2012

Roam With Me

I541- Human Computer Interaction Design I
Final Project

Team4
Sukale, Ryan
Wu, Hsiao-Wen
Hopper-Gaunce, Stephanie

School of Informatics, IUPUI
2012/12/12

Content

List of Figures

List of Tables

I. Problem Space and Requirements Gathering

A. Problem Space

While living in a hostel during travelling, you find that many travelers share their travel experience with others. They would recommend places they think are worth a visit or restaurants that serve delicious food. But you can only reach them while you are around them in the hostel. During the daytime, everyone goes to the places according to their itinerary. In the hustle bustle of your activity, you would forget what interesting places your fellow traveler told you about. It is not easy for tourists to remember things they are not familiar with. Some tourists have a loose plan, so they could add a new spot to their schedule. They make use of a tourist navigation system to guide them. Since they are unfamiliar with the local roads and traffic, they might accidentally take a road that is under construction may have to take another route in order to pass. This is huge waste of time. If they can be provided with this kind of information in real-time, they can avoid this situation and catch the schedule as they planned.

Currently in-car navigation system does not allow users to have multiple destinations. However, it seldom happens that travelers only visit one tourist spot every day during travelling. Most travelers plan their schedule well before hand. If they are in a car, they have to regularly input the destination into the car navigation system. If the navigation and recommendation system can be combined together, it can save a lot of time. By gathering information recommend by the others during travelling, travelers can update their own customized route in real-time.

During travelling, travelers might split-up to the spot they want to go. However, it is very hard to connect with other co-travelers when that happens. By using a mobile phone, you can only contact one person each time. By text message, it is not intuitive to describe location-based information. Our system tries to solve this problem by providing geo-location information of all the group members and helps them to communicate with all the parties of interest at once. An added benefit of such a system is that it can provide location to families and friends when travelling alone. By doing this, families and friends can know that the traveler is safe.

B. Purpose

Our system is a tourist navigation and recommendation system. There are three purposes of this system. The first purpose is to help travelers retrieve more information from other experienced information providers. By experienced

information providers we mean travelers who are travelling or have been to the same place, or it can also be people who live locally.

The second purpose is to provide channels of communication to the group members. They can let co-travelers know their location when they feel like doing so after splitting-up. When traveling alone, users can share their locations to families or co-travelers and let them know that they are safe. Moreover, they can reach new places and confirm to their friends who recommended the interesting places to them.

Third, by receiving recommend tourist spots from others, users can choose the places what they are really interested in visiting. They can then use this system to calculate a customized route for traveling.

C. Goals

A traveler's goal is to explore new places, learn about the location they are visiting, and find context information that is relevant to their interest. Ultimately travelers want to make the most of their time while visiting new places. Although Prior research helps users in determining predefined destinations in their travels, the problem is these may be set tourist destinations, and sometimes exploration off the beaten path my yield more enjoyment and richer knowledge of the environment. And this is the kind of information that we envision, only other travelers or locals can provide. By connecting tourists visiting the same location they would be able to share their intimate knowledge of the environment, the best places to travel, the best places to eat. The app would also provide a sense of security to the traveler because if (s)he gets lost, (s)he can rely on a fellow traveler/friend to guide him/her back to a familiar terrain.

Usability

Effectiveness:

Connect users who are traveling in the same location, allowing them to share their destination information. Connect them while they are out exploring through geo mapping, and provide real-time communication.

Efficiency:

Vacationers can easily find new and interesting places, by conversing with other travelers in real time with the assistance of maps and visual clues.

Safety:

Users can disable their geo mapping at any time.

Utility:

Users can join groups, create groups, or ask locales based on their destination goals.

Learnability:

The groups chat; mapping, and tagging system will be based on existing systems using familiar metaphors for the user.

Memorability:

Visual clues and mapping will allow users to easily remember points of interest.

User Experience:

Enhancing Sociability:

Connecting travelers to share interesting destinations, through mapping assist fellow travelers if they get lost, and enabling them to meet face to face.

