Mulberry HCI Evaluation: Folders and Mailboxes Mini-Project

Final Report

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Introduction

Before embarking on this sub-project, the Mulberry team had already performed over 100 user tests. During those experiments we learned a great deal about the problems with folder and mailbox management. In response to user difficulties in this area some general design principles were developed from which our solution was developed.

**Principle 1: Do not duplicate instances of the same information.**
In the current version of the application if the user has one email account, the word inbox appears in three places on the left-hand pane. Even our most advanced computer users had trouble creating sub-folders, unable to discern which inbox to select.

**Principle 2: Separate private and shared mail.**
To many users the concept of a shared mailbox is unfamiliar. Furthermore our subjects were often hostile to the idea that their email could be anything other than private. Better separation between public and private mailboxes would make novice users feel more secure.

**Principle 3: Only show users the most relevant information.**
Currently the left pane has many purposes. Not only does it show users all subscribed mailboxes, it is also the place where they browse through the unsubscribed ones. As well as being confusing this assaulsts the user with information not necessarily relevant to their every-day email reading tasks.

**Principle 4: Do not reinvent the wheel.**
Most people who use mulberry have experience with other email clients. In redesigning existing functionality we want to make sure that we followed as many common conventions as we could. In addition, we want to use a minimum of non-standard widgets.

**Principle 5: Put commands in context.**
Our solution makes many functions accessible directly from the graphical areas they affect. This approach solves two persistent problems, locating a function, and defining its scope.
Separating Private, Shared, & Public Mailboxes

In keeping with our second principle our first recommendation to better organize the left-hand pane is to split it up into four sections.

- My Mail
- Shared Mailboxes
- Public Mailboxes
- Cabinets

These sections should each have a raised bar indicating its start. In addition, the bar will have the expand/contract arrow on the left. (The same arrow that is common throughout the application.) Clicking any where on the bar will expand or contract its section depending on its state when clicked. Please see our prototype to see this functionality implemented. Also see the palettes in Macromedia’s Flash MX for similar functionality.

The division between public and private is understood well by users we tested. Although the distinction between shared and public is less clear. Nevertheless, the server advertises these categories to the client. Making them meaningful is partially a function of server and mailbox administration. At CMU some shared mailboxes our shared to all people making them virtually indistinguishable from public mailboxes. However we feel that a client that makes effective use of the distinction will encourage good administration. Either way these distinctions will not interfere with normal email reading, and should fail gracefully if a server is configured poorly.

The cabinet section allows continuity with current versions of the application.

The administration tool should be able to hide any of these sections from users. It should also allow administrators to subscribe users by default to public and shared mailboxes.
**Inside the My Mail Section**

When we asked users to give definitions of words common in email, we learned a great deal about the mental models users hold. As a typical user understands it a mailbox is associated with an email account, while folders are within that account. Thus we recommend that the structure of our hierarchy conform as much as possible to that model.

To our left we see an example of what My Mail should look like when a user has only one account. The top level is named Inbox and has a mailbox icon to its left. Everything below inbox has a folder icon.

In the next image we see a My Mail section with multiple accounts. There are no inboxes. The top levels are named for the email address that they correspond to.

In both cases unseen messages are denoted by bold text. The number of unseen messages appears in parentheses to the right of the text.

**Aesthetic Suggestions**

In the images above you may note that we have replaced the current mailbox icon. We thought the current icon wasn’t clear. In testing no user has questioned the meaning of this new icon.

Another aesthetic suggestion is the blue and white background and the extra space between the items on the tree. Both should enhance readability of the data within that pane. However we did not test this in our prototype. Consider it a design suggestion.
Our testing showed that the process of subscribing to public mailboxes was extremely difficult to even experienced users. Most subjects did not realize that they needed to create a display hierarchy to achieve that goal.

In our solution we wanted to make that as simple as possible. Since public and shared mailboxes were to be section headings, we surmised that there should be some way to find public mailboxes from those sections. The simplest way we could think of to do this was by using an HTML link. These are universally known widgets. No user we tested misunderstood their function. Our testing also showed that most users when asked to subscribe to a public mailbox (cmu.misc.market) first expanded the public mailbox section.

Many other applications now use HTML style links to initiate actions. These include Windows XP folders, Microsoft money, office XP, and Kazaa.

The link, which states “Find Public Mailboxes” or “Find Shared Mailboxes”, takes users to a subscription dialogue. This dialogue is described in detail later in this document. This link should always be the last item in a section, and our only found in the Shared and Public sections.
Mini-Toolbar

When users are looking to do something, the first place they look is at the object they want to manipulate – or in some cases, the place they want the item to appear. The next thing they do is to look for a way to do this. Context menus (discussed in the “Context Menus” section) help users find commands where they want them. But putting the tools nearby that they’ll use to manipulate the objects is also useful.

In the user tests we did in Mulberry, users often had trouble finding out how to create new Folders. Part of this occurred because they couldn’t find the right place to execute the command, and part because they couldn’t find the command. We’ve renamed the “Create” to “New Folder”, which will help them find the command more easily when they are looking in the right area. We’ve also eliminated the duplicate “Inbox” items that confused users when the right-clicked to create the item. And last, we put a button immediately near the locations that they can create a new folder. In our user tests on the new prototypes, users almost invariably immediately clicked on the button – where the previous task often took many minutes to find the option, most users found the button within several seconds.

