mobiQuad

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ListAssist

Discovery & Requirements Definition

HCI 440 Usability Engineering—Spring 2008   Group 4

Project Overview

At mobiQuad, we know **you lead a busy life.** Though everyone is a consumer, shopping might not be your favorite pasttime. With the mobiQuad ListAssist, you will be able to easily keep track of all your needed and wanted items. Just think, no wasted time in stores—**more time to do what you really want.**

Multiple lists and categories allow you to navigate various stores with maximum efficiency. Items are easy to enter and lists readily update while shopping. Reminders can be set for regularly purchased items. Lists are easily shared with family or friends. Eliminate the "d'oh!" moments of realizing that-one-forgotten-item yet again.

Value Proposition

For the busy consumer who needs to save on time and ever-rising gasoline prices, ListAssist is a mobile application that promotes easy and efficient shopping by reducing the number of trips to the store and keeping the user organized with their shopping desires. Unlike SplashShopper, ListAssist will also allow for sharing of lists in the event that one may need to delegate responsibilities in the household.

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Jacklyn Amhurst

User Profile

Jacklyn is an active business woman. Her consulting career includes occasional periods of travel, but always makes time to care for her family first. Her husband is supportive and enjoys male-bonding with their two-year old son while she is away. She stays on top of her game and involved with her family by being in constant communication. If she's not at a computer, she's easily reached by phone.

She knows what needs to get done at work and at home. On her commute, she stops by the store in preparation for dinner or the next home project. On her free time, she plans play dates for her son, has lunch with friends, and cuddles up for a movie with her husband.

Background

- Location: Chicago
- Age: 34
- Job: Business Consultant
- Oldest of five siblings
- Wife and Mother
- Enjoys tennis and jogging
- Reads magazines and occasional books

General Attributes

- Highly organized
- Frequently uses laptop and mobile phone
- Believes in relationship and cooperation
- Loves adventure and imagination
- Looks forward to 'date nights' with her husband
- Has a mind that doesn't stop running

Representative User Needs

- Needs to be efficient with time
- Main household manager: needs to keep track of items needed to keep family going
- Wants ability to prioritize tasks and purchases
- Wants to be able to categorize purchases under specific stores with no hassle
- Needs peace-of-mind that things won't fall through the cracks

Competitive Analysis

1 Standard Phone Task Managers

Product Description

Most smartphones and PDA's and many other mobile phones now come with a task manager utility to record to-do lists. On Windows Mobile phones, it is available through Outlook Mobile. Blackberry has its own Tasks application. They are usually simple applications that allow you to enter a list item and possibly set a due date, reminder etc.

Functional Properties

- Allows entering a description of a task that needs to be done.
- Many versions allow you to set a due date and a reminder.
- Some versions will also allow setting priorities, adding notes, etc.
- Most phone task managers collect a variety of information and remind you to complete a task.

Notable Design Properties

- Some phones may allow syncing of your task lists to your computer or to your work task list. These have a variety of requirements. Syncing Outlook Mobile requires use of an Exchange server or else tethering your phone to your PC to sync to your desktop version of Outlook. For other phones, all task entry and maintenance is done on the phone itself.
- Assigning a task to another person may be possible for some applications, but will depend on a number of conditions being met, such as both parties being connected to the same Exchange server.
- There is a lack of consistency among mobile devices. Each phone may have a different task manager with different interfaces. Learning on one type of phone (e.g. Windows Mobile) may not help you use the equivalent program on another type (e.g. Blackberry).

Value Proposition

These built-in task managers are generally free and do not require any additional installation. They are good for people who are on the go and want to make sure they do not forget to do or get something on their list. Learning how to use the task manager on a given device is generally not difficult.

2 Remember the Milk   www.rememberthemilk.com

Product Description

Remember the Milk (RTM) is a primarily web-based task manager that is beginning to move more into the mobile space. Located at http://www.rememberthemilk.com, the site is very slick, built on Web 2.0 technology. The service is free for personal use, but some advanced features require paying for the Pro edition, which at this time costs $25/year.

Functional Properties

- Allows you to add tasks in a variety of categories.
- Allows you to enter a variety of details about the tasks, including due date, when the task repeats (if ever), estimated time to complete, location, notes, etc.
- Will display your tasks by category (personal, study, work) or by due date (today, tomorrow, overdue).
- Allows you to share tasks with other RTM users.
- Allows mobile phone access through a special mobile web site, http://m.rememberthemilk.com. Functionality available includes viewing, adding, editing and completing items.
- Can sync the tasks on your Windows Mobile phone (requires Pro account).
- Allows you to manage your tasks with an iPhone application (requires Pro account).
- Integrates with a number of Google applications.

