

# ROOMY

clutter-free is the way to be

**Group 10**

Tim Adrianoff

Kagonya Awori

Paul Caravelli

Nisha Kurani

Ray Luong

## Table of Contents

Executive Summary.....	2
Design: iPhone App for Parent.....	4
Design: Web App for Child .....	17
Design Rationale.....	28
Flexible Communication.....	29
Accurate Digital Archiving.....	31
Good User Experience .....	33
Retrospective .....	35
Focus Setting.....	36
Contextual Inquiry and Design .....	37
Think Aloud .....	39
Keystroke Level Modeling .....	41
Heuristic Evaluation.....	43

## Word Count

Executive Summary: 499

Design & Rationale: 3004

Retrospective: 2997

# Executive Summary

Upon moving out, children typically leave behind items that parents must sort through to maintain a healthy living space. While some technologies exist to make this decluttering process easier for parents, no single product directly helps parents make efficient decisions on how to sort their children's items. This semester, we were tasked with designing a system to help a family transition from including dependent children to including only independent adult children, specifically to help discard and archive accumulated childhood possessions.

Our team was composed of five Human-Computer Interaction Master's students, four coming from backgrounds in computer science and one in cognitive science. Over the course of three months we employed the techniques of Focus Setting, Contextual Inquiry, Think Alouds, Keystroke Level Modeling, and Heuristic Evaluation to model the work of decluttering and to develop and evaluate a shared vision of how to support this work. Our findings led us to design a system to address the three areas of user needs:

## **Flexible Communication**

To identify what their children want to keep and what not to keep, parents need flexibility in communicating with their children. **Asynchronous** communication emerged as an important, but poorly supported, way that parents currently ask their children about what to do with items. Evidence also shows **real-time** conversations help parents immediately identify and sort items.

## **Accurate Digital Archiving**

To encourage them to help with the process, children should be able to efficiently identify items—both single and groups of items—and let parents know what to do with the items. Should parents ultimately decide to keep an item, they need a way to refer to the stored item by name and location.

## **Good User Experience**

To optimize the experience of the process and make it a pleasant one for both parents and children, the system should be intuitive to use. Without a pleasant user experience, users encounter frustration and inefficiencies. We also find that parents need a mobile experience to efficiently sort items in various locations in their house.

To address these needs we designed a system spanning two platforms: an iPhone application for parents and a web interface for children. To establish a mutual understanding of what to do with belongings, we developed the concept of a digital "card" containing information about an item.

The iPhone application allows parents to kick off the task of creating cards to archive their child's belongings and track information about their fate. This

proceeds in either an asynchronous mode using the iPhone's camera to capture photos, or via real-time videochat with a child.

The web interface lets children start communicating their decisions on items, assigning them fates of "Keep", "Dispose", or "Donate." The child can do this together with the parent through videochat, or on their own after the parent has taken pictures of items.

Our design intends to give parents and children appropriate tools to effect a clutter free family transition. The current report includes a design overview of both mobile and web interfaces, followed by our design rationale grounded in data, and concludes with discussions about the methods used.

# Design

iPhone Prototype: **Roomy**

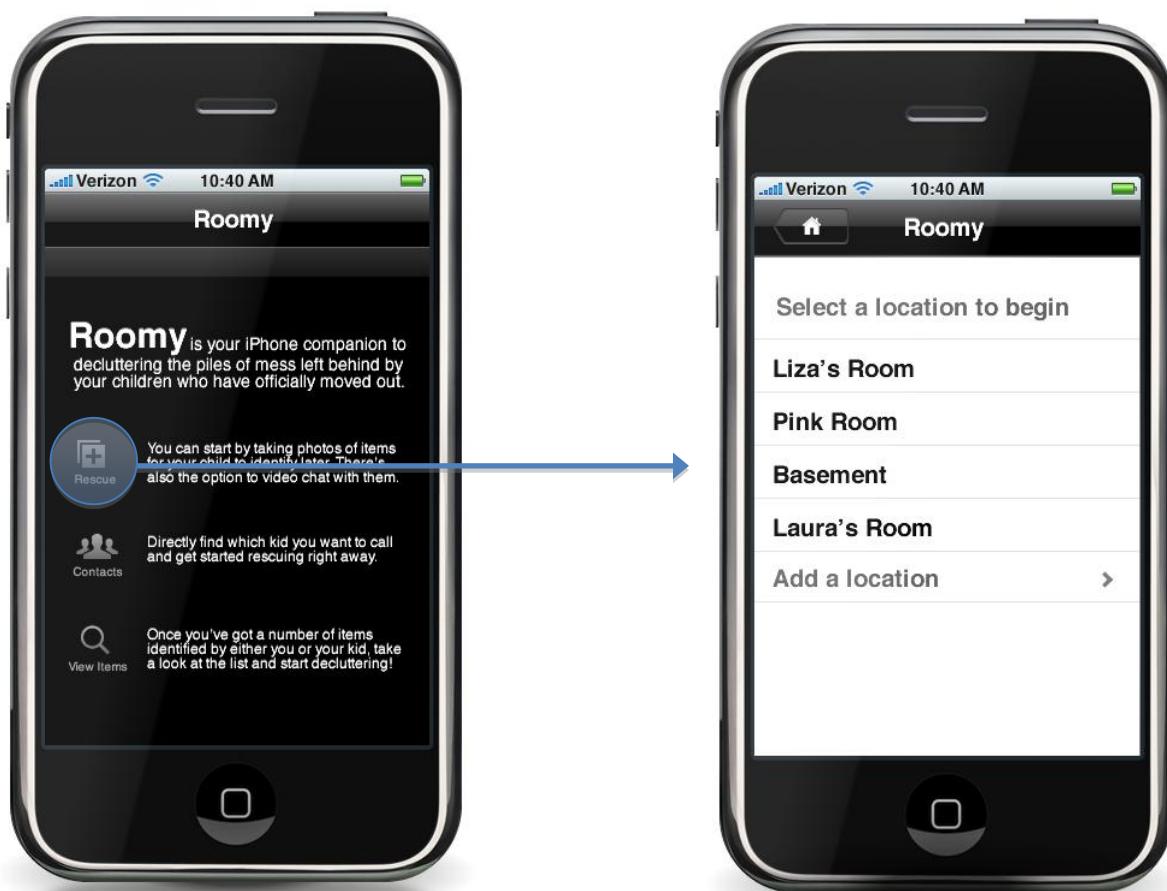
## Home Screen

Upon entering the application, the user reads a quick description of the app. She picks from one of three options: (1) Rescue, (2) Contacts, (3) View Items. First, tapping on the **Rescue** icon lets the user begin an asynchronous “room rescue” where they first enter a location to begin rescuing. Second, tapping on the **Contacts** icon leads the app to a list of the user’s contacts for a more direct path to beginning a real-time video room rescue. Finally, **View Items** allows the user to view a list of all sorted items.



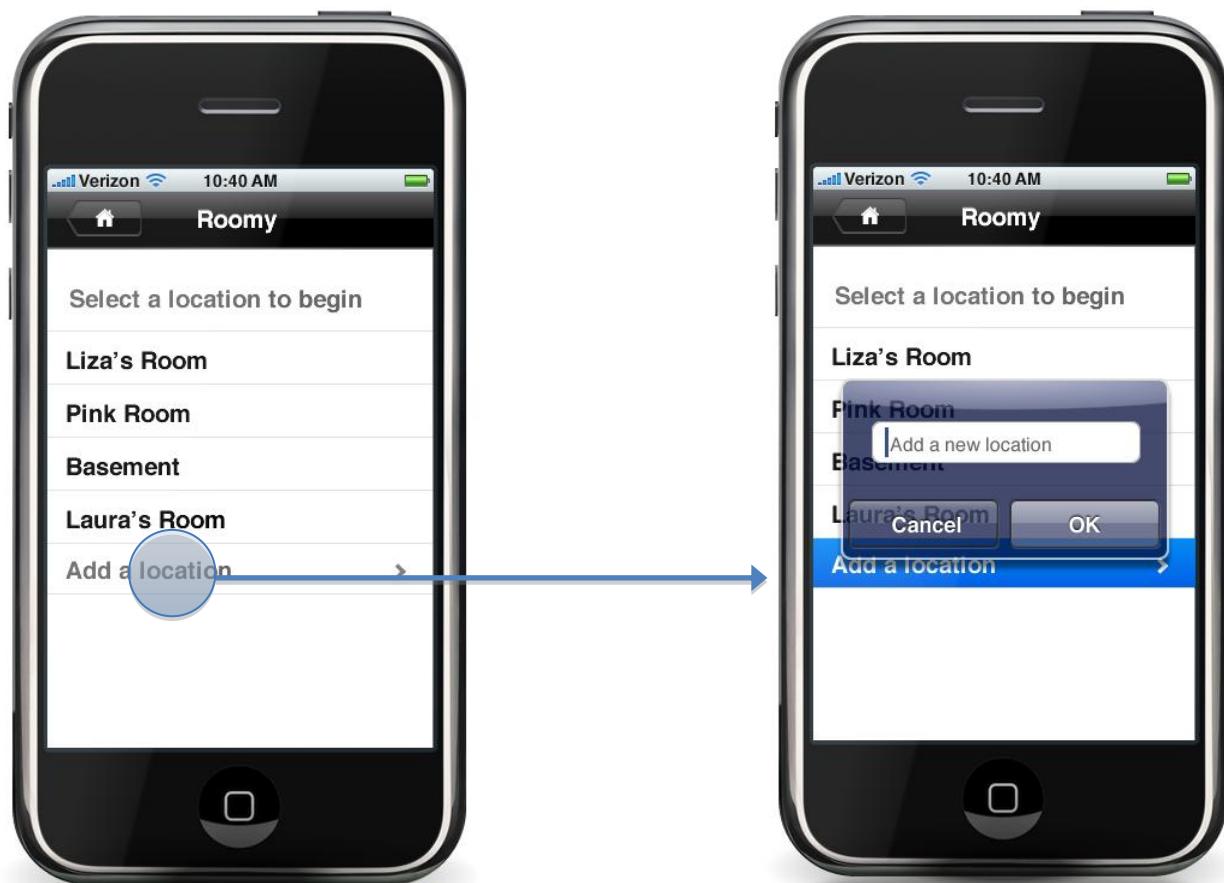
## Select a location to begin

Before allowing the user to start capturing photos of items, the application first asks the user where the rescue will take place. This activity prepares the application to tag all captured items as being found in the location set on this screen.



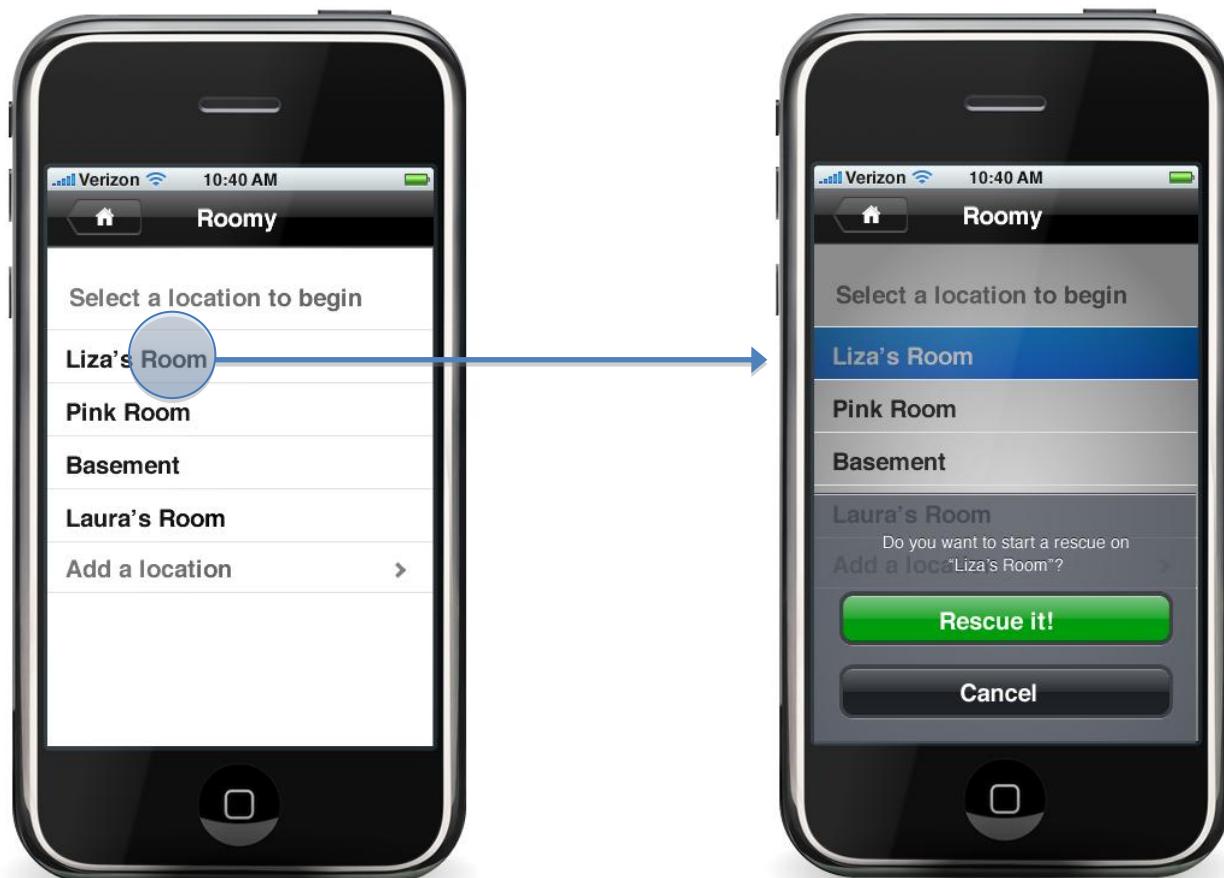
## Add a location

On first launch, the user has the option to **Add a location**. On selecting this option, a dialog pops up to allow the user to add a new location.



## Confirm location

On selecting a location, such as **Liza's Room**, the app asks for confirmation: “**Do you want to start a rescue on ‘Liza’s Room’?**” The user cancels by tapping the **Cancel** button or enters the next screen by tapping **Rescue it!**



## Asynchronous Rescue

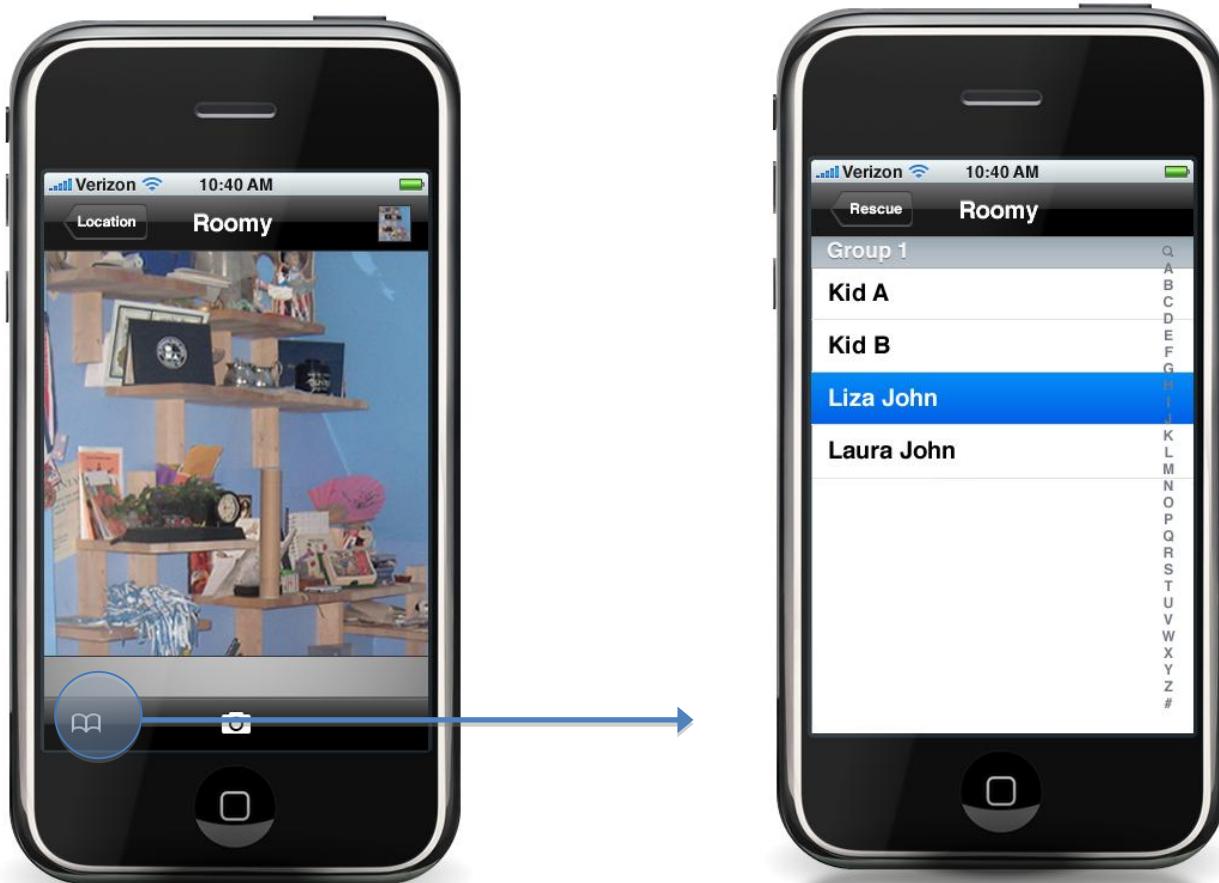
At this stage of the application, the user has four options.

- (1) By tapping on the **Location** button at the top left, they can return to the location screen to reset the room they want to clean up.
- (2) By tapping on the **Camera** icon, the user takes a photo of the current scene. This automatically creates a card—initially untitled—for the child to add items to. On taking a photo, the application will stay in the same screen (i.e. it does not switch to card view), which allows the user to take multiple photos and create multiple cards quickly.
- (3) The top right thumbnail icon brings the user to a gallery of all previously captured cards.
- (4) Tapping on the **Contacts** icon at the bottom left takes the user to a list of contacts they can call to begin a real-time video rescue.



## Contacts

From the list of contacts, the user can either return to the asynchronous rescue mode by tapping on the top left **Rescue** icon or begin a real-time video rescue with their child by selecting their name. In this screen, the user has tapped on "Liza John", which will take them to the next screen.



## Real-Time Video Rescue

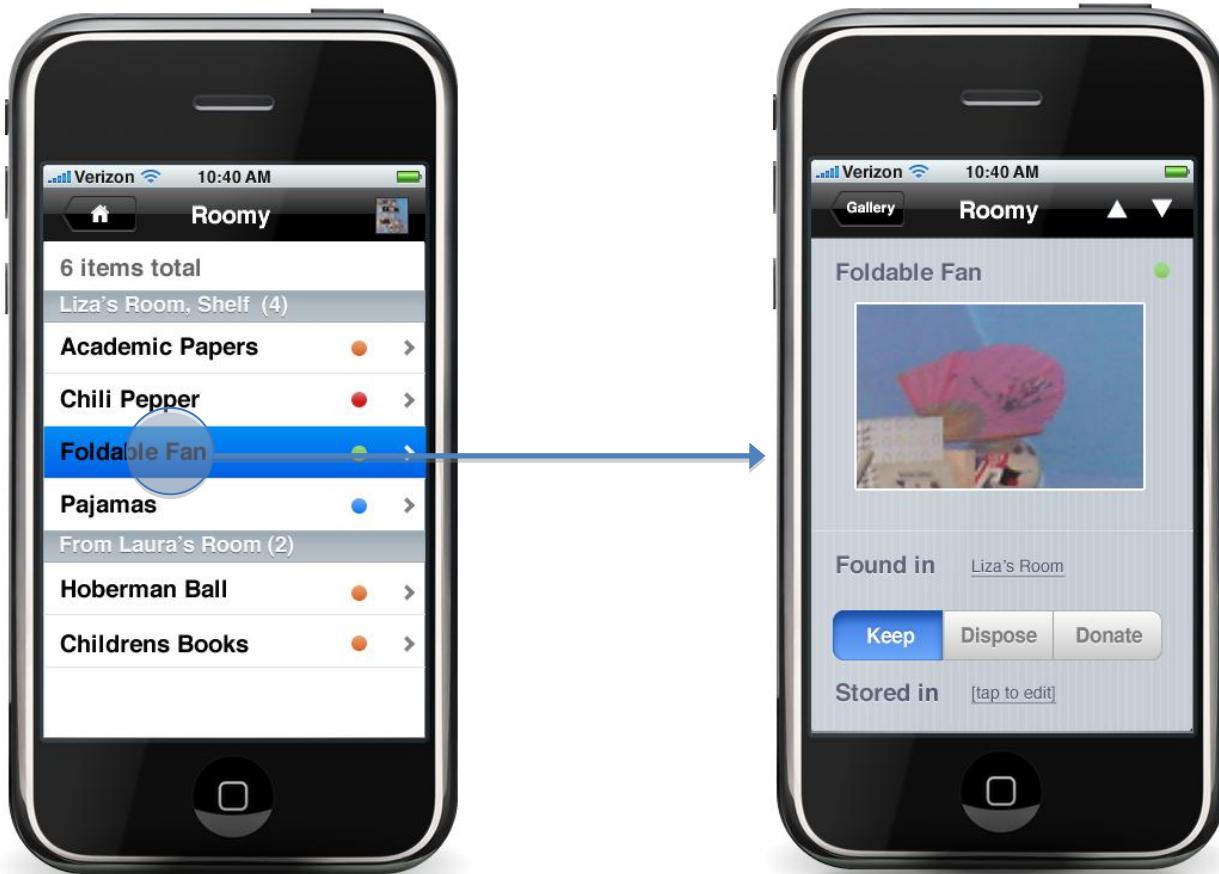
After selecting one of the contacts, the application calls the selected contact to begin essentially a live video chat with the child. New elements on the screen include: "Calling Liza John" and an **End** button, both to indicate the status of being in real-time video rescue mode.



## Card

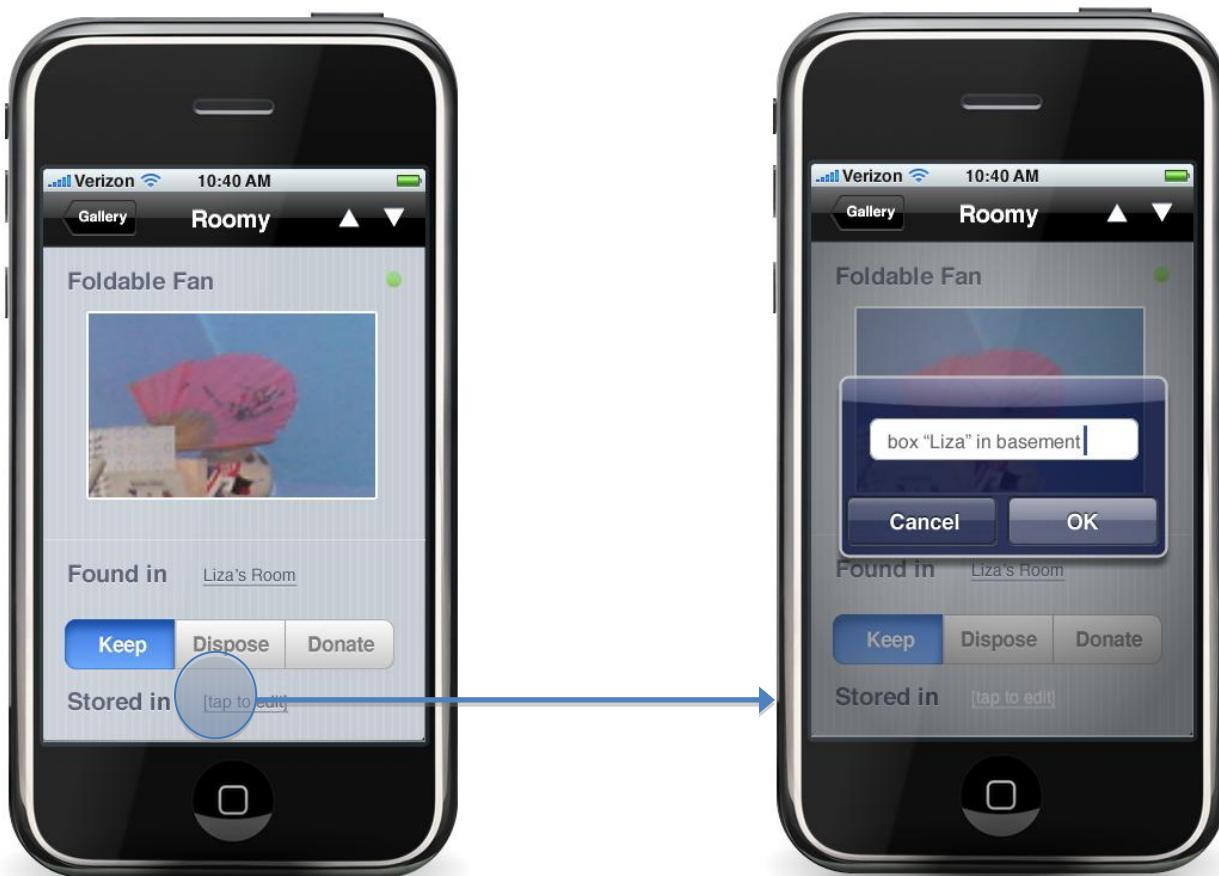
The user accesses an item's card from the gallery or list of cards. Using the up and down arrows at the top right, the user can navigate between cards in the list.

Each card displays information about the item: *Name*, *Sorted Status* (e.g. green for kept), location *Found in*, options for child or parent to *Keep*, *Dispose*, or *Donate*, and *Stored in*. When the child has selected an option to Keep, Dispose, or Donate, the respective button becomes highlighted on the iPhone app. For instance, the *Keep* button is selected here because the child has indicated it is an item they would like to keep. However, the parent has authority to make the final decision on the item's fate.



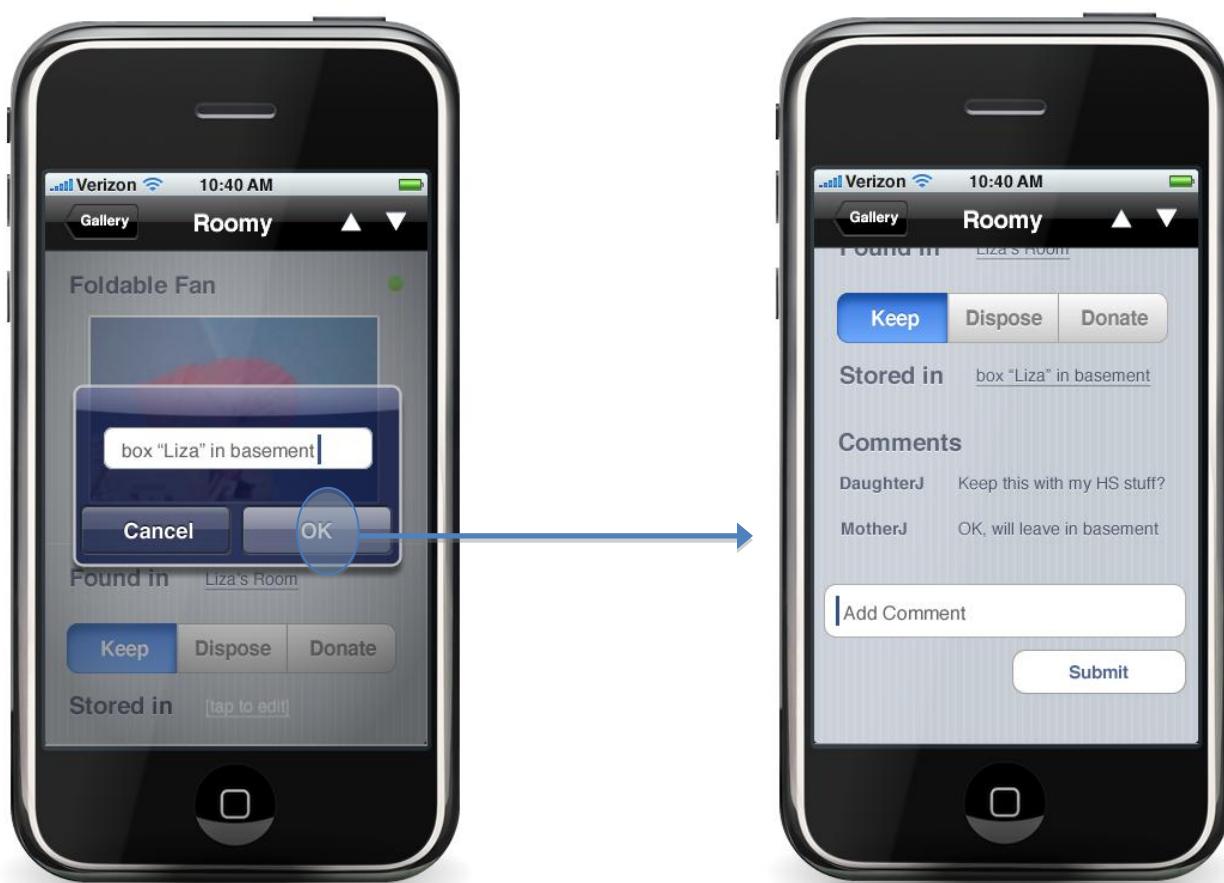
## Card editing

Each underlined label indicates editable text. On initial creation of the card, each label shows “[tap to edit]”, indicating an affordance to edit the value. For instance, this screen shows what occurs after the user edits to *Stored in* value. A text entry box pops up to allow the user to add the location that the item has been stored in.



## Card Commenting

Scrolling down on the same screen, each card also features a commenting system where additional comments can be accessed and added. In this instance, the child has added the comment "Keep this with my HS stuff?" in addition to selecting *Keep*. The parent can respond using the comment text input box, which will then add to the comment wall.



## List of Cards

This screen showing a list of cards is accessed from the home screen after tapping **View items**. As each item in a scene becomes tagged by the child, it creates a new card and places it in the location that it was found (set initially on the Select a Location screen). Each color represents the sort status of each item.

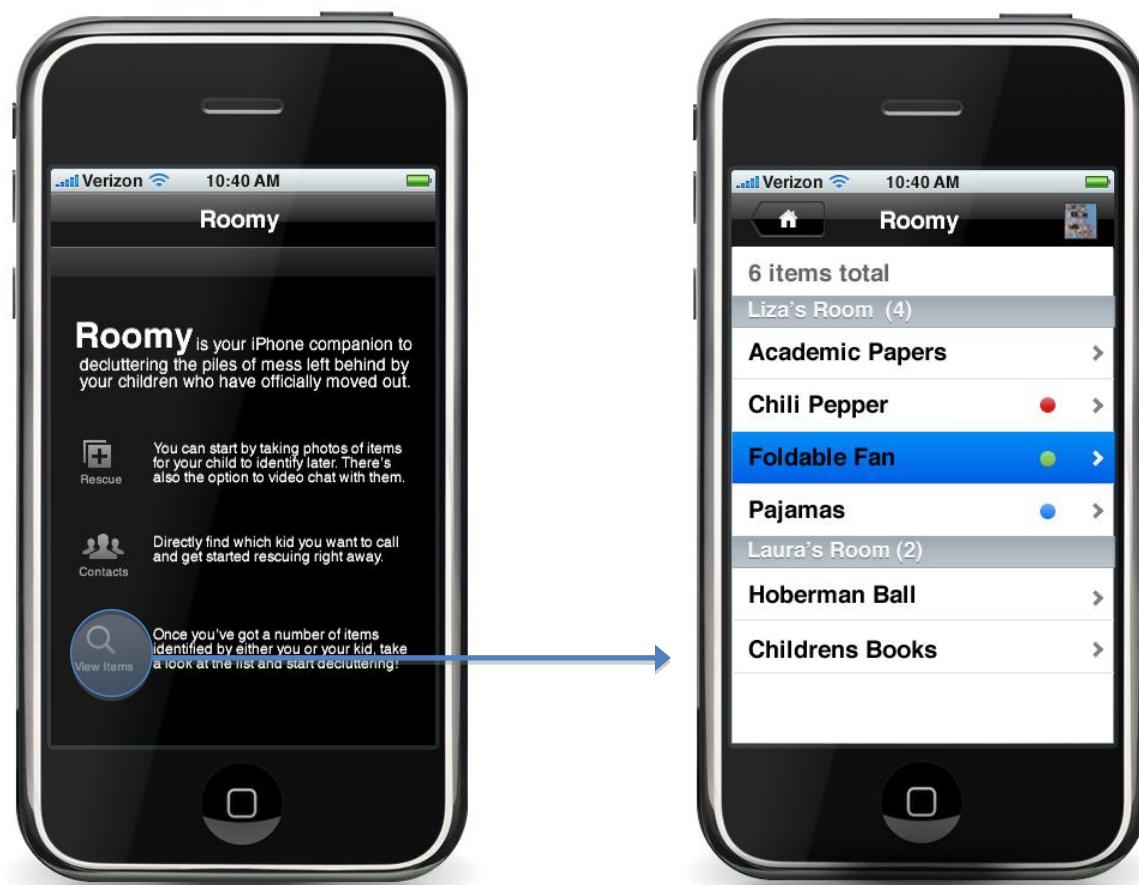
**Green:** Keep

**Blue:** Donate

**Orange:** Unsorted

**Red:** Dispose

The top right thumbnail icon allows the user to switch views and view the list of cards by icons (see next screen).



