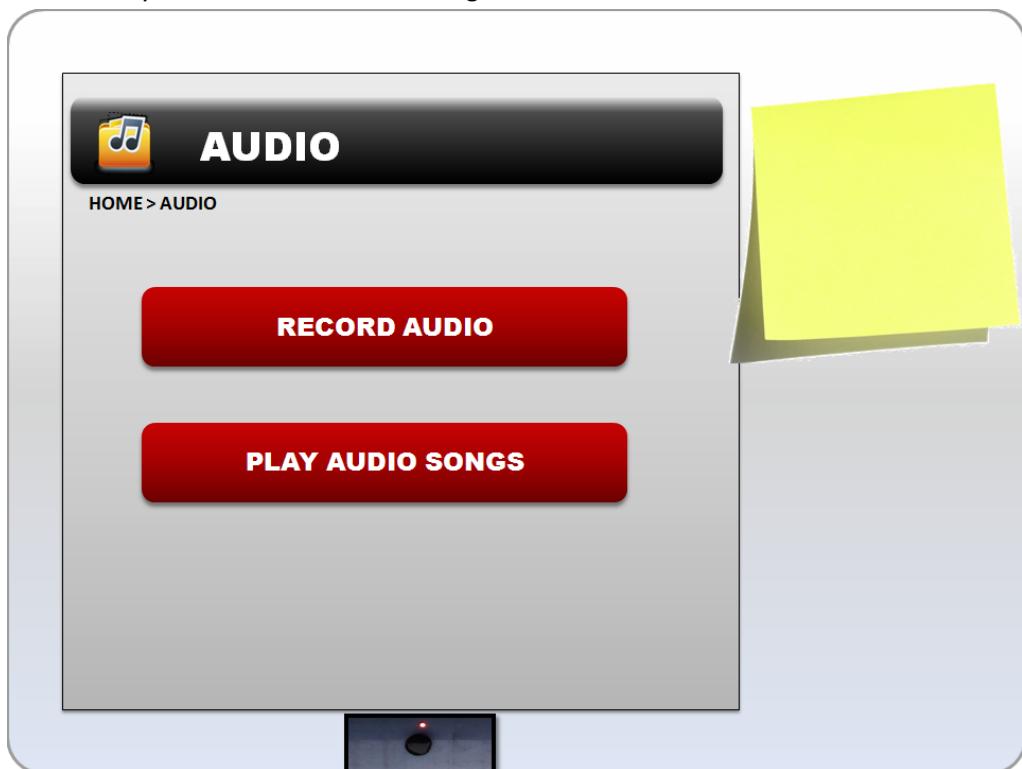
8. Screen of doodle function. This is done with a touch-based input.