Engaging:

By connecting with others, travelers can find new and interesting locations, great deals, and may stumble upon unexpected entertainment/cultural events that might interest them.

Helpful:

Having a network of travelers within the same location can help if you get lost, or need information.

Target Users

Our application basically tries to target travelers who upon reaching a new location want to track down their friends or sometimes tend to get lost or those who want to find new places to visit within a city based upon information gathered from other travelers.

Apart from travelers, the other users are the local people in the city who might want to share information about cool places in their city for other travelers to be able to explore.

The application helps in promoting the tourism industry, not just by word of

mouth, but by continuous real time engagement with tourists through local residents.

II. Design (Conceptualization)

A. Conceptual Model

The core objective of our system is to create short-term communication channels between travelers who meet each other in tourist spots. Our primary user is the traveler and our secondary users are locals.

The system allows users to create location based GPS sensitive groups that connects them to other travelers and friends.

Within groups, travelers can share information with each other such as pictures of places they have tagged. They can share their location on the map, share travel itineraries, and chat with members of the group. Users can also join open groups that allow them to communicate in the same way, except sharing your location on a map is not available within open groups.

The system provides an innovative way for travelers, to coordinate and and share information relevant their common location. Often when traveling you meet new people and learn about new places to visit or great restaurants through these encounters. Our system takes these interactions and makes them conveniently available to you no matter where you are. This is not a social network in the typical sense; The groups and interactions formed within the system are based upon location, and are ephemeral.

Within our system users will have the ability to create groups and add users or join other groups. They can manipulate the system by adding tagged images to maps, adding up to date events and local deals. Users can also create, save and share their travel itinerary. Even though groups are temporary, if a user saves an itinerary, it can be permanently kept and shared with others.

Local people of a city form our secondary user group; They will primarily consist of businesses that want to communicate with travelers with the intent to attract them to their businesses. They will share deals, up-to-date events and travel information on hotels and other local offerings that will be relevant to travelers.