## Gallery of cards

To allow the user to quickly, visually search items, the user to view a gallery of the card photos. Tapping on a single thumbnail takes them to the respective card. The user can return to the list view by tapping the top right button labeled **List**.



# Design

Website Prototype: **Roomy**

# Library View

Roomy's web interface defaults to **Library View**, which consists of two main components. The right hand side contains the **Card Component**, a shared component also present in the iPhone app. The **Card Browser Component** on the left side allows the user to browse through previews of cards that are either pending (in the **Pending Tab**), filled out (in the **Completed Tab**), or corresponding to a specific search initiated by the user in the **Search Bar**.

## Browse Pending Cards

The **Pending Tab** pictured here shows thumbnails of all the cards that either have not yet been assigned a keep/donate/dispose designation by the child, or have had a new parent comment posted. From here, the child can sort through cards that need attention. Card previews are accompanied by their names and indicators in the bottom right that show how many belongings are referenced within that picture. Clicking on card previews opens the **Card Component** on the right.

The screenshot illustrates the Roomy web application's Library View. On the left, a sidebar titled "Pending" lists several card previews with labels such as "Beanie Baby Room", "Liza Shelf 2", "Liza Floor", "Beanie Baby Shelves", "Liza Shelves", "Pink Room Floor", and "Pink Room Closet". Each preview includes a small thumbnail image and a label. On the right, a detailed view of a card for a "Dog Calendar" is shown. This view includes a large thumbnail image, the label "Found in: Liza's Room", and three buttons: "Keep", "Donate", and "Dispose". Below these buttons is a text input field containing the placeholder "Keep this with my HS stuff?". The "Comments" section contains a reply from "Daughter" asking about the year of the calendar. The "Stored in" section indicates that the item has not yet been stored, with the text "Not yet stored!" displayed in red.

## Browse Completed Cards

The **Completed Tab** shows thumbnails of cards that the child has given a keep/donate/dispose designation to. The card thumbnails are highlighted green, yellow, or red, corresponding to the button colors for keep/donate/dispose so a user can instantly recognize an item's fate.

The screenshot shows the Roomy application interface. On the left, there is a grid of thumbnail images under the 'Completed' tab. The thumbnails are color-coded: green for 'Keep', yellow for 'Donate', and red for 'Dispose'. The first three thumbnails in the top row are green, while the bottom row contains one yellow and two red ones. To the right of the grid, a specific card is displayed in detail. The card title is 'Dog Calendar'. It features a photo of a calendar page with several dog-themed illustrations. Below the photo, it says 'Found in: Liza's Room'. There are three buttons at the bottom of the card: 'Keep' (green), 'Donate' (yellow), and 'Dispose' (red). A text input field below the buttons contains the placeholder 'Keep this with my HS stuff?'. Further down, there is a 'Comments' section with a text input field for adding comments and a 'Post' button. The status 'Stored in' is shown with the message 'Not yet stored!'. The overall design is clean and modern, using a dark background with light-colored cards.

## Video Rescue View

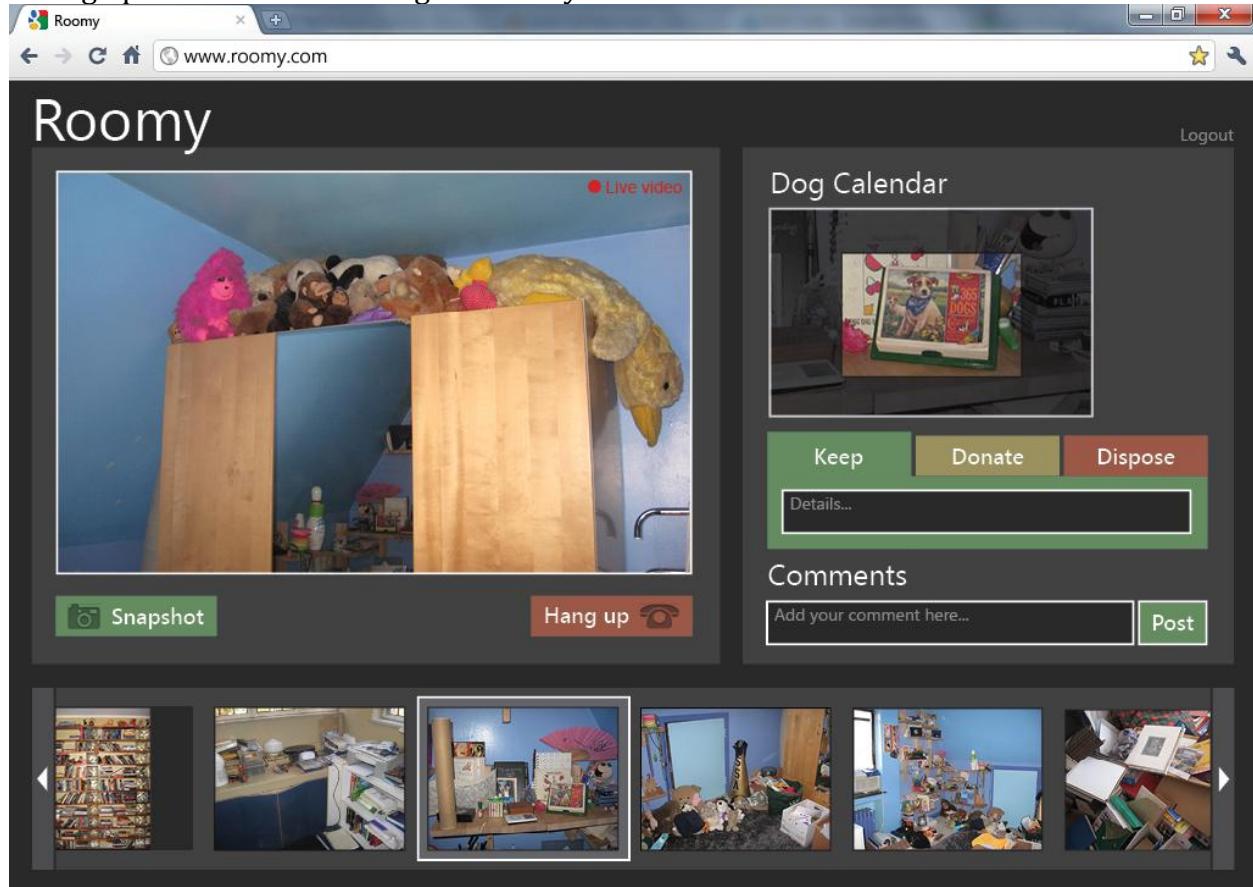
The web interface implements a second main view called the **Video Rescue View**. This view holds three primary components: the **Video Component** (left) is a live video feed coming from a parent's iPhone, the **Card Component** (right) does not change from the Library View, the **Card Filmstrip** (bottom) is a filmstrip view of pictures that need to be supplied with information.

### Video Component

The **Video Component** shows a live video and audio feed from the parent's iPhone. From this component, the child can end the video viewing or take a snapshot of the video, which captures a frame and adds it to the **Card Filmstrip** beneath it. If the new snapshot is the first one taken, it will be immediately viewed in the **Card Component** on the right as well.

## Card Filmstrip

The **Card Filmstrip** shows a horizontally scrolling view of snapshots that have been taken with the Snapshot Button, or by the parent. These pictures represent cards that have yet to be dealt with by the child. It provides a means for the child to look through pictures that are being constantly created for review.



# Card Component

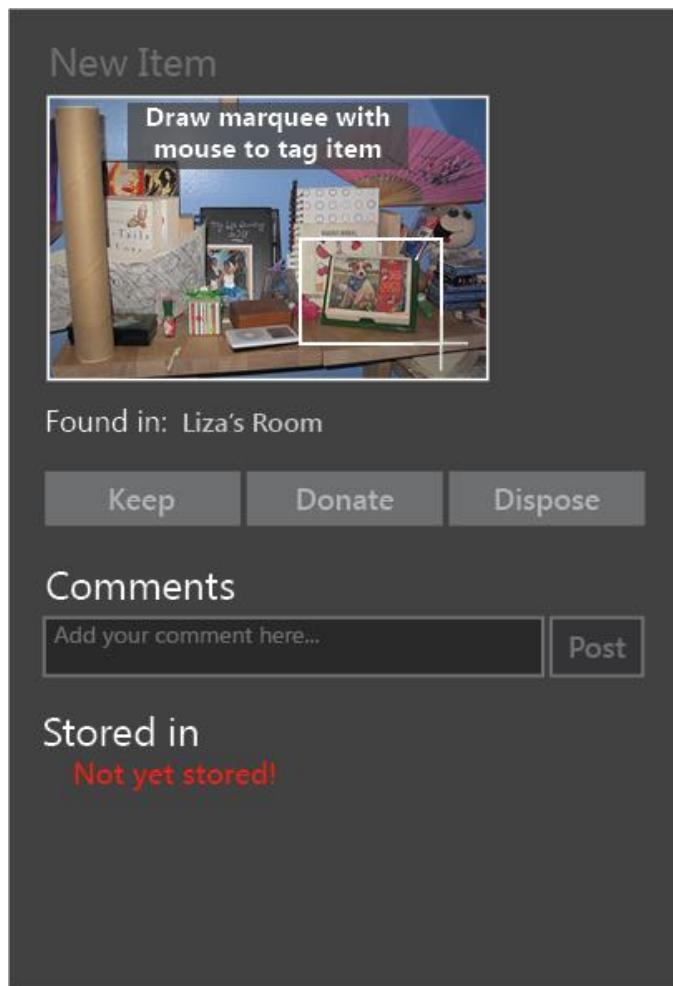
The **Card Component** is a key part of the web interface. It contains the most useful and complex interactions in the system's design. The card contains such information about belongings as: their name, a picture of them, where they were found, what should be done with them, where they have been stored, and additional comments about them from parents and children.

## Filling in a Card

Filling in card data is a key part of our design. Upon first seeing a card, all fields are disabled except for the ability to draw a marquee around an item in the photo.

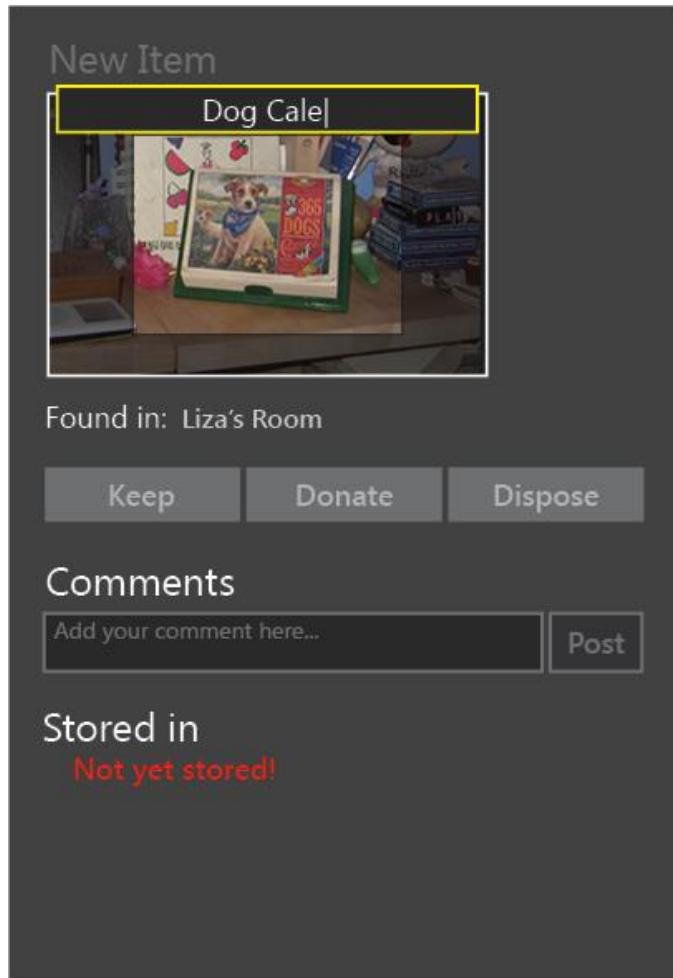
### Tagging a Belonging

By using the marquee tool shown below, a user can tag a specific belonging from a picture.



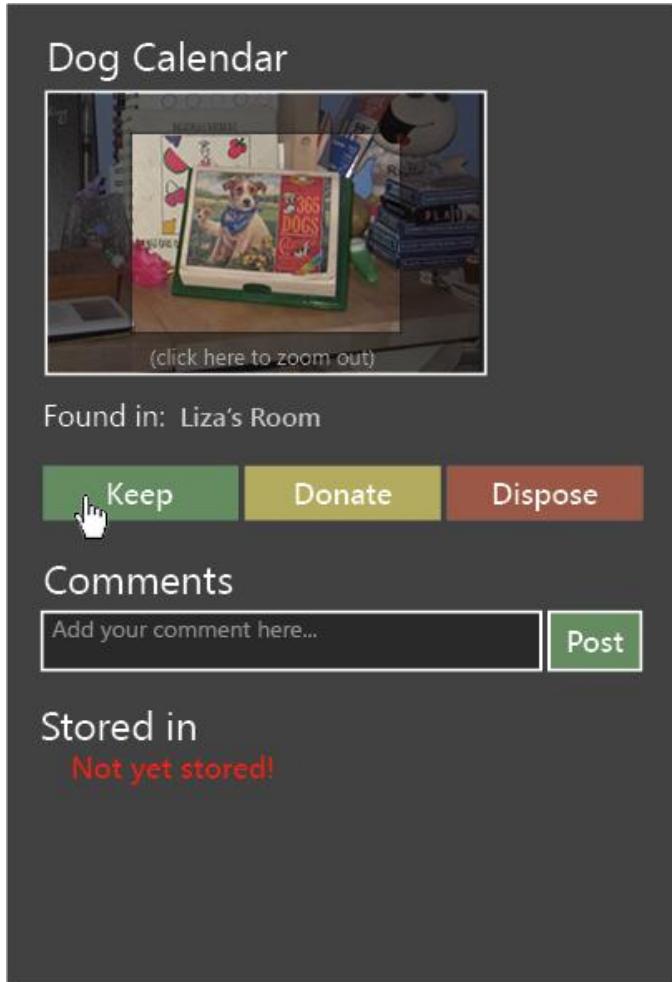
## Naming a Belonging

Once the marquee has been drawn, the picture zooms to that area and a textbox appears for naming the belonging.



## Editing Card Information

Once a card has been named, the name moves to the top of the card, and the rest of the information fields become active. Most importantly, the buttons concerning what should be done with a belonging are active and can be selected.



## Additional Belonging Action Details

Having chosen whether to keep/donate/dispose an item by clicking on the appropriate buttons, some additional informational fields are exposed. The **Keep** and **Donate** choices provide an extra text field for input. This field could be used to tell a parent what in particular to do with a kept belonging ("bring it to me" or "keep in the attic"). The **Dispose** choice brings up two radio buttons that allow the child to choose between **Trash** and **Recycle**.

Dog Calendar



(click here to zoom out)

Found in: Liza's Room

Keep      Donate      Dispose

Details...

Comments

Add your comment here...      Post

Stored in

Not yet stored!

## Creating Multiple Cards per Picture

An important feature of this interface is that a single picture can be used for multiple cards and belongings. This gives extra flexibility to the users and can be particularly helpful for messy areas. In the example above, we can click in the grayed out portion of the picture to restore the full-sized image. The full sized image now can have a new marquee drawn on it, just as in the previous example, which will create a second card for this second belonging. It will follow the same editing interaction as above, except now when zoomed out, two marquees will show around their respective items in the picture. Also, some of the information fields will be disabled, since they do not refer to groups. The ability to name the group picture, however, is also provided.

# Design Rationale

# Flexible Communication

## Asynchronous Communication

User data showed a need for parents and children to communicate asynchronously; each party could only receive communications during available times. For example, in our CI, the parents were unable to contact their daughter because of the geographical time difference (Appendix B, L103-109), and thus had to postpone their decluttering. Both parties could also benefit from asynchronous communication since the deciding party would have more time to decide what to do with an item. For instance, when one daughter was uncertain of what to do with a belonging, the parent responded by giving her the option of deciding later (Appendix B,L253).

Roomy implements several asynchronous communication features. Editable cards allow both parties to discuss the value of each item at their own pace. This form of asynchronous communication accelerates the process since the system automates notifications in a way that children can respond as soon as they are available. In one session, parents will create digital information about all the items in a room. Once the child has identified the name and value of the items, parents can begin decluttering the room in another session. By facilitating such turn-based sorting--one in the digital realm, the other in the physical--our design minimizes the time between collecting information about items and waiting for responses from children.

We considered possible tradeoffs with asynchronous communication, but still placed it as a high priority aspect in the design. It may allow for procrastination on the child's side. However, we should keep in mind this form of communication serves as a complement to real-time video rescue and thus parents have the option of speeding up the process should they decide to coordinate the latter. In the end, editing cards in an asynchronous manner offers flexibility to users with busy schedules.

## Real time communication

Real time communication proves crucial in the decluttering process. From the CI (See Appendix B, Line 124, L223) we see the parents calling their younger daughter twice to understand what to do with the belongings they left behind.

This inefficient communication justifies the need for a faster decision making process at the time the parent is tidying their child's room. The parent is unable to continue tidying up the room without input from their child. In the above example, they needed to call their daughter, describe what they were looking at in the best

way they could, and then keep or throw away the item according to their daughter's request.

Roomy reduces communication time simply by implementing a real-time video rescue mode, which essentially serves as a video call for parents and children to communicate both visually and through audio.

# Accurate Digital Archiving

## **Children need to identify item value**

The idea that children need to identify the value of their belongings is one that recurs throughout the Contextual Inquiry. On numerous occasions, a daughter makes specific requests of what to do with her belongings based on her valuation of those belongings. For example, Liza describes how belongings from college are "things that [she] think[s she] might actually want to go back and look at at some point," while those from High School "are things ... that ... have somewhat of a sentimental value" (Video 3 of the CI at 7:11). These value judgments lead to decisions about what ends up being saved and what is thrown away.

Input from the child is necessary for the parents. When trying to organize Liza's room, the parent has "no idea" whether the daughter wants to keep magazines for example, so she has to call the daughter to find out how she values them (Appendix B 2, Minute 4:56-5:24).

On the most basic level, our system meets this need by allowing the child to choose whether to keep, donate, or dispose of belongings. However, since our CI showed both the child justifying those decisions and also discussion of parent and child over value, we implemented both a 'details' text input for items that were kept, and a comments section for each belonging where discussions of a belonging's value could be expressed fully.

## **Parents and Children need to deal with stacks of items**

In our CI, we observed instances where items within stacks each needed to be identified. For example, the parents called their daughter regarding a stack of magazines of varying value to the daughter (Appendix B, L118-135), and also to go through a pile of schoolwork, of which only some items were kept (Appendix B, L223-255).

These occurrences prompted us to ensure our system distinguishes one item from a stack of items. We meet this need in two ways. First is the real-time communication, described above, that allows the child to see a video feed of the stacks of items and talk to parents as they sort through the belongings. Second is the child's ability to tag multiple items in a single photo and specify for each what to do with them.

## **Parents need to keep track of item locations**

We observed numerous breakdowns related to storage (Appendix B, L68, L274-286, L293-309). This pointed to the fact that tracking what is done with items after a decision is made is as important as making that decision. We support this by

providing the ability to note a "Stored in" location when viewing items.

Before settling on our present design, we discussed solutions ranging from a full-fledged system solely for tracking the storage of items to using RFID tags to keep track of different belongings. While our solution is lightweight, we wanted our system to complement the workflow that we observed in the CI without creating onerous new responsibilities for the parents.

# User experience

## Easy-to-use system for non-technical users

It is evident from the CI and TA that our application should account for both tech savvy and technical novices. The mother in the CI used the “Notes” tool on her iPhone to create a list of items titled “Decluttering” that needed to be stored or inquired about (Appendix B, Line 90). We also witnessed a father who was unfamiliar with the current technology struggle with uploading and tagging pictures on Flickr.

In order to maintain an easy-to-use system for novice adult users, we designed the parent-side of our application for the iPhone, which implements a clean user interface that allows designers to break down tasks into step-by-step screens. This avoids situations where the user would have trouble finding certain features as we witnessed during the TA where the participant had trouble finding the button to upload photos, creating sets efficiently, and completing the task of tagging pictures (Appendix F). The trade-off of using an iPhone, however, is that many of our potential users may not own one. Future development should consider expanding on other mobile devices like Android.

Another trade-off we made was removing the ability for parents to create their own hierarchy with the items they have posted for their children to sort through. Since parent users can already sort items by location, we feel that providing more ways to organize the items may complicate our interface. Having less buttons to press will reduce the system wait time and user think time, thus providing a more pleasant user interface.

## Parents need mobility

In the CI, we observed the parents calling their daughter as they were decluttering (Appendix B, L104-107). Along with being tied to the need for synchronous communication support, we saw in this the need for the system to travel with the user as they visit rooms, discuss items with children, and declutter. The parents move through multiple rooms in the course of the CI. A stationary desktop would not support this approach, and would be unable to capture items as the user encounters them, which is important to the system's ability to facilitate both the real time and asynchronous communication between the parent and child.

We weighed options of what sort of device would support this best. Our design initially incorporated a pair of glasses worn by the parent to capture video and still photos. This was supported by either an iPad or a custom portable tablet tied to the system. Interacting with a wearable item such as a pair of glasses has the potential

to fit into a workflow more naturally than a screen based interface. However, when not in use, an item with no function outside of our system becomes another piece of clutter to deal with. It is unconscionable that a system to reduce clutter should create it, so we focused our attention on designing for a mobile phone due to the increasing ubiquity of such devices with the capability of implementing our system. We focused specifically on the iPhone, as the mother in the CI used one already (Appendix B, L90), and even used it to record notes while decluttering. Our system can help the mother do what she already wants to do in a way that is far more effective.

# Retrospective

## Focus Setting

In order to narrow down our foci, we used the focus setting process that we learned in class. This was a modification of the affinity diagramming process in which group members recorded thoughts, ideas, and questions regarding parents transitioning from parents of young children to parents of grown children no longer living in the house. We then took post-it notes from the affinity diagram and grouped them with related notes, forming separate categories that can be used to form the desired foci for research direction.

In forming the categories on the diagram, we were able to discuss each post-it. This sparked intense debates and discussions that allowed us to develop a group consensus on what should be focused on in data collection methods like contextual inquiries. Every category was weighed equally, regardless of the number of post-its it consisted of because there may be important categories that the majority of the group members may have overlooked, but one group member may have captured. The process of affinity diagramming ensured that everyone was able to have a voice in what they felt were important areas to consider when coming up with a focus.

Our group found that the focus setting process could be improved if each member initials their post-its and numbers them in the order they are written (in addition to using a different color post-it for each person). By adding these annotations, it will provide every member with the ability to contact a group member and ask them for further clarification by using the post-it number as a way to reference that note in a particular category. This way you can continue to discuss the information without someone having to point out the post-it to you, which saves time.

## Contextual Inquiry and Design

Contextual Inquiry (CI), a method of gathering qualitative user data and about how they do their work in practice, is based on four essential principles: *context, partnership, focus, and interpretation*.

CIs are conducted in the *context*, or environment, of where the user does their work, while they are working. The user and researcher form a master-apprentice *partnership* where the researcher is the apprentice inquiring and learning from the master user while they are in the midst of tasks. The results of Focus Setting give a *focus* for the researcher's time spent with the user, becoming a means of directing both users and researchers towards a common goal. This focus can develop, expand, or change entirely as the researcher questions the user about their activities and strives to find the right *interpretation* to assign meaning to observations.

The CI data are used as the basis of Contextual Design (CD). CD is a subjective process employing both inductive and abductive reasoning from data to produce design ideas that, though not contained in the data, benefit from being grounded in it. The most labor intensive aspect of contextual design is building, from data, models of the communication flows, cultural influences, artifacts, physical layout, and sequences of actions and intents involved in the user's work.

Encountering difficulties in these work models revealed important value in the technique. In the course of constructing our flow model we wrung our hands over how to correctly portray physical objects in this communication focused model. This was in part due to our efforts to incorporate ways that people's possessions communicate their identity and values through what is kept and how it is displayed or stored (Kirk, Sellen 2010). Our deliberations over this matter made us realize the level of subtlety and complexity that can be involved in producing a truly accurate model of the user's work. They also accomplished one of the key tasks in CD, which is to establish a shared understanding of the data amongst people involved in the design. Though different interpretations of the data were inevitable, we found a few ways to deal with this. One is to agree not to end a meeting until a consensus has emerged in order to increase motivation to understand others' viewpoints. Other ways include seeking an outside opinion to act as a final arbiter between interpretations, and having people speak one at a time while all others listen actively.

Once a shared understanding of the data emerged, contextual design proved to be a good way for us to resolve disagreements over design choices. In cases such as trying to decide whether or not it was necessary to give the user the option to flag an item for recycling when choosing to dispose it, we found ourselves saying "the simple way to resolve this is just to answer the question 'what does the data have to say about that?'" Referring back to our cultural model, we could see that recycling

was important to the children in the CI, and encouraging it with our system would be the right thing to do. Seeing the data back up a certain design approach resolved such disagreements decisively and in a way that everyone on our team felt comfortable with.

Because it is based so heavily on CI data, the effectiveness of CD is impacted by the quality of the CIs informing it. Many of the limitations of CI stem from the subjectivity and variability of the data it provides. First, the usefulness of a CI depends on the ability of the researcher to ask relevant, on-focus questions. An unskilled, inexperienced interviewer will have an impact on the quality of data obtained and its usefulness to a design.

Furthermore, the type of users available for CI can cause the data, and thus the design, to change. An extreme example of this can be found in our experience with contextual inquiry, which was limited to a video of a single CI with two parents. This had a strong effect on our design choices. We originally wanted to incorporate into our design a pair of glasses that a parent could wear to capture photos and video of a room while sorting through children's belongings. Ultimately, we decided that supporting the use of a phone for this task made more sense based on the fact that the single CI participant we looked at used an iPhone in the process of decluttering. However, seeing more users as well as the devices and approaches they use could have again shifted our decision on this matter. Finally, it is important to note that obtaining subjects for and scheduling CIs can come with heavy time costs and overhead.

Although CI can have such limitations and costs, they are concerns worth taking on and prices worth paying for the unique advantages that it offers as a method. CI is essential in the early stages of contextual design; we found that it informed the design of our system more than anything. It can also, be applied at any point in the design process to learn more about users and to address vital questions that are raised by other methods. It is the best starting point to determine users' needs and the direction of a system because it does not require that any kind of design be completed in order to employ it.

## Think Aloud

Think-Aloud (TA) Usability Testing refers to the empirical study of users who have been instructed to complete various tasks using a specific product or prototype. These users are supposed to speak out loud as they carry out their tasks, informing the researcher what they are thinking as they are working. The researchers watch silently (save for prompting the user to keep speaking) and can learn where the users have troubles with the system (John 1999, p.147).

The think-aloud (TA) method was one of the more useful tools in our arsenal for gathering data. It was particularly helpful in its concreteness; the data collected shows good and bad aspects that real users had while using real software. This type of evidence was helpful in multiple regards.

First, this data was useful as a reminder that we are not like the users we design for. This is a very important rule of the design process and the TAs reinforce that by showing us the struggles users unexpectedly had while completing assigned tasks.

These struggles of TA participants were particularly insightful in comparison to results collected using Keystroke Level Modeling (KLM) via CogTool. While CogTool also returned "concrete" results (at least within 10%), the nature of these results were very different. KLM helps us evaluate how well a system is designed for the experienced user who is slowed down primarily by cognitive processes, but otherwise knows the system flawlessly. The TA, however, shows that this picture is incomplete. In our TA for Flickr, we found that the user had a very difficult time completing certain tasks because the layout of the website was not helpful for discovering how to achieve those goals.

Data from the TA pushed our design to support a simple structure and work flow that the user could follow. Since our design idea includes similar tasks of photo sharing as Flickr, the TA using Flickr helped us to anticipate certain pitfalls that we identified there. Thus, we focused our design not only on reducing number of clicks and cognitive load, but also on keeping relevant tasks always in front of the user so they would not spend time finding each feature.

A practical downside of TAs we encountered was simply that we did not have enough data from them to strongly base our design decisions in. Ideally, having TA data from many users could ensure that the critical incidents we collected were not outliers, or perhaps more importantly, that no critical incidents could be easily missed. Additionally, a strength of TAs that we could not see first-hand is the ability to iteratively conduct TAs on new design prototypes in order to ensure constantly improving designs. While this would likely bring in excellent data, the true limitation here is that conducting so many TAs is very time costly particularly compared to analysis using KLMs.

There are also some limitations of the TA method itself that we noted. Firstly, there is the Evaluator Effect (Nielsen 1993), whereby multiple evaluators of the same TA data can come up with very different interpretations of that data. This was felt to some degree when we consolidated our UAR reports--at times, there were events that some were convinced were critical incidents while others equally thought were unimportant.

A second limitation of TAs is that they are heavily task-oriented. TAs could help us gauge the critical incidents that occurred while a user was performing tasks, but they could not give us an overall impression of how users would explore or think about a piece of software on their own. While this is out of the scope of the traditional TA, it would be interesting to also see how users would interact with applications as they explore them at first sight, without a scripted task. This could give a very different picture of how users respond to the products they use.

A final limitation of the TA method that we encountered is that it requires a prototype or completed product in order to be used effectively. Combined with the previously mentioned task-oriented nature of TAs, this means that TAs are not typically an effective tool for visioning or brainstorming. More likely, they will instead alert designers to potential pitfalls that can be avoided. While it is possible to gain some inspiration for new design features from observing the failures of current systems, that is not the chief strength of the method. However, as an evaluation method, TAs give solid data for identifying problems and good aspects of existing designs.

## KLM

Keystroke Level Modeling (KLM) is a task analysis technique in the GOMS family of human information processing models for human computer interaction. These engineering models were developed as ways of predicting the cognitive, physical, and perceptual actions an expert user of a system will take in performing a task. KLM makes simplifying assumptions about users' performance that make it less accurate but more easily applied than other GOMS techniques.

We employed KLM by using CogTool, a software tool for producing KLM predictions for a system by demonstrating tasks on a storyboard of a design. CogTool's automation of such things as Fitt's laws calculations and prediction of a user's time spent in cognition, perception, and motor activities made the technique accessible enough for us to use. We applied it to the task of uploading pictures of belongings, tagging them, and notifying a child of their readiness, comparing this task in two photo sharing systems, Flickr and Picasa. Analyzing the results of this yielded insights into things like how Flickr, having a higher number of transitions between screens and required clicks, yielded a slower task completion time than Picasa. This helped direct our design by prompting us to consciously strive to eliminate unnecessary transitions in our design.

KLM is, within its limits, a very powerful and useful tool, but it is important to know what those limits are to apply it effectively. The objective, quantitative nature of the feedback it provides makes it a compelling way to justify design recommendations. The requirement of having a complete design and fully specified task to test restricts use of KLM to design phases occurring after conducting contextual inquiry and design.

However, provided that criteria is met, it has a very low cost to apply in evaluating a design given that, like heuristic evaluations, it requires no access to actual users and can happen in the lab. As some of us experienced in our lab sections, there are times where access to users is slow in coming, making techniques that can be applied in the absence of users a necessity for progressing with a design. Even its requirement of a fleshed out task and design can be useful in that it forces one to think through an interaction thoroughly from start to finish.

Appreciating these benefits must be tempered by the understanding that an efficient way of doing the wrong thing is still wrong. KLM is focused exclusively on evaluating the usability of a system for completing a defined task, and, as a consequence of being derived from GOMS, it models only expert system use. It is incapable of capturing user needs, the user experience of a system, and the emotional qualities of interactions with a system, and thus cannot serve as the sole validation of a system. Furthermore, not all users are experts in a system and not all tasks are well defined. CogTool and KLM currently offer no insights into the use of a system by novice users

or special classes of users like senior citizens or disabled users.

## Heuristic Evaluation

A heuristic evaluation is a study of an interface against a set of usability standards. The study is conducted by a set of evaluators, usually experts in the field, for one to two hours each (How to Conduct a Heuristic Evaluation, Jakob Nielsen).

We conducted three heuristic evaluations separately for the child interface and the parent interface for a total of six heuristic evaluations. Evaluators went through the paper prototypes at least twice and wrote down a list of observations under each heuristic. We then held a short debriefing which included the rest of the design team where we discussed all the heuristics and our experience with the process in general. An evaluation manager, who we appointed from the three who performed the evaluation, then compiled all the heuristics into a single report.