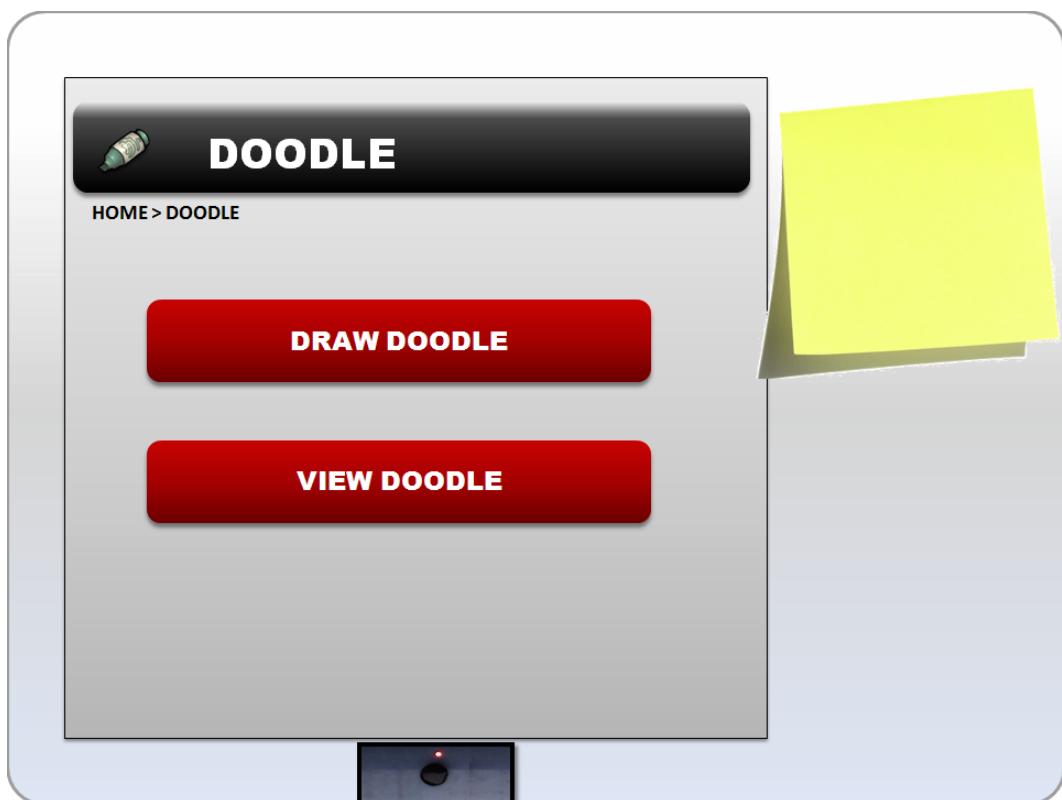
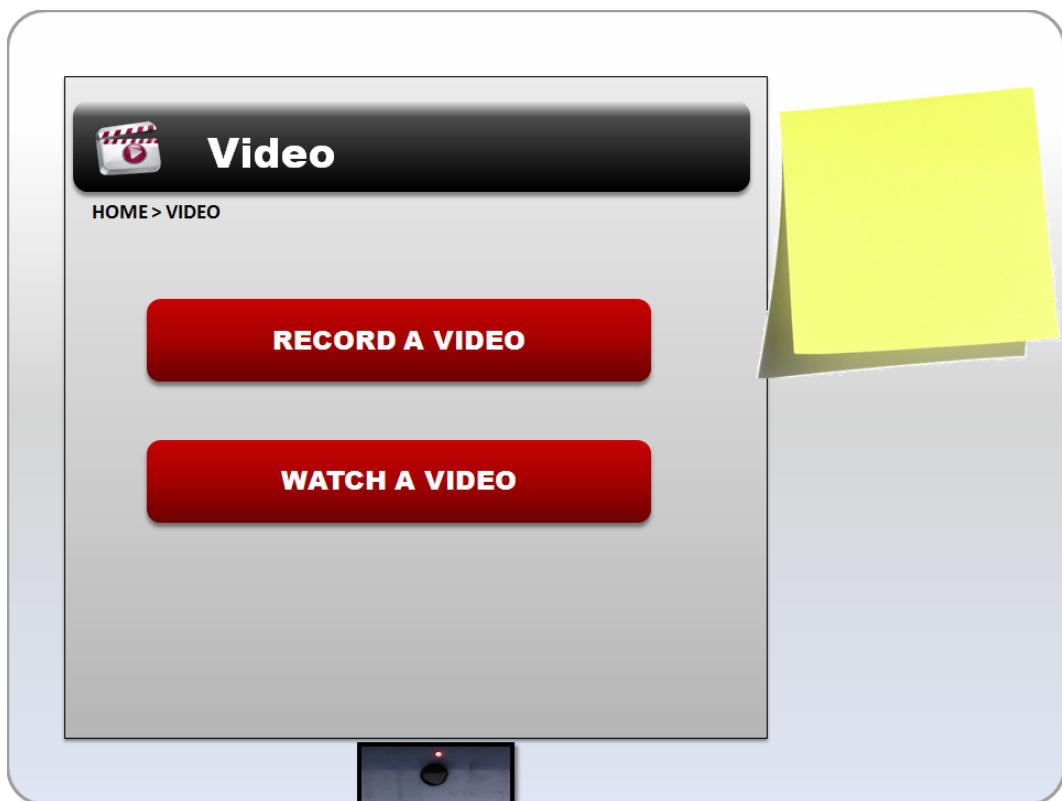


