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Mulberry HCI Project Team  
Address Book – Final Recommendation  

Email is an extremely popular form of communication. People collect numerous addresses and an address book, to store contact information, is a necessity within an email program. One of the problems we found during our tests of the Mulberry interface dealt with people not using the address book because it was too difficult. The address book is such a useful feature that the Mulberry team decided to examine the problems and re-design the address book.

This paper is going to describe: the approach to finding the problems of the address book, results of all testing, and present a final recommendation concerning the re-design of the address book.

**Approach to finding the address book problems**

One of the first methods that the HCI Mulberry team practiced to find out issues people were having with Mulberry was Contextual Inquiry. This method involves observing and interviewing users in their work environment. We observed and watched students go through their email. When asked about address book usage, people expressed difficulty with setting up and using the address book.

Next the HCI team performed Heuristic Evaluations on the interface. As part of this evaluation the group critiqued the interface based on a set of design principles as stated by Jacob Nielsen in his chapter in Usability Inspection Methods (1994). The group felt the address book interface repeatedly violated Neilson’s fourth heuristic known as Consistency and Standards. Users should not have to wonder whether different words, situations, or actions mean the same thing. The interface is inconsistent with address book terminology. The address book is called contacts as well as address book. The address book icons such as “Single” and “Group” are unclear to users because they are not standard buttons.

Lastly, the HCI team performed Think Alouds to see how new Mulberry users reacted to address book tasks. Our Think Aloud participants were given three tasks, 1. Create a new address book, 2. Add an individual to the address book, and 3. Add a group to the address book. Most users did not have any problems creating a new address book. When asked to insert an address to the default address book, users did not know that they had a default address book already created for them. The other problem was inserting contacts into the address book. The interface contains a panel that displays a list of contacts. Users would click on the “Full Name” label to add a contact, instead of clicking on the “Single” button. The “Single” button was unrecognizable to people and a couple people knew to click on the button because they read the tool tip. Adding to groups was another problem because some people do not understand groups. The tasks used in think aloud testing informed the group about problems people had with simple tasks in the address book interface.
Lastly, the Mulberry team found that students tested in the investigation phase do not use the address book frequently. To get more feedback on this part of the interface, the team decided to query the Mulberry discussion list to get a feel of how different types of users use the address book. This list helped the team identify more problems with the address book. Some of the problems collected from the Mulberry discussion lists are stated below:

- Capture problems
- Layout problems
- Changing an individual listed in multiple groups does not change the individual in all groups
- Sorting by first name

**Approach to Re-design**

We prototyped new versions of the design and tested the prototypes on actual users. The Mulberry team tested a total of four prototypes, two paper prototypes and two computer-based prototypes. The team completed iterative testing with many users. This next section will discuss each prototype of the address book in detail.

**Paper Prototype 1**

The first paper prototype was very similar to the current Mulberry interface version 3.0. We removed the “Single” and “Group” buttons and added “Add” and “Remove” buttons to the toolbar. When the user selected “Add,” a dialog would pop up prompting the user to add either a single contact or a group. The appropriate dialog would pop up depending on the user choice. If the user selected “Add a single contact,” then the current Mulberry single dialog would pop up. If the user selected “Add a group contact” then the current Mulberry group dialog would pop up. A user could still add a new address book by selecting the new button.

We immediately got rid of the three icons with diamonds and check marks that allow the user to select open at startup, nickname expansion and search options. Nobody tested were able to tell us what those options were, so we took them away and decided to place them somewhere else on the screen.

This design tested fair because people were unsure if the “New” button would allow them to create a new address book or a new contact. Most people did understand that the “Add” button meant to add to the address book. Another problem was that people kept pressing “Open” to open the address book. They thought they needed to open the book before adding addresses. This was an unnecessary step since the address book was already open.

**Paper Prototype 2**
For the next iteration of the paper prototype we based our design decisions from the test of the previous prototype. Since people had problems with “New” we changed the toolbar button to “New Book.” We kept “Add” and “Delete” but got rid of the extra dialog. In the previous prototype, once the user selected “Add” a dialog box would prompt the user to select “Add a single contact” or “Add a group.” Instead we removed this dialog and made one dialog that allowed the users to add single or a group.

This prototype tested well. Everyone was clear with the “New Book” button. People were unsure about how to add groups. They just assumed that add meant to only add a single contact. After selecting the add button they saw that groups could be added from the same dialog. The tests went fairly well, so we decided to begin computer prototyping.

Before we started, we briefly met with the client to show them the paper prototypes and to get feedback. It was suggested that we remove “Add” and “Delete” from the main toolbar and put them in another toolbar where single contacts and groups are displayed. There would be no confusion as to what the user was adding to the address book because the “Add” button would be displayed next to the single and group contacts.

**Computer Prototype 1**

The first computer prototype is based on previous testing and suggestions made by the client.
Adding New Address Book
- “New” button in the toolbar is replaced with “New Book” button.

Adding Contacts
- Removed “Single” and “Group” button and added “Add” buttons to the section where contacts are directly added.
- Replaced “Single” with Individual

Tree Structure
- IMSP address books were replaced with Personal address books and Public address books. When the address book opens up, the only address book displayed will be the personal address book titled “My Address Book (username).”
- Unclear diamonds, with check marks and icons that represented, open at start-up, nickname expansion and search have been removed.