Discussions from the debriefing session brought some issues to the surface. Mainly, we experienced the “evaluator effect” (Nielsen 1993), which occurs when different people observing the same system identify usability problems unique to them. To address the effect, we prioritized the usability problems that were present in other parts of our data. Also, referring to our UARs and recorder’s notes from the CI helped to remind us that we are not the user and should thus fix issues based on further empirical data.

Performing an HE also allowed us to justify having some features that we disagreed on amongst ourselves. For example, we initially disagreed on whether include a fourth option to ‘Recycle’ in addition to Keep / Dispose / Donate. From the HE we were able to justify having three buttons as it maintains minimalist design (Heuristic 8) and is a mapping of what happens in reality, as observed from the Contextual interview (Heuristic 6).

Another example of where the heuristic evaluation helped us decide on a feature is the ‘Snapshot’ button on the ‘Roomy Video Rescue’ screen of the child’s interface. We initially argued that the button should not be there since, in the CI, we observed that it was the parents’ role to initiate phone conversations and ask the child which item to keep. However, in order to allow user control and freedom (Heuristic 3) this feature is necessary.

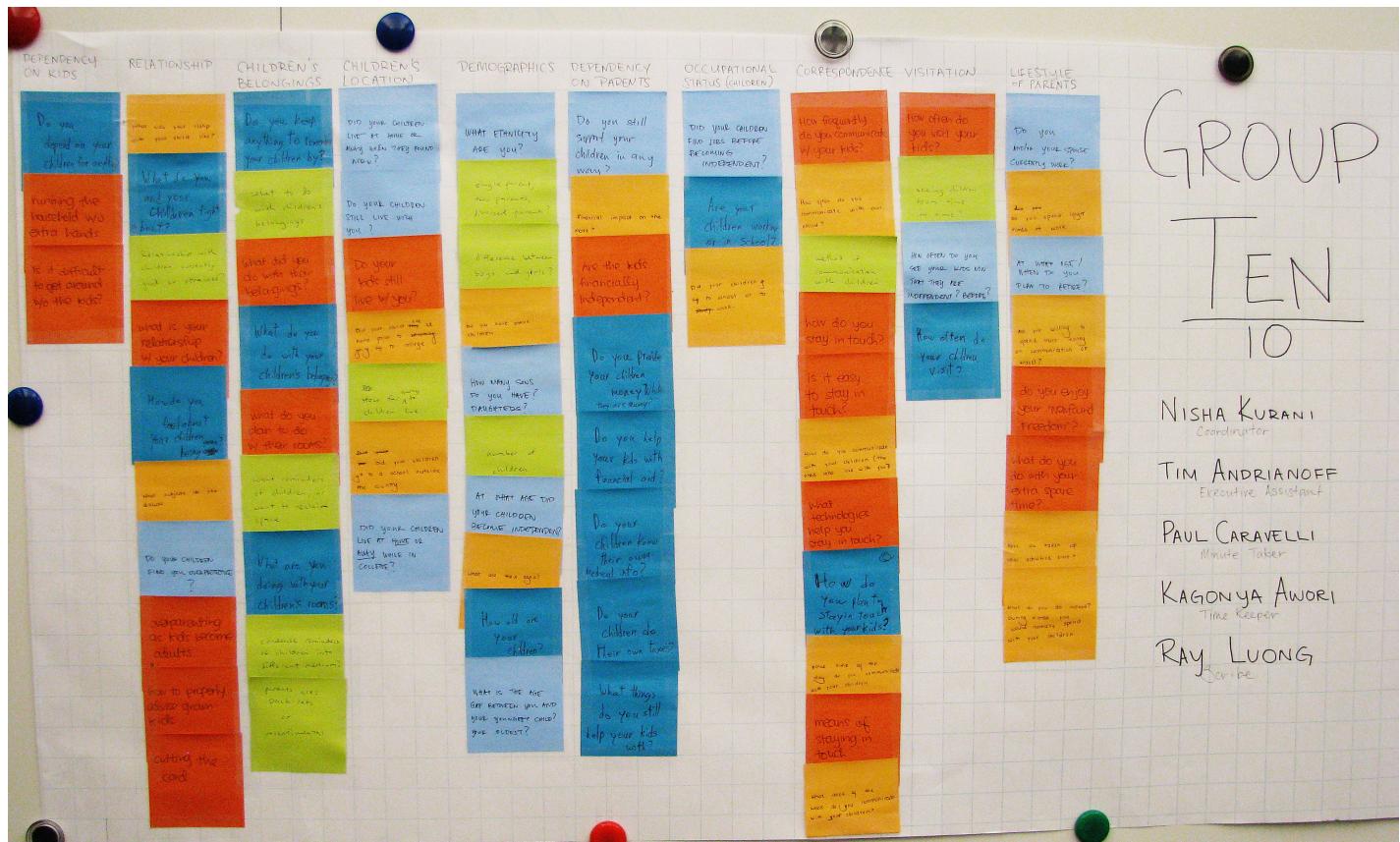
We also found that it was easier for us to fix the smaller usability problems like adding a ‘Post’ button for comments section in the child’s interface. In contrast, the bigger issues, like the need to add help tools throughout the parent interface, were too expensive to implement since they were noted after producing the high fidelity prototype. Though the time limitation prevented us from continuing with a fix, future iterations should take into consideration our notes on the problem. A heuristic evaluation is also more likely to miss some major usability problems when performed on a paper prototype (Nielsen).

We note the value of a heuristic evaluation, but then add that for it to better suit our system it needs to have additional heuristics since we are creating a mobile application that integrates with a web application. The dilemma here, however, is that having the same people who designed the system come up with heuristics to judge the system by may create bias. One solution is to have a different group of usability experts come up with heuristics for our use, though this adds to expenses of time and money.

# APPENDIX

# A

## FOCUS SETTING DIAGRAM



# B

## CONTEXTUAL INQUIRY TRANSCRIPT

Begin Time -mm:ss	Speaker	Transcript
<b>Video Part 1</b>		
0:00	P1	Hello
S	I2	Hello
0:02	I1	Oh, hi
0:03	I2	We're the team from Carnegie Mellon
0:06	P1	Come on in
0:06	I2	Nice to meet you
0:07	P1	Hi, I'm Bonnie
0:10	I1	I'm Jenn
0:11	P1	Hi Jenn
0:12	I2	Martina
0:13	P1	Martina, hi Martina. This is my husband Gary
0:16	I2	Oh, hi
0:16	P2	Hello
0:24	I1	OK, well, Shall we have a seat?
0:28	P1	Sure, let me get my tea
0:30	I1	OK
0:31	P1	OK, how about the living room?
0:33	I1	Great!
0:34	I1	So we're here today to find out, um, about how you're going through your children's old, um, things up in the attic and we're interested in looking at how you're deciding, uh, the decision process you go through for what to keep, and what to throw away
0:42	I1	and also specifically what kind of media you're going to be storing this in
0:48	I1	So can you tell me a little bit about your children and what kind of material they have, uh, left behind?
0:53	I1	Well, so we have two girls,
1:02	P1	Um, they're both adults now, one she's been a programmer at Google for three years, so she's been out of the house now for seven... since college,
1:06	P1	and the younger one, Liza, has just graduated from college, um, and she's in Manhattan, moving into an apartment next week
1:16	P1	So we're um, we're kinda like now, "OK, this is the time we should be thinking about downsizing", and just getting rid of stuff, and
1:29	P1	Cause it's a new phase, you know...this is not their home anymore
1:43	P1	So there's just stuff all over, pretty much...not so much on this floor
1:51	P1	but things in their rooms, um,
1:58	P1	as you mentioned I'm sure there's stuff in the attic

		Uh, there's stuff in a room we call the "pink room" which has gone through many different, um, uses in its lifetime with us, so we just call it "the pink room"
2:06	P1	And so, I...we're just starting this....you know, like this is the first day.
2:20	P1	OK
2:24	I1	...so, we don't have a process...
2:27	P1	and then there's bedrooms
2:30	P2	what?
2:32	P1	and then their bedrooms
2:33	P2	Yeah, their bedrooms, yeah, yeah. Um,
2:34	P1	But I don't think there's really much of anything on this floor.
2:37	P1	So is this, you've never kind of pared down before; this is everything that's been accumulating since ...they were young?
2:40	I1	No we actually cleaned up the pink room one time in the past and got rid of probably 2/3 of their school stuff... or 3/4
2:49	P2	OK
2:58	I1	Yeah, and Laura, having been kind of out of the house for seven years, um, every time she'd come back, I'd say "fifteen minutes, just fifteen minutes, just fifteen minutes"
2:59	P1	And the reason, actually the reason that fifteen minutes is an important thing...there's, um, there's a website, and a mailing list and stuff, called "Fly Lady"
3:10	P1	OK
3:21	I1	And it's a woman who really really really likes to fly fish
3:21	P1	But she didn't have any time to fly fish, because she was constantly cleaning her house and feeling like she was overwhelmed with clutter
3:27	P1	So she developed a system for herself to unclutter her life, to simplify it, so now she has time to fly fish. And so she's called Fly Lady
3:34	P1	OK
3:43	I1	And she teaches other people how to declutter.
3:43	P1	And a couple years ago I discovered this and I can't remember how how...uh, I discovered it.
3:49	P1	And she has this routine for things, and says you can do anything for 15 minutes. And so that's why the fifteen minutes, see, fifteen minute decluttering, I've asked Laura to do every time she comes back
3:58	P1	And how we cleaned the pink room was the "five minute room rescue"
4:04	P1	Five minutes a day can rescue a room, eventually, it did take us months and now it's back to clutter again because it's in transition again
4:09	P1	but, so it's a constant battle, but things are really way less cluttered than they used to be
4:16	I1	OK
4:24	I1	And now we've gotta get back into the habit, right
4:25	P1	All right
4:30	I1	Well, shall we get started then?
4:33	I1	Sure...I was thinking of going up to their rooms first
4:35	P1	OK
4:42	P2	Um, because I did get permission from both girls to go into their rooms, and knowing that you were coming
4:42	P1	

		Um, and, uh, the younger one, Liza, gave permission; um, the older one, Laura, said "why are you asking me permission? I don't live here anymore" So it was an interesting difference in perception even on their part, um, and, um
4:50	P1	Liza also, since she's moving next week, and we're going to New York to help and bring her some things,
5:10	P1	She said that I could call her this morning to, uh, ask her about things in her room, if she was around. I don't know if she's gonna be around.
5:18	P1	If she's actually around, then I was hoping to get on iChat so we could use video and she could actually look at some things and make some decisions
5:26	P1	but if she's on her way to Maine, then all we can do is phone.
5:36	P1	but she knows that I'm gonna call her this morning and hopefully its not too early.
5:39	P1	
5:44	I1	OK that'll be great additional input
		OK so we can go upstairs, I'm not going to ask you so many questions but just kind of observe what you're doing, and
5:48	I1	may, uh, jump in as needed
5:56	I1	but we're just interested in seeing, kind of, your process
6:01	I1	Let's go!
<b>Video Part 2</b>		
0:00	P2	I'll go get a garbage bag
		Oh, that's a really good idea! So, Fly Lady says you're supposed to bring three boxes with you when you do things like this. "give away", "throw away", "put away" and then you put things into the boxes and you do the right things with them.
0:02	P1	
0:22	P1	This is Liza's room and this is Laura's room, okay, and so, the difference is that somebody has been sleeping in Laura's bed, probably a dog... okay, the difference is that mostly this is empty because Laur... Laura's been, Liza's been, no, Laura's been doing this for years, so
0:42	I1	And she's the older...
0:43	P1	She's the older one
		These books were things, the baby books, the kids books were ones that she particularly liked, which is why she kept them in here,
0:44	P1	and so I think we should keep them for grandchildren if we ever have any
0:54	P1	
1:00	P2	Okay, do you have a better place than in here?
1:05	P1	Probably, eventually in the attic if that makes sense
1:08	P2	Yeah
1:09	P1	Do we do it now or do we just make the decision now?
1:12	P2	Well, we don't have boxes and other things to put them all in, do we?
		Só, that's kind of a prerequisite to doing something about it that I should write down. I should, I'm gonna make a note of things to do.
1:22	P1	
1:40	P1	So I'm gonna add a new note on my iPhone that is for, I'm gonna call it downsizing, I'm gonna call it decluttering because we're not really downsizing, decluttering,
1:52	P1	uh, get boxes,
1:58	P1	and make Laura's room, and record, it says Laurasia, that's weird, Laura's room,
2:14	P1	and I will say books for grandkids

2:22	P1	I hope my children never see this video, because I don't want them to know I'm even thinking about that.
2:30	I1	Haha
2:32	P1	okay. Okay, um, so there's other things in here like her book, um, what are these things called? book ends
2:49	I1	Uh huh
2:50	P1	<u>She might want those.</u>
2:51	P2	Yeah. Yeah, I don't know if she has everything out of here that she wants.
2:51	P2	Yeah, her, um, expandable ball she
3:10	P1	Hoberman ball, huh, that's a special part of it, okay
3:17	I1	<u>So what are you doing now?</u>
3:19	P1	I'm writing down some of the things we think she might want
3:22	I1	Okay, and then will you ask her about these?
3:23	P1	Yeah
3:23	I1	<u>Is this the one you can speak to?</u>
3:25	P1	This is the older one. No, we're not allowed to speak to her, it's six thirty in the morning in California
3:28	I1	<u>So this will be at a later time?</u>
3:41	P1	And, well, I guess it's kind of in general, when is she coming home next? Maybe Christmas? Alright, so we probably have to do, um, I probably have to write down Christmas to say we have to do more of kind of a final thing in here
4:00	P1	She's pretty, she's pretty darned gone, but um, there are, there are some things that she still has, like pictures
4:06	I1	Okay
4:09	P2	I mean, I don't mind putting stuff in a box, having her put stuff in a box that says keep this for me, okay, for instance bunny, um, okay, any of the things up over there
4:28	P1	I bet she's not gonna want all of those stuffed animals, there might be a special one or two
4:31	P1	Alright, so maybe, this, what's in here we can't do anything with at the moment
4:38	P2	Right, now I know there's trash in Liza's room
4:42	P1	We know there's trash in Liza's room!
4:42	I1	Okay, moving on to... Alright, yeah, I can still, I can see there's still a lot more out here
4:52	P2	<u>So, does she want any of these magazines</u>
4:56	P1	I have no idea, let's call her. My guess is that she's gonna say no
5:01	P2	That's my guess too
5:02	P1	We can see how, how well we do
5:09	P2	April 2007 Vogue, my guess is that she's not going to read through this again
5:12	P1	Okay
5:24	P1	[on phone] Hello, so are you at home, or are you on your way to Maine? ... Oh, you're in Maine?
5:30	P2	<u>We can talk all the way to Maine? That's so cool!</u>
5:33	P1	Okay, well, we're in your room, and we're thinking that there are some things in here that you probably absolutely don't want, um, like, magazines. ...
5:40	P3	[inaudible from phone]
5:41	P1	Okay, we can throw all of the magazines out she just said.
5:41	P1	Okay, what, say again? ...
5:50	P3	[inaudible from phone]

5:55	P1	I can recycle all of them, we can recycle all of the magazines Gary
6:04	P2	Okay, does she want the...
6:05	P1	Uh, Shadyside news from December 14 2007, SSA says goodbye to Ms. Shau
6:15	P3	[inaudible from phone]
6:25	P1	Right. That's, that's exactly what I thought too, that the paper itself is not a dear thing, but that particular article might be. Uh, so we'll keep that.
6:38	P1	I don't want to throw anything out that you have any idea that you might want to look at before... Okay we'll just stick that, we'll keep that
6:50	P1	So, in general though, is there anything that you want us to bring next weekend?
6:52	P3	[on speakerphone] Um, so, something that you guys, like, if you are not afraid of not having space in the trailer, if you guys can bring, like, every piece of clothing that might be in my room and I can go through it next weekend with you guys while you're here and sort it between things that I might possibly want to keep or things that could be given away
7:14	P3	And then you can take it all back with you, pretty much
7:16	P1	Okay, and that will be fine, uh, we can do that
7:21	P3	I have an entire drawer of bags
7:23	P1	An entire drawer of bags, do you want those bags?
7:28	P3	I, I can't imagine why
7:31	P1	Okay, we can get rid of the entire drawer of bags, too, Gary
7:35	P2	Okay
7:36	P1	Okay, then we'll, we'll bring what you said. We'll bring all the clothes ummm, and that's about it that you're looking for, right?
7:46	P3	yeah, I guess
7:49	P1	Okay, and we will recycle the, um, the magazines
7:52	P3	Okay
7:53	P1	Okay, have a good time in Maine,
7:58	P3	okay bye.
8:00	P1	bye bye
8:02	P1	Well we're gonna get a lot out of here next weekend
8:05	P1	You're so good you can get all of those magazines, but, how do you recycle magazines?
8:13	P2	I didn't think you could recycle magazines
8:16	P1	We'll have to look that up
8:18	P2	Okay
8:18	P1	Okay, we'll, we'll look it up on the web
8:20	P1	Let's do the bags first, because we know we can get rid of those. The drawer of bags.
8:32	P1	Why the heck does she have a, who knows...why do I have these things too?
8:38	P1	Oh, that's a nice ice bag. This one! Oh, M&M World, I dunno. I care about this one, this can be a gift bag, not that one.
8:51	I1	So it seems like you're kind of hesitant to throw anything out, ah, without her permission. Are you taking more of a conservative approach?
8:59	P1	Yeah, yeah, and she's suggested that she'll come home some weekend and that would be far better.

9:07	P1	What is it?
9:08	P2	It's a chili pepper
		Wait, don't throw away the chili pepper. It's not a bag, she said we could throw away the bags, the chili pepper is not a bag, you're not taking it out are you
9:10	P1	
9:19	P2	No, no I'm not
9:25	P2	There are clothes in here, too.
9:26	P1	Oh, you're kidding.
9:30	P2	Why would I kid?
9:32	P1	She has been looking for these for five years, four years
9:37	P2	What are they?
		They're her Shadyside pajamas that she wanted as a freshman. She was so distraught that she didn't know where these were. Okay, well, she'll have them now.
9:37	P1	Good, this is good.
9:53	P2	Yeah
9:54	I1	Okay
9:55	P1	Okay, onward
9:57	I1	Okay, so what, what other areas are we going to now?
10:04	P1	Uh, pink room. Gary you, uhhh, pink room and attic
10:08	P2	Okay
10:09	I1	Okay
10:10	P1	Okay
<b>Video Part 3</b>		
		So as we go to the pink room, this room has had different uses through the years also, it used to be a TV room where people actually watched TV without cable because we only had cable in one room.
0:08	P1	So now it's in transition...and then it was a video game room, where we only played... I had my Dance Dance Revolution set up, we had the Wii...
0:22	P1	and then we got a really BIG TV down in the basement, and I said "But I want to play Wii on the BIG TV," so I moved all that down there so now we don't know what we're doing with this room.
0:32	P1	
0:42	P1	But it does have stuff that the kids did, and these are the sorts of things, like so we have....Liza did that little face at some point, I don't even actually know when...
0:53	P1	and Liza... I believe did that in England, when we were in England we did brass rubbings and one of the girls did a dog that she gave to her grandfather for Christmas one year, the year we came back, and the other girl did that one, I don't know which one did the dragon...
		Um, but then there's some other things, so this I believe was Laura...why don't I know that? that's bad...That's definitely Laura. OK, but the collages are Liza, but Laura was a lion freak when she was a little kid, OK, so I know she did that.
1:17	P1	And Liza had art classes where she did the collages. I really like that blue one. So I think I'll frame that nicely and keep that forever.
1:40	P1	This one I don't like as much, just because of the outline. I don't know, I'll have to decide about that. I really like the blue one a lot.
1:48	P1	And then Laura did this sketch, which obviously needs a more expensive frame
1:57	P1	But those are the sort of things I think we will keep, and I don't mind having things on the walls
2:04	P1	

2:08	I1	Mmhmm
2:09	P1	I mind having things around. Like.....Beanie Babies! My kids were little in the time of Beanie Babies, which is why we have a million of them
2:21	I1	So it seems to me that you have a kind of a two step part - some things you know definitely that you want to keep, those have more of a sentimental value, would you say?
2:27	P1	Mmhmm Well, I think...I guess
2:35	I1	OK
2:35	P1	There are some things are sentimental, but we can't afford to keep everything that's sentimental
2:40	I1	OK
2:40	P1	and by afford, I mean I just can't live in as much clutter forever.
2:45	I1	There would still be too much
2:47	P1	Yeah, it would be too much
2:48	I1	and then it seems that there's another substage where it's not a definite thing, and that's more a call for the children to make?
2:57	P1	or for...actually I was thinking about the Beanie Babies, whether they want them. I'm pretty sure I don't want most of them
3:00	I1	Yeah. Right. yeah, so yeah, so those have passed your cut, but you don't know about them
3:10	P1	Alright, arrrgh... I feel like today I'm taking stock of what has to get done
3:17	P1	OK so this room has, in the past, actually been a nice guest room
3:23	P1	At the moment, the problem is that we are going to... we have to modify this and cut out some pieces of it and put it in the basement so that it holds our big screen TV that we got last Christmas, but we haven't gotten around to doing that.
3:30	P1	But of course what that meant was that we had to take it ...it was a wall unit, you know, the whole wall over there. So then we had to take everything out of it then all this stuff was in it,
3:49	I1	OK, so that's what's here
3:52	P1	Yes, this is why this is here, and that's on the way down, because we have to cut it, because the TV is you know, twice this, and so we have to cut this out and so it's a big deal and that's why now we can't move in here
4:08	P2	She probably doesn't need to have a book on the class structures of Columbia from 2006
4:16	P1	Right
4:17	P2	Something on team building....I doubt she'll ever want that
4:23	I1	So are you making these judgments because it's impossible to ask about every tiny thing?
4:27	P2	Right, yes
4:28	P2	OK, so Masterpieces of Western Music...
4:33	P1	Maybe
4:37	P2	OK. with her midterm, and camera instrument of photography? This...
4:47	P1	Do you wanna call her?
4:51	P2	This is all Fall 2006...homework
4:55	P1	Oh we can call her...again and say we've now moved into your schoolwork in the pink room
5:14	P1	[on phone] Hi, so we've now moved into the pink room and we're....

5:17	P1	let me put you on speaker again. OK and, I've just put you on speaker
5:24	P1	and we're now, we found piles of schoolwork of yours
5:31	P1	So things like "Masterpieces of Western Music" from Fall 2006
5:41	P1	In general, do you believe that you're ever gonna want these notebooks again, or are you sure you won't
5:47	P3	No. No, probably not
5:53	P1	OK, should I take the word "probably" meaning that you want to think about it, or...?
5:58	P3	Umm, they're actual notebook notebooks?
6:02	P1	Yeah
6:03	P3	There must be something in that pile, the ones you particularly said, no...I don't think that I'll ever care about that again.
6:13	P3	Except the fact there might be extra paper in that notebook
6:14	P1	Oh, OK, extra paper, OK
6:18	P2	How about identifying owl pellet contents? From biology at.... at Shadyside
6:28	P1	Shadyside?
6:29	P1	Oh yes - identifying owl pellet contents in high school biology
6:36	P3	that sounds fascinating
6:40	P2	Economics?
6:41	P3	Is there extra paper in there too?
6:44	P1	We will look for extra paper. Um,
6:47	P1	Is it kind of, in general anything from Shadyside you don't care about and things from college maybe you might?
6:54	P3	Umm...
6:56	P2	I found a blank piece of paper!
7:01	P3	I don't ...I don't know
7:03	P1	OK
7:04	P3	so hard...!
7:06	P1	Yeah, so again, I don't wanna throw anything that you might want. so...
7:10	P1	oh Dad found a whole bunch of blank paper
7:11	P3	Things to keep from college would be things that I think I might actually want to go back and look at at some point
7:17	P3	Things I might keep from Shadyside are things more that like have somewhat of a sentimental value
7:24	P1	Right, and owl pellets probably don't, but who knows what does
7:32	P1	OK, well maybe we'll just take stock and put these things in a place where you can make decisions later
7:40	P3	OK
7:44	P1	OK, sorry, but, OK thanks, bye!
7:45	P2	Ooh, lots of highlighters. Cool, lots of colors
7:52	P1	OK so she...doesn't know
7:55	P1	So she wants us to
7:56	P2	So what do you wanna do
7:57	P1	I want to...I think if we had put them, if we had a box, if we put them in a box and put them in her room, then that would be the place where she would be able to make decisions about everything in the room and it would be out of here
8:12	P2	And if she didn't make a decision when she came home, we're just throwing out the box
8:18	P1	We could do that

8:19	P2	OK
8:20	P1	OK, so want me to go find a box in the garage?
8:23	I1	So how does going through all this make you feel?
8:25	P2	I'd be throwing it all away
8:27	I1	Yeah?
8:28	P2	So it makes me feel a little frustrated
8:31	I1	OK
8:31	P2	cause we're not throwing everything away, so... you know
8:36	P2	I just can't believe that she would look at energy flow...owl pellet dissection from her advanced biology class ever again,
8:51	I1	OK
8:51	P2	but you know, I don't really know....I have been overruled
9:01	P1	All right. This box is taped up
9:07	P2	Yes
9:07	P1	But it doesn't say "For Goodwill" on it
9:11	P1	So Fly Lady tells you that when you, um decide you're gonna give something away, you put it in a box and you tape it so that you never look at it again, you just put it in the car and take it to Goodwill or wherever
9:30	P1	So the fact that this is taped makes me think that it's probably things to give away
9:35	P1	But the fact that it doesn't say "For Goodwill" on it, cause usually I label them... makes me doubt that the tape actually is that um, that signal.
9:47	I1	but you don't remember what's actually in there?
9:48	P1	I have no clue what is in this box, so I think I have to open it
9:54	P1	See if we can find out what it is and then of course if it is something to give away, then I'll tape it up again
10:02	I1	tape it back up
10:04	P1	Oh I forgot to tell Liza we found her Shadyside pajamas... oh well
10:13	P1	So this looks like a million t-shirts. Kennywood!? Wait a second, this is a good t-shirt!
10:26	P1	Oh, I know what this is, Gary....You should know what these are! You brought this back for me from Tarrytown.
10:36	P2	Oh, okay.
10:38	P1	These are my good things that I have had with me in New York, and I asked him to bring home for me
10:46	I1	Oh, okay
10:47	P1	And then he put them here, and I didn't know they were here, and that's OK...now I know. All right, so those I will unpack later, those are not to be given away.
10:19	P2	We have a lot of...
10:57	P1	I think that one's broken, that's trash.
11:04	P1	But where, Gary, are the things I know you kept? Bag after bag after bag of things from kindergarten, and that sort of thing. I know you kept those things.
11:19	P2	They were in the bottom of one of these units
11:23	P1	Oh were they...
11:25	P2	Yes
11:26	P1	Oh
11:28	P2	And it wasn't bag after bag after bag; it was....some. Ok, so they're either here or we carried them downstairs. I doubt we carried them downstairs.

11:36	P1	I don't think we carried them downstairs
11:39	I1	Is this from the previous bout of....decluttering?
11:42	P2	Yes
11:43	I1	Ok so...
11:45	P1	Well no, I think it was...I wouldn't consider it that. I would say that
11:50	P2	There was one previous bout of decluttering
11:52	P1	why do you think that?
11:56	P2	Because it was during our five minute room rescue of this room, that we went through all of that
12:02	P1	Oh, OK, alright, so we did the 5 minute room rescue...
12:08	P1	Every day for 5 minutes, this room got to be a nice guest room; his parents even slept in it. That's how neat it was
12:20	P1	And we kept what we were going to keep in the wall unit
12:28	P1	But now half the wall unit is down in the basement, with the TV on it; the other half is still being renovated so it can have the TV on it
12:36	P1	But we had gotten down, right, to a much smaller amount. So it is probably on the couch. Oh crumb.
12:49	P1	OK. Now, what else is here, there's stuff over here...
		There is a drawing of a bicycle -- quite nice! Laminated. Only slightly cut. I don't know who did it -- oh yes I do! It says Liza John on it.
13:08	I1	OK
13:09	P1	Liza John. And this is actually nice -- it's a nice exercise.
13:17	I1	What do you think about that?
13:18	P1	I could imagine keeping this in some form or another
13:24	P1	And I could imagine hanging it up.
13:27	P1	I could imagine...taking a picture of it and shrinking it down and making a collage of a lot of things she's done..
13:35	I1	Oh, OK
13:36	P1	I could imagine that....let's see what else is here
13:39	I1	So that's interesting -- some things you might to preserve digitally but not necessarily physically?
		Or....yeah, could be digital, but it could also be....digitally manipulate them, and then print them out and put them on the wall.
13:44	P1	Right
13:54	I1	Some people make scrapbooks, but I know I never look at things, cause we have photo albums and stuff, and I never look at them
13:58	P1	If they're - I do look at things that are on my computer, like my screen saver...So I can imagine putting things on my screen saver.
14:05	P1	
14:12	I1	OK
14:17	P1	Because then I see them every once in a while -- I mean it's nice when I see them, you know, I go away from wherever it is, and my computer's still open. I come back, and there's a picture of Gary, you know, or there's a picture of the dogs... and I like that, so I can imagine this being like that too.
14:34	I1	So it's a way of keeping these more in the forefront of your life rather than...
14:39	P1	Yeah...
Video Part 4		
0:00	P1	I don't know whether she'd want these or not
0:02	I1	Oh, okay

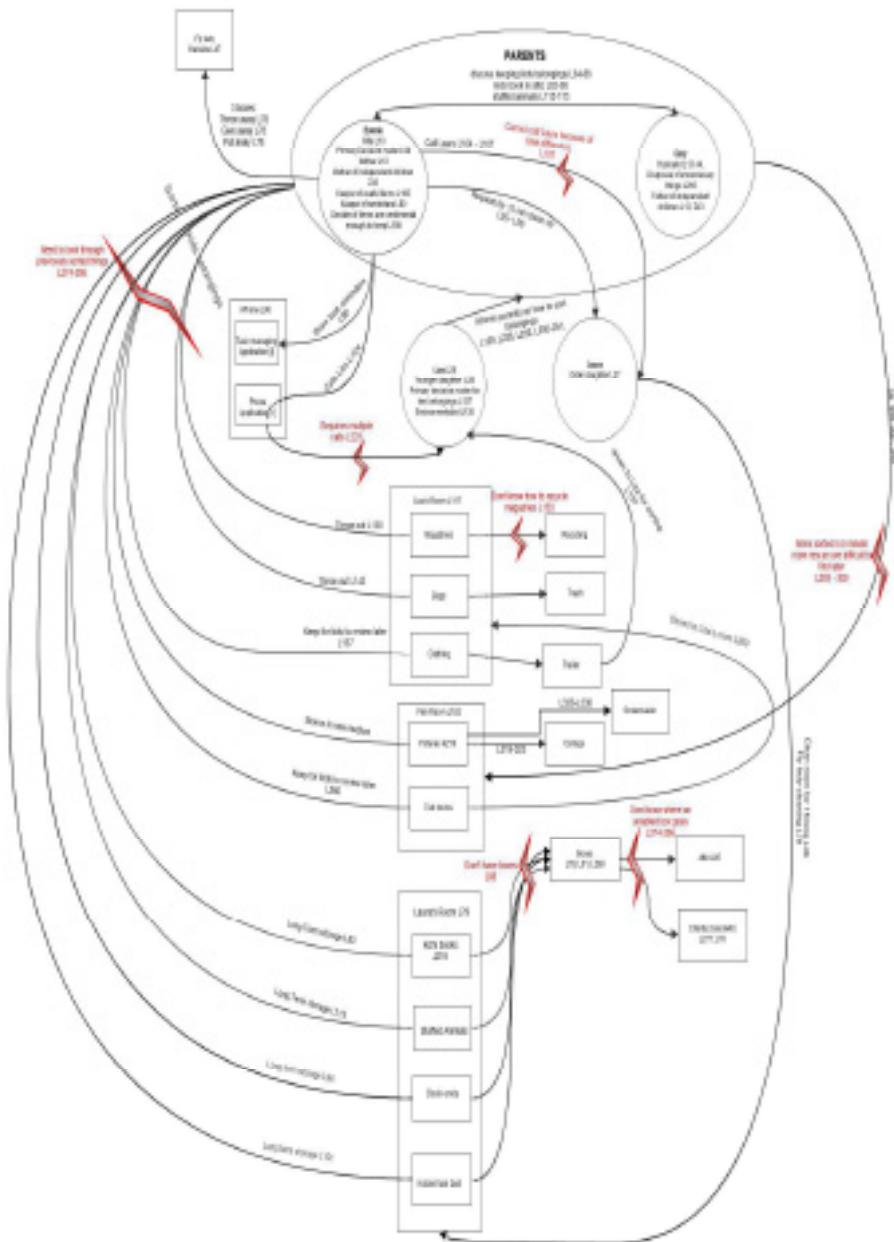
0:03	P1	So, I probably do have to ask, but I want...I want some of them.
0:08	P1	And we also have plenty of blank posterboard. We know she wants to keep blank paper [hahaha] she's been very careful about that
0:15	I1	Hahaha
0:20	P1	So this looks like a whole stack of things that Liza did in art class, um, so I can imagine,
0:30	P1	in fact, uh one of the women I worked with at IBM just put in a whole bunch of things... just took a picture of things that her kids had...our kids are much younger, but um, things that her kids had done and it does show up on her screensaver. I think I'm gonna do that,
0:45	I1	Okay, so you are inspired by that? That's a good strategy
0:46	P1	yeah, yeah
0:49	I1	I asked Gary [P2] about this, but um, how does going through all of this make you feel?
0:58	P1	Overwhelmed that there is so much stuff...which makes me realize that I've gotta get back in the habit of five-minute room rescue, because five minutes a day, it's not overwhelming, you might figure out, you might make a decision about one thing, but that's okay. So I, uh, I've gotta get back into five minutes a day sort of thing
1:26	I1	You both mentioned kind of feeling overwhelmed or frustrated with just how much stuff there is, is there any sort of nostalgia that you're experiencing through going through some of these old memories?
1:38	P1	Not the Consumer Reports
1:40	I1	okay, what about the artwork and some of the school things
1:46	P1	Well, so, not...not the high school stuff,
1:50	P1	How about you Gar? Nostalgia in any of this?
1:59	P2	Uh, not a whole bunch yet
2:03	P1	So, what now?
2:05	I1	Well, is there anything else that you have to show us?
2:14	P1	Not that I know of
2:16	I1	Okay, so it seems like we have a kind of dichotomy between your reasons for keeping things and the childrens' reasons for keeping things, uh, and, it seems like from your point of view the reasons would be things like, kind of the memories of the kids
2:34	P1	Mhmm
2:36	I1	Things that they've done such as art that are representing themselves at a certain point in time maybe, and, can you think of any other reasons?
2:50	P2	Make fun of them when they get older
2:52	I1	That's an important one
2:52	P1	make fun of them when they get older? I mean, like their 30th birthday or something like that, or their 25th birthday. okay.
3:00	I1	And then, it sorta seems like from hearing Liza talk, the reasons might be the same or different, she, I think she mentioned some sentimental value
3:09	P1	She did about the stuff from school, from high school
3:12	I1	So, that again kinda makes it I guess difficult from your point of view to be able to make some of these decisions
3:17	P1	Right, because I don't know what's sentimental to her