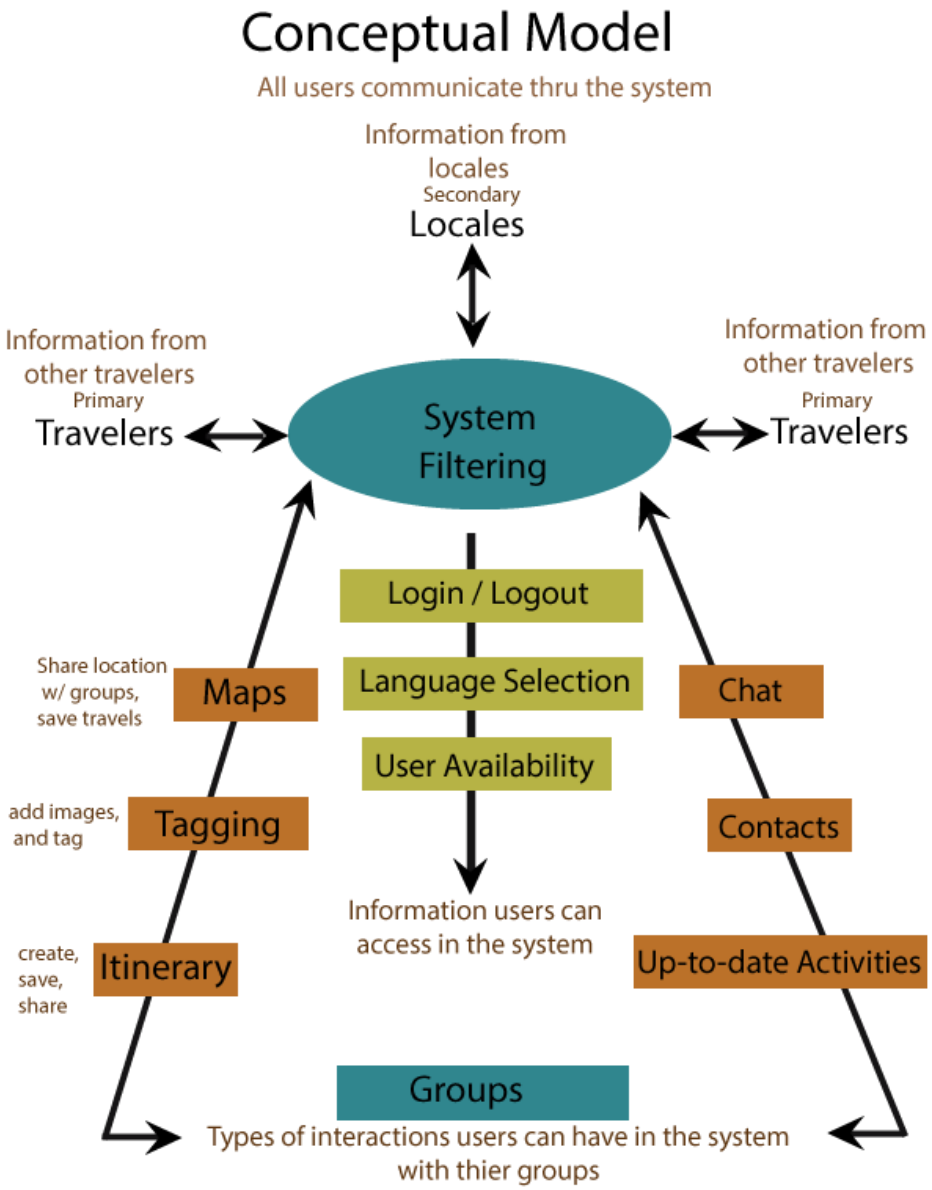


Figure 1. Conceptual model of Roam with Me

1. Key CMC Elements

Communication and Coordination:

Groups:
Users will have the ability to create groups or join open groups to share tagged images, chat, and share their location on maps. Sharing your location on a map is not available in open groups.

Chat:
Users can stay in constant communication with their groups through synchronous chat.

Maps:
Users can trace other's location visually on a map, or save their travel routes on their own cellphones in a map which they can then refer to later or share with groups for further exploration.

Interactive Components:

Tagging:
Through their phone users can take pictures that they can add to their maps and also share interesting sites with other travelers.

Itinerary:
By researching local destinations users can create an itinerary to refer to or share with others.

Location Tracking
Travelers can choose to broadcast their location details to other travelers within their group in real time if they need to meet up at a particular place.

Up-to-date activities:
All local activities that have been added to the system have to refer to events that occur within a week; once the event has expired it will be removed from the system. Locales can enter deals, or as users encounter bargains they can share these with their group and can make them available for everyone to view.

Content Requirements:

Language Settings:

Users can use the language of their choice to operate the system and find open groups based on their selected language.

Login / Logout:
Users must log into the system to access their groups, view saved itinerary and share their location on a map.

User Availability:
This provides a convenient way for a user to hide their visibility from all groups, it mimics being logged out.

2. Requirements: Components/ Functionality

Since the target users of our application are mainly travelers, we focused on the issues faced by travelers whenever they plan a trip to a new place. For this, we tried to view the problem from the perspective of two types of travelers

- Travelers who usually chalk all the intricate details of the trip. These kind of travelers tend not to get lost easily. One reason why we had to consider these type of travelers is because they might have friends and/or family in the place that they are trying to visit. Hence it may not be difficult to find their way in a new place. However, even for such travelers, a new place can sometimes be quite a bit intimidating. More so if you don't know the local language. Communication can become a major issue and degrade the quality of the travel experience.

- Our second type of traveler is more like a free spirited person. Such kinds of travelers do not make very detailed plans. Instead they want to explore the place by stumbling across things. The issue that these kinds of travelers face is that due to the unpredictable nature of where their travel might take them, they might end up spending a lot of time being lost of in not very tourist friendly places in the city and therefore might miss out on enjoying going to places that would have been very entertaining had they been aware of them.