9. Screen of keyboard input.

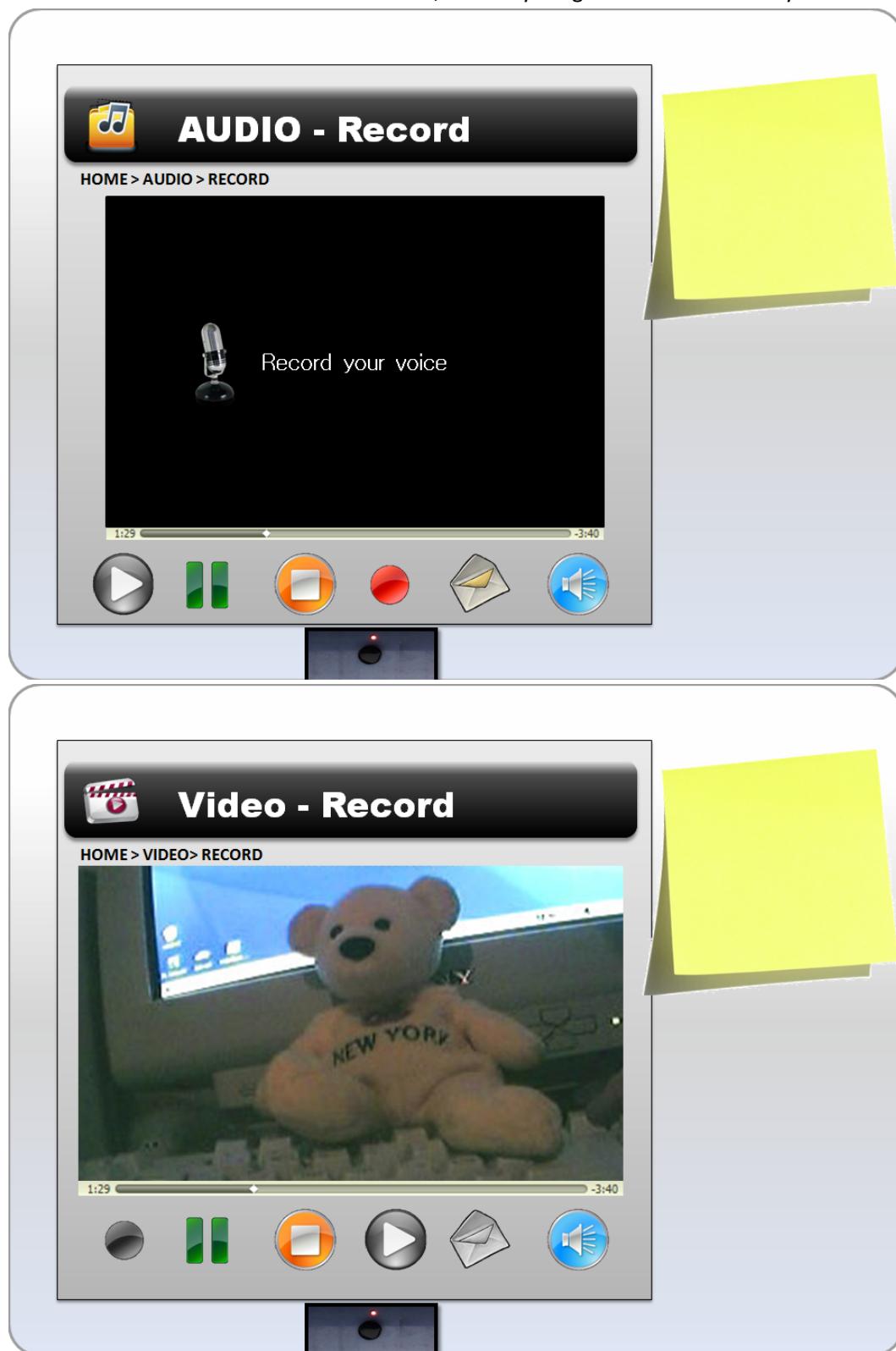


10. Screen of audio home. All the first screen of each feature has only two or three buttons intentionally for intuitive understanding of overall features.