3:21	I1	Right
3:21	P2	Blank paper.
3:22	I1	Eco-minded
3:27	I1	Okay, well, thanks a lot for having us and um, and good luck with your ongoing room rescues
3:34	P1	Right, okay

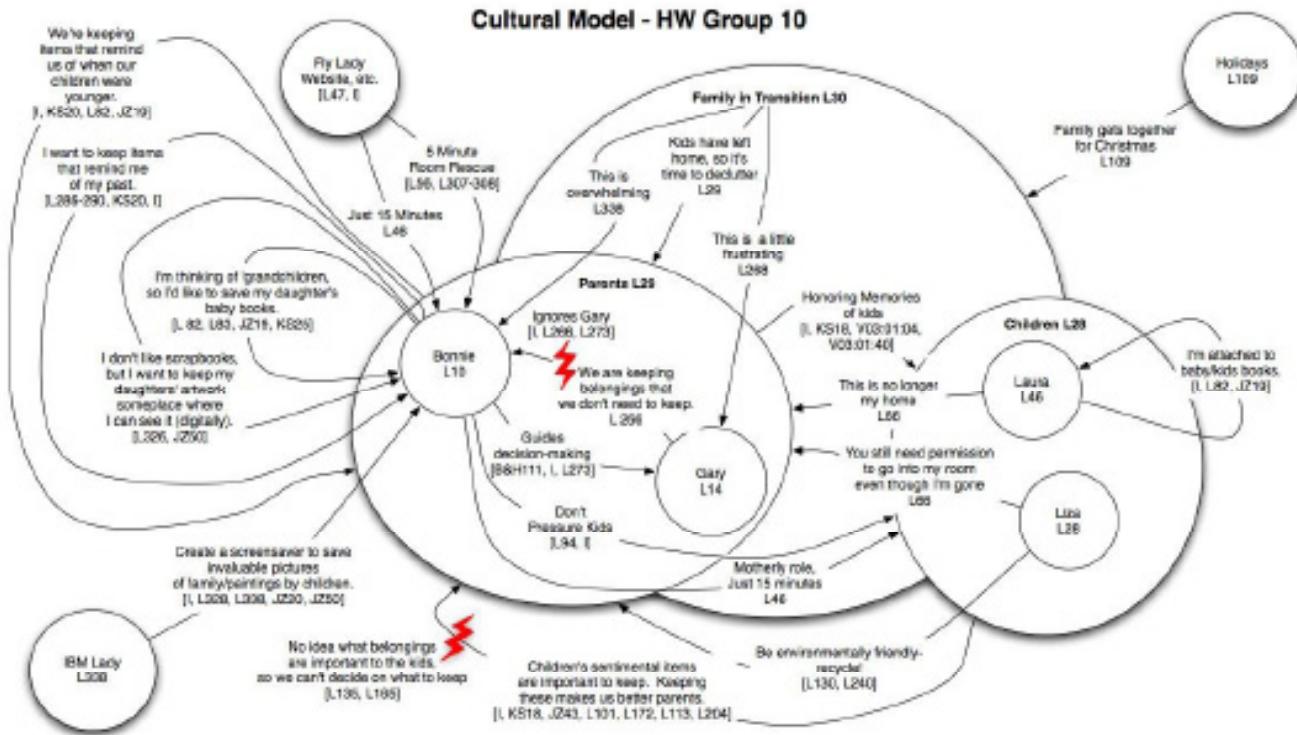
# C

## CONTEXTUAL INQUIRY MODELS

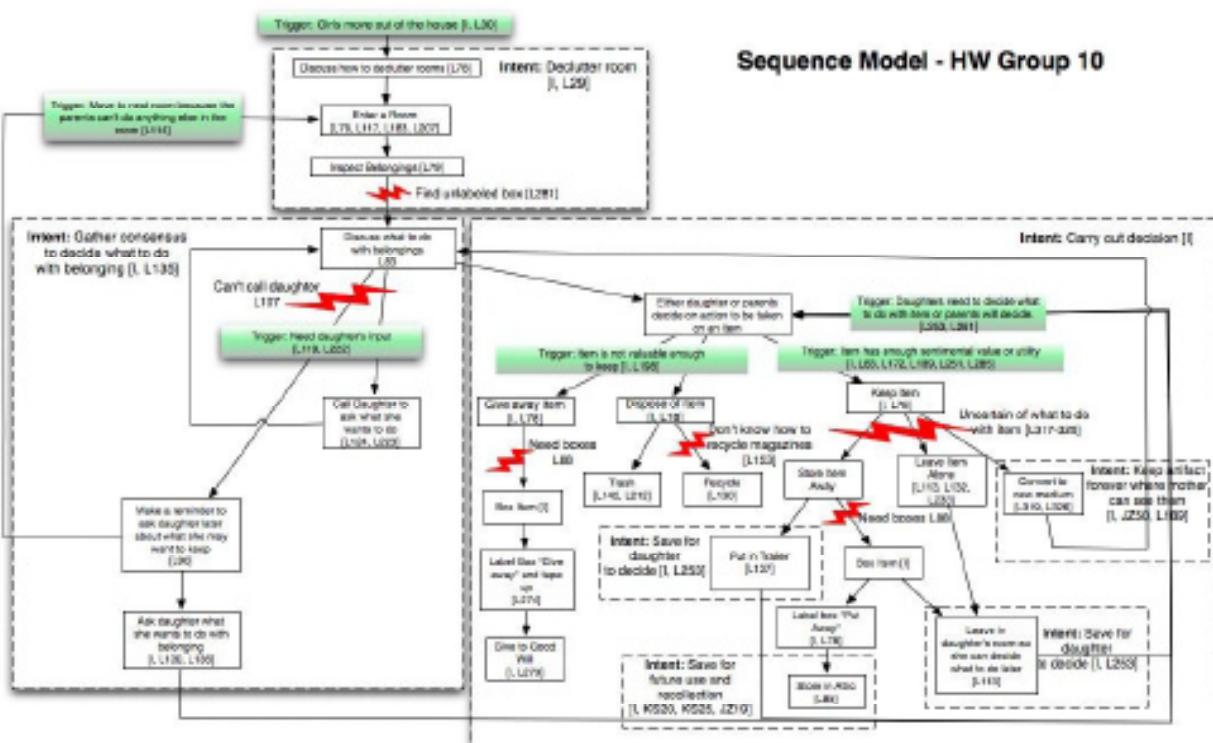
RESEARCH METHODS  
3. FLOW MODELS



## 3. CULTURAL MODEL

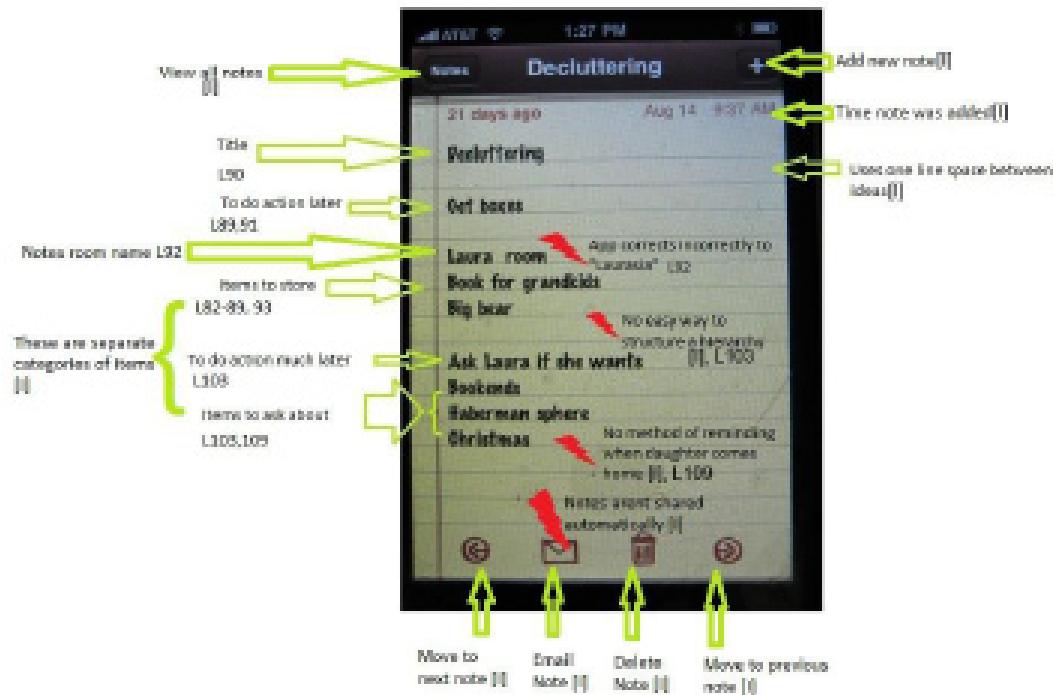


## 4. SEQUENCE MODEL



## 4. PAPER MODEL

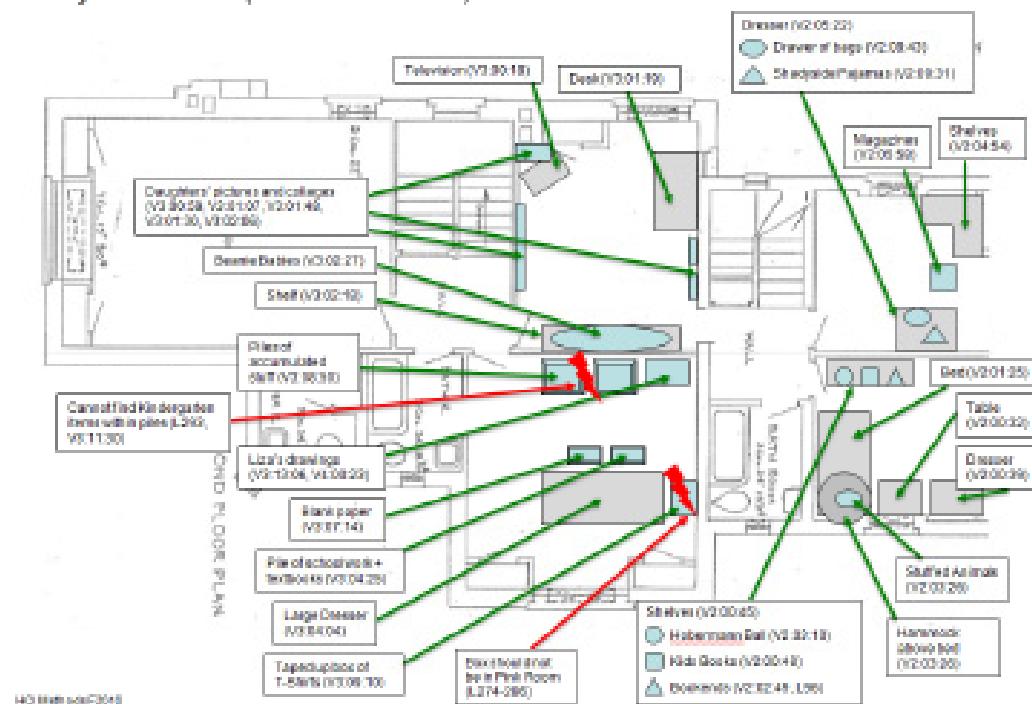
### a. ANNOTATIONS



## 5. PHYSICAL MODEL

### b. PHYSICAL MODEL

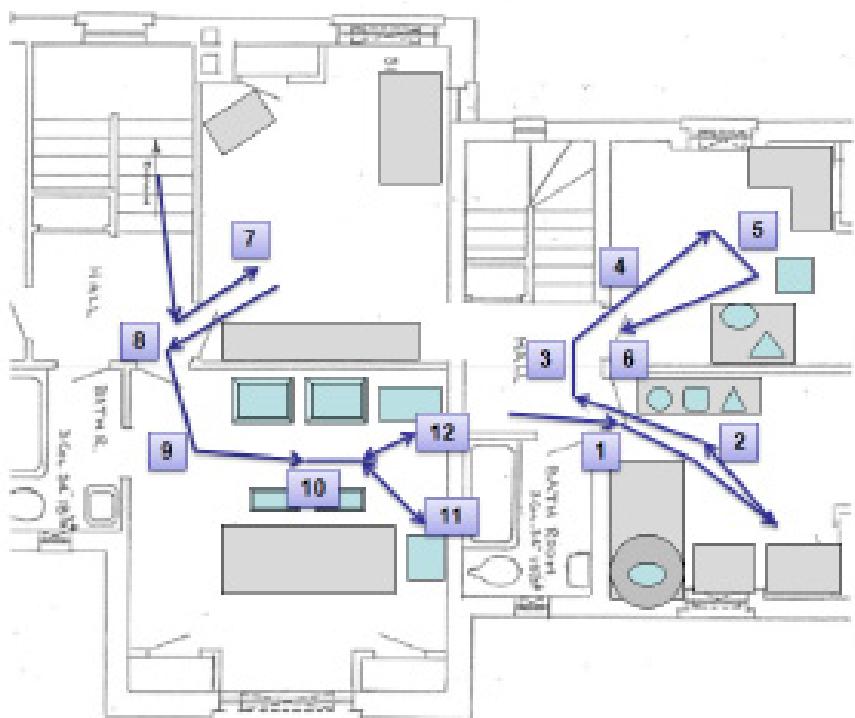
Physical Model (artifacts + labels): Second floor of the house



## ANSWER

- 1 Enter Luan's Room (V2:08:21)
- 2 Inspect belongings on shelves (V2:30:45)
- 3 Leave Luan's room (V2:34:40)
- 4 Enter Liza's room (V2:34:43)
- 5 Inspect belongings (V2:35:21)
- 6 Leave Liza's room (V2:38:10)
- 7 Enter Beanie Baby room (V3:00:03)
- 8 Leave Beanie Baby room (V3:03:12)
- 9 Enter Park Room (V2:03:18)
- 10 Inspect paper and school books (V3:04:06)
- 11 Inspect taped-up box (V3:09:55)
- 12 Inspect drawings (V3:12:49)

Physical Model (movement): Second floor of the house



# D

## GROUNDED BRAINSTORM & VISION

### *Grounded Brainstorming:*

Mobile Application and Website

laser pointing glove

glasses with detector uploads to website -- augmented reality

website

mobile app

pic, name, point and shoot

camera

bluetooth with ear piece, camera capture

ipad that you can write on

screen shots with voice and speech-to-text

scrapbook generator

develop our original idea by considering:

watch

skype thing

digital picture frame

flickr with chat

simplified tagging system

comment on picture

comment on pic, describe and have search

snapshot box

teleporter

game

### *Design Ideas:*

- Marquee selection for each item and sub item

- Be very clear what each field in the form is for.

### *Two ideas we came up with:*

- Photo Cards with stunner shades

- Video remote

## 1. RECORDER'S NOTES

These notes were taken in the order that we discussed them in the meetings and they include notes from readings and lectures.

### KEY

Bonnie = P1

Gary = P2

Laura = LRA

Liza = LZA

Whole Family = FAM

Parents = PRT

Textbook = B&H

John Zimmerman Lecture = JZ

Kirk and Sellen Notes = KS

Inference = I

		Note	Link Back (Line No.)
P1	01	Started Video 1 -- Discussed P1 Role: wife, mother, primary decision maker, keeper of useful items,	10
P2	02	Role: husband, Father of independent children	13
PRT	03	= P1 + P2	13
	04	= P1 + P2 + LRA + LZA	1
LRA	05	Role: older daughter	27
	06	Role: younger daughter	28
	07	[Question] Should we take into account the family in transition for cultural model A: Yes we should!	109-115
	08	Daughters not living at home anymore	30
P1	09	[I] Influenced by Fly Lady online (not P2, he looks away smiling)	47
P1	10	Fly Lady (website) is a repository for cleaning information	47
P1	11	[Influence] 5 minute room rescue	56
P1	12	Makes LRA (and LZA [I]) clean room 15 minutes per day, when home	46
LRA	13	[Influence] Does not feel that she needs to give permission to go through room. Room is not hers anymore	66
P1	14	Calls LZA (and LRA [I]) to walk through cleaning	68
P1	15	Video chats children if possible	69
P1	16	Question] Do 65-71 tell us anything about the sequence, with respect to calling?	65-71
PRT	17	Started Videos 2-3 -- [Breakdown] did not get boxes first before attempting to clean room	88
P1	18	[Influence] Laura's attachment to kids books (added to cultural model).	82
P1	19	[Influence] Idea of future grand-kids influences P1 to save things	83
P1	20	[Influence] Does not want to pressure LRA to have kids [I]	94
TXT	21	[Influence] [I] Bonnie guides the decision making [90, ...]	111
P1	22	Move to Liza's room because there wasn't anything else to do	107
P1	23	Move to Liza's room because there wasn't anything else to do	117

	24	[Question] Should we add rooms to flow diagram? A: They go to the rooms in order to call the daughters while looking at their things. That won't happen without them being in the room with their belongings (i.e. they consult the environment to make the decision to call daughter), so it is necessary to show on the flow diagram.	
P1	25	[Question] Goes to call daughter, but she can't because it's 6:30AM in California (Should we model this? Is it a breakdown?)	107
	26	[Question] Are the rooms repositories? A: Yes! (asked BJ in class)	
P1	27	[Question, Influence] Bonnie to self, doesn't want to throw away anything the kids want ... not sure if she influences herself? A: Yes, she does. Bonnie addressed issue in class.	135
LRA	28	<del>additional role: primary decision-maker of her belongings</del>	<del>1</del>
	29	<del>additional role: primary decision-maker of her belongings</del>	<del>1</del>
P1	30	Don't know how to recycle magazines, so bonnie has to look it up	130
P2	31	Throws away chili pepper away regardless of the daughter saying not to	165
P2	32	[Question] Was the chilli pepper a joke? A: [I] it was a joke.	165
P1	33	[Influence] Decided to create a new influence on the culture model because Bonnie gets excited about items that help her connect with the past: stuffed animals, "nice ice bag" versus m&m bag, shadyside pj's	113, 160, 172
P1	34	[Influence] KS 18 (Honoring those we care about) Bonnie hangs pictures of her daughters' artwork (Laura's lions, Liza's collages, England)	v3 1:04, v3 1:40, 186-191
P1	35	[Question] Should items with memories be in cultural model as influencer? or is this from Bonnie to herself (L195) A: Child's needs are important to the parents (include newspaper article, stuffed animals, beanie babies)	195
P1	36	[Influence] Keep things that kids might want, Influence from KS p. 18	204
P2	37	[I] Gary wants to sort through stuff and not ask about every little thing, but Bonnie wants to call Liza cares about extra paper -- college may be useful later, but high school = sentimental value when daughter doesn't know, bonnie decides to box items until girls sort through after they come home (Gary wants to throw away if girls don't go through the box when they come home) gary thinks some things are unnecessary to keep so he's frustrated fly lady says to put stuff in a box and tape it so you never look at it again... and you give it away	268
P3	38	[I] Liza influences her parents to be environmentally friendly (recycle/reuse)	130, 240

	39	<p>Flow:  [Questions]</p> <p>How are roles organized?</p> <p>How are decisions made and what flow does the decision process take?</p> <p>Communication methods?</p> <p>Coordination between entities that get the work done. In our case the work the foci.</p>	
	40	<p>Culture:</p> <p>[Questions]</p> <p>What is valued? Why? How do these values affect the work?</p> <p>Who/what is influencing who/what.</p>	
	41	[Question] anything to do from flow model? update roles.	
	42	[Question] too specific with details? (chili pepper example) if we are detailed, remain consistently detailed throughout models.	
	43	[Question] should we model talk about the big tv in the basement and wii moving down to complete the video game room? no, it's not relevant to task.	
	44	[Question] should we separate daughters or keep them in one entity? doesn't hurt to keep them separate, they can later be shown to be one circle.	
	45	[Question] where is the pink room on the flow diagram? we decided not to include bedrooms. okay, maybe it's a repository. is it? for a repository, "things" have to come in and out of it. the stuff that's there was already there. so why is the attic included? we must where the models end up.	
	46	[Question] is the fact that the pink room name has changed a cultural issue?	
	47	[Question] how to model something like the m&m bag? get rid of/keep something without consulting children. maybe model in sequence?	
	48	[Question] how to model something like the m&m bag? get rid of/keep something without consulting children. maybe model in sequence?	
	49	[Question] Gary seems to throw away whatever he wants while bonnie wants to make sure items are undesired by daughter before throwing away. this should be modeled in flow model.	
P1	50	[Breakdown] Can't find bags of stuff from before. misplaced. (We decided this is a breakdown by referring to the examples of breakdowns in the lecture slides).	293
	51	[Question] Should we infer that some items go to charity and that there's a breakdown from not labeling boxes? -- should we model things that only breakdown sometimes?	

P1	52	[Question] Discussed whether Bonnie's discovery of her old stuff from New York, including a Kennywood shirt, was important to display on the cultural model, but we decided that in order to maintain consistency, we should not display it on the model since it is outside the scope. (We didn't mention the M&M bag or tv either.)	285
	53	[Question] Are breakdowns something that always happens, or only once in a while?	
PRT	54	[Question] Are these lines indicative of something that ought to be in the cultural model between Bonnie and Gary?	288, 291, 294
P1	55	[Influence] 5 minute room rescue added to cultural model because Bonnie implemented the 5 minute room rescue influenced by Fly Lady	307-313
P1	56	Video 4 -- [Influence] IBM lady on Bonnie. Save Pictures as screensaver.	338
P1	57	[I]Bonnie keeps them for role enhancement, to feel like a better mother	JZ20
P1	58	[Influence] The family's transition prompts Bonnie to sort through all their stuff, which makes her feel overwhelmed.	342
P1	59	[Breakdown] Requires multiple calls. Bonnie has to call Liza more than once to decide.	124
P1	60	[Breakdown] Not knowing if things are important to children prevents Bonnie from being able to decide what to do with items.	135
P1	61	[Breakdown] iPhone notes App autocorrects Laura's Room to Laurasia.	92
P1	62	[Influence] Bonnie wants to keep daughter's artwork, family pictures somewhere that she can see them. She knows that she looks at her screen saver.	323-326
P1	63	[Influence] Bonnie wants to keep her T-Shirts, which remind and connect herself to the past.	286 – 290, KS20
PRT	64	[Influence] The parents (largely Bonnie) want to see themselves as good, loving parents and try to achieve this by saving items their children find sentimental.	JZ43

From KS: "On Human Remains: Values and Practice in the Home Archiving of Cherished Objects"

Why do people archive things?

1. Defining the self: putting up something that tells a story about themselves. It becomes emblematic about their identity (e.g. artwork, childhood books).
2. Honoring those we care about: for example, hanging up children's drawings in honor of them. Or you keep your aunt's ugly sweater.
3. Connecting with the past: e.g. a family that collects heart shaped rocks every visit to the beach. Revisiting this collection of rocks would connect one to the past.
4. Framing the family: e.g. putting up family portraits. It creates a perspective of the family and quality of relationships in the family.
5. Fulfilling duty: e.g. mother with adopted children saves social records for the future.

6. To forget: e.g. unhappy letters may be stored in an unseen place (the attic), not thrown away since the act of eliminating them causes guilt or conflicts with any of the other five reasons.

Means of storage:

1. Display - putting something out not to be used but to be seen to tell a story... intended to be visible but not anything else really
2. Functional Storage - using grandma's old jam jars... the act of using it is part of your sentimental value
3. Deep Storage - putting things in a box into the attic... anything that's not out in use or display but you feel the need to keep it because you have it accessible if you feel like looking at it again and/or keeping things in that way gives you the chance to stumble upon them surreptitiously

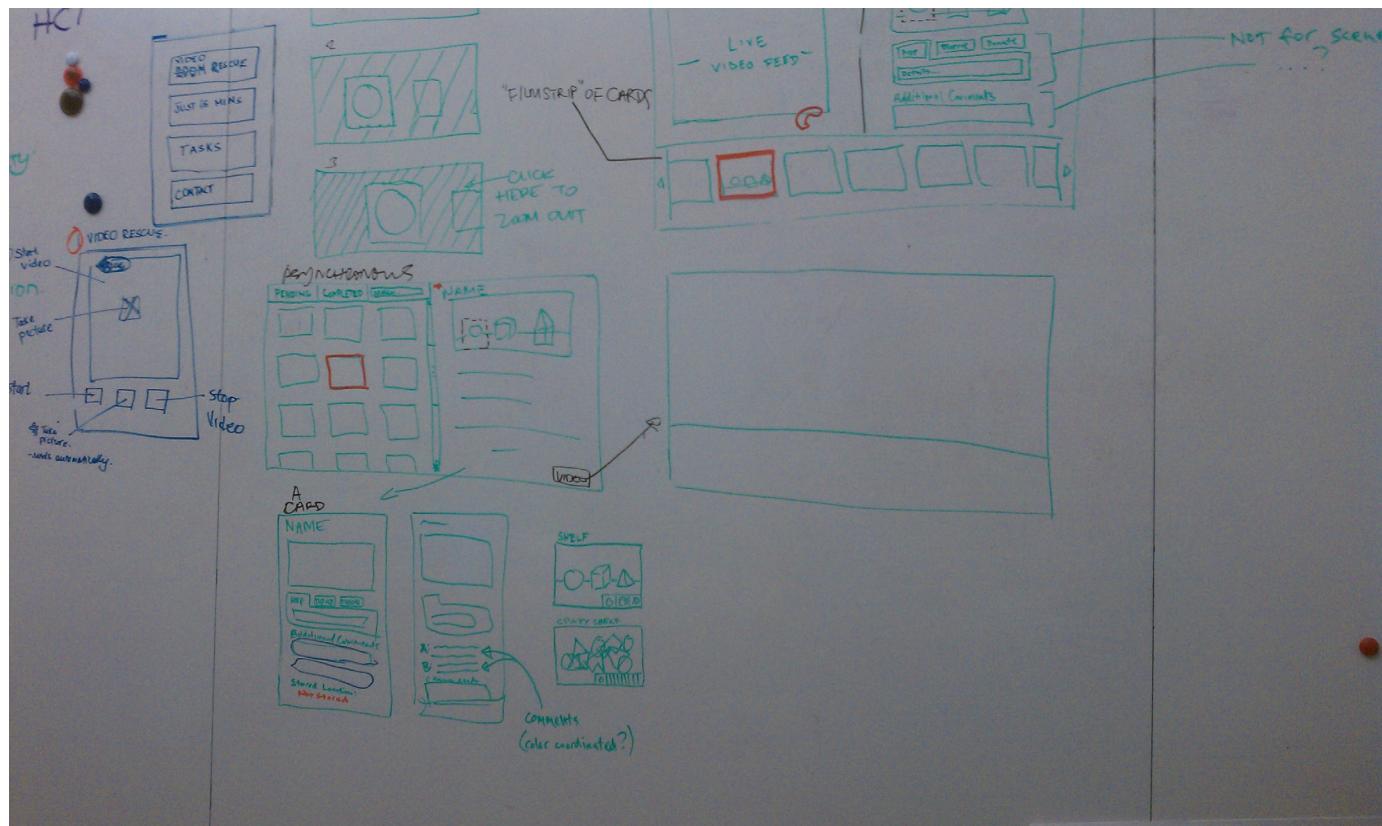
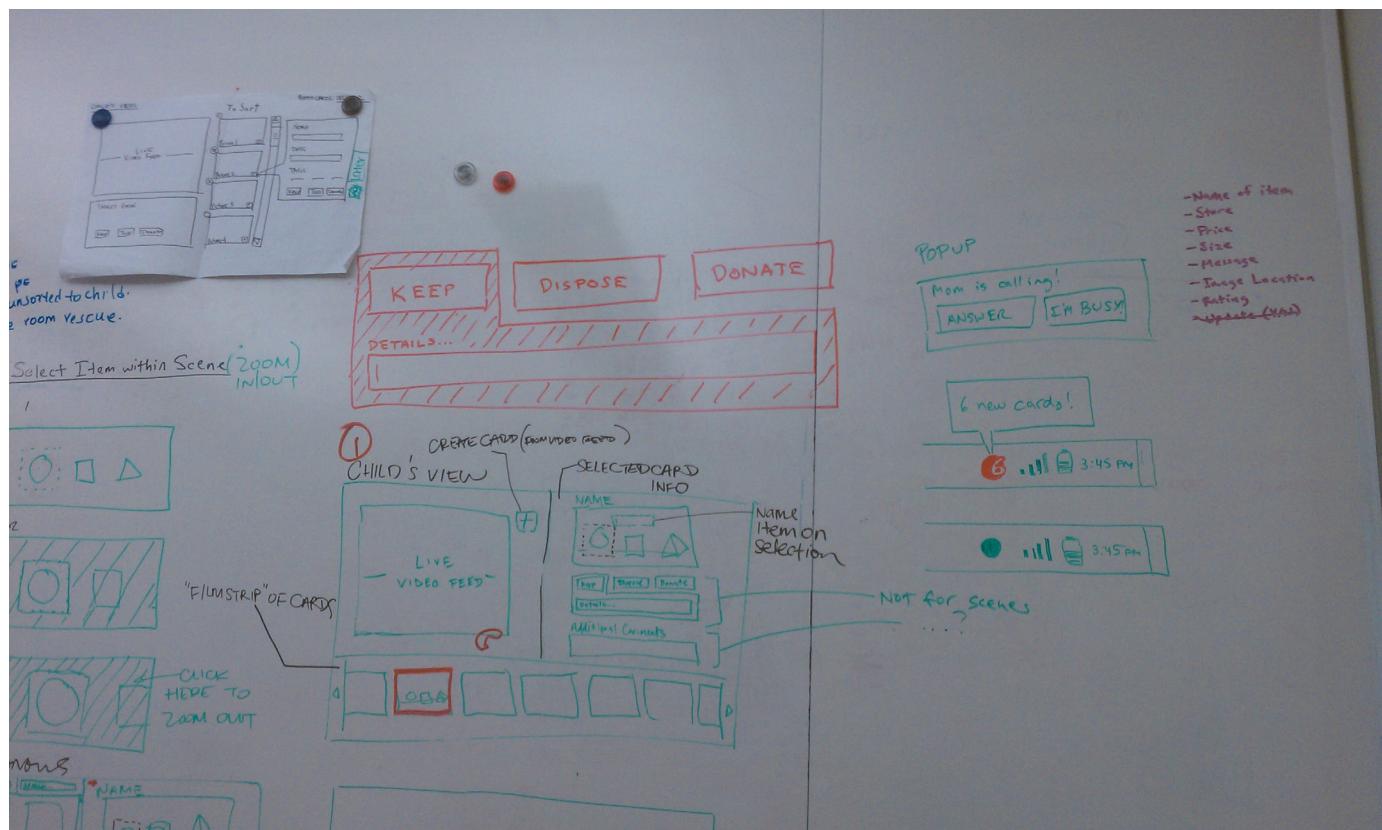
Notes from JZ