Based upon these types of travelers and the interviews that we conducted, we were able to figure out a list of requirements that would guide us towards creating an application.

- Design a mechanism for travelers to be able to share and connect with other travelers whom they have just met with.

- Create a means for travelers, who are mostly likely to be unknown to each other, to be able to share information about the different locations that they have visited during their tour.

- Provide a means for different travelers to be able to broadcast information to other travelers.

- Provide a means for groups travelers to tag and share information about the different places that they are travelling even after they have split up.

- Provide a means for travelers to be able to share their location information in real time with other travelers either in situations like emergencies or when a split group decides to meet up again.

- Allow travelers to be able to share their maps with other travelers and see the location and activity of each other on a shared map.

- Allow travelers to be able to chat and talk to local residents that use the same app, in order to ask for information for situations such as - when they are lost or when they need to find a restaurant nearby that offers a special cuisine, or a nearby historical monument that they were not aware of when they were planning their trip.

- Allow travelers to form and be a part of different travel groups within the application who have common interests.

- A means for users to search for trending keywords within a given location, such as a big event happening nearby - like food fests or live music concerts - which represent the things that users might not have anticipated when initially planning their travel.

In order to support the above functionality, our application would need that the user have a device that has all of the below mentioned features.

- Internet connectivity.
- Camera.
- Voice recording.

- Maps and GPS.
- Keyboard (e.g. onscreen keyboard for smartphones)
- Mobility
- A sufficiently large screen to view/zoom/scroll through information.

Most of the above mentioned features are readily available in smartphones now a days. Based upon the system requirements, it is very likely that the application will be designed for a smartphone/tablet device or a similar mobile device that can be easily carried along during a trip.

3. Key Scenarios

Scenario 1

Adele and her group of friends are on a vacation together and are planning to split up in order to explore different parts of the city. Before they leave the hotel in the morning they all decide to meet up later for dinner. All of them agree that an Italian restaurant would be good. Adele says she will find some places to share with the group. Adele finds 3 Italian restaurants to add to the new itinerary that she is creating. She wants to save her new map; she names her trip 'places to eat' and the map 'dinner'. She then shares the itinerary with her group of friends so that they all vote on and then meet at a suitable place.

Scenario 2

Dexter has a group of people on his "Vacation Friends" group in the app. He is in the middle of the city and wants to check where all his friends are on the map. Among his group, Charlie and Allen decided to go to a different part of the city. Dexter wants to see what these two were talking about when they were on their trip.

Scenario 3

On her tour, Judith decided that she wanted to take a few more pictures of the museum while her friends wanted to go to the park nearby while a few others went to grab something to eat. She also wants to find the friends who are closest to her at the moment and check what they are saying about the food. If it's something nice, she'd rather go there and pick up something to eat before joining her other friends in the park.

B. Prototype Design & Development

1. Paper Prototype

Please refer to appendix A for the paper prototypes that we created for the

system.
During prototyping, we used simple pencil sketches to develop the visual interaction concepts of the system.

2. Cognitive Walkthrough

Once the first version of paper prototype was ready, we performed a cognitive walkthrough of the system and video recorded how the user would interact with our system by using the paper prototype.

This task helped us in identifying several loopholes in the interaction design of the system.

Table 1. Cognitive Walkthrough Results

No	Findings	Examples	Recommendations
1	Unclear icons	Pinpoint icons include place, group member and users. But icons for place and group members are the same.	Provide different three types of icons for places, group members and user current location.
2	Lack of buttons/ functions	In group page, there is no itinerary button for user to select so that they have to show members' location first then to previous page to show itinerary. In itinerary list page, no share button for user to share it with friends. For manage itinerary, no cancel buttons for user. If they want to cancel add new map in itinerary, they can't do it.	Create a button for itinerary so that user can select itinerary directly. Add share button to itinerary page. Add cancel buttons for itinerary manage.
3	Confusing labels	In itinerary page, there are two different labels for same function which is save map to itinerary. Itinerary and map is poor defined. Some buttons are itinerary but some are map. In create new itinerary, "trip" is not a	Only safe button. For user to choose add to existing or new ones. Replacing 'map' with 'itinerary' in itinerary pages.