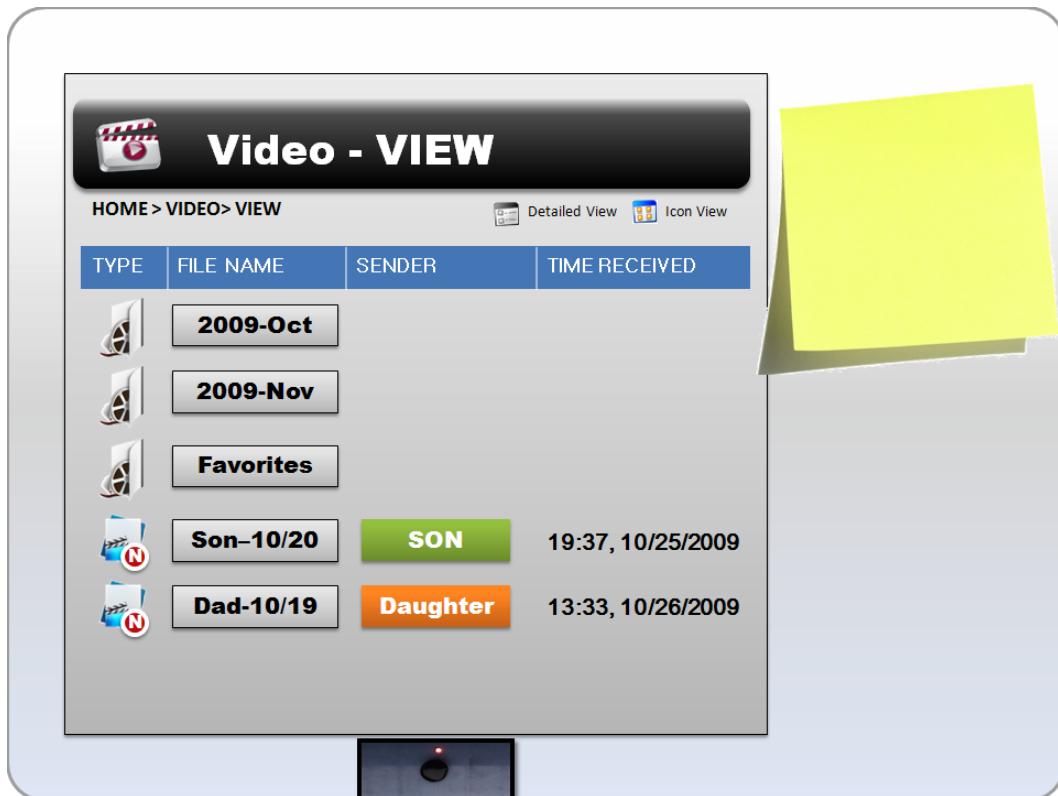
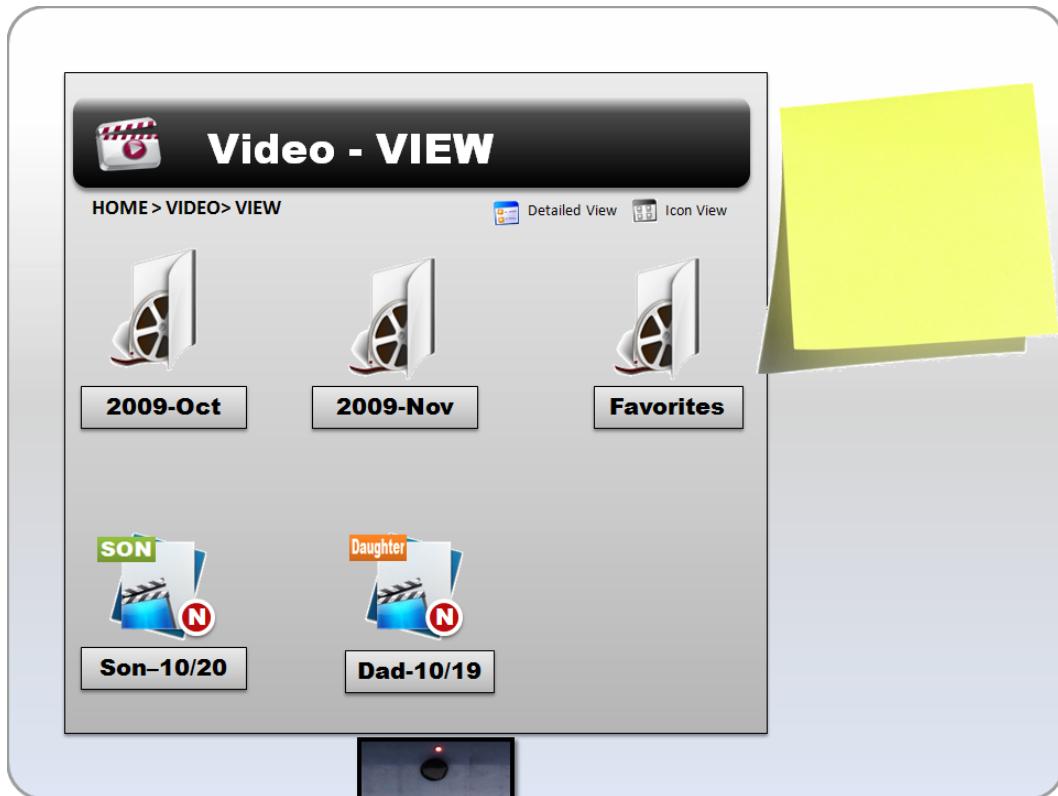