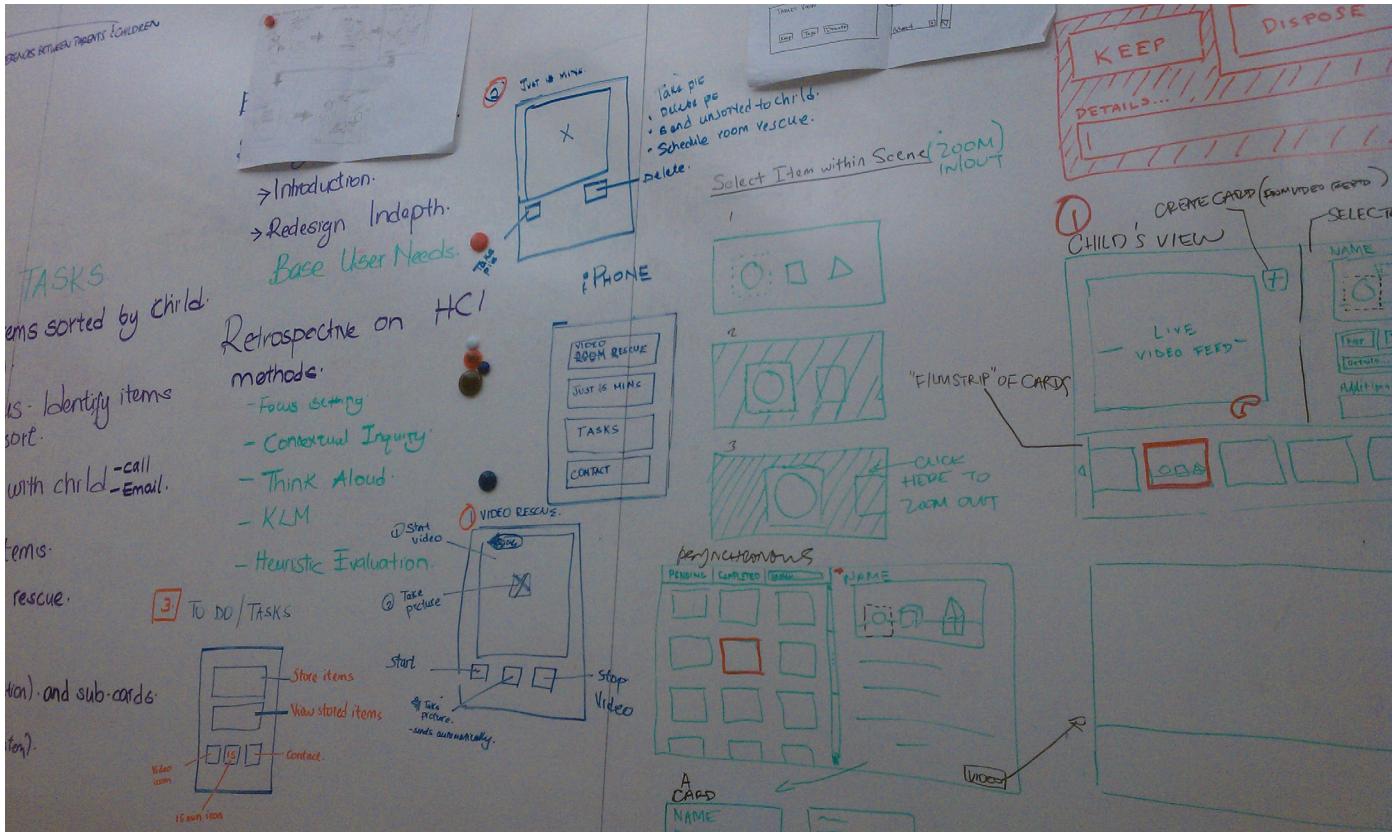
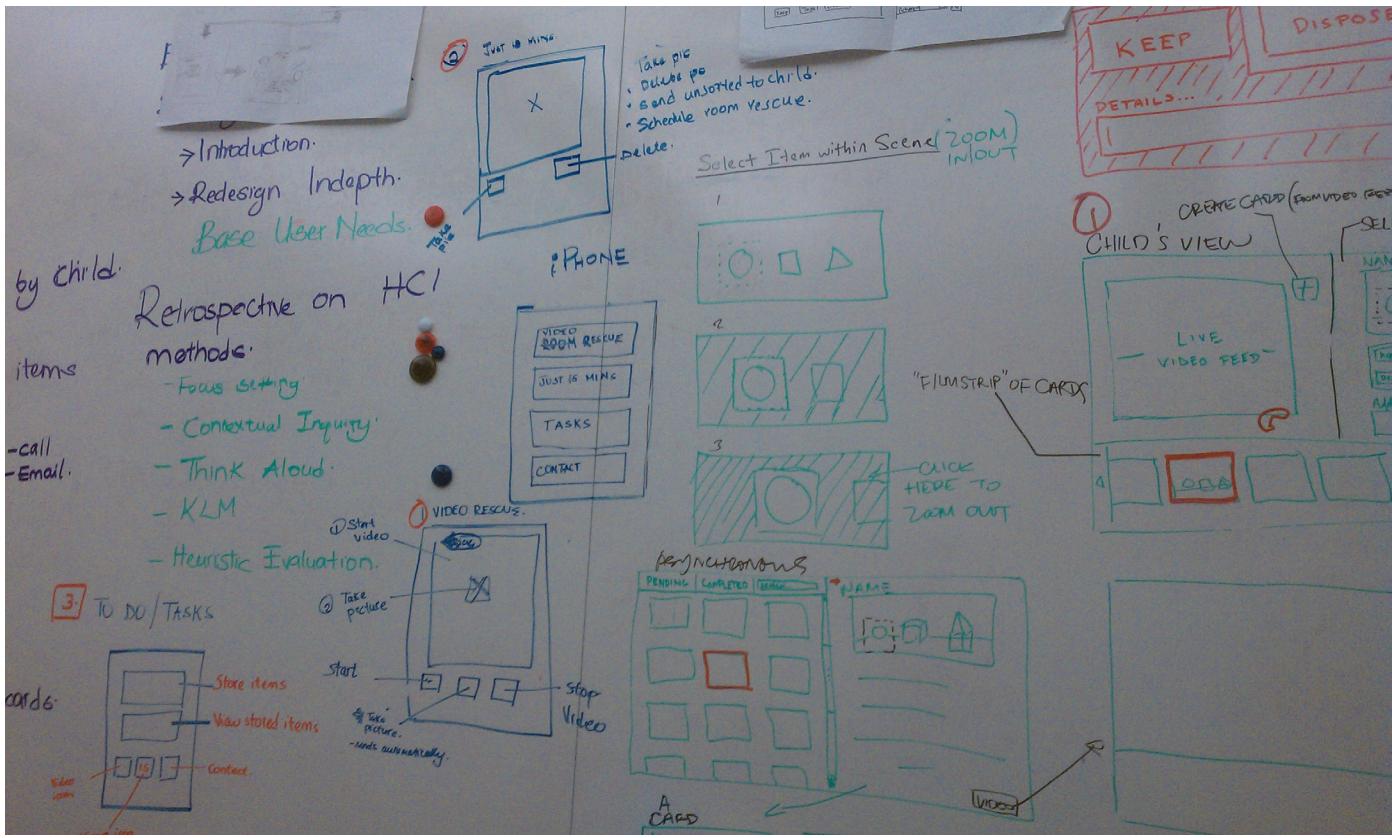
1. Desire: design based on explicit expression or behavior as evidence
2. Product attachment: people are what they possess
3. Roles: role enhancement--products that help people become the person they desire to be in a certain role (collage screensaver: bonnie's role as a good mother JZ20)  
role transition--design of products that support discovery and invention of self in a new role

Virtual possessions slide to add reference to cultural model

Design Ideas:

create a repository where the parents can post pictures of belongings  
kids can go through and indicate what to do  
drag to different areas -- box attic, keep there, trash, send to me





# E UARS

No.	Tape Time	Problem Description	UAR #s	Consensus Severity Rating
G10 - TA - 1	0:09-0:26	Button to upload photos is not easily discoverable.	PC-1, NK-2, TA-1, RL-1	1.5
G10 - TA - 2	1:07-1:14	Upload indicator is not apparent to user	TA-3	1
G10 - TA - 3	1:53-2:21	User interface does not make it clear how to organize photos after uploading them.	TA-4	2
G10 - TA - 4	1:30-3:14	Optimal way of creating sets is not easily discoverable.	PC-3, NK-4, KA-11	2
G10 - TA - 5	1:43.	System does not provide hints on how to begin creating sets after uploading content.	RL-3, KA-12	1.5
G10 - TA - 6	1:30-5:35	User interface was inefficient, requiring 3 minutes for the user to create sets.	NK-3, RL-5, TA-5	1.5
G10 - TA - 7	5:37-8:07	User interface does not make clear the meaning of photostream.	NK-6, KA-05, PC-10	2
G10 - TA - 8	6:20, 6:25, 8:42	The lack of an immediate option to add tags to content makes user unnecessarily browse options.	RL-9	3
G10 - TA - 9	6:10 - 12:09	User-interface does not provide a clear method of adding tags to content that was just added.	TA-7, KA-7, RL-7, NK-9, PC-8	3
G10 - TA - 10	8:07-8:34	User-interface use of "Tag FAQ page" when a new user clicks on "Tags" is rejected by user.	NK-7, RL-8, KA-8, TA-10, PC-9	2
G10 - TA - 11	2:29, 3:31-4:39	User interface does not make it clear that the user can add multiple pictures at a time instead of one by one.	KA-4	1
G10 - TA - 12	9:35-9:44	User interface does not make it clear how to save a comment.	TA-12, NK-8	1
G10 - TA - 13	12:14,	User-interface made it difficult for user to create a tag, as expressed by user	NK-10, TA-14	3

G10 - TA - 14	8:16, 8:30	User interface does not make it clear how to add tags when in Organize and Create mode.	TA-8	2
G10 - TA - 15	11:40 - 12:02	When viewing a photo, the user interface does not make it obvious how to view a set.	TA-13, KA-09	1.5
G10 - TA - 16	6:22-7:00	User interface does not make it clear how to open tabs for a set while in the Organize and Create view.	TA-9	2
G10 - TA - 17	3:03, 6:18, 7:12, 8:42	User interface does not allow use of contextual (right-click) menu for picture-related functions	PC-04	2.5
G10 - TA - 18	9:00 - 10:30	Comment system can be confused with tagging.	TA-11, PC-5, KA-07	3
G10 - TA - 19	4:03-4:05	Dragging content out of batch edit area leads to confusion about where picture ends up.	PC-6, RL-6	1
G10 - TA - 20	From 1:55 - 12:09	UI uses metaphors/instructions that are not clear to the user causing him to be confused over achieving goals and also not succeed in add tag task	KA-5	3

# UARS - PC

<b>Number:</b> PC - "TA" - 01
<b>Problem/Good Aspect:</b> Problem
<b>Name:</b> Button for uploading photos is not easily discoverable
<b>Evidence:</b> <i>What the user did:</i> User went to "Organize & Create" page instead of "Upload" page when prompted to upload photos (0:20). From that page, he followed a link to the proper "Upload" page.
<b>Criterion:</b> 4. The user accomplishes the task, but in a suboptimal way
<b>Explanation:</b> The user states his need to upload photos to Flickr (0:09), but instead of clicking on the "Upload" link, he clicks on the "Organize and Create" link (0:20). Since he has never uploaded photos before, Flickr shows a link to the Upload page from there, which he clicks (0:27).
<b>Severity or Benefit Rating:</b> 1
<b>Rationale for Rating</b> This problem has a low impact on users. It will be an issue the next time the user attempts to upload photos, since the "Organize and Create" page may no longer have a link to upload photos. However, the link does exist, and once the user does know where it is, it will not be much of a problem any longer. Nevertheless, a more prominent link to the Upload page could help users navigate more easily to this important feature.
<b>Possible solution:</b> Provide a more prominent "Upload" link.
<b>Relationship:</b> N/A

<b>Number:</b> PC - "TA" - 02
<b>Problem/Good Aspect:</b> Good Aspect
<b>Name:</b> Setting privacy to predefined group is easy for user
<b>Evidence:</b> <i>What the user said:</i> At 1:07, the user exclaimed "That's easy" after having set the privacy to be for family only. <i>What the user did:</i> Checked the 'Private' checkbox, followed by the 'Family' checkbox.
<b>Criterion:</b> 9. The user expressed some positive affect or says something is really easy.
<b>Explanation:</b> The user intended to set the privacy of his photos to be only visible to his family (1:00). Flickr gives a simple checkbox that allowed the user to set the photo privacy to be family only, which he clicked at 1:06. At 1:07, the user exclaimed that this task was easy to complete.
<b>Severity or Benefit Rating:</b> 0
<b>Rationale for Rating</b> This is beneficial, so this is certainly a 0. Moreover, its benefit can be seen, since it would affect anyone that wants to share photos with their family, which is likely a large population. Being present in the upload screen appeared to be intuitive for this user, and helped him achieve his goal.
<b>Possible solution:</b> N/A
<b>Relationship:</b> N/A

<b>Number:</b> PC - "TA" - 03
<b>Problem/Good Aspect:</b> Problem
<b>Name:</b> Creating Sets functionality is not easily discoverable
<b>Evidence:</b> <i>What the user did:</i> The user needed to try multiple approaches before figuring out how to create Sets for pictures. First, he considered clicking the link labeled "add a description" (2:00), but reasoned against that. Next, he tried to use the "Batch Organize" interface, but could not get that to work for sets (2:58). While in the "Batch Organize" tab, he tried to right-click on images to find Set functions there (3:03), which they were not. Finally, the user did find the "Sets" tab.
<b>Criteria:</b> 3. The user articulates a goal and has to try three or more things to find the solution. 4. The user accomplishes the task, but in a suboptimal way
<b>Explanation:</b> In order to achieve the larger goal of creating sets for his photos (stated 1:30), first the user must find where this functionality is located. That is the goal referred to in this UAR. If we include the user's consideration of clicking the "add a description" link (2:00), then we find that the user tried three things in order to accomplish his goal before finally achieving it. However, further knowledge about Flickr reveals that the "add a description" link would have actually brought the user to a page where he could have created his sets. Therefore, it is clear that the route that the user took to discover the set creation functionality was suboptimal.
<b>Severity or Benefit Rating:</b> 2
<b>Rationale for Rating</b> Considering the effort that the user needed to put in to finding the set creation functionality (nearly 3 minutes), it is clear that this was a disruption in the user's workflow; hence, I have rated it a 2. I have stopped short of assigning a rating of 3, since a means of getting to the set creation functionality would likely be learned after a couple of uses. However, even if a routine is learned similar to the way that the user found the functionality eventually, it could still be suboptimal if the "add a description" link was not discovered to be the quickest way to create sets of images. Thus, this could remain a disruption in the long-term.
<b>Possible solution:</b> This problem could be fixed by more effectively labeling the "add a description" link to include set creation (e.g. "Assign descriptions and sets to images"), or otherwise encouraging a clearer workflow that would step users from uploading photos into other functions such as set creation.
<b>Relationship:</b> PC - "TA" - 04

<b>Number:</b> PC - "TA" - 04
<b>Problem/Good Aspect:</b> Problem
<b>Name:</b> User interface does not allow use of contextual menu paradigm for accessing picture-related functions
<b>Evidence:</b> <i>What the user did:</i> Multiple times, the user attempted to access the contextual menu in order to use system-specific tasks. This occurred when trying to access Sets functionality (3:03), and three times when trying to find Tagging functionality (6:18, 7:12, 8:42). <i>What the system did:</i> The system created a contextual menu with the default browser functions, but with no system-specific functions, like tagging and assigning sets.
<b>Criterion:</b> 5. The user does not succeed in a task. That is, when there is a difference between the task the user was given and the solution the user produced.
<b>Explanation:</b> The goal in each of the four occurrences of the user invoking the right-click menu was to reveal picture functionality in that menu. This is evidenced by the fact that these occurrences happened while the user was trying to find picture functionality (e.g. creating sets). The user seemed to expect that the contextual menu for a picture would contain picture-related tasks. This is likely due to this paradigm being common in computer systems. However, Flickr did not implement custom contextual menus, so instead, the default browser contextual menu appeared, which was unsatisfactory to the user (he did not use these menus in the end). Thus, the user did not succeed in that task when he attempted it, since he did not find his picture functionality there.
<b>Severity or Benefit Rating:</b> 3
<b>Rationale for Rating</b> Considering that the user attempted to use the right-click menu four times within a relatively short time span, it is clear that this is a usage pattern that is expected, even after multiple failures. Thus, I categorize it as a 3, a major disruption that should be fixed. Without a fix, many users could waste time trying to use right-click menus to access functionality, and could be confused by the options that the browser does give in right-click menus, as they are not at all Flickr related. Additionally, although it is technically easy for users to avoid using contextual menus, in real-world use, it is not actually so easy for users to change deeply ingrained habits.
<b>Possible solution:</b> Include system-specific functions in contextual menus.
<b>Relationship:</b> PC - "TA" - 03, PC - "TA" - 05

<b>Number:</b> PC - "TA" - 05
<b>Problem/Good Aspect:</b> Problem
<b>Name:</b> System does not distinguish well enough between tagging photos and posting comments on photos.
<b>Evidence:</b> <i>What the user did:</i> The user posts comments on the pictures instead of tags (9:00, 9:45, 10:28, 12:30).
<b>Criterion:</b> 5. The user does not succeed in a task. That is, when there is a difference between the task the user was given and the solution the user produced.
<b>Explanation:</b> The user's stated task is to add tags to some of his pictures (5:48), but instead, he posts comments on these pictures. This constitutes a failure to complete his task. The user seemed to come to the conclusion that in the absence of finding any other tagging functionality, comment posting was likely the same thing as tagging. Since Flickr does, in fact, have a separate tagging feature, it did not consider any need to process the users posts as tags.
<b>Severity or Benefit Rating:</b> 3
<b>Rationale for Rating</b> I have rated this problem as a 3. This is due to the fact that this problem can cause the user to use Flickr in a way that will not produce the desired results, yet the user may not understand why these undesirable results are occurring if the user believes that (s)he is doing the correct thing. Since there is a distinct difference between tags and comments (tags can be searched upon, sorted by, organized with; unlike comments), this confusion could cause users to miss out on important functionality.
<b>Possible solution:</b> Increase the prominence of the tagging functionality. If the user had discovered tagging sooner, he may not have come to the conclusion that posting comments was the same thing. Alternatively, a more directed workflow that included tagging could ensure that users would encounter the tagging functionality.
<b>Relationship:</b> PC - "TA" - 08

<b>Number:</b> PC - "TA" - 06
<b>Problem/Good Aspect:</b> Problem
<b>Name:</b> Dragging images out of batch editing area leads to confusion over where image ends up.
<b>Evidence:</b> <i>What the user did:</i> The user dragged a photo from the batch editing area for new sets back to the filmstrip view at the bottom, in order to remove the photo from the new set he was creating (4:03). <i>What the system did:</i> The system grayed out the film strip and put text instructing the user to drag pictures there to remove them from the set. Once the user had done that, though, there was a delayed response for the film strip to return. <i>What the user said:</i> "Oh, where is it now?" (4:05), because it was unclear where the photo had gone, since the filmstrip took too long to return.
<b>Criterion:</b> 6. The user expresses hesitation, surprise.
<b>Explanation:</b> The user intended to remove a picture from the batch editing area, as could be understood from his statement that he had had pictures of toys in the edit area when toys should not have been (4:01). He completed the action as was necessary, dropping the picture onto the grayed-out film strip, but the system lagged after he had already dropped it. This caused the user to question what had happened to the photo he had just dropped, which seemed to have disappeared.
<b>Severity or Benefit Rating:</b> 1
<b>Rationale for Rating</b> I have given this a rating of 1. Since the system completed the task as the user expected, with just a slight lag time, this will not confuse the user for long. In fact, the user did continue about his task moments after expressing surprise with no apparent hindrance from this problem. Additionally, the user will not be surprised by this as much in the future, once he is used to it.
<b>Possible solution:</b> Increase the efficiency of the code such that there is no lag time.
<b>Relationship:</b> N/A

<b>Number:</b> PC - "TA" - 07
<b>Problem/Good Aspect:</b> Good Aspect
<p><b>Name:</b> Process of creating sets from within Set tab is easy</p>
<p><b>Evidence:</b> <i>What the user said:</i> "Okay. Now it's easy." (5:48), referring to creating new sets, once he has already found the set creation area.</p>
<p><b>Criterion:</b> 9. The user expressed some positive affect or says something is really easy.</p>
<p><b>Explanation:</b> Although the process of finding the area for creating sets was difficult (see PC - "TA" - 03), once the user reaches the proper area, he is able to work within the system well (with the one annoyance having already been mentioned in PC - "TA" - 06). After creating all the necessary sets, the user exclaims that "Now it's easy" (5:48). This shows that the user has quickly got the hang of the interface and will be able to work with it with no hesitation in the future.</p>
<b>Severity or Benefit Rating:</b> 0
<p><b>Rationale for Rating</b> Since this is a benefit, the rating is 0. This will frequently help users, whenever they wish to organize their images into sets, and will help them achieve that goal by being an understandable interface.</p>
<p><b>Possible solution:</b> N/A</p>
<p><b>Relationship:</b> PC - "TA" - 03, PC - "TA" - 06</p>

<b>Number:</b> PC - "TA" - 08
<b>Problem/Good Aspect:</b> Problem
<b>Name:</b> Photo Tagging is not easily discoverable
<b>Evidence:</b> <i>What the user did:</i> The user tries checking contextual menus of pictures (6:18, 7:12, 8:42), looks in the row of tabs for a Tagging tab (6:42-7:35), goes to the "Tags" page (8:22), looks at the Photostream (7:49), and finally, goes to specific image pages, but does not see the Tagging functions.
<b>Criterion:</b> 1. The user articulated a goal and does not succeed in attaining that goal within 3 minutes.
<b>Explanation:</b> User states goal of tagging photos at 5:48, but only finally "discovers" the tagging (incorrectly; he actually finds the commenting system) at 9:00. This is over three minutes later. The user was confused first because tagging was not an option among the tabs at the top of the screen while he was at the set creation screen. Later, he wanted to use contextual menus, but that was not allowed by Flickr. The purpose of the Photostream confused the user, and hindered him from using it to find the tagging functionality. Finally, when on the pages of individual photos, the user did not see the tagging options available. There were links to tagging functionality on multiple screens along the way. However, the fact that the user was unable to locate these shows that these were not prominent enough.
<b>Severity or Benefit Rating:</b> 3
<b>Rationale for Rating</b> This is a major disruption that must be fixed, so I rate it a 3. It is a major disruption since the user cannot locate a feature that he needs. It must be fixed because this could lead to user dissatisfaction and frustration that could lead him away from the product. It is not a "show-stopping" bug, however, since tagging is not likely a necessary feature for many users. This is illustrated in this case, where the user was content to merely comment on the image.
<b>Possible solution:</b> Make the links to tagging functionality more prominent, or make the workflow of uploading photos better, so it steps the user logically through set creation and tagging automatically.
<b>Relationship:</b> PC - "TA" - 04, PC - "TA" - 05

<b>Number:</b> PC - "TA" - 09
<b>Problem/Good Aspect:</b> Problem
<b>Name:</b> Answers to pertinent questions are not presented in a way that users are willing to look at.
<b>Evidence:</b> <i>What the user did:</i> While on the "Tags" page, the user glossed over the Tagging FAQ despite not knowing how to achieve his goal of tagging pictures (8:22). <i>What the user said:</i> "If you'd like to find out more about tagging, you might like to start at the Tag FAQ page. Ah, it lasts too long, I must find it out in another way." (8:25).
<b>Criterion:</b> 6. The user expresses hesitation, surprise.
<b>Explanation:</b> The user was looking for the tagging functionality, but would not read the Tagging FAQ because it would take too long (8:25). In this case, the user expressed hesitation to use that part of the website. This is a problem because it may have contained the answer to the user's goal (tagging photos), but the user was discouraged from looking there.
<b>Severity or Benefit Rating:</b> 2
<b>Rationale for Rating</b> This is a disruption, so it is ranked 2. It is a disruption because it potentially caused the user to spend significantly more time figuring out how to use tagging features. This problem could possibly have broader effects with respect to users' willingness to read FAQs in general. It would be desirable to get across important information in a way that users will be willing to read.
<b>Possible solution:</b> Relevant information from the FAQ could be integrated with various screens in the webpage such that the content would be immediately in front of a user. This would minimize the hesitancy that the user feels about looking through a larger FAQ, but could still deliver some of that information.
<b>Relationship:</b> N/A

<b>Number:</b> PC - "TA" - 10
<b>Problem/Good Aspect:</b> Problem
<b>Name:</b> User interface makes it unclear what the Photostream is.
<b>Evidence:</b> <i>What the user did:</i> At 7:47, the user entered the Photostream page, but quickly left due to confusion (7:55), only to return again (8:15). <i>What the user said:</i> "Here, photostream? Why should I go there..." (7:44) "Here is no, nowhere something where it could be a description. Your photostream, what should it mean?" (8:07).
<b>Criterion:</b> 6. The user expresses hesitation, surprise.
<b>Explanation:</b> The user's goal is to apply tagging data to some photos. He figures out over time that he is going to need to explore more of Flickr's site in order to find this functionality. This brings him to the Photostream. However, his verbal confusion over the purpose of the Photostream illustrates that its interface does not do a good job of clarifying its purpose.
<b>Severity or Benefit Rating:</b> 2
<b>Rationale for Rating</b> This is a disruption, so I rate it 2. It is a disruption because there is an important screen of the interface that is difficult for the user to understand. This means that until the user can figure it out, there will be a large set of functionality and navigability that the user will not be able to take advantage of, which this screen makes available. It is likely not a major disruption since the user may yet get over the learning curve for this screen and use it effectively.
<b>Possible solution:</b> Rename the Photostream to make it more intuitive what it is for. Redesign the Photostream so that it is immediately apparent what it is for.
<b>Relationship:</b> N/A

# UARS - NK

**Number:** NK - TA - 01

**Problem/Good Aspect:** Good Aspect

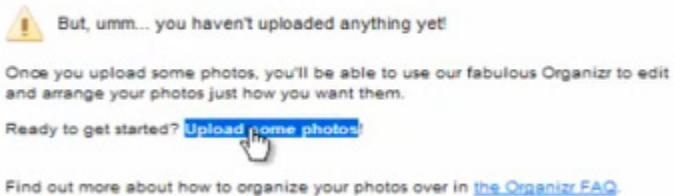
**Name:**

User-interface was "easy" when setting privacy while uploading photos

**Evidence:**

To upload photos, the user selected "Organize & Create" at 0:20, which prompted the following message:

## Organize your photos?



The message (pasted above) allowed the user to select "Upload some photos!" to upload photos that the user will be able to organize, which is what the participant did at 0:26. He then selected "Choose photos and videos" where he selected the photos he wished to upload. He then successfully adjusted the privacy setting on who can view his photos to include family only at 1:02, as seen in the screen shot below:



He stated "Family. Private. Visible to family. That's easy," at 1:02. He was then able to select "Upload Photos and Videos" to complete the task.

**Criterion:** 9. The user expressed some positive affect or says something is really easy.

**Explanation:**

The user-interface provides the user with a clear way to adjust the privacy settings for the pictures they are about to upload.

**Severity or Benefit Rating:** <Rate from 0 to 4>

0: not a problem

**Rationale for Rating**

I rated this problem as a 0 (not a problem) because it is a good aspect.

**Possible solution:**

N/A

**Relationship:**

N/A

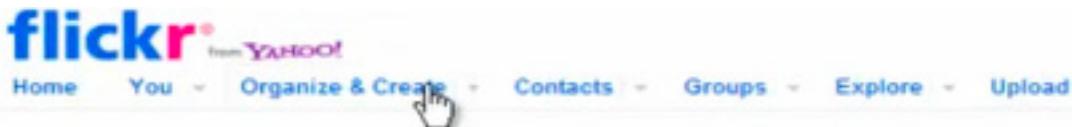
**Number:** NK - TA - 02

**Problem/Good Aspect:** Bad Aspect

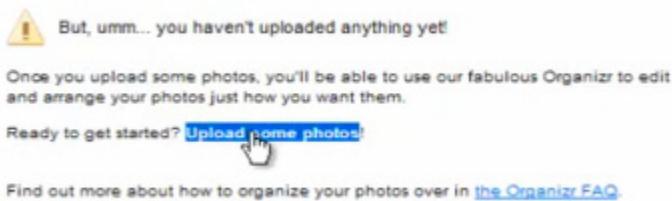
**Name:**

User-interface was inefficient when user needs to upload pictures because the "Upload" button is not easily discoverable

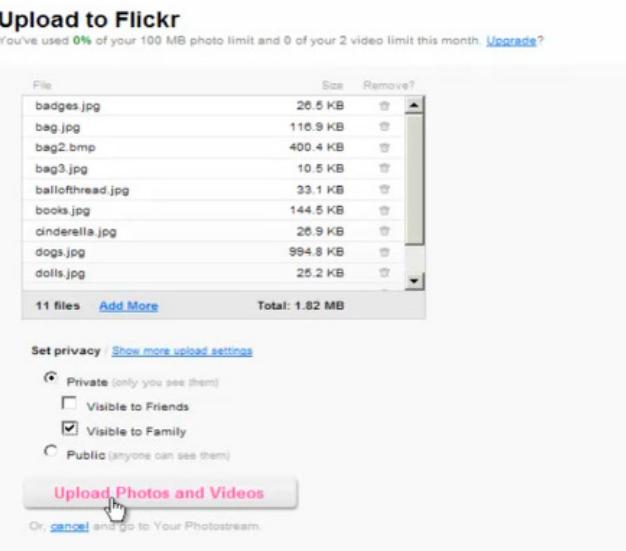
**Evidence:**



To upload photos, the user selected "Organize & Create" at 0:20 instead of "Upload" which prompted the following message:



The message (pasted above) allowed the user to select "Upload some photos!" to upload photos that the user will be able to organize, which is what the participant did at 0:26. He then selected "Choose photos and videos" where he selected the photos he wished to upload. He then successfully adjusted the privacy setting on who can view his photos to include family only at 1:02, as seen in the screen shot below:



He was then able to select "Upload Photos and Videos" to complete the task.

**Criterion:** 4. The user accomplishes the task, but in a suboptimal way.

**Explanation:**

The user-interface does not make it clear enough for the user to select "Upload" in order to upload photos. The user selected "Organize & Create" instead, which is not the optimal way to perform this task.

**Severity or Benefit Rating:** <Rate from 0 to 4>

2: disruption

**Rationale for Rating**

I rated this problem as a 2 (disruption) and no higher because it is easy to overcome. Although the path that the user chose is not ideal and may happen frequently before the user realizes a better way to perform the task, it does not take too much longer to complete the task.

**Possible solution:**

Placing "Upload" earlier in the menu (after "You") would possibly make it more visible to the user so that they don't select "Organize & Create" since they didn't see "Upload" on the menu.

**Relationship:**

N/A

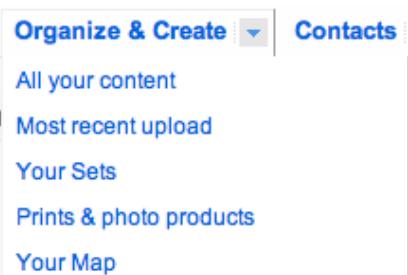
<b>Number:</b> NK - TA - 03
<b>Problem/Good Aspect:</b> Bad Aspect
<b>Name:</b> User-interface was inefficient, causing user to take over 3 minutes to create sets
<b>Evidence:</b> The user articulates that he needs to organize the photos into 3 categories (Toys, Bags, Other Items) at 1:30. He is greeted with the following message when the pictures have completed uploading:

He expresses confusion over what "add a description" means at 1:55 when he states, "finished. Add a description? Next. Description? To every picture or...?" If he were to have clicked on the link he would have seen the following which would have allowed him to "Create a new Set...":

After he hesitates to select the link, and decides to go to "Organize & Create" to complete the task instead at 2:23. He then tried to create sets by dragging items into the "Batch Organize" window at 2:32. After that did not provide him with the desired results, he noticed that he could select "Sets" under the second tab at 2:57. He then checked the contextual menu at 3:03 before proceeded to create the sets (which he began at 3:13): other items at 3:29, toys at 4:43, and bags at 5:21. He saves his last set at 5:35.
<b>Criterion:</b> 1. The user does not succeed in attaining that goal within 3 minutes. 3. The user articulates a goal and has to try three or more things to find the solution.
<b>Explanation:</b> The user took over 3 minutes to complete this task from start to finish. He hesitated when he saw "add a description" and tried to use "Batch Organize" to create sets before he figured out how to create the sets using the "Sets" tab. He tried 3 different ways to create sets: exploring "add a description", using "Batch Organize", clicking a context menu, and finally using the "Sets" tab.
<b>Severity or Benefit Rating:</b> <Rate from 0 to 4> 1: minor annoyance
<b>Rationale for Rating</b> I rated this problem a minor annoyance and no higher because it is a problem that users will encounter the first time they try to create sets. Once the user learns how to create the set, it will be easy to create in the future.
<b>Possible solution:</b> Changing "add a description" to "organize pictures into sets" would make it more explicit and easy for the user to understand what the next step in the process is. Another possible solution would be to make it clear that there is a drop-down menu available.
<b>Relationship:</b> NK-TA-04 – this is how the user completes the organization of photos into 3 sets in a suboptimal way, NK-TA-05 – this is how the user expresses that after creating the sets becomes easy after a few times

<b>Number:</b> NK - TA - 04
<b>Problem/Good Aspect:</b> Bad Aspect
<b>Name:</b> User-interface does not make it obvious enough that the user can create sets by selecting "add a description" or selecting "Your Sets" from the drop down menu for "Organize & Create"
<b>Evidence:</b> The user articulates that he needs to organize the photos into 3 sets (Toys, Bags, Other Items) at 1:30. He is greeted with the following message when the pictures have completed uploading:

He expresses confusion over what "add a description" means at 1:55 when he states, "finished. Add a description? Next. Description? To every picture or...?" If he were to have clicked on the link he would have seen the following which would have allowed him to "Create a new Set...":

After he hesitates to select the link, and decides to go to "Organize & Create" to complete the task instead at 2:23. He did not see that the small arrow to the right of the menu item indicated that it is a drop down menu, which would have allowed him to select "Your Sets" and complete the task in an optimal way (as shown in the image below).