No	Findings	Examples	Recommendations
		appropriate label for itinerary.	
4	Layers of itinerary is not enough	Under each itinerary, there are only tourists' spots. It is not easy to manage or to view for users.	Provide users set branches under each personal itinerary, like day 1 and day 2 schedules.

3. Dynamic Prototype

A high fidelity prototype of the system was made using Axure and image manipulation software such as Inkscape and Illustrator.

Links

URL: http://share.axure.com/WR9BA0/
PASSWORD: HCI541

Explanation of the interaction and interface design components

Roam with me is a GPS based application that can be used by travelers to keep track of the locations of the people in their groups. The interface has a few core features

Maps: This is at the heart of the system. It allows users to see their own location in a city and select people or groups with whom they want to share their location or whose location they want to track. Once they select a group or individuals, they can instantly view their conversations.

MyTrips: This is the section where the user can save the set of maps of all his/her past and future trips. For each map saved, they would be able to share it with their family or friends or people in their contact list.

Contacts: The contacts within the application. In the real world, this would attempt to integrate with the contacts of user's phone but it is also possible to have separate contacts that are not part of the user's phone list. In this way, a user can share maps/interesting places/itineraries with other travelers whom they might only meet on a trip but do not want to have permanent contact with.

Around Me:This is an important section that lets users find the places of interest in their vicinity. The map list displayed using this function would primarily consist of the different places that have been recommended by previous

travelers or by other local people. Users can save interesting maps into their itineraries for future reference.

Settings: Although non-functional at the moment, in the real application, this page would allow the user to be able to set up his/her global or default GPS sharing settings and chat visibility settings.

III. Validation (Product Assessment)

We collected validation data from four evaluators. The demographics are as follows. The minimum experience is 2 years. Three of them had travelling experiences during past six months and therefore they could give us significantly valuable feedback.

Table 2. Demography of evaluators

Demographic Items	Categories	Number of User(s)
Age	25-30	2
	30-41	2
Gender	Female	2
	Male	2
Experience	2-10 years	3
	10-15 years	1
Travelling more than two days in past six month	0	1
	3	2
	5+	1

They have to perform three tasks to evaluate this product.

Task 1
Imagine that you are a traveler and arrived in a new city a couple of hours ago. It is lunch time. You are hungry and you want to find out the locations of the sushi restaurants around you.

Task 2
Imagine that you had been on a recent Family trip. Now that you are back home, you want to share your itinerary with your contact group of Family friends. The itinerary that you want to share is under Family trip - > Hotels -> Holiday Inn.

Task 3
Let us assume that you are currently out on the road in the middle of the city. Two of your friends in the group "Spring trip", name Lisa and Joe are also along with you. You want to take a picture of a building that you see right in front of you. Once that is done, you have to share your location with your friends in this group and then see what they were talking about.