Notable Design Properties

- The interface on the web site is clean and modern and makes use of AJAX, giving the user a rich and responsive experience, since it allows users to interact with a web page without the whole page needing to be refreshed after each user action.
- Allows you to quickly add a task with just clicking Add Task and then typing in a name. Optional fields are off to the right and the user is free to ignore them if they want.
- The mobile web site for RTM is simple and functional. It allows users to accomplish the same functions as the main websites, though some extra steps may be required due to the limitations inherent in a mobile web site.

- Tasks are displayed by category or due date (if they are due today, tomorrow or overdue only). If there is a method of displaying all open tasks together, it is not readily apparent.

- Marking a task complete is done by selecting it and then clicking a Complete button above the task list. The task disappears from the list and it is not clear how to view completed tasks.

- Priorities are indicated by a colored bar, and until a user learns what the colors indicate, they will need to refer to a key located on the lower right of the page.

- Except for the iPhone (and Windows Mobile, which has only a RTM syncing application), the mobile version of RTM is accessed through a mobile web site. This is convenient only for people with web browsers on their phones.

Mobile web pages allow a less rich user experience than a dedicated application, but require no separate download and install.

- Unlike the main web site, on the mobile site the default presentation of tasks is by due date, rather than category. The organization of information between the two versions is very different. For a user, switching from mobile web to standard web would be almost like switching between two totally different applications.

- Not all optional data is set the same way. Most fields are in a Task box at the right of the page, but setting a task priority requires selecting the task then choosing a priority from the drop down menu labeled "More Actions".

- There is a check box field located next to each task. While in most people's mental model checking a

box next to a task would indicate it is complete, that is not the case for RTM. You click check boxes to select a task or tasks on which to perform actions.

Value Proposition

RTM provides a very modern looking web interface and nice Google applications integration. It would work well for people who need to manage multiple tasks and sometimes share them with others. Most functionality of RTM is available for free. The application is suited well for people who spend a lot of time at the computer or do no mind using mobile web pages on their phones.

3 Splash Shopper

Product Description

SplashShopper is a combination desktop and mobile application created by SplashData, Inc. SplashShopper (SS) is a program dedicated to the creation and maintenance of detailed shopping lists. SS currently comes in mobile versions for Palm OS, Pocket PC (Windows Mobile), Smartphone (Windows Mobile), and Blackberry. Desktop versions are available for Windows and Mac OS. The mobile version costs $29.95 and includes the desktop version. The desktop version may be purchased by itself for $19.95.

Functional Properties

- The application comes populated with a number of lists (groceries, books, travel needs, etc), and each list has a variety of items.
- Allows users to add items that they need from a list.
- Allows users to enter details about items such as price, store, quantity and unit (e.g. 1 bag or 2 gallons).
- Allows users to specify custom properties they want to track per list, such as the aisle in which an item can be found.
- Allows users the option to track prices by store.
- Synchronizes between the desktop and mobile device, allowing data entry to be done on the PC where it can be done more quickly.

Notable Design Properties

- The desktop and mobile versions differ in details out of necessity, but the basic layout and workflow are consistent between the two.
- While also maintaining the same basic layout and workflow, the mobile versions themselves differ in details, each taking into account the particular advantages and disadvantages of their environment (e.g. Blackberry vs. Pocket PC).
- Each list has an All view and a Need view. The All view contains all items entered in the current list, and Need contains all the items that the user has indicated they need.
- Items added in the Need view will be saved in the list's All view, but there is an auto-delete option that

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can be used when adding items meant for a one-time purchase.

- Syncing requires physically tethering to the computer, as the application is not Internet enabled.

- Installation requires first down-loading and installing the desktop application and then connecting the user's phone to their PC to install the mobile version.

- There are over 10 fields on the Add Item screen, which may be intimi-dating for users who just want to add something simple.

- There is no obvious way to move or copy items between lists or to cre-ate a simple one-time shopping list.

Value Proposition

SS offers a lot of functionality and a consistent design across its versions. It would be good for a person who is a serious shopper or bargain hunter who doesn't mind spending a little money now to increase their shopping efficiency. SS could also be good for someone who generally does one or two big shopping trips per month.

Requirements Gathering

Unstructured Interviews

Our team originally had a few different ideas for mobile applications, one being an interactive shopping list manager which would provide the user with an easy way to collaborate and manage her shopping list; another a GPS-type application that would provide more advanced functionality than the current products on the market, such as walking directions.