He then tried to create sets by dragging items into the "Batch Organize" window at 2:32. After that did not provide him with the desired results, he noticed that he could select "Sets" under the second tab at 2:57. He then proceeded to create the sets: other items at 3:29, toys at 4:43, and bags at 5:21.
<b>Criterion:</b> 4. The user accomplishes the task, but in a suboptimal way.
<b>Explanation:</b> The user decided not to "add a description" because it was unclear what that meant. Also, despite the small arrow that point's downward next to "Organize & Create" to indicate that there are more menu items. The user simply selects "Organize & Create" in order to categorize the pictures into sets. The user could have accomplished this task by selecting "Your Sets" from the dropdown where it would have prompted the user to create sets.

<b>Severity or Benefit Rating:</b> <Rate from 0 to 4>
2: disruption
<b>Rationale for Rating</b>
I rated this problem as a 2 (disruption) and no higher because it is easy to overcome and would not occur frequently. The risk is that the user will not be able to figure out how to complete this task quickly.
<b>Possible solution:</b>
By changing the "create a description" to a link that is more explicit about the action that can be performed, the user would better understand what that link is for.
<b>Relationship:</b>
NK-TA-03 – this is how the user takes over 3 minutes to create sets, NK-TA-05 – this is how the user expresses that after creating the sets becomes easy after a few times

<b>Number:</b> NK - TA - 05
<b>Problem/Good Aspect:</b> Good Aspect
<b>Name:</b> User-interface makes it easy for the user to pick up how to create multiple sets
<b>Evidence:</b> The user articulates that he needs to organize the photos into 3 sets (Toys, Bags, Other Items) at 1:30. He expresses confusion over what "add a description" means at 1:55 when he states, "finished. Add a description? Next. Description? To every picture or...?" After he hesitates to select the link, and decides to go to "Organize & Create" to complete the task instead at 2:23. He then tried to create sets by dragging items into the "Batch Organize" window at 2:32. After that did not provide him with the desired results, he noticed that he could select "Sets" under the second tab at 2:57. He then proceeded to create the sets: other items at 3:29, toys at 4:43, and bags at 5:21. At 5:21, he states, "Then bags. Okay. Now it's easy. Bags. Save."
<b>Criterion:</b> 9. The user expressed some positive affect or says something is really easy.
<b>Explanation:</b> The user-interface provides the user with a clear way to add multiple sets once the user figures out how to add sets.
<b>Severity or Benefit Rating:</b> <Rate from 0 to 4> 0: not a problem
<b>Rationale for Rating</b>
I rated this problem as a 0 (not a problem) because it is a good aspect.
<b>Possible solution:</b> N/A
<b>Relationship:</b> NK-TA-03 – this is how the user takes over 3 minutes to create sets, NK-TA-04 – this is how the user completes the organization of photos into 3 sets in a suboptimal way

<b>Number:</b> NK - TA - 06
<b>Problem/Good Aspect:</b> Bad Aspect
<b>Name:</b> User-interface does not make clear the meaning of photostream
<b>Evidence:</b> The user articulates that he needs to find things that he knows his daughter really cared about as a child and add tags to the "snow white" and "hello kitty" at 5:37. He flips back and forth between sets (from 6:07 to 7:17) looking for an "add tag" button and even tried looking at the tool (at 7:18) before going back to flipping between sets at 7:23. He finds the "Your Photostream" link at 7:44 when he expresses his confusion about the "photostream." The picture below displays the tab menu, toolbar, and photostream link that he was sorting through for over 2 minutes:
After he clicks on the photostream link, he sees the following: 
Instead of looking through the page and finding the "Tags" link under "Your photostream" the user expresses, "Here, photostream? Why should I go there... I Don't understand why I should find tag" at 7:44. He then hits the back button on the browser to return to the previous page. After realizing that nothing on the page he returned to indicates "tag" he decided to try "Your photostream" again while expressing confusion, "Here is no, nowhere something where it could be a description. Your photostream, what should it mean?" at 8:07; however, on his second try, he finds the "Tags" link.
<b>Criterion:</b> 6. The user expresses confusion over how to achieve a goal.
<b>Explanation:</b> The user-interface causes the user confusion with the use of the word "Photostream," which the user does not understand. The first time he clicked on "Your photostream" he didn't find "Tags" because he didn't understand what it meant which caused him to go back to the previous page. After he realized he couldn't find "Tags" there he tried "Your photostream" again where he found the "Tags" button. The user also didn't realize that he could have found a page where he could tag pictures by double-clicking and enlarging an image.

**Severity or Benefit Rating:** <Rate from 0 to 4>

2: disruption

**Rationale for Rating**

I rated this problem a 2 (disruption) and no higher because it caused the user confusion. The user spent 2.5 minutes searching for the "Tags" link. This could be a common problem in novice users, but it will only occur the first time the user attempts to find the "Tags" link. The user can learn where to go once they do it a couple of times.

**Possible solution:**

A possible solution would be to indicate a hint about what "Your Photostream" can accomplish. Adding a brief description of its functionality when a user hovers over the link can do this.

**Relationship:**

NK-TA-07 – this is how the user decides to find an alternative way to tag pictures because he feels that the Tag FAQ page will take too long,

NK-TA-08 – this is how the user decides to post comments instead of tags,

NK-TA-09 – this is how the user adds comments instead of accomplishing his goal of adding tags,

NK-TA-10 – this expresses that the user finds the interface difficult to use when adding tags

**Number:** NK - TA - 07**Problem/Good Aspect:** Bad Aspect**Name:**

User-interface use of "Tag FAQ page" when a new user clicks on "Tags" is rejected by user

**Evidence:**

After discovering the "Tags" link at 8:07, the user reads the following message:



You haven't tagged any of your photos or videos yet. If you'd like to find out more about tagging, you might like to start at the [Tag FAQ page](#).

He states, "Tags. Heh, your photostream... You haven't tagged any of your photos, okay. If you'd like to find out more about tagging, you might like to start at the Tag FAQ Page. Ah, it lasts too long, I must find it out in another way" at 8:17. Instead of clicking on the link, he attempts to set a tag in a different way.

**Criterion:** 7. The user expresses some negative affect or says something is a problem.**Explanation:**

The user felt that the "Tag FAQ page" would take too long to read through, so he decided to find an alternate way to tag pictures, instead of using the "Tags" page.

**Severity or Benefit Rating:** <Rate from 0 to 4>

2: disruption

**Rationale for Rating**

I rated this problem a 2 (disruption) and no higher because the new user rejected the path since he thought it would take him too long to find the proper information on the Tag FAQ page. This could potentially happen every time a new user selects the "Tags" link. This was not ranked higher than a disruption because once a user learns how to tag pictures, he doesn't have to encounter this issue again. There is also an alternate way to tag pictures by enlarging them and selecting the area which you wish to tag.

**Possible solution:**

A possible solution would be to allow users to view the "Tags" page right away, but to leave the link to the "Tag FAQ" at the bottom of the page for first time users (if they would like more information).

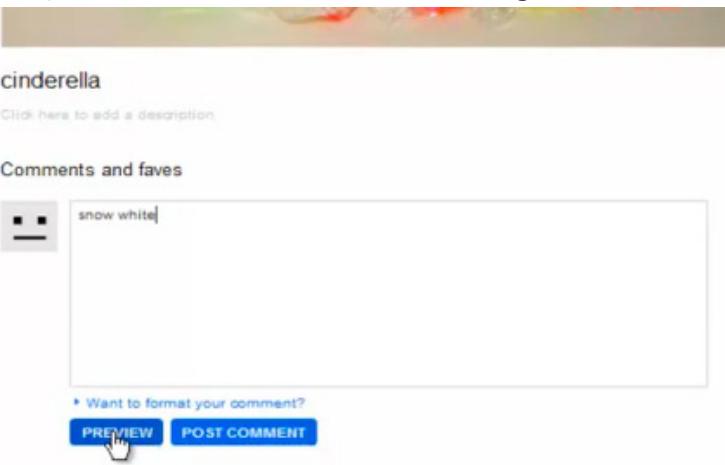
**Relationship:**

NK-TA-06 – this is how the user finds the "Tags" link despite his confusion about photostream,

NK-TA-08 – this is how the user decides to post comments instead of tags,

NK-TA-09 – this is how the user adds comments instead of accomplishing his goal of adding tags,

NK-TA-10 – this expresses that the user finds the interface difficult to use when adding tags

<b>Number:</b> NK - TA - 08
<b>Problem/Good Aspect:</b> Bad Aspect
<b>Name:</b> User-interface does not make clear how to "save" a comment
<b>Evidence:</b> In an attempt to tag a picture, the user reads that he can add a description. He states, "...Click here to add a description. Aha. Okay..." at 8:41. He then finds an image of Snow White where he selects "Click here to add a description" which leads him to add a comment. After he writes his comment, he looks for a save button and states, "Where is save?" at 9:22 while looking at the screen below:  A screenshot of a photo editing interface. At the top, there's a placeholder image with the text 'cinderella' and a link 'Click here to add a description'. Below it is a 'Comments and faves' section containing a text input box with 'snow white' typed into it. To the right of the comments section are several settings: 'People in this photo (add a person)', 'Tags (add a tag)', and 'Owner settings (show more)' with options for 'All Rights Reserved' and 'Only Family can see this photo'. At the bottom of the comments section are two buttons: 'PREVIEW' and 'POST COMMENT', with a cursor hovering over 'POST COMMENT'.
After he looks for save for a bit, the interviewer told him it was "Post Comment" at 9:40. When posting his second comment, he states, "...place a tag here. And post" at 10:07.
<b>Criterion:</b> 6. The user expresses confusion over how to achieve a goal.
<b>Explanation:</b> The user-interface does not provide a clear way to save a comment. The user did not realize what the "Post Comment" would do until the interviewer told him what it meant. However, once he knew what "Post Comment" meant he was able to successfully post comments on his second (10:07) and third (10:46) tries.
<b>Severity or Benefit Rating:</b> <Rate from 0 to 4> 1: minor annoyance
<b>Rationale for Rating</b> I rated this problem as a 1 (minor annoyance) and no higher because it may be a rare problem. Although this user had trouble understanding what "Post Comment" meant, this may not be an issue with all users. This did not prevent the user from achieving their "goal" of saving a comment. It is not difficult to overcome because there are only two options which he could have tried to figure out what "Post Comment" meant because it is clear that the two buttons are associated with that particular text box. Once the user knows to select "Post Comment" instead of "Save" he will no longer have this problem.
<b>Possible solution:</b> A possible solution would be to write "Save your comment!" as a description that appears when you hover over the "Post Comment" button.
<b>Relationship:</b> NK-TA-06 – this is how the user finds the "Tags" link despite his confusion about photostream, NK-TA-07 – this is how the user decides to find an alternative way to tag pictures because he feels that the Tag FAQ page will take too long, NK-TA-09 – this is how the user adds comments instead of accomplishing his goal of adding tags, NK-TA-10 – this expresses that the user finds the interface difficult to use when adding tags

<b>Number:</b> NK - TA - 09
<b>Problem/Good Aspect:</b> Bad Aspect
<b>Name:</b> User-interface does not make clear how to add tags to a picture
<b>Evidence:</b> The user articulates that he needs to find things that he knows his daughter really cared about as a child and add tags to the "snow white" and "hello kitty" at 5:37. He flips back and forth between sets (from 6:07 to 7:17) looking for an "add tag" button and even tried looking at the tool (at 7:18) before going back to flipping between sets at 7:23. After realizing that nothing on the page he returned to indicates "tag" he decided to try "Your photostream" again where he finds the "Tags" link. After discovering the "Tags" link at 8:07, he states, "Tags. Heh, your photostream... You haven't tagged any of your photos, okay. If you'd like to find out more about tagging, you might like to start at the Tag FAQ Page. Ah, it lasts too long, I must find it out in another way" at 8:17. Instead of clicking on the link, he attempts to set a tag in a different way. He misunderstands that adding a description to a picture is not the same as adding a tag to a picture, which is evident when he says, "...Click here to add a description. Aha. Okay..." at 8:41. He then finds an image of Snow White where he selects "Click here to add a description" which leads him to add a comment. He did not see the "Tags" section on the page where he would have been able to successfully add a tag (as you can see on the menu to the right of the page):
<p>cinderella</p> <p>Click here to add a description</p> <p>Comments and faves</p> <p>snow white</p> <p>Want to format your comment?</p> <p>PREVIEW POST COMMENT</p> <p>People in this photo (add a person)</p> <p>Adding people shares who is in your photo</p> <p>Tags (add a tag)</p> <p>Adding tags helps describe your photos</p> <p>Owner settings (show more)</p> <p>All Rights Reserved (edit)</p> <p>Only Family can see this photo (edit)</p>
He then continues to "tag" pictures by adding comments to them at 10:07 and 10:46. After he finishes adding his comments, he states, "So I've posted several tags now" at 10:51 and then goes on to state, "So we have two comments on this picture" at 12:09, using the words tag and comment interchangeably.
<b>Criterion:</b> 5. The user does not succeed in a task. That is, when there is a difference between the task the user was given and the solution the user produced.
<b>Explanation:</b> The user-interface does not provide the user with a clear way to add tags. He began to use the words "tags" and "comments" interchangeably. Despite having a way to add tags on the screen, the user decides that comments is a way to add tags.

**Severity or Benefit Rating:** <Rate from 0 to 4>

3: major disruption that should be fixed

**Rationale for Rating**

I rated this problem as a 3 (major disruption that should be fixed) because if users do not understand the difference between a tag and comment they will misuse the interface, which can lead to confusion and frustration. This can ultimately lead the interface to fail since users will reject the system if they are frustrated enough. This will be a frequent problem if the user never realizes the difference between tagging and commenting pictures.

**Possible solution:**

An explanation should be provided stating the difference between posting a comment and a tag. Another possible solution would be to increase the size of the menu on the right side of the page so that the word "Tag" is more visible.

**Relationship:**

NK-TA-06 – this is how the user finds the "Tags" link despite his confusion about photostream,

NK-TA-07 – this is how the user decides to find an alternative way to tag pictures because he feels that the Tag FAQ page will take too long,

NK-TA-08 – this is how the user decides to post comments instead of tags,

NK-TA-10 – this expresses that the user finds the interface difficult to use when adding tags

<b>Number:</b> NK - TA - 10
<b>Problem/Good Aspect:</b> Bad Aspect
<b>Name:</b> User-interface made it difficult for user to create a tag, as expressed by user
<b>Evidence:</b> After the user finishes adding his comments, he states, "So I've posted several tags now" at 10:51 and then goes on to state, "So we have two comments on this picture" at 12:09, using the words tag and comment interchangeably. He goes on to say, "That's all? Oh. What hard work" at 12:09, expressing how difficult he felt this task was to accomplish.
<b>Criterion:</b> 7. The user expresses some negative affect or says something is a problem.
<b>Explanation:</b> The user interface made it difficult for the user to add tags to the system. He began creating tags at 5:37, which he finished unsuccessfully at 12:08. It took him over 6 minutes to complete this task unsuccessfully. He expresses this negative affect when he says "Oh. What hard work," at 12:09.
<b>Severity or Benefit Rating:</b> <Rate from 0 to 4> 3: major disruption that should be fixed
<b>Rationale for Rating</b> I rated this problem as a 3 (major disruption that should be fixed) because if the user finds the interface difficult to use, he will not be very likely to return to the interface in the future. While the problem may not be frequent because the user will continue to add tags by using the comments functionality in the future, it will cause frustration and confusion that may cause the user to give up on the system.
<b>Possible solution:</b> A possible solution would be to explain the difference between comments and tags. Also, it may be wise to show walk new users through "Next" steps that include tagging pictures and posting comments for the first set they create.
<b>Relationship:</b> NK-TA-06 – this is how the user finds the "Tags" link despite his confusion about photostream, NK-TA-07 – this is how the user decides to find an alternative way to tag pictures because he feels that the Tag FAQ page will take too long, NK-TA-08 – this is how the user decides to post comments instead of tags, NK-TA-09 – this is how the user adds comments instead of accomplishing his goal of adding tags

# UARS - TA

<b>Number:</b> tja-TA-1
<b>Problem/Good Aspect:</b> Problem
<b>Name:</b> “Organize and Create” causes confusion.
<b>Evidence:</b> At 0:09 the user states that his goal is to “Upload these photos onto Flickr.” At 0:16 he moves his cursor up to the navigation link for “Home.” He moves his cursor over “You” and at 0:17 stops on “Organize and Create,” reading it aloud. The system presents a message saying that he has no photos to organize. At 0:26, he clicks a link at the end of the message saying “Upload some photos,” which takes him to the state he would have been in had he clicked the “Upload” navigation link.
<b>Criterion:</b> 4. The user accomplishes the task, but in a suboptimal way.
<b>Explanation:</b> In searching for the option to upload photos, the user scans the top bar’s navigation links from left to right. He comes to “Organize and Create” before seeing the link for “Upload,” and he interprets this as allowing him to upload photos by creating them. Because he has not seen the option for “Upload,” he chooses this instead, costing him an extra click in uploading his photos.
<b>Severity or Benefit Rating:</b> 1 – minor annoyance
<b>Rationale for Rating</b> This problem occurs only when the user is not aware of the “Upload” link, which is likely before they have uploaded photos. The user recovered from his mistake with a single click. Due to this infrequency and the fact that recovery was easy, I would not rate this a 2. It is a small problem, however, so it cannot be rated 0.
<b>Possible solution:</b> Do not display the “Organize and Create” link if the user has no photos to organize.
<b>Relationship:</b>

<b>Number:</b> tja-TA-2
<b>Problem/Good Aspect:</b> Good Aspect
<b>Name:</b> User Interface supports user privacy goals.
<b>Evidence:</b> At 0:47 the user moves his cursor close to the "Set privacy" heading and says "ah private." At 1:00 he rereads the task, stating the goal "you can at least protect your images by only allowing family to see it." At 1:03 he clicks the radio button for private. At 1:05 he clicks the tickybox labeled "Visible to Family." At 1:07 he clicks "Upload Photos and Videos" and says, "that's easy."
<b>Criterion:</b> 9. The user expressed some positive affect or says something is really easy.
<b>Explanation:</b> The user saw the controls for privacy setting, prompting him to remember a goal of protecting the images by only allowing his family to see them. Because the "Visible to Family" radio button option underneath the "Privacy" radio button matches this goal exactly, the user finds accomplishing his goal to be easy.
<b>Severity or Benefit Rating:</b> 0 – not a problem
<b>Rationale for Rating</b> The good aspect here is that the privacy controls correspond exactly to the task the user wants to complete. He wants to make his photos visible only to family, and the privacy controls offer the option "Visible only to Family" under the "Private" radio button option. The user quickly understands that these controls allow him to accomplish his goal.
<b>Possible solution:</b> No fix needed. The value of this feature needs to be taken into consideration when making changes to privacy features.
<b>Relationship:</b>

<b>Number:</b> tja-TA-3
<b>Problem/Good Aspect:</b> Problem
<b>Name:</b> Upload indicator is not apparent to user.
<b>Evidence:</b> After clicking the "Upload Photos and Videos" button at 1:07, the user asks at 1:14, "so. Is it uploading?" as the system updates progress bars for the upload of individual files and the upload as a whole.
<b>Criterion:</b> 6. The user expresses confusion over how to achieve a goal.
<b>Explanation:</b> The user does not initially see any indication that his pictures are uploading, causing him to state confusion as to whether or not the photos are uploading.
<b>Severity or Benefit Rating:</b> 1 –minor annoyance
<b>Rationale for Rating</b> This is a problem in that it caused the user confusion, but because it did not impact the completion of the user's goal, it is not a disruption, which would merit a 2 or higher ranking.
<b>Possible solution:</b> While uploading, display a message stating that the system is now uploading files.
<b>Relationship:</b>

<b>Number:</b> tja-TA-4
<b>Problem/Good Aspect:</b> Problem
<b>Name:</b> User interface does not make it clear how to organize photos after uploading them.
<b>Evidence:</b> After the user's upload finishes at 1:53, the user moves his mouse to the "add a description" link that appears and, at 2:03, says "Add a description? ... To every picture or...?" He then checks the task description, saying "There's not talked about a description." and, at 2:21, he asks "How can I organize into different sets?"
<b>Criterion:</b> 6. The user expresses confusion over how to achieve a goal.
<b>Explanation:</b> After his photos are done uploading, the user wants to organize his photos into sets, but he doesn't see any indication of how to do this and is confused by the option presented to "add a description." Not knowing how to proceed, the user becomes confused.
<b>Severity or Benefit Rating:</b> 1 – minor annoyance
<b>Rationale for Rating</b> This problem can only occur for a user who has never attempted to organize their photos into sets, and as such is likely to happen only once. The user was eventually able to find the "Organize and Create" link and recover. Because this is a problem and is thus more than a 0, but is not frequent and does not prevent the user from continuing in a way that merits a 2 or greater ranking, I have ranked it as a minor annoyance, 1.
<b>Possible solution:</b> Along with the link to "add a description" that appears after uploading, present a link for organizing photos.
<b>Relationship:</b> tja-TA-5 This confusion contributes to slowing the user in completing his task efficiently.

<b>Number:</b> tja-TA-5
<b>Problem/Good Aspect:</b>
Problem
<b>Name:</b> Organize and create interface is not intuitive for new users.
<b>Evidence:</b> At 2:19 the user states "How can I organize....?" He clicks the link for "Organize and create" and at 2:30 stops his cursor over the "all your content" pull down menu and reads "all your content." At 2:44 he reads the message displayed in the editing area, "drag items here to edit them in a batch," and says, "I try it." He drags two image thumbnails into the editing area and at 2:57 he right clicks the first image. At 3:15 he notices and clicks the "Sets" tab. At 3:30 he drags an image into the editing area and starts to type "other items" in the name field of a sidebar that appears. At 3:50, his cursor goes to save, but then he asks "Or should I add more?" He then continues to make the three sets. At 5:19 he clicks save for the second set, and at 5:35 clicks save for the last set.
<b>Criterion:</b> 1. The user articulated a goal and does not succeed in attaining that goal within 3 minutes. AND 3. The user articulates a goal and has to try three or more things to find the solution.
<b>Explanation:</b> The user declares a goal of organizing his photos into sets, but three minutes later has not finished this task. He is not certain how to proceed, and tries a few erroneous things, like inspecting the "all your content" menu, using the batch edit tool, and right clicking an image, before finding how to accomplish his goal, which slows him down.
<b>Severity or Benefit Rating:</b> 2 - disruption
<b>Rationale for Rating</b>  This is a 2, disruption, because the usability of the system is impacted for a new user, meaning that a disruption does occur. It takes time for the user to figure things out, and is not cosmetic, so a 1 rating would be inappropriate. A rating of 3 or more is too severe because the problem only affects users who have not made a set before.
<b>Possible solution:</b> Offer a popup explaining the user's options in Organize and create the first time a user uses this feature, and providing links to the appropriate tab.
<b>Relationship:</b> tja-TA-4 – The user's confusion contributes to the slow down in making sets for the first time.

<b>Number:</b> tja-TA-6
<b>Problem/Good Aspect:</b> Good aspect
<b>Name:</b> Once familiar, the Set making interface is easy to use.
<b>Evidence:</b> At 5:25, after having made two sets, the user clicks the "create a new set" link and remarks "then bags. Okay. Now it's easy." He drags thumbnails of bags into the editing area, and at 5:33 names the set "Bags" and clicks "save."
<b>Criterion:</b> 9. The user expresses some positive affect or says something is really easy.
<b>Explanation:</b> After learning how to create sets, the user is able to do this task with ease.
<b>Severity or Benefit Rating:</b> 0 – Not a problem
<b>Rationale for Rating</b> The interface for making sets is simple enough that a user knows exactly what to do after only using it a few times previously. This is desirable, and should be maintained.
<b>Possible solution:</b> No fix needed. That the user finds this easy indicates that the present workflow of the interface is worth maintaining.
<b>Relationship:</b> tja-TA-5 – Although difficult to find at first, once the user discovers the Set making tool, it is easy to use. This suggests taking an approach of guiding the user to the right tool, rather than reworking the tool itself.

<b>Number:</b> tja-TA-7
<b>Problem/Good Aspect:</b> Problem
<b>Name:</b> User interface does not make it clear how to add a tag to a photo.
<b>Evidence:</b> At 6:10 The user says, "I should add... What's called.. add tag." He right clicks the one of lower image thumbnails at 6:18. At 6:23 he clicks on the thumbnail for the "Bags" set after saying, "Can I add a tag somewhere, or do I have to open the things?" At 6:34 the user clicks the tab for "Sets" and clicks the thumbnail for the "Toys" set. At 6:58 he clicks into the "Print & Create" tab and then the "Sets" tab. At 7:08 he clicks the thumbnail for the "Toys" set, and at 7:10 right clicks the first thumbnail image in the gray editing area. At 7:21 he moves his cursor over the menu bar for his web browser, saying, "is it perhaps here in the top line, no?" At 7:28 he clicks the "Batch Organize" tab. At 7:46 he clicks the link for "Your photostream" and then remarks "why should I go there... I don't understand why I should find tag." He clicks the browser's back button at 7:56, but eventually goes back to the photostream. At 8:20 he clicks the "Tags" navigation link, but then goes back to the photostream and, at 8:40, right clicks one of the photo stream images titled "robot." At 9:10, the user has still not successfully tagged a single photo.
<b>Criterion:</b> 1. The user articulated a goal and does not succeed in attaining that goal within 3 minutes. AND 3. The user articulates a goal and has to try three or more things to find the solution.
<b>Explanation:</b> As he navigates through several screens, the user is either not presented with controls that would allow him to add tags to a photo, or he does not notice those that are present, as in the Batch Create tab of the Organize and Create view. Furthermore, actions that the user takes which he expects will produce controls for adding a tag, like right clicking an image, do not provide any useful controls.
<b>Severity or Benefit Rating:</b> 3 – major disruption that should be fixed.
<b>Rationale for Rating</b> This issue affects the usability of the system, and so a minimum rating of 2 is appropriate. Because the user ultimately never succeeds in adding a tag, is likely to encounter problems again the next time that he wants to tag photos, and these problems will persist for as long as he is unable to figure out how to add tags, this problem is a 3, major disruption. A rating of 4 is not appropriate because, while the user had problems adding tags, they are not guaranteed to be encountered by all users, making it inaccurate to say that Flickr will fail on the basis of these problems.
<b>Possible solution:</b> Detect right clicks on photos and bring up a context menu with an option for adding a tag to the photo that was right clicked.
<b>Relationship:</b> Tja-TA-8 – This is one of the problems that contributes to the overall difficulty of discovering how to add tags. Tja-TA-8 – This is a missed opportunity that could have prevented the overall difficulty in adding a tag

<b>Number:</b> tja-TA-8
<b>Problem/Good Aspect:</b> Problem
<b>Name:</b> User interface does not make it clear how to add tags when in Organize and Create mode.
<b>Evidence:</b> While in the Sets tab of the Organize and Create view, the user says, at 6:18, "Can I add a tag somewhere, Or do I have to open the things?" At 6:22 he opens the Bags set, and at 6:30 he says "I don't see where there's a tag." No controls on screen at this point contain the word "tag."
<b>Criterion:</b> 6. The user expresses confusion over how to achieve a goal.
<b>Explanation:</b> The user knows that he wants to add a tag to a photo, but the lack of any controls directly corresponding to the act of adding a tag in the Organize and Create view leaves him confused as to how to proceed with adding a tag.
<b>Severity or Benefit Rating:</b> 2 - disruption
<b>Rationale for Rating</b> This problem affects usability, and therefore merits at least a 2. This problem can only occur if the user is trying to add tags from the Organize and Create view, and the user eventually left this view to go to the Photostream view, where he eventually encounters (but does not use) a control for tagging. For this reason, this particular problem is not a major disruption, or a 3.
<b>Possible solution:</b> Add a button specifically for "Tag an image" above the viewing area for images in sets.
<b>Relationship:</b> tja-TA-7 – The user's overall difficulty in adding a tag is in part due to his inability to discover how to do so in the Organize & Create view.

<b>Number:</b> tja-TA-9
<b>Problem/Good Aspect:</b> Problem
<b>Name:</b> User interface does not make it clear how to open tabs for a set.
<b>Evidence:</b> At 6:22 the user clicks the "Bags" set from the within the Sets tab, opening a tab for "Bags." He returns to the Sets tab and opens a tab for "Toys." After clicking between these two open tabs, the user says, "Where is the set 'other things'" at 6:49. He clicks into the Print and Create tab at 6:58, then back into the Sets tab at 7:00.
<b>Criterion:</b> 6. The user expresses confusion over how to achieve a goal.
<b>Explanation:</b> The user does not seem to realize that clicking on the sets in the Sets tab opened the respective tab for each set. He expects to find a tab for the "Other Things" set, and is confused when there is not one open.
<b>Severity or Benefit Rating:</b> 2 - disruption
<b>Rationale for Rating</b>  I rated this a 2 and not higher or lower because it ultimately does not impact the user's ability to achieve his goal, but it does appear to cause the user confusion. Until he makes the connection between clicking sets and opening tabs, he will continue to have difficulties.
<b>Possible solution:</b> When a new tab opens in the Organize and Create view, display a simple, unobtrusive animation around the tab itself to subtly draw attention to the fact that clicking a set had a consequence of opening a new tab.
<b>Relationship:</b>

<b>Number:</b> tja-TA-10
<b>Problem/Good Aspect:</b> Problem
<b>Name:</b> Tag FAQ page is rejected for being too long.
<b>Evidence:</b> At 8:20 the user is trying to tag a photo and clicks the "Tags" navigation link underneath the header for "Your photostream." The system presents the message "You haven't tagged any of your photos or videos yet. If you'd like to find out more about tagging, you might like to start at the Tag FAQ page," and provides a link to the Tag FAQ page. The user reads this, says, "Ah, it lasts too long, I must find it out in another way," and then hits the back button to return to the photostream view.
<b>Criterion:</b> 7. The user expresses some negative affect or says something is a problem.
<b>Explanation:</b> The user is searching for a way to tag a photo, a task he does not know how to accomplish. When presented with the option to read an FAQ about tagging in general, he decides that reading the FAQ would take longer than trying to figure out tagging on his own by experimenting with the interface.
<b>Severity or Benefit Rating:</b> 2 - disruption
<b>Rationale for Rating</b> I rated this a 2 because it represents a missed opportunity to assist the user with his task of adding a tag. It is not at the level of a 3 rating because it does not actively cause a problem with the usability of the system, but it is more than a minor annoyance, 1, because the user did not know how to accomplish his goal and could have used assistance at this point.
<b>Possible solution:</b> Instead of pointing the user to the FAQ using a statement with uncertain language ("if you'd like... you might...") at this point, present brief instructions on adding tags directly on this page, perhaps with a link saying "click here to start tagging your photos" that takes the user to a tag editing mode.
<b>Relationship:</b> tja-TA-7 – The user's overall difficulty in adding a tag could have been eased had this been handled better.