We also placed other relevant items near the relevant objects, the most important being the button. Users who previously might have had difficulty finding the options for checking mail, subscriptions, and other options on a folder (untested in user tests) found this item within several seconds of searching in the new prototype (tested).

The button is present, although this is not a highly common operation on folders. Another operation which is more common and more desirable for users to use could be placed here instead. Although the toolbar clutters the interface up more, making it more visually busy, it seems to have helped users find the options they were looking for much quicker in the new version.

Also note that the mini-toolbars should match the specs of the customizable toolbar mentioned in the Interface Simplification Mini-Project’s final document’s section on the “Customizable Toolbar.”
Right-Click Menu

When users right-click on items in the left pane in Mulberry now, they get one long list of options that are contextually relevant (See Figure 1) (and some not contextually relevant, like “Check Favourites”). When different things are clicked on, the same list of items shows up, with some grayed out (See Figure 2). These menus have been completely redesigned to:

a) use the new terminology  
b) not show grayed-out items  
c) show only the most contextually appropriate items

Items that were renamed:
- Create… -> New Folder  
- Open… (title is misleading in context and is not contextually appropriate) and Display Hierarchy were replaced by “Find Public Mailbox…” or “Find Shared Mailbox…”

Items that were removed:
- Subscribe and Unsubscribe (moved to the “Details…” dialog)  
- Check Favourites (not contextually appropriate)  
- Search Mailbox… (not contextually relevant enough)

Two of the new menus are shown in Figure 3 and Figure 4.
Main Menu Changes

Many menu changes were specified in the Interface Simplification Mini-Project, but the ones relevant to the Folders and Mailboxes pane are detailed here. Duplicate screenshots are in the Interface Simplification Mini-Project.

In the Edit menu, the main change related to the Folders was moving the “Details…” item to the Folder menu. Users during our tests looked for things they can do with a Folder in the Folder menu, not the Edit menu. During our user tests, people did not look for in nor find it under the Edit menu, though they did look under the Folder menu.

Current Edit Menu

Recommended Edit Menu

In the “Mailbox” menu, renamed to the “Folder” menu, a large variety of changes were made. Grouping and ordering of items was changed, and others were renamed. The changes we recommend are:

- Rename “Create…” to “New Folder…”
- Move “Details…” to the Folder menu under “Rename Folder…”
- Rename “Expunge” to “Expunge Deleted Messages”
- Rename “Synchronise…” to “Synchronize…” for the standard US spelling
- Rename “Clear Disconnected…” to “Clear Disconnected Message Cache…”
- Remove the “Display Hierarchy” submenu
- Remove “Subscribe” and “Unsubscribe” and add in “Subscriptions…” to go to the Subscriptions Dialog
• Rename “Goto Message…” to “Goto Message Number…”
• Remove the separator between “Sort By” and “Goto Message”
• Remove the separator between the subscriptions group and “Cabinets”
• Rename “Make Rule” to “New Rule”
Details Dialog

When users press the button on the toolbar or the Details item in the Folder menu, a dialog comes up with a variety of different information and options for the folder. We guessed that the most common tasks people would want to do and check on a folder were checking it for mail and checking their quota.

Thus, the most common options were moved to the first tab in the dialog – see Figure 2. The first option, how to check for new mail, has a different name and a slightly different popup menu – see Figure 8. All items in the list state how often they check (and if they have different alert styles, they should state that in the popup). The popup also has an item to make a “Custom…” checking time – which is where you create a new style for checking mail.

The “Quota” tab (Figure 6-7) requires several mouse-clicks and an entire tab to see how much of their quota is full. This has been moved to a one-liner in the “Options” tab that does not require the user to find the tab and expand the hierarchy to see their quota.

Most of the other items on the first “Options” tab have been moved to the “Advanced” tab, to simplify the first page.

The “General” and “Server” tabs (Figures 3-4) currently used do not contain any user-editable information. We recommend moving all the information on these tabs into a single “Information” tab, possibly with a scroll pane to scroll through all the information. The access control list tab stays in the same place, although modifications to it are recommended in the Interface Simplification Mini-Project documents, in the section titled “Menus, Popup Menus, and Dialogs.”
Figure 1: The Details Dialog Now

Figure 2. The proposed, unfinished new Details dialog
Figure 3. The current Details->General dialog.

Figure 4.
Figure 5.

Figure 6. The current Details->Quota tab as first seen
Figure 7. The current Details->Quota tab as seen after one mouse click

Figure 8. The proposed popup menu for checking for new mail
Subscriptions Dialog

In user tests, users often had a lot of difficulty finding bulletin boards and subscribing to them. To simplify this process, we made a “Subscriptions…” dialog box. This dialog shows the user all the mailboxes that they are subscribed to and lets them add and remove subscriptions by merely checking a checkbox.

The dialog is accessible by clicking on one of the links in the Shared folder or Public folder panes, for example: *Find Public Mailboxes*

When an item has been checked, it shows up in the left pane under the appropriate heading. It is also subscribed to and automatically checked for new messages (the default probably being check every 60 minutes or something else that is a longer time-span than how often to check the user’s private mailbox).