A. Usability Study Findings

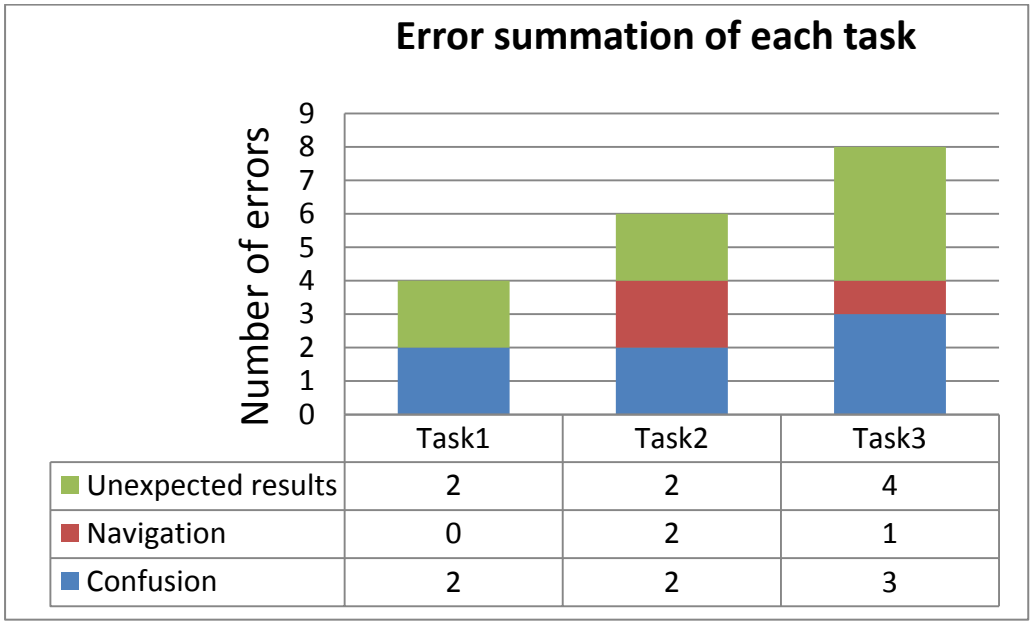
Those findings were analyzed based on quantitative and qualitative data. Quantitative data came from error descriptions, open questions in post-test questionnaire and interviews. Qualitative data came from close questions in post-test questionnaire. These data gave us their general perspective of this application.

1. Task Error

Our evaluators sent us back their error descriptions (Please see Appendix IV.B). We categorized this information into groups. We found that there were three major problems in our product - unexpected results, navigation and confusion. Unexpected results are those in which the screens did not show or reveal the information that they had expected. Under this category, there are problems when switching between results but the users felt that they received no system feedback. Navigation problems came from navigating operations. Users did not know what to do while performing the tasks. The third one is confusion for evaluators. Icons and labeling are the major causes for the same.

- Unexpected results/ screens
  - Switch between Map & Chat
  - System feedback
- Navigation
- Confusion
  - Icons
  - Labeling

Based on the number of errors, we found that most of the errors occurred in Task3. This task is related to sharing a location and tagging a place. Since this was the most complex task and had most of the errors, I would need significant improvement. Most of the problems caused user unexpected results. Among three tasks, unexpected results take the largest portion of errors.



	Task1	Task2	Task3
Unexpected results	2	2	4
Navigation	0	2	1
Confusion	2	2	3

Figure 2. Error summation of each task

2. Post-Task Questionnaire

Evaluators had to fill an online post-test questionnaire. We used both closes and open questions for this questionnaire. In closed questions, we adopted system usability scale (SUS) because it is a standardized questionnaire and is reliable. Details are shown in Table 3.