<b>Number:</b> tja-TA-11
<b>Problem/Good Aspect:</b> Problem
<b>Name:</b> Comment system can be confused with tagging
<b>Evidence:</b> At 9:00, while viewing a picture in the Bags set, the user clicks add comment. 9:33 pastes into comment field 9:44 post comment 9:51 this could also be (ignores add a tag) 10:25 User says "I place a tag here" 10:30 posts comment for "hello kitty"
<b>Criterion:</b> 5. The user does not succeed in a task. There is a difference in the solution the user produced and the task they were given.
<b>Explanation:</b>
<b>Severity or Benefit Rating:</b> 3
<b>Rationale for Rating</b> User doesn't achieve goal, doesn't know it, and this problem could recur.
<b>Possible solution:</b>
<b>Relationship:</b>

<b>Number:</b> tja-TA-12
<b>Problem/Good Aspect:</b> problem
<b>Name:</b> Not clear how to save comment
<b>Evidence:</b> 9:35-9:44User says "Where is save?"
<b>Criterion:</b> 6. The user expresses confusion over how to achieve a goal.
<b>Explanation:</b>
<b>Severity or Benefit Rating:</b> 1
<b>Rationale for Rating</b>
<b>Possible solution:</b>
<b>Relationship:</b>

<b>Number:</b> tja-TA-13
<b>Problem/Good Aspect:</b> Problem
<b>Name:</b> Not clear how to get to sets from photo view.
<b>Evidence:</b> 11:05 (on transcript) user says, "Oh, where do I change to another set?"
<b>Criterion:</b> 6. The user expresses confusion over how to achieve a goal.
<b>Explanation:</b>
<b>Severity or Benefit Rating:</b> 2
<b>Rationale for Rating</b>
<b>Possible solution:</b>
<b>Relationship:</b>

<b>Number:</b> tja-TA-14
<b>Problem/Good Aspect:</b> Problem
<b>Name:</b> Adding a tag is not simple enough.
<b>Evidence:</b> End of video – User says "What a hard Work"
<b>Criterion:</b> 7. The user expresses some negative affect or says something is a problem.
<b>Explanation:</b> User struggled with adding a tag, and never even accomplished it.
<b>Severity or Benefit Rating:</b> 3
<b>Rationale for Rating</b>
<b>Possible solution:</b>
<b>Relationship:</b>

# UARS - KA

<b>Number:</b> KA_01
<b>Problem/Good Aspect:</b> Good Aspect
<b>Name:</b> Instructions to upload photos are clear and systematic to the novice participant and easy to follow in order until completion.
<b>Evidence:</b> At 00:10 we hear the participant state that he had never uploaded pictures on Flickr before. At 00:18 we see him click on “Organize and Create” tab, he then clicks on the “upload your photos” link which has been made more prominent on this page by having a larger font size and different colour from the text around it. At 00:29 he then clicks on “Choose photos and videos” and then notes at 00:45 that he can upload photos by clicking “Upload photos and videos” which he does at 01:10. At 1:13 the UI confirms to him that the upload process has been completed and he says “This means he has done it? Okay” indicating that he completed the task.
<b>Criterion:</b> 9. The user expressed some positive affect or says something is really easy. [At 00:28 the participant does not say it is really easy but demonstrates positive feedback by saying “All photos. Okay. Upload”]
<b>Explanation:</b> The interface highlights the most important actions necessary to complete the task of uploading pictures and highlights these actions through the use of main menu bars (Organize and Create), larger text (Upload your photos), underlining (Upload Your Photos, Choose photos and videos). This is a good aspect and should be maintained because uploading photos and videos is the main function of Flickr and thus the process should be the easiest to perform especially by new users.
<b>Severity or Benefit Rating:</b> <Rate from 0 to 4> <b>0: not a problem</b> 1: minor annoyance; 2: disruption 3: major disruption that should be fixed 4: “show stopping” problem that must be fixed or product will definitely fail
<b>Rationale for Rating</b> The participant showed no difficulty in completing the upload process.
<b>Possible solution:</b>
<b>Relationship:</b>

<b>Number:</b> KA_02
<b>Problem/Good Aspect:</b> Good Aspect
<b>Name:</b> UI makes the setting of privacies easy to do.
<b>Evidence:</b> The participant clicked Private at 1:04, then clicked Family at 1:05 and after completing the privacy setting said “That’s easy” at 1:07.
<b>Criterion:</b> 9. The user expressed some positive affect or says something is really easy. [The participant states at 1:07 “That’s easy”]
<b>Explanation:</b> The arrangement and design of the upload page allows for the privacy to be set there right after pictures have been uploaded. Grouping of these related tasks in a logical way allows for the easy performance of these tasks.
<b>Severity or Benefit Rating:</b> <Rate from 0 to 4> <b>0: not a problem</b> 1: minor annoyance; 2: disruption 3: major disruption that should be fixed 4: “show stopping” problem that must be fixed or product will definitely fail
<b>Rationale for Rating</b> The participant stated that the task was easy to do after he completed it thus I should think that it is not a problem.
<b>Possible solution:</b> Retain the information architecture on this page.
<b>Relationship:</b> KA_01 has to have been completed for the participant to make the privacy settings on the uploaded pictures.

<b>Number:</b> KA_03
<b>Problem/Good Aspect:</b> Good Aspect
<b>Name:</b> Feedback on the progress of an action performed by Flickr.
<b>Evidence:</b> At 1:13, the participant asks aloud “Is it uploading?”. From the video we then see the mouse over on the progress bar. The UI shows the upload as it is going on and hence state “This means he has done it. Okay” at 1:14
<b>Criterion:</b> 9. The user expressed some positive affect or says something is really easy.
<b>Explanation:</b> The UI uses a progress bar image to communicate that the task is taking place. For this participant who is new to the system, I infer that he needed confirmation that tasks are being performed and thus he is doing the right thing. He raised concern at the beginning of the test that he has never uploaded photos onto Flickr (00:10) so having the progress bar shows him that he is actually uploading pictures. This is shown by the mouse moving over the progress bar indicating that the participant looked at the progress bar of the photo upload process. This allows the participant to get the answer to his question at 1:13. Note that I have distinguished the progress of a task and the completion of a task (see KA_10). Both these types of system feedback are noted by the participant.
<b>Severity or Benefit Rating:</b> <Rate from 0 to 4> <b>0: not a problem</b> 1: minor annoyance; 2: disruption 3: major disruption that should be fixed 4: “show stopping” problem that must be fixed or product will definitely fail
<b>Rationale for Rating</b> At 1:13 the participant indicated that he knew the task was completed by saying OK. The participant did not express any negativity on this task.
<b>Possible solution</b> None. Maintain this feature.
<b>Relationship:</b> KA_01 and KA_10 as it shows the progress of the photo upload process done in KA_01 and KA_10 because that indicates the completion of a task.

<b>Number:</b> KA_04
<b>Problem/Good Aspect:</b> Problem
<b>Name:</b> UI does not effectively communicate to the participant that he can add multiple pictures to a set at once
<b>Evidence:</b> Between 3:28 and 4:39, the participant adds pictures to the set one by one instead of multiple select. There is proof that he is able to select multiple pictures at once at 00:37 - 00:41 when he selects multiple images at once to upload to Flickr.
<b>Criterion:</b> 4. The user accomplishes a task but in a suboptimal way.
<b>Explanation:</b> The UI fails to optimize the addition of several pictures at once. Though this participant does not complain verbally about it can be inferred that for users who may have dozens of photos to upload or more, this would be an annoyance. According to Flanagan (pg 12) "In this case, it might be specified that any action which either directly or indirectly could be expected over a long period of time to have a significant effect on the general aim should be included." From this test we can predict that if users are not able to ease the adding of several pictures to a set, it will cause an annoyance.
<b>Severity or Benefit Rating:</b> <Rate from 0 to 4> <b>0: not a problem</b> 1: minor annoyance 2: disruption 3: major disruption that should be fixed 4: "show stopping" problem that must be fixed or product will definitely fail
<b>Rationale for Rating</b> The participant did not verbally complain about it.
<b>Possible solution:</b> At the bottom bar, there should be 'Select Multiple' next to 'Select All' and 'Clear Selection'
<b>Relationship:</b>

<b>Number:</b> KA_05
<b>Problem/Good Aspect:</b> Problem
<b>Name:</b> The UI uses metaphors/instructions that are not clear to the participant.
<b>Evidence:</b> At 1:55 the participant reads the button “Add a description”, however he does not understand what the description will be added to and hence says “Add a description? Next Description. To every picture or...?” Between 2:01 – 2:07 we see that the participant did not click on add a description yet he lingered over it. Between 2:21- 3:12 he clicks on ‘Organise and Create’ which opens the ‘Batch organise’ as the default landing page with the aim of adding pictures to a set. He then realizes he is doing the wrong thing and clicks on the ‘sets’ menu option which is next to ‘Batch organise’. At 7:30 he is confused between ‘Sets’ and “Batch” in the tag creation task. At 8:07 he asks “Your photostream, what should it mean?” At 12:09 the participant says “ So we have two comments on this picture”. He was unable to distinguish between a comment and a tag.
<b>Criterion:</b> 6. The user expresses confusion over how to achieve a goal.[Add a description?, Sets/Batch when trying to add a tag] 4. The user accomplishes a task but in a sub optimal way. [‘Organise & create’ then to ‘Set’] 5. The user does not succeed in a task.[12:09 He adds comments instead of Tags]
<b>Explanation:</b> The UI does not provide instructions or helpful hints suitable enough to allow a new participant whose first language is not English, to understand the system. This leads the participant to have moments of confusion ( add a description and photostream), completion of a task in a suboptimal way ( addition of pictures to a set but adds them to a batch first ) and eventually frustration to the participant and the incorrect completion of a task ( adding a comment instead of a tag).
<b>Severity or Benefit Rating:</b> <Rate from 0 to 4> 0: not a problem 1: minor annoyance; 2: disruption <b>3: major disruption that should be fixed</b> 4: “show stopping” problem that must be fixed or product will definitely fail
<b>Rationale for Rating</b> I rate this as 3 because it happens throughout the design testing and eventually leads to frustration to the point the participant (at 12:09 “Oh. What hard work”). I think that it is more than 2 because it occurs throughout the test.
<b>Possible solution:</b> The instructions can be complete for example, “Add description to picture”. Another option is to have word menus differently for example ‘Batch organize’ can be ‘Organise into batches” or have tool tips
<b>Relationship:</b> KA_06

<b>Number:</b> KA_06
<b>Problem/Good Aspect:</b> Good
<b>Name:</b> Creation of a set by the participant, who is a novice user, is easily performed
<b>Evidence:</b> At 2:21 participant asks "How can I organize.." At 2:45 he follows instructions and at 2:56 drags items to a batch. This is incorrect which he realizes at 3:14 when he clocks 'Sets' Between 3:36-4:38 he is able to create a set called 'Other items'. 4:50-5:17 he creates "Toys" and when creating 'Bags' from time 5:24 After this he states that it is not easy to create sets by saying "Now its easy"
<b>Criterion:</b> 9. The user expressed some positive affect or says something is really easy.
<b>Explanation:</b> The steps have been organized logically enough for a new user to easily follow through and complete the set creation task. However, despite this being a good aspect the participant performed the task in a suboptimal way (see KA_11). He first clicked on "Batch Organise" then proceeded to "sets". Nonetheless, once in sets, the participant was able to easily complete the task.
<b>Severity or Benefit Rating:</b> <Rate from 0 to 4> 0: not a problem <b>1: minor annoyance;</b> 2: disruption 3: major disruption that should be fixed 4: "show stopping" problem that must be fixed or product will definitely fail
<b>Rationale for Rating</b> The participant eventually found the creation of a set easy hence it is not 2 or greater but in the beginning verbalized some confusion hence not 0.
<b>Possible solution:</b> By addressing KA_11 this process will be improved.
<b>Relationship:</b> KA_05 needs to have clear instructions so that the participant can perform tasks as easily as he did here.

<b>Number:</b> KA_07
<b>Problem/Good Aspect:</b> Problem
<b>Name:</b> Participant is unable to create a tag due to insufficient information provided by the UI.
<p><b>Evidence:</b></p> <p>At 6:18 he right clicks thinking that he will be able to add a tag that way.</p> <p>At 6:28 opens the set "Bags" and verbalizes "can I add tag somewhere or do I have to open things"</p> <p>At 6:47 he views the set Toys</p> <p>At 6:57 He hovers over 'Print &amp; Create'</p> <p>At 7:12 he right clicks again</p> <p>At 7:21 he hovers over the browser's main menu items 'File. Edit. View'</p> <p>Between 7:44 and 7:56 he expresses confusion over what a photostream is and says " Your photostream, what should it mean?"</p> <p>From 7:57 to the end he ignores the FAQ Help link and proceeds to adding comments instead of adding tags yet he thinks he performed the task correctly "So we have two comments on this picture. That's all?" (12:09).</p> <p>His frustration with the task is expressed when he says " Oh. What a hard work."</p>
<p><b>Criterion:</b></p> <p>5. The user does not succeed in a task. That is, when there is a difference between the task the user was given and the solution the user produced. [Did not create tags but instead added comments]</p> <p>6. The user expresses confusion over how to achieve a goal.[Did not know what a photo stream, description was. Mouse movement indicates confusion]</p>
<p><b>Explanation:</b></p> <p>This task caused a lot of frustration to the participant to the point that at he was happy to be done with the test (12:09). The task was also not performed correctly in that he ended up adding comments to the photos instead of tags and thought he had added tags .The process is not intuitive enough to the participant to create tags.</p>
<p><b>Severity or Benefit Rating:</b> &lt;Rate from 0 to 4&gt;</p> <p>0: not a problem</p> <p>1: minor annoyance;</p> <p>2: disruption</p> <p><b>3: major disruption that should be fixed</b></p> <p>4: "show stopping" problem that must be fixed or product will definitely fail</p>
<p><b>Rationale for Rating</b></p> <p>This task is applicable to each photograph added thus it can be a very frequent task hence the rating of 3. I rated it 3 also because it frustrated the participant so much that he was happy to finish the test. I did not rate it as 4 because it does not affect the functionality of Flickr and will not cause it to crash. It can however cause it to be rejected by a participant due to frustration.</p>
<p><b>Possible solution:</b></p> <p>Make it more obvious to the participant that simply double-clicking on the photo will allow the participant to add more information to each photo. For example an instruction at the right side explaining that.</p> <p>Also, make the 'Edit' link beside each photo a bit more conspicuous e.g. by increasing font size. Tool tips can also help distinguish between actions.</p>
<b>Relationship:</b> KA_05

<b>Number:</b> KA_08
<b>Problem/Good Aspect:</b>
Problem
<b>Name:</b> Participant chooses not to refer to the Help option provided yet they were stuck at a task
<b>Evidence:</b> At 8:32 while he is trying to figure out how to add a tag, he reads that he can click on the 'Start at the Tag FAQ page' but he comments that that is too long and that he must find another way. (8:35 " If you'd like to find out more about tagging, you might like to start at the Tag FAQ page. Ah, it lasts too long, I just find it out in another way.")
<b>Criterion:</b> 7. The user expresses some negative affect or says something is a problem.
<b>Explanation:</b> By the participant ignoring the option to refer to the FAQ help page and stating it's too long, we can infer that the participant preferred to find out how to perform the task by interacting with the system instead of reading on how to solve the problem. The participant continued to attempt the task and eventually did it wrong. The UI needs to provide less 'burdensome' way to offer solutions to users.
<b>Severity or Benefit Rating:</b> <Rate from 0 to 4> 0: not a problem 1: minor annoyance; <b>2: disruption</b> 3: major disruption that should be fixed 4: "show stopping" problem that must be fixed or product will definitely fail
<b>Rationale for Rating</b> I rated this as 2 because it would have helped him perform the task of adding tags correctly had he read the Tag FAQ page. I did not rate it as 3 because the UI should have this as a last resort and I infer that it will not happen frequently. The UI should be intuitive enough to allow users to perform tasks without having to resort to help pages.
<b>Possible solution</b> Solving KA_05 and KA_12 will reduce the need to refer to the help page
<b>Relationship:</b> KA_05

<b>Number:</b> KA_09
<b>Problem/Good Aspect:</b> Problem
<b>Name:</b> UI does not make the viewing of a different set obvious enough for the participant
<b>Evidence:</b> 11:35 “Oh, where do I change to another set?” He mouses over an image at 11:36 At 11:41 he hovers over the search box and at 11:48 clicks on the same set he is in. He navigates within the same set between 11:50 and 12:06. At 12:07 we see that he does not manage to change to another set and continues to do the task of adding tags.
<b>Criterion:</b> 5. The user does not succeed in a task. [11:50-12:07] 6. The user expresses confusion over how to achieve a goal. [11:35]
<b>Explanation:</b> The participant wanted to find a way to get to another set [11:35] while he was viewing a different set. He needed to change to another set in order to complete the task of adding a tag to a pic in another set.
<b>Severity or Benefit Rating:</b> <Rate from 0 to 4> 0: not a problem <b>1: minor annoyance;</b> 2: disruption 3: major disruption that should be fixed 4: “show stopping” problem that must be fixed or product will definitely fail
<b>Rationale for Rating</b> I rated it as 1 because the participant eventually forgot to follow up on changing sets and started something else.
<b>Possible solution:</b> Re-architecture the navigation and have a link on the right hand side showing other sets in order of when they were created.
<b>Relationship:</b>

<b>Number:</b> KA_10
<b>Problem/Good Aspect:</b>
Good
<b>Name:</b> UI communicates the completion of a task in a clear way
<b>Evidence:</b> At 1:55 the participant says “Finished” after mousing over the finished icon when the picture upload process completed.
<b>Criterion:</b> 9. The user expressed some positive affect or says something is really easy. [At 1:555 the participant said ‘Finished’]
<b>Explanation:</b> The system, through use of visually distinguishable graphics ( big green circle with tick on it) allowed the participant to know that the upload of all selected photos was complete. This should be maintained by the UI because it assures the participant, especially a novice participant that indeed the system works and it is performing the tasks he has requested it to perform.
<b>Severity or Benefit Rating:</b> <Rate from 0 to 4> <b>0: not a problem</b> 1: minor annoyance; 2: disruption 3: major disruption that should be fixed 4: “show stopping” problem that must be fixed or product will definitely fail
<b>Rationale for Rating</b>
<b>Possible solution:</b> Maintain this feature throughout the UI.
<b>Relationship:</b> KA_03. It reports the progress while this reports the completion. KA_01 is related because after he knows that the upload is finished he moves on to the next task.

<b>Number:</b> KA_11
<b>Problem/Good Aspect:</b> Problem
<b>Name:</b> UI does not provide an intuitive way for the participant to directly create a set
<b>Evidence:</b> At 2:22 he clicks on “Organise and create” and adds pictures to Batch At 2:48 he edits them as a batch. At 3:13 sees ‘Sets’ and realizes that he should be creating sets and not batches
<b>Criterion:</b> 4. The user accomplishes the task, but in a suboptimal way. (This means that as a member of the design team, you need to familiarize yourself with the system to know what are possibly more optimal ways to accomplish the same goals.)
<b>Explanation:</b> The participant continues to add pictures to a batch under the impression that he is adding to a set. Only when he sees ‘Sets’ does he realize his mistake. Nothing under the ‘Batch Organise’ differentiated batch creation from set creation despite reading ‘Batch’ at 2:48.
<b>Severity or Benefit Rating:</b> <Rate from 0 to 4> 0: not a problem 1: minor annoyance; <b>2: disruption</b> 3: major disruption that should be fixed 4: “show stopping” problem that must be fixed or product will definitely fail
<b>Rationale for Rating</b> I rated it as less than 3 because the participant corrected himself and not 1 because it made the creation of set less efficient by having to create batches first.
<b>Possible solution:</b> Possibly a difference in colour and having creation of sets appear first on the main menu bar before batches depending on the more frequently performed task. More participant stats should be collected to determine which action should be prioritized.
<b>Relationship:</b>

<b>Number:</b> KA_12
<b>Problem/Good Aspect:</b> Problem
<b>Name:</b> UI does not provide helpful descriptions to allow for the creation of tags
<b>Evidence:</b> At 7:44 he says "Here is no, nowhere something where it could be a description."
<b>Criterion:</b> 8. The user makes a design suggestion (Do NOT ask them to do this, but sometimes they do this spontaneously as they think-aloud).
<b>Explanation:</b> The participant is unable to find how to add tags easily and tries to perform actions such as right-clicking to add a tag. He is not familiar with what tags and this eventually leads him to adding comments instead of tags.
<b>Severity or Benefit Rating:</b> <Rate from 0 to 4> 0: not a problem 1: minor annoyance; <b>2: disruption</b> 3: major disruption that should be fixed 4: "show stopping" problem that must be fixed or product will definitely fail
<b>Rationale for Rating</b> I rated this as 2 because it eventually led to him not creating tags because he did not know what they were. However the UI the creation of tags is not a task vital to the system and often performed by intermediate or expert users and thus I did not rate it as 3 or higher.
<b>Possible solution:</b> Add a tool tips.
<b>Relationship:</b> KA_07

# UARS - RL

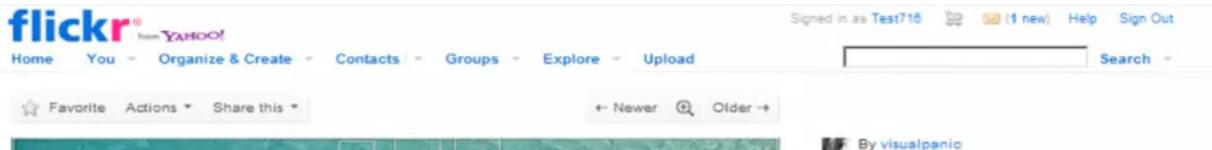
Pronouns are eliminated to maintain maximum user anonymity.

**Number:** RL - TA - 01

**Problem/Good Aspect:** Bad Aspect

**Name:** User-interface does not provide an easily discoverable *Upload* button.

**Evidence:** The user articulates a goal to upload photos at 0:09 saying "So I should...what should I do? Upload these photos onto Flickr. How upload? I've never done it." Clearly a novice user as indicated by the last phrase, this user has a fresh experience with the interface (see explanation for more). In fact, the interface does not display the *Upload* button sequentially (left-to-right) in the top navigation. The *Upload* falls to the far right of the navigation while *Organize & Create* appears early in the navigation menu. The user's cursor travels to the top left corner and hovers over the first few elements from left to right at 0:26. The user does not actually navigate to the *Upload* page until later at 0:26, clicking a hyperlink to the *Upload* page within the *Organize & Create* page.



**Criterion:** 6. The user expresses confusion over how to achieve a goal.

**Explanation:** It does not seem in this case that directly accessing the upload is an intuitive task. The user's first end goal is to upload content onto Flickr. This requires subtasks of navigating to the *Upload* page, selecting local content, and clicking the upload button. With the evidence given, it appears navigating to the *Upload* page is not the most intuitive it can be for novice users. It can be inferred that this issue might be attributed to two things. First, the user interface does not make a clear distinction between the two sections *Organize & Create* and *Upload*. Users may interpret *Create* as a way to begin (i.e. to begin creation on) their experience in the system. Another reason is the sequence of the options. When a user begins the Flickr experience, the first task is to put local content onto Flickr (as evidenced). This issue should be heavily considered for first-time users and the fresh experience because if users become frustrated early on in the experience, they may not return to the service.

**Severity or Benefit Rating:** <Rate from 0 to 4>

1: minor annoyance

## Rationale for Rating

Although the user spends some time (17 seconds) looking for the first step to upload content, it is eventually found through an alternate path from *Organize & Create*. This may present a minor annoyance to some beginning users especially if they have no content uploaded. Many users might initially be put off by the number of clicks needed to upload their first batch of content. However, it does not present a disruption in work-flow as indicated by the user's ability to access the *Upload* page from the *Organize & Create* page. A severity rating of 1 is most appropriate.

## Possible solution:

Move the *Upload* button to the far left so that western readers, a majority of Flickr users, can find it easily on initial use.

## Relationship:

None

<b>Number:</b> RL - TA - 02
<b>Problem/Good Aspect:</b> Good Aspect
<b>Name:</b> User-interface provides sufficient information to let user know how to toggle privacy options.
<b>Evidence:</b> Upon loading content into the upload queue (0:41), the user articulates the task of setting privacy options for those uploading photos (1:00). From top to bottom, the interface showed the queued files in a list, followed by privacy options for visibility to friends and/or family, all before the <i>Upload Photos and Videos</i> button. At time 1:05, the user changes the privacy option from letting the public see these photos and selects the <i>Private</i> radio button, followed by the <i>Visible to Family</i> checkbox.  After clicking the upload button, the user continues to re-articulate the task just accomplished, saying "family, private. Visible to family" and immediately expresses the ease of the task, saying "that's easy" (1:07).
<b>Criterion:</b> 9. The user expressed some positive effect or says something is really easy.
<b>Explanation:</b> The user-interface provides the user an easy and logical method to set privacy options before uploading content to the system. This is especially the case since these options are below the list of the content and before (i.e. above) the upload button.
<b>Severity or Benefit Rating:</b> <Rate from 0 to 4> 0: not a problem
<b>Rationale for Rating</b> Because this is a good aspect, its inclusion should be considered for future iterations. Though the aspect would occur infrequently, its presence is nonetheless important to consider since this is (after logging in) the first impression of the system's main functionality and features. Privacy of photos is an issue for many users, necessitating the ease of the system's current privacy options. As mentioned in the evidence, the feature's usability presents no problem for the user thus giving reason for a 0 rating.
<b>Possible solution:</b> An alternative might set the default option to <i>Private</i> instead of <i>Public</i> . More research is needed should we decide to explore this.
<b>Relationship:</b> None

<b>Number:</b> RL - TA - 03
<b>Problem/Good Aspect:</b> Bad Aspect
<b>Name:</b> System does not provide hints on how to begin creating sets after uploading content.
<b>Evidence:</b> While waiting for content to upload to the system, the user articulates the next goal of organizing content into three categories saying "So I need three categories" and continues with "I hope there's a hint, how to do it" (1:43).
<b>Criterion:</b> 8. The user makes a design suggestion.
<b>Explanation:</b> The user's next goal at this point of waiting for content to upload is to figure out how to create three sets, or "categories" as the user calls them. The system provides no hints or "next steps" that align with the user's goal while the content is uploading; only suggestions for upload tools. The user does not explicitly point out a missing design aspect or directly suggest a change to design, but rather indirectly provides a design suggestion by expressing hopeful expectation. Providing a brief hint for how to organize content into three sets could have saved the user time and from frustration.
<b>Severity or Benefit Rating:</b> <Rate from 0 to 4> 1: minor annoyance
<b>Rationale for Rating</b> The user mentions the hope for a hint on "how to do it" just once. The lack of such a hint on how to create three categories does not hinder the user from ultimately achieving the task. However, it proves to be a minor annoyance in that the user must first (after setting an intent) look for the next sequence of actions necessary to correctly create three different sets and does not achieve this goal until after trying two things: batch organize, then create sets. We find later that providing hints could help the user with other tasks. No additional design suggestions are made by this particular user, but there are instances where providing tips may help the user achieve goals faster.
<b>Possible solution:</b> While the system is uploading content to the server, provide the user brief hints for the most frequently used features in the system. This may include steps on how to tag images. However, keep in mind that no hyperlinks should be present as clicking on these would interrupt the uploading. Avoid "MS Clippy" tips that are given at every action; instead, use them sparingly for novice users and at pages they spend more time on (e.g. <i>Upload</i> page where they wait idly). Alternative: Provide a pop-out screenshot of an individual content page and point out the tag area (RL1)
<b>Relationship:</b> RL - TA - 04 Creating sets becomes easy once the user discovers the option. RL - TA - 05 Users may also confuse batch organize with set creation

<b>Number:</b> RL - TA - 04
<b>Problem/Good Aspect:</b> Good Aspect
<b>Name:</b> Once discovered, it becomes easy for the user to add content into sets.
<b>Evidence:</b> After creating two sets, the user needs to create one more for "bags." At 5:26, the user has learned how to quickly create a set, name it, and drag content into it. This is evidenced at this point as the user says "Then bags. Okay. Now it's easy."
<b>Criterion:</b> 9. The user expressed some positive effect or says something is really easy.
<b>Explanation:</b> The user-interface provides the user an easy and logical method to create sets. It is easy to learn for novices and continues to be efficient for expert users who want to do it quickly. The process is intuitive once the user navigates to the <i>Sets</i> page especially since the page prompts the user to drag content into the workspace in order to create a set. This particular user quickly understands what to do in order to achieve the intent of set creation. The gulf of execution is nearly non-existent here because it is clear what the user needs to do in order to accomplish the task.
<b>Severity or Benefit Rating:</b> <Rate from 0 to 4> 0: not a problem
<b>Rationale for Rating</b> This does not present any problem for the user once the ability to create sets has been discovered by the user. The fact that the user says, " <b>now</b> it's easy" indicates that after creating the first two sets, the task of creating sets becomes increasingly easy. The system's current method of handling set creation should be maintained in future iterations.
<b>Possible solution:</b> None for a good aspect
<b>Relationship:</b> RL - TA - 03 Novice users may have trouble discovering set creation without hints. RL - TA - 05 Users may confuse batch organize with set creation

<b>Number:</b> RL - TA - 05
<b>Problem/Good Aspect:</b> Bad Aspect
<b>Name:</b> The presence of both <i>Batch Organize</i> and <i>Sets</i> makes the user-interface ambiguous about how to separate content into different sets.
<b>Evidence:</b> While the user waits for the system to finish uploading content, the user reads begins to set a goal. The user first articulates the goal at 1:25 with "to make it easier for your daughter to sort through...they should be organized into... toys, bags, and other items" then rearticulates it as "so I need three categories..." (1:43). At first, the user attempts to create these categories using batch organizing. Only after more than a minute (3:02) does the user discover the <i>Sets</i> option. It takes a total of more than 3 minutes from the time of articulating the goal to attaining the goal of creating and organizing three categories of toys, bags, and other items (5:26).
<b>Criterion:</b> 1. The user articulated a goal and does not succeed in attaining that goal within 3 minutes
<b>Explanation:</b> After articulating and interpreting the task at hand, the user attempts to find a way to execute it. Because the system provides some ambiguity, the user is not clear which option between <i>Batch Organize</i> and <i>Sets</i> would achieve the goal. The user was given the specific task of organizing the content into "sets" though this was initially interpreted by the user as categories. Though the user's goal upon The term "batch" may appear synonymous with both words, presenting some confusion for the user who wants to organize into "sets."
<b>Severity or Benefit Rating:</b> <Rate from 0 to 4> 2: disruption, minor usability problem
<b>Rationale for Rating</b> The problem occurs just once, presenting a minor usability problem. The user eventually recovered from the wrong path to find the right one to accomplish the task. So, the issue presents a disruption, but not one to be highly prioritized for fixing. That is, the issue is not a major disruption. It should be considered no less than a severity rating of 2 as the issue delves deeper than a minor annoyance and cosmetic problem; it deals with wording and semantic ambiguity that can be fixed using clearer wording or distinction using visual semantics.
<b>Possible solution:</b> Use two different icons to represent the actions for each feature of batch versus sets.
<b>Relationship:</b> RL - TA - 03 Novice users may have trouble discovering set creation without hints. RL - TA - 04 Creating sets becomes easy once the user discovers the option.