11. Screens of record function. As explained in the low-fidelity (early prototyping) section, these screens have minimum number of buttons, so that younger children can easily use.



12. Screen of file view. Although basic view is set to icon view, users can change it to detailed view.



Cognitive Walkthrough

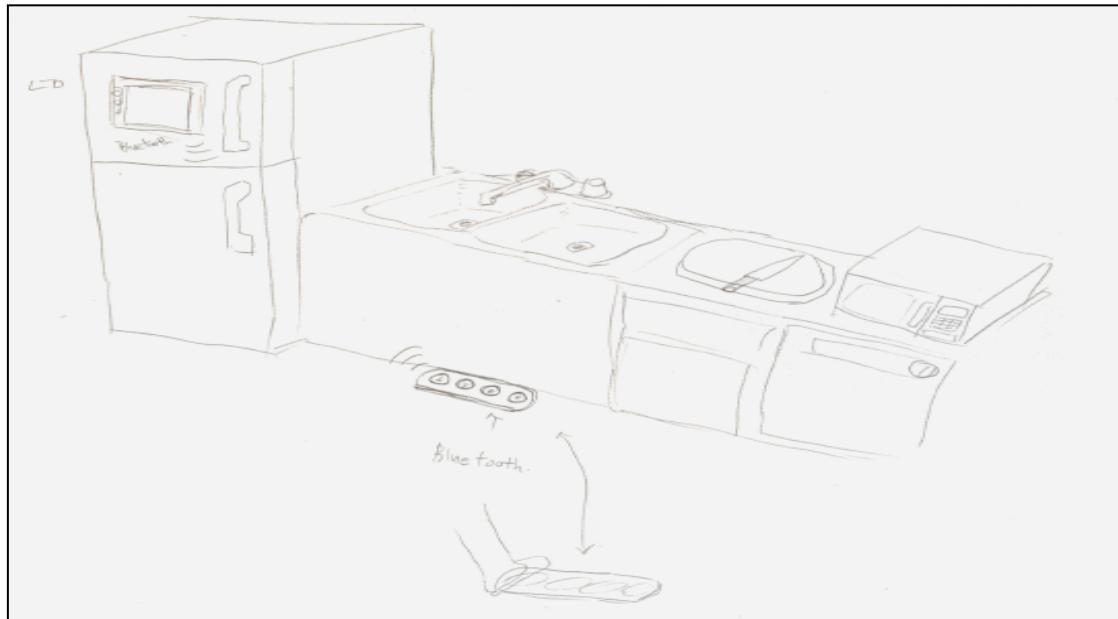
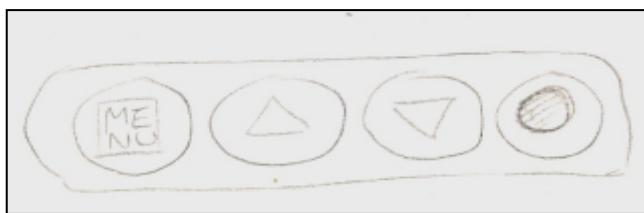
- After initially designing the paper prototypes, we performed cognitive walkthroughs among ourselves to try and find any flow deficiencies and improvements. This allowed us to find few of the problems which we had never anticipated while working on the paper prototypes. Based on the feedback which we received from the users, we tend to observe a pattern where users look for certain keywords and are particular about them. For example, one of the users wanted to see the term 'message' for sending any message. We also found that this keyword depends on a few factors, and are not the same for all users. This would be a labeling concern, and there needs to be some changes with that.
- The other issues which we encountered were related to certain features which were entirely looked over. For example, the file management system to delete or add a new file was definitely one among them. Since this was a prototype, one of our younger users expected this to actually work. She expected to be able to hear or view the message which she recorded before sending it to someone. This is an interesting proposition to have a preview option before a message is being sent and would definitely be a good additional feature.
- There was also this concern that, some icons in the playing video function did not have a matching text to convey what it meant. That is, there is no text under the playing button, stop button, and sending button. So, this resulted in many users asking what these icons meant, because it obviously was not very intuitive enough for some users such as young users and old users. The main issue was with the send icon which had the image of an envelope with a paper inside. This was not construed to be for sending by many users.