Preview Pane
- The preview pane has been extended to be on one panel instead of 3 tabs.
- There is still a notes panel for people to write notes about the contact
- Save button has been added to allow people to edit within the preview pane.
- A revert button has been added to allow people to undo any editing in the preview pane.
Computer Prototype 2

![Computer Prototype 2](image)

**Figure 2:** HCI Mulberry Project - Computer Prototype 2

**Adding New Address Book**
- “New” button in the toolbar is replaced with “New Book” button.

**Adding Contacts**
- There is only one contacts panel that displays a list of individual contacts and groups.
- Added “Add Single” and “Add Group” buttons

**Tree Structure**
- IMSP address books were replaced with Personal address books and Public address books. When the address book opens up, the only address book displayed will be the personal address book titled “My Address Book (username).”
- Unclear diamonds, with check marks and icons that represented, open at start-up, nickname expansion and search have been removed.
- Tree structure is separated to display personal address books and public address books in separate panes.

**Preview Pane**
- The preview pane has been extended to be on one panel instead of 3 tabs.
- There is still a notes panel for people to write notes about the contact
Address Book Terminology Testing

Besides testing the design of the address book interface we also surveyed our users with their knowledge of address book terminology such as capture and expansion. It is important that terminology used in the Mulberry interface is both consistent and understandable by the majority of users. Eight users were given a survey that asked them to define address book terminology. 87.5% (N = 7) of users correctly defined groups and add to contacts. 100% of users correctly defined address book, contacts, and add to address book. 25% of users (N = 2) correctly defined expand address and 37.5% of users (N= 3) correctly defined capture address.

It is important to note that all survey participants were Carnegie Mellon University students, students who are usually trained in the functionality of Mulberry as part of their curriculum. It is assumed that the general population would be less familiar with the address book terms used in this survey. The results of the survey will be included in the final recommendation section of the paper.
Address Book Layout Testing

In Mulberry, users can have many different layouts of the address book. It was suggested by our client that we test different layouts to see which users prefer. The layouts tested are shown below. The preferred layout will be stated in the final recommendation section of the paper.

Figure 3: Layout #1

Figure 4: Layout #2
Figure 5: Layout #3

Figure 6: Layout #4
We also asked our users how they would like their contacts to be displayed. Users have a choice to display contact information such as, full name, phone, email or nickname in the display panel. Currently, the default is to display the full name of the contact in the display panel.

The preferred layout of the address book interface and contact display list will be stated in the final recommendation section of the paper.

**Final Address Book Recommendations**

![Final Address Book Interface](image)

**Figure 7: HCI Mulberry Project - Final Recommendation**

**Adding Contacts**
- Removed “Single” and “Group” button and added “Add” buttons to the section where contacts are directly added.
- Replaced “Single” with Individual
Adding an address to the Address Book
  o Capture address has been changed to “Add to Address Book.”

Tree Structure
  o IMSP address books were replaced with Personal address books and Public address books.
  o When the address book opens up, the only address book displayed will be the personal address book titled “My Address Book (username).”
  o Unclear diamonds, with check marks and icons that represented, open at start-up, nickname expansion and search have been removed.

Preview Pane
  o The preview pane has been extended to be on one panel instead of 3 tabs.
  o There is still a notes panel for people to write notes about the contact
  o Save button has been added to allow people to edit within the preview pane.
  o A revert button has been added to allow people to undo any editing in the preview pane.

Address Book Pane Recommendations

Address Details Columns
The open on start, resolve nickname and allow search columns in the address book directory pane should be hidden from users by default. Users should be able to show these columns either through options in the Preferences dialog, through the address book manager dialog, through the address menu, or through the context menu for the address book. Move the three checkboxes on the directory tree and address book manager to the top level of the address menu and context menu for a selected address book. Users should still be able to access this functionality through the details dialog for the address book. All are set for the user’s main personal mailbox by default.

Capture Address Edit Functionality
When users capture an address to their address book (either manually or automatically) feedback telling users that the address was added is important. It is recommended that the edit dialog always be shown on capture as the default. Most users will probably not want to change this setting; however users should be allowed to change this setting in the preferences dialog (especially with automatic address capture.)

Address Book Terminology
The results of the survey given suggest that users are equally familiar with the terms contacts and address book. These terms are used interchangeably throughout the Mulberry interface. To match additional suggestions given in this document, it is suggested that the term address book be used instead of contacts for the main address book tab. This term should be used in other areas of the interface where contact is currently used.
Add to address book should be used instead of add to contacts and capture address in the main Mulberry interface, such as the context menu of an individual email. Capture address should only be used in specified sections of the preferences dialog where that terminology more accurately reflects automatic address capture. More details on this can be shown in the address book tab section of the preferences document.

It is suggested that the term expand address be kept in the Mulberry interface. The majority of users do not use this functionality and there is no better alternative to describe this functionality to users.

**Address Book Layout**

The Mulberry team tested several address book layouts. It was a pretty close race between layout #1 and layout #4. Layout #1 is very close to the current Mulberry layout and so we recommend that the layout not be changed to stay consistent with previous Mulberry address book layouts.
In terms of how users would like their contacts displayed, having just the full name is adequate since the user can just click on the name and all the contact information will be displayed in the preview pane.

The final address book recommendation adheres to the goal of making the address book unambiguous so that it can be useful for all Mulberry users. The Mulberry team is confident that these changes will make the address book clear and easy to use.