<b>Number:</b> RL - TA - 06
<b>Problem/Good Aspect:</b> Bad Aspect
<b>Name:</b> Dragging content out of a set and dropping it in the bottom thumbnail viewer leads to confusion about where the content goes.
<b>Evidence:</b> The user creates a new set at 3:31 by dragging a photo into the work space (see <i>RL2.1</i> ) and names it "Other Items". Realizing that the first photo dragged into the set is not an "other item", but rather a toy, the user begins to drag the photo's thumbnail from the set back down to bottom viewer (4:00) (see <i>RL2.2</i> ). At this point of interaction before the user releases the mouse button, the bottom viewer reads "Drop a photo or video here to remove it from the set." Immediately after dropping the photo, its thumbnail disappears upon which the user exclaims at 4:03, "oh, where is it now?" The strip of photo thumbnails reappear, fading back in less than a second after the user removed the photo from the set. The user continues working.
<b>Criterion:</b> 6. User expresses some negative effect or says something is a problem [handout] 6. User expresses hesitation, surprise [lecture]
<b>Explanation:</b> The user's main goal of creating sets is facilitated by dragging and dropping functionality. As evidenced, this precedes naming the set. Since the user here does not realize until later the mistake of either dragging in the wrong type of photo or naming the set inappropriately, the user decides to fix the mistake the easier way by dragging the toy photo out of the set. Though there is feedback when a thumbnail is dragged to the bottom viewer, the user's focus is on the dragged thumbnail which is on the left of the screen. Because the text "Drop a photo or video here to remove it from the set" is center-aligned, the user might not see it. Alternatively, the immediate disappearance of a thumbnail can be a confusing experience as evidenced by the user's question "where is it now?"
<b>Severity or Benefit Rating:</b> <Rate from 0 to 4> 1: minor annoyance
<b>Rationale for Rating</b> The issue occurs only once and the user seems to understand afterwards the consequence of dragging content out of the work space. In fact, the user recovers from the confusion almost immediately when the bottom viewer reappears. So, it is not so much a usability issue as it is one that confuses the user for a short period of time and likely landing outside the user's mental model of how the system works. However, the user learns quickly that the content is not removed from the entire collection of content, but only from the set.
<b>Possible solution:</b> Instead of drag and drop to create a set, use a button that creates one and prompts for the set name. Alternative: Instead of changing the bottom viewer, simply let the user drop the thumbnail back into the strip of thumbnails of other content and make it "bump" the other thumbnails as it re-enters.
<b>Relationship:</b> None

<b>Number:</b> RL - TA - 07
<b>Problem/Good Aspect:</b> Bad Aspect
<b>Name:</b> User-interface does not provide a clear method of adding tags to content that was just uploaded.
<b>Evidence:</b> Immediately after uploading and organizing content, the user articulates the task of adding tags. At 5:42, the user reads "To help your daughter find things that you know she really cared about as a child, add tags to the 'snow white' and 'hello kitty'..." At this point, the user sees a screen showing all sets (A.2) and looks for ways to add tags to content in these sets. Questions arise, including one at 6:15 "Can I add a tag somewhere, or do I have to open the things?" Further confusion is expressed by the user after opening a set and not finding any option to tag: "Set. Where's the tag? I don't see where there's a tag" (6:30). Again, at (7:23) when exploring options, the user expresses confusion about how to tag, saying "where can I find... is it perhaps here in the top line, no?" The user spends the rest of the session attempting to accomplish the task by trying several more options. It takes up until the end of the video at 12:13 when the user thinks the task has been accomplished when in fact no tags were created.
<b>Criterion:</b> 5. The user does not succeed in a task. That is, when there is a difference between the task the user was given and the solution the user produced. 6. The user expresses confusion over how to achieve a goal.
<b>Explanation:</b> The user-interface does not provide immediately clear options on how to add tags to uploaded content. For users who want to add tags to content they've just uploaded, this presents a problem. Unfortunately, the gulf of execution becomes fairly wide when the user is unable to find ways to accomplish the established goal and intents at a certain point of the Flickr experience. Immediately after organizing content into sets, the system affords no direct option to tag anything. As a result, the user explores all possible options and eventually settles on one that is assumed to provide a solution to the initial goal when in actuality it does not.
<b>Severity or Benefit Rating:</b> 3: major disruption that should be fixed
<b>Rationale for Rating</b> This issue presents a major disruption for users who want to quickly add tags to the content they just uploaded. Moreover, instead of accomplishing the task of tagging, the user in this case merely comments on the content. By doing so, the value of tags is lost; viewers have no ability to view all content with the same comment. Consequently, users who are not familiar with tags may become frustrated with the confusing ambiguity between commenting and tagging. Although the issue is more likely to occur with novel users than experts, it is unknown whether or not this issue will generalize to more than a majority of all users (novice & expert). That is, once a user learns how to tag (on individual content pages), the task of finding the tag option no longer becomes an issue. The only issue that remains for experts is efficiently tagging a large number of photos. This does not merit a 4, or a "show-stopping" problem" that would lead to the fail of the product, especially since I feel the most valuable aspect of Flickr is the ability to share photos, not to create a web of metadata. Users can still operate the product without tagging; and the product surely will not fail if users posted relevant comments to content.
<b>Possible solution:</b> Upon creating a set, describe what one can do with tags and provide a clear option to add a tag.
<b>Relationship:</b> RL - TA - 08 A hyperlink to the FAQ on tagging does not appeal to the user and so loses its value. RL - TA - 09 The lack of a clear method to tag causes the user to waste time trying unhelpful actions.

<b>Number:</b> RL - TA - 08
<b>Problem/Good Aspect:</b> Bad Aspect
<b>Name:</b> User assumes that the Tag FAQ page would take too long to read.
<b>Evidence:</b> At the photostream page, the user selects <i>Tags (8:20)</i> , which loads the tags page that tells the user "You haven't tagged any of your photos or videos yet. If you'd like to find out more about tagging, you might like to start at the Tag FAQ page." The user reads it, moves the mouse over the hyperlink to the FAQ page for less than 2 seconds, and responds "Ah, it lasts too long, I must find it out in another way" and clicks on the browser's back button to return to the photostream page (8:35).
<b>Criterion:</b> 7. The user expresses some negative effect or says something is a problem.
<b>Explanation:</b> As indicated by " <b>too</b> long", the user does not have time to read the tag FAQ to find out how to add tags. Not only is it the user's goal to discover the tagging option—the user wants to discover it quickly and intuitively without reading any seemingly long body of text. Given the fact that the user hovers over the FAQ hyperlink for some time we might assume the user hesitated about clicking on it. Aside from the user's assumption that the FAQ would be a long read, the extra click down another path could be another aspect inhibiting the user's willingness to click on through. Also, though the option to add a tag is present per individual content page, the user does not see it. The interface does not seem to consider a short page fold for users whose primary goal is to add tags.
<b>Severity or Benefit Rating:</b> <Rate from 0 to 4> 2: disruption, minor usability problem
<b>Rationale for Rating</b> Although this user in particular does not think that reading the tag FAQ page would be the most efficient use of time, it does not present a major disruption for a general population of users. This issue occurs once in the video and we might assume the issue is a rare instance as many users who use Flickr for tagging purposes are not in a terrible rush to finish. Accordingly, the problem deserves a severity rating of no more than 2 since a rating of 3 would mean the product had major glaring issues surrounding the appeal a Tagging FAQ hyperlink. I consider this issue more than a 1. Minor annoyance since it contributes to a long-lasting problem with discovering the tagging functionality. If somehow the Tag FAQ appeared to be a more attractive solution so that the user clicked it, there would be a high chance the user would find the solution to the goal of tagging content.
<b>Possible solution:</b> On top of providing a hyperlink to the tag FAQ page, provide a quick tip on how to start tagging right away. For example, the page could provide a screenshot of a photo's page and point specifically to the Tag section in the right sidebar.
<b>Relationship:</b> RL - TA - 07 The user interface does not provide an intuitive manner to support tag discovery and the tagging FAQ is not immediately accessible enough for the user to find value in it. RL - TA - 09 The lack of intuition and documented tips causes the user to waste time trying actions that do not accomplish the goal.

<b>Number:</b> RL - TA - 09
<b>Problem/Good Aspect:</b> Bad Aspect
<b>Name:</b> The lack of an immediate option to add tags to content makes user unnecessarily browse options.
<b>Evidence:</b> <p>At 6:20 the user has opened the <i>Sets</i> page to reveal the open sets and the bottom viewer containing a strip of thumbnails. In the sets section, the user right clicks on a photo in the bottom browser to look for an option to tag, but finds no such option (see <i>RL3</i>).</p> <p>At 6:25 the user opens a set to see if there is an option to tag within a set. There is none. From here, the user navigates to the next option: the photostream.</p> <p>8:42 In photostream page, the user right clicks a photo to look for an option in the menu to tag, but still finds nothing related to the original plan.</p>
<b>Criterion:</b> 3. The user articulates a goal and has to try three or more things to find a solution [not literally <b>the</b> solution]
<b>Explanation:</b> The user has already established the goal to add relevant tags to particular photos, but first must find the option to tag any content. Since this goal is not immediately met (not met at all), the gulf of execution continues to widen. The user's intent of revealing the option to tag in a contextual menu with right-click is not met; the system does not seem to support right-click. Because tagging functionality is not present on pages where the user expected them to be, this contributes to a mismatch between the user's mental model and the system's model. Because tagging functionality is not highly visible enough for the user to notice on particular pages, the user will not notice it.
<b>Severity or Benefit Rating:</b> <Rate from 0 to 4> 3: major disruption that should be fixed
<b>Rationale for Rating</b> This issue presents a major disruption for users who want to quickly add tags to the content they just uploaded. When this goal cannot be accomplished within a particular period of time, it contributes to a crescendo of frustration that could ultimately lead to a system that lacks usability. In this case, it leads to a user's misinterpretation of a feature and the unacknowledged failure of achieving the original goal. The evidence cited shows how much exploration (too much) is required by the user before getting to a page that allows one to directly add tags to content. The issue deserves no more than a 3 for the main reason that it probably would not occur for <b>all</b> users. The problem will not stall the system's success as, I already mentioned, the service's main value is in sharing content instead of creating a large web of metadata. A severity rating of 2 would be too low. The issue forces the user to navigate in non-linear paths on the site, making the problem persist.
<b>Possible solution:</b> For each photo's page, provide a clear option to add tags under the photo itself.
<b>Relationship:</b> RL - TA - 07 The lack of a clear method to tag causes the user to waste time trying unhelpful actions. RL - TA - 08 The lack of intuition and documented tips causes the user to waste time trying actions that do not accomplish the goal.

# RL1

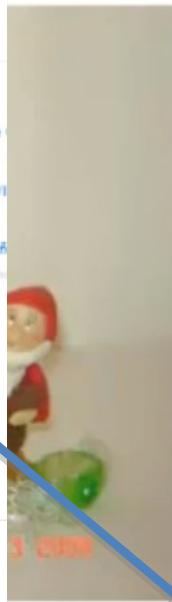
Signed in as Test716 (1 new) Help Sign Out

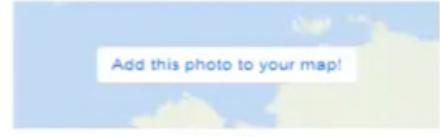
Home You Organize & Create Contacts Groups Explore Upload Search

Your photostream Sets Galleries Tags People Archives Favorites Popular Profile

You haven't tagged any of your photos or videos yet. If you'd like to find out more about tagging, you might like to start at the [Tag FAQ page](#).

Activity Around You | In Your Groups | From your friends  
You Your Photostream | Organize | Upload | Your Account  
Explore Places | Last 7 Days | This Month | Popular Tags | The Commons | Creative  
Help Community Guidelines | The Help Forum | FAQ | Tools | Sitemap | Get Help  
Flickr Blog | About Flickr | Terms of Service | Your Privacy | About Our Ads | Copyright/  
Licenses | Flickr API | Flickr RSS | Flickr News | Flickr Photo Stream | Flickr Photo Stream RSS  
简体中文 | Deutsch | English | Español  
Copyright © 2010 Yahoo! Inc.

 A blue arrow points from the top left towards the "Tags" section at the bottom right of the page.

By Test716 No real name given  
This photo was taken 8 minutes ago.  
  
Add this photo to your map!  
0 views

This photo belongs to  
Test716's photostream

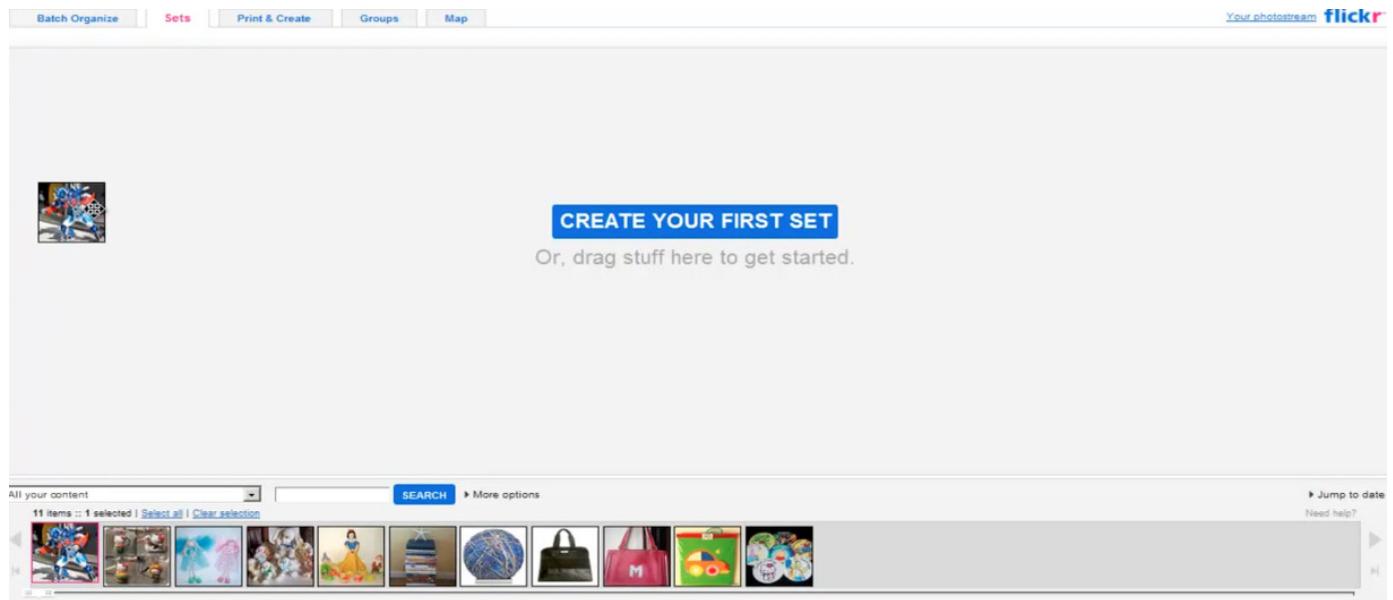
This photo also appears in  
Toys (set: 6)  last photo ←

People in this photo (add a person)  
Adding people shares who is in your photo

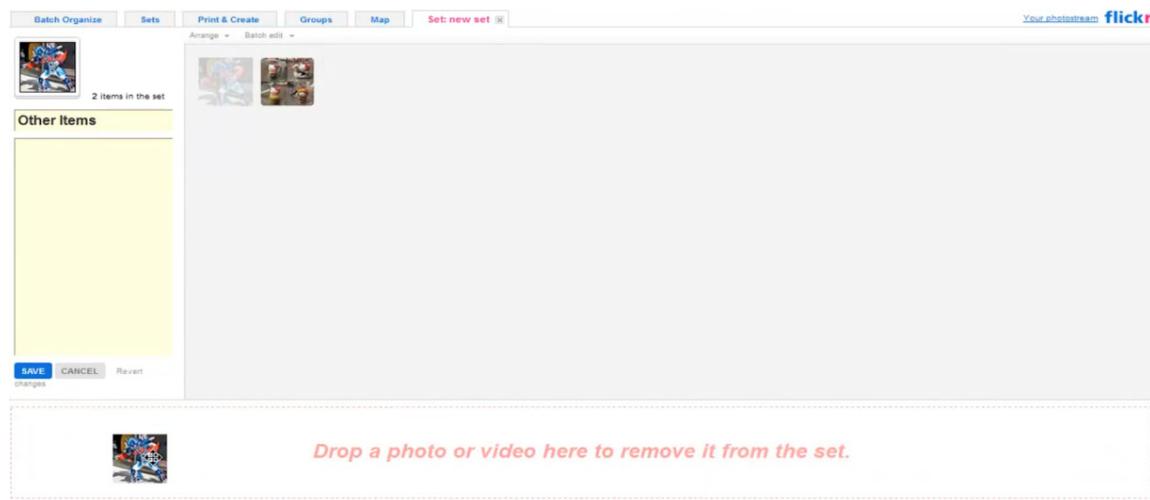
Tags (add a tag)  
Adding tags helps describe your photos

Owner settings (show more)  
 All Rights Reserved (edit)  
 Only Family can see this photo (edit)

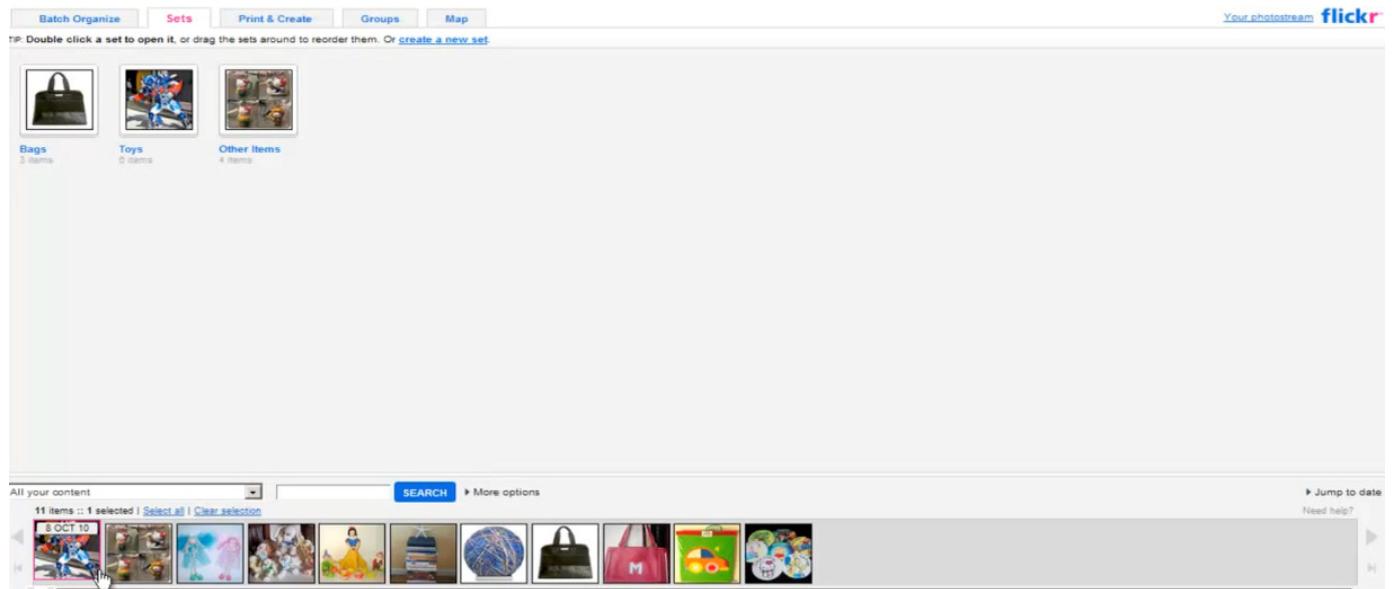
## RL2.1



## RL2.2



# RL3



# F

## THINK ALOUD TRANSCRIPT

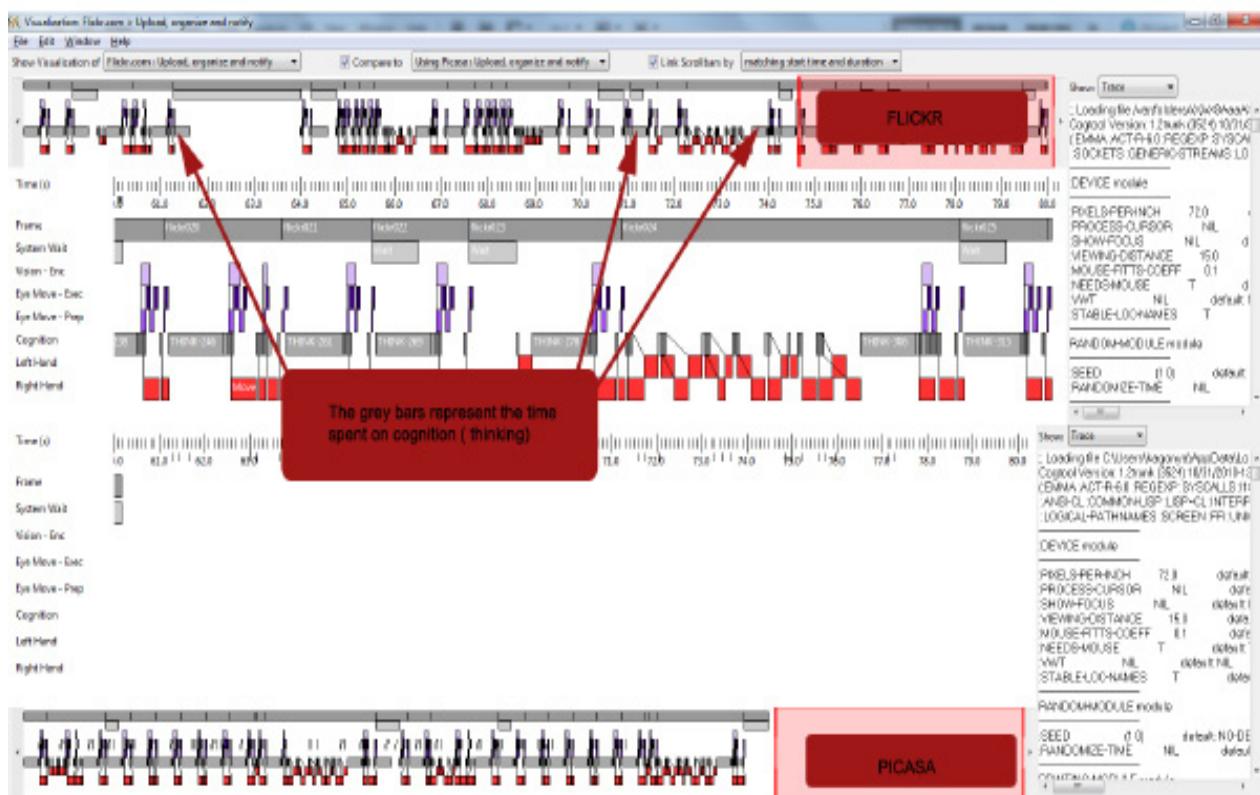
Time	Speaker	Content
0:03	Participant	I'm in now?
0:04	Interviewer	Yes
0:05	Participant	So I should, what should I do? Upload these photos onto Flickr. How upload? I've never done it.
0:14	Interviewer	That's good! That's exactly what we want.
0:17	Participant	Organize and create. Organize your photos. Upload some photos. Let's try.
0:28	Participant	Choose photos and videos. It was on desktop, and then Photos, and I think I can take every photo. All photos. Okay. Upload.
0:47	Participant	Ah, private. We should, what was the task? Flickr won't let you pick individual people that can see your images, but you can at least protect your images by only allowing' family to see it.
1:02	Participant	Family. Private. Visible to family. That's easy.
1:13	Participant	So. Is it uploading? This means he has done it. Okay.
1:20	Participant	Next task is: to make it easier for your daughter to sort through... they should be organized into... Toys, bags, and other items.
1:38	Participant	So I need three categories. I hope there's a hint, how to do it.
1:55	Participant	finished. Add a description? Next. Description? To every picture or... ?
2:13	Participant	organize into different sets. There's not talked about description. Sets. How can I organize... Okay, organize. I try it again. Organize. Em.
2:32	Participant	All your content. I try... Drag items here to edit them as a batch. You can then change picture attributes... I try it.
2:57	Participant	So, and now? Ah. This is other items, or... Sets, sets? Create your first set.
3:19	Participant	This is what I should do. Ah, in three different sets. So, sets is correct.
3:29	Participant	I take it, this set is called other items.
3:51	Participant	Save. Or should I add more. Okay. These are toys. That's a toy. Oh, where is it now? Toys... Maybe this is a toy, this is also a toy, everything is a toy. These are bags. Okay, this is an other item, and this is an other item. What's that? Also an other item. And maybe these are toys. Okay, save. Now, create.
4:43	Participant	Create a new set. New set, toys. Okay, toys were, I take... Maybe this is also a toy. I try it, it can have a set... one item in different sets. Is it possible, I don't know, I try it.

5:21	Participant	Then bags. Okay. Now it's easy. Bags. Save.
5:35	Participant	So, happy to have done that.
5:37	Participant	Next task: To help your daughter find things that you know she really cared about as a child, add tags to the "snow white" and "hello kitty"... eh, don't understand these.
5:53	Interviewer	Snow white is Schneeweisschen.
5:43	Participant	Yeah, okay. There are two images with one or... Okay.
6:07	Participant	I think I should add... What's called... add tag. Can I add a tag somewhere, or do I have to open the things?
6:25	Participant	Set. Where's the tag? I don't see where there's a tag. Sets. Here are my different... Where is the set other things? Print and create. Where can I add a tag?
7:15	Participant	Hm. Where can I find... is it perhaps here in the top line, no? Sets. Batch. Organize... Maybe this was wrong, I should...
7:44	Participant	Here, photostream? Why should I go there... I don't understand why I should find tag
8:07	Participant	Here is no, nowhere something where it could be a description. Your photostream, what should it mean?
8:17	Participant	Tags. Heh, your photostream... You haven't tagged any of your photos, okay. If you'd like to find out more about tagging, you might like to start at the Tag FAQ page. Ah, it lasts too long, I must find it out in another way.
8:41	Participant	Can I set a tag here? No. Tags. Sets. Galleries. Click here to add a description. Aha. Okay. What kind of... snow white.
9:05	Participant	To go on the other set. So, toys. Snow white. Where does it fit to, here?
9:16	Interviewer	That's snow white.
9:18	Participant	This one?
9:18	Interviewer	No, the one with the yellow...
9:22	Participant	Don't know that. I would have thought that.. Add your comment here. Snow white. Save. Where is save?
9:40	Interviewer	Post comment.
9:43	Participant	Aha.
9:48	Participant	Add a tag, but, this could also be eh, hello kitty? What is hello kitty?
9:57	Interviewer	Hello kitty is a cat.
10:00	Participant	This is not a cat. Where is a cat here? I've never seen a cat.
10:07	Participant	Here? There's a cat? Ah, this one. I... place a tag here. And post.
10:31	Participant	Something more? Does this have anything to do with...
10:40	Interviewer	This is also hello kitty.
10:41	Participant	This is hello kitty?
10:42	Interviewer	Yeah, that's a cat.
10:46	Participant	Well, if you say that, I believe.

10:51	Participant	So, I've posted several tags now.
10:59	Interviewer	That's okay.
11:00	Participant	Is it enough? Have I done my work? There are two images with one or the other of those, and one image that has both. I haven't given both yet. Is it snow where somewhere here? Snow white nowhere here? Is it both? No, this is not a cat.
11:31	Participant	So we should take another set. Oh, where do I change to another set. Where is... oh. Toys, maybe here? Is this a cat? Ah, here is hello kitty already. But I don't think here's a snow white too?
12:08	Participant	Ah, this one. So maybe I should add another. Ehm, snow white. And post.
12:09	Participant	So we have two comments on this picture. That's all? Oh. What a hard work.

# G

## KLM RESULTS



# H

## CONSOLIDATED HEURISTIC EVALUATION

positive heuristics

negative heuristics

fixed heuristics

### CHILD INTERFACE

#### Visibility of system status

The system should always keep users informed about what is going on, through appropriate feedback within reasonable time.

- The system sorts items in categories ( Pending, Completed) informing the user what stage of the sorting process each item is.
- In the asynchronous feed window, the user is able to know whether a picture contains several tags or just one tag depending on the number of lines a picture has in its bottom right corner.
- The white border around the picture the child is viewing allows for status visibility
- The system shows when a Live feed is going on.
- **The system does not adequately inform the user where they are in the system. User cannot read that they are in synchronous or asynchronous mode.**

#### Match between system and the real world

The system should speak the users' language, with words, phrases and concepts familiar to the user, rather than system-oriented terms. Follow real-world conventions, making information appear in a natural and logical order.

- The system video feature resembles video feed applications like YouTube which is familiar to a vast majority of our anticipated users.
- By having three main functions of "Keep", "Donate" and "Dispose", Roomy matches what happens in the real world as inferred from the Contextual Interviews.
- The system allows for communication and commenting over items which reflects what happens in the real world when the parent and child are trying to decide what to do with an item.
- Allows for sorting of several items at once by allowing multiple tagging in one picture

#### User control and freedom

Users often choose system functions by mistake and will need a clearly marked "emergency exit" to leave the unwanted state without having to go through an extended dialogue. Support undo and redo.

- There is a logout button
- The user can end a video/ phone call by using the "Hang up" button allowing the child some freedom when performing a video rescue which will most often be initiated by the parent.
- **There is no "Start Video Feed" button**

#### Consistency and standards

Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions.

- Overall, the system resembles a simple online web system.
- The system has a search function.

**~~-There was no "Done" or "Send" button under the Comments box.~~**

## Error prevention

Even better than good error messages is a careful design which prevents a problem from occurring in the first place. Either eliminate error-prone conditions or check for them and present users with a confirmation option before they commit to the action.

- There are instructions in the text boxes to guide the user on what to input
- There are clearly labeled tasks on the interface which are easy to spot and click on. (adequate button size)
- Labeling the child's belongings requires drawing a marquee around the item in its photo. This prevents ambiguity about what object in a photo is being referred to.

## Recognition rather than recall

Minimize the user's memory load by making objects, actions, and options visible. The user should not have to remember information from one part of the dialogue to another. Instructions for use of the system should be visible or easily retrievable whenever appropriate.

- Within each of the two views of the web interface, most tasks are immediately present to the user if applicable. Clicking through the interface is not necessary.
- Completed card previews show a color corresponding to what action was to be done with them. This allows users to see relevant information at a glance, as opposed to checking each card and remembering it.

## Flexibility and efficiency of use

Accelerators -- unseen by the novice user -- may often speed up the interaction for the expert user such that the system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions.

- The system allows for a single photo to be used to represent multiple items or belongings. This means no complicated duplicating of pictures
- Color coded cards help the user see relevant information so they can act more quickly.
- Search functionality lets the user view cards that are relevant to them for whatever reason.
- Instant sharing of pictures during Video Rescue skips the lengthy sharing and privacy setting process that is present in other platforms like Flickr.

## Aesthetic and minimalist design

Dialogues should not contain information which is irrelevant or rarely needed. Every extra unit of information in a dialogue competes with the relevant units of information and diminishes their relative visibility.

- Each of the two main views show only information that is needed during the specific workflows that they are made to support. There is no extraneous information shown.
- Live video feed, scrolling photos, and data input all in one screen may overwhelm users.

## Help users recognize, diagnose, and recover from errors

Error messages should be expressed in plain language (no codes), precisely indicate the problem, and constructively suggest a solution.

- If a user draws an undesirable marquee on a card's picture, clicking outside the marquee in the picture will undo the action
- When a card is filled in with information, it leaves the child's Pending view. If incorrect information was filled in, the child will now have to search Completed cards for it.
- There is no delete ability for cards (bad/duplicate picture, etc.)

## Help and documentation

Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation. Any such information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.

- There was no visible help function.

# CONSOLIDATED HEURISTIC EVALUATION

## PARENT INTERFACE

( Suzanne, "iPhone App Usability Heuristics ", <http://www.iphoneuxreviews.com/?p=114> )

### 1. Visibility of app status

The app should always keep users informed about what is going on, through appropriate feedback.

Since the main interface of each feature in the app differs, the user has good grounding in knowing where they are in the app and what the system is doing. Each point of interaction gives the user sufficient information about what next steps are required from the user to proceed to the next screen.

- For instance, the Select a Location screen prompts the user to select a location before beginning. On adding a location, a dialog box pops up to request user input at the blinking cursor.
- On the asynchronous Rescue screen, where the parent is not connected with the child, the screen gives a blank gray bar at the bottom to indicate there is no live connection with the child.
- Once the parent has made a call, the gray bar displays "Calling ..." and an End button at the bottom right to indicate that the app is in real-time video communication with another party.

Overall, the Roomy app displays adequate visibility of app status for all prototyped features.

### 2. Match between app and the real world

The app should sense the user's environment and adapt the information display accordingly.

The system allows the user to bridge the gap between the app and the real world. Upon selecting the option to rescue a room, the app prompts the user to select a location. From this point, every card captured automatically becomes labeled as being found in that selected location.

-Another feature of the app allows the user to tie the real world with information stored in the app: photographing scenes from the real world. This allows users on both sides to identify a card based on information from the real world.

### 3. User control and freedom

Users often choose app functions by mistake and will need a clearly marked "emergency exit."

- Each point of the application has the option to return to the previous screen. The button is always located in the top left in the form of a left-pointing arrow.
- Users can also cancel using Cancel buttons. This is evident on the select a location screen when the app confirms with the user whether or not the user wants to rescue the selected room.

### 4. Error prevention

Eliminate error-prone conditions or check for them and present users with a confirmation option.

- Because it is easy to accidentally tap an option on the iPhone, each major decision selection is met with a confirmation prompt. For instance, after selecting a location to rescue, the app gives two options: Rescue it!, and Cancel.
- The user can easily avoid the error of accidentally tagging every single item with the wrong location by being checked by this confirmation message.

### 5. Consistency and standards

Users should not have to wonder whether different words, situations, or actions mean the same thing.

Consistency was highly considered in prototyping the application. The interface uses standard iPhone interface elements such as tab bars, back buttons, simplistic design, and lists (e.g. Contacts and Item List).

-The bar at the top consistently displays the app title and an option to return to the previous screen by tapping the top left button. It follows standards put forth by the Apple Human Interface Guidelines.

## **6. Recognition rather than recall**

Minimize the user's memory load by making objects, actions, and options visible.

- The contacts page allows the parent to save their children's contact information on the phone
- The application allows the user to first enter which room they are sorting before beginning the rescue process. This is helpful especially when searching for items after sorting them.
- The application also stores the sorted items as images instead of text to enable recognition.
- The application uses icons that match the task to be performed. For example a group icon for contacts which also follows iPhone standards.

## **7. Flexibility and efficiency of use**

Reduce the number of steps required by anticipating user needs and enabling customization.

- By enabling the input of storage location to each item, the application allows for easier search of items and better organisation of the rescue process.
- The parent has less steps to perform when sending pictures to the child. All they need to do is take a picture and the picture is sent to child immediately. The gets rid of the 'upload' step.

## **8. Aesthetic and minimalist design**

Screens should not contain information which is irrelevant or rarely needed.

- By following the iPhone design standards, minimalist design and good aesthetics was guaranteed.
- The application keeps the design clean and thus easy to understand.

## **9. Help users recognize, diagnose, and recover from errors**

Error messages should be expressed in plain language precisely indicating the problem and solution.

- Presence of a back button was noted.
- Use of familiar iPhone buttons and functions
- Dialogue could not be evaluated using the paper prototype

## **10. Help and documentation**

Help should be focused on the user's task, list concrete steps to be carried out, and not be too long.

- There was no visible help function.