Suggested Changes

- The major change would be to allow users to manage files. This would include adding features like adding a file, removing a file, and renaming a file, etc.
- The other change would be to include a translucent keyboard which pops up while editing an event in the calendar. Even though this may not completely solve the problem of real estate occupancy by the keyboard, it can somewhat minimize the effect because of its translucence.
- The navigation methodology needs a makeover, by using more visual cues and less textual content. For example, once the user is inside the audio section, there could be small icons below which could take the user to other sections like video, doodle, etc.
- Minor change will be a customizable color scheme. Because our high fidelity prototype has red-colored scheme, one user told that red button gave him a hidden important message so that he needs to push the button although it was not really important.

Design Wish List

- **Advanced E-book function:** this function is not just to show text of the book content but also to speak its content with several voice options such as voice of old men, old women, younger men, and so on. Although this might be done with a machine-voice, it will entertain a person who is doing other things at the time.
- **Bluetooth-based button:** We assume that one of the users who use our Home Message Center most frequently may be a mother. So, we put some external button set which is a Bluetooth-based so that she can put a button to choose a menu of our Home message center while she is standing when she is cooking or she is doing other things. This will prevent stopping and choosing a button from what she is doing.



Appendix

- Address of our High fidelity Prototype:
<http://mypage.iu.edu/~sungmoon/i564/Prototype/index.html>
- Address of our High fidelity Prototype for presentation:
http://mypage.iu.edu/~sungmoon/i564/Prototype_wLink/index.html