In order to get a feel for the market need, the mobiQuad team individually conducted unstructured interviews, having conversations that involved asking questions such as "What do you wish your phone could do that it currently doesn't do?", "What types of mobile applications do you currently use?" and "Do you currently track to-do's, shopping lists, and other tasks on your computer locally, through an online service, or directly on your phone?". Conversations were had with approximately 20 people both male and female, ranging in age from 21 to 75 years old. See Appendix, page 14, for additional details on interview questions.

User Feedback

Some of the people we talked to used their mobile device strictly for telephone and text communication. However, those that have a Smartphone (QWERTY keypad, internet access, synchronization with e-mail, calendar etc.) as well as those who use what we'll refer to as a "dumb phone" (numerical keypad, limited web browsing experience if any, etc.), tended to have many suggestions on ways they could use their phone for other purposes. There were multiple suggestions for **augmenting consumer tasks,** such as using their mobile device to make purchases or to in some way help manage this consumer process. Some other suggestions included **enhancing multi-media activities** related to TV, music and picture taking; **providing information** such as consolidated news and local information; **improving existing phone functionality** (usually phone specific) such as adding MMS messaging capabilities to the iPhone, extending the voice memo length, adding "reply all" to text messaging, and improving the Bluetooth capabilities.

Based on the unstructured interviews, mobiQuad decided to design ListAssist to satisfy the market need for helping the user organize and manage her consumer activities.

The users also stressed that the ease and simplicity of entering data directly in their phones was a major requirement for any list management system. As a result of this insight, mobiQuad decided on allowing for alternative data entry mechanisms aside from keypad text entry for greater simplicity and ease of use.

Requirements Gathering

Survey

A structured survey was conducted to help our team determine what types of functionality would be useful to implement for ListAssist. Additionally, the demographics and technological and shopping habits of our user group were determined based on this questionnaire.

User Feedback

We surveyed 80 people total. Most of these people were between the ages of 25 and 35 years old, living in urban or suburban areas and are online or have access to the internet most of the day. They use a variety of phone types including smartphones and "dumb" phones, however the majority of the users surveyed have a "dumb" phone. Those who were most interested in the functionality of the ListAssist frequently write lists prior to shopping and tend to have multiple people living in their household. For a more comprehensive analysis of the survey results, see Appendix, pages 15-16.

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Requirements Definition

Functional

- Users will be able to create, modify, and delete multiple lists of items the user wishes to buy.

- Users may assign lists to different categories.

- Individual items on lists may be added, modified, or deleted at any time.

- For any item on any list, users may define a time to trigger an alert on the device regarding the item.

- Users may allow any list to be updated by one or more other ListAssist users, with the users with permission to update set by the user that owns the list.

- Users may export and send their lists to other mobile devices (either with or without ListAssist).

- Users may import or create lists of ingredients or materials based on recipes or instructions.

Non-functional

- The number of lists and items in the list is limited only by the mobile device's available memory.

- ListAssist will respond to the user's input in less than 2 seconds for every operation that does not require data transmission to other devices.

- ListAssist will complete all data transmission within 2 minutes of the time the transmission is initiated.

Environmental

- The mobile device must consist of standardized mobile phone controls: 4-direction arrow keys, and left/center/right soft keys.

- ListAssist will run on smartphones that have the previously described keys (or equivalent keys).

- For exporting/updating capabilities, the mobile device must support external communications, such as Internet capabilities, text messaging, and/or SMS.

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Requirements Definition

Data

- ListAssist will store data via a database residing on the mobile device.

Usability

- To aid in data entry to ListAssist, which may be complex and time consuming especially for users without full QWERTY keypads on their mobile device, at least one other data entry mechanism must be made available.
- Help for ListAssist will be available from any point within the application.
- Any successful action performed by the user will update the display generated by the application to reflect the action taken.
- Any unsuccessful action performed by the user will display an error message describing what occurred and provide the user an indication of what can be done to correct the issue.

User Requirements

- The user must be able to perform simple tasks on a mobile device, such as highlight objects using the device's arrow keys and manipulating the objects through text-based menus and entering text using the device's keypad/keyboard

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Contributions

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Requirements Definition

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Project Overview, Persona, Appendix, document design

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Requirements Gathering Methodology, launched survey

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Competitive Analysis

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The group as a whole discussed all parts and gave feedback to collaborate. Everyone participated in data gathering and analysis.

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Appendix

Unstructured Interviews

Each member interviewed a handful of people to get a general feel for what application would be of more interest. Here is a sampling of some of the questions asked.

1] What type of mobile phone do you have?

2] If you have a mobile phone, what mobile applications (if any) do you use? Which is your favorite and why?

3] What, if any, applications (other than calling and text messaging) do you currently use on your mobile phone? How often?

4] Is there an application or functionality you wish you had on your mobile phone that isn't available currently or is unsatisfactory in some way?

5] What, if any, mobile applications are you aware of that seem useful/fun but you don't use? Why not?

6] Do you use the organizers on your phone (e.g. calendar, task manager, etc.)? If so, how often? If not, why?

7] Do you have GPS capabilities on your phone? If so, how often do you use it? If not, would you like to have it?

8] Do you currently track to-do's, shopping lists, and other tasks on your computer locally, through an online service, or directly on your phone? If so, which application do you use?

9] Do you currently categorize your tasks or shopping lists? What are the categories (e.g. Work, Personal, School, Drugstore, Groceries, etc.)

10] Would you find it useful to be able to send an e-mail or fill in an online form that would populate a grocery list or update a task list on your phone?

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Survey Questions and Collected Data

The following are the questions used in the structured survey. There were a total of 80 responses. Percentages shown represent the total number of survey takers. Percentages not accounted for represent skipped questions.

1] What is your gender?
[ ] Male   57.5%
[ ] Female   42.5%

2] How old are you?
[ ] Under 17 Years   0.0%
[ ] 18 to 25 Years   15.0%
[ ] 26 to 35 Years   55.5%
[ ] 36 to 45 Years   15.0%
[ ] Over 46 Years   15.0%

3] Which best describes the area where you live?
[ ] Urban   67.5%
[ ] Suburban   32.5%
[ ] Rural   0.0%

4] How many people over the age of 15 live in your household (including you)?
0: 5.0%   1: 23.8%   2: 53.8%
3: 10.0%   4: 6.3%

5] How often do you access the internet through your computer?
[ ] Multiple times per day (online most of the time)   93.8%
[ ] Once per day (online for brief periods of time)   3.8%
[ ] A few times per week   2.5%
[ ] Once per week   0.0%
[ ] Rarely or Never   0.0%

6] Which type of mobile device do you use?
[ ] Blackberry   13.8%
[ ] iPhone   5.0%
[ ] Windows Mobile Device   13.8%
[ ] Other Smartphone   8.8%
[ ] Other (please specify)   51.3%

7] Do you have Internet access through your mobile phone?
[ ] Yes   57.5%
[ ] No   41.2%

8] Have you ever downloaded a mobile application to your phone?
[ ] Yes   41.3%
[ ] No   58.8%

8.1] Do you have any additional comments regarding your experience(s) with mobile applications?
Various answers.

9] Please describe some of your shopping habits.
[ ] Never   [ ] Rarely
[ ] Occasionally   [ ] Frequently

9.1] How often do you write lists of items to purchase prior to going to a store?
N 3.8%   R 18.8%
O 37.5%   F 40.0%

Appendix

9.2] How often do you go shopping and forget something you intended to pick up?
N 2.5%   R 22.5%
O 62.5%   F 12.5%

9.3] Do you have any additional comments regarding your personal shopping habits?
Various answers.

10] If you were able to use your mobile phone to manage your shopping list(s) (i.e. groceries, drug/convenience store, household supplies, etc.). Rate these functions by how useful they would be to you.
[ ] Would NEVER use this
[ ] Would RARELY use this
[ ] Would OCCASIONALLY use this
[ ] Would FREQUENTLY use this

10.1] The ability to save previous shopping lists to be re-called, duplicated and/or edited at a later date.
N 20.0%   R 21.3%   O 37.5%   F 21.3%

10.2] The ability to import ingredients or materials from recipes or DIY instructions into your shopping list(s).
N 17.5%   R 25.0%   O 37.5%   F 20.0%

10.3] The ability to have your mobile device remind you to purchase frequently used items.
N 21.3%   R 35.0%   O 27.5%   F 16.3%

10.4] The ability to send your shopping list(s) to another mobile device that also has the application installed.
N 23.8%   R 26.2%   O 22.5%   F 12.5%

10.5] The ability to send your shopping list(s) to another mobile device that does NOT have the application installed (through a text or SMS message).
N 23.8%   R 21.2%   O 28.8%   F 12.5%

10.6] The ability to update and sync your list(s) through an online web application from your computer.
N 15.0%   R 23.8%   O 32.5%   F 15.0%

10.7] Do you have any other functionality suggestions?
Various answers