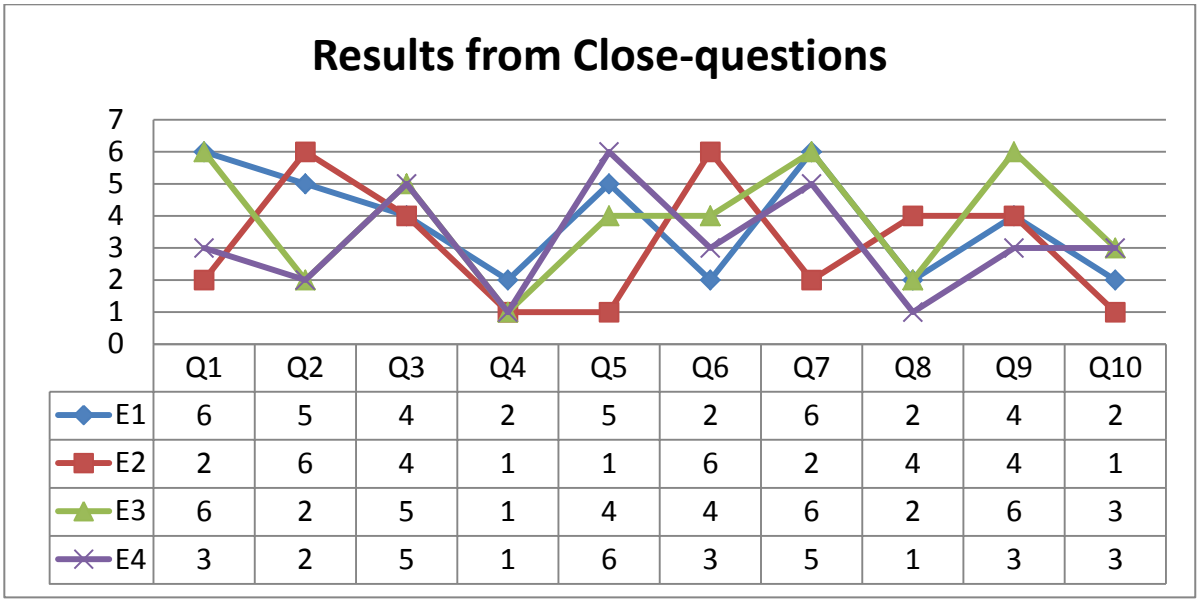
Table 3. Close-questions results

	E1	E2	E3	E4	MAX	min	Max-min	Average
Q1	6	2	6	3	6	2	**4**	4.25
Q2	5	6	2	2	6	2	**4**	3.75
Q3	4	4	5	5	5	4	1	4.5
Q4	2	1	1	1	2	1	1	1.25
Q5	5	1	4	6	6	1	**5**	4
Q6	2	6	4	3	6	2	**4**	3.75
Q7	6	2	6	5	6	2	**4**	4.75
Q8	2	4	2	1	4	1	3	2.25
Q9	4	4	6	3	6	3	3	4.25
Q10	2	1	3	3	3	1	2	2.25

We compared data from all the evaluators. Detail values are shown in Figure 3. They had same attitudes about some questions varied significantly over others. Those differences point out that our product needs some level of improvement in a few areas. From the table, we know that among all the questions, Q1, Q2, Q5, Q6 and Q7 have relatively large differences in evaluator opinions. For the closed questions, we used a 7 point scale where 1 represents ‘strongly disagree’ and 7 represents ‘strongly agree’. Below is a short summary of the questions that generated conflicting responses among the users.

- Q1: would you use this application frequently?
- Q2: is it unnecessarily **complex**?
- Q5: was this application was well **integrated**?
- Q6: was there too much **inconsistency?**
- Q7: do you think most people would **learn** to use this application very **quickly**?

Since responses to this data had a high variation, and the number of users surveyed was very small, the calculated average could not give us much information. However these questions did point out that we need to fix the problems in complexity, integration, consistency and learnability. For question 4, the reason it has lowest average point is that since our evaluators are quite familiar with technology, they did not feel the need for any technical support.



	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
E1	6	5	4	2	5	2	6	2	4	2
E2	2	6	4	1	1	6	2	4	4	1
E3	6	2	5	1	4	4	6	2	6	3
E4	3	2	5	1	6	3	5	1	3	3

Figure 3. Close-question results among evaluators

3. Interviews

We prepared interview questions as shown in Figure 4. Besides these questions, we read their responses to the questionnaires before conducting the interviews. By doing this, we were able to know more about their thoughts for before evaluation such as the reason they gave us a low score for post-test questions. We recorded each interview that were used for discussion with team members after all the interviews were completed. The results of the interview were analyzed with open-end questions. These results are shown in next section.

- When using the application, did you feel that the context in which the actions and information was displayed was appropriate to the tasks?
- Did you find it easy to use and access the different parts of the system?
- When browsing through the system, did you feel that the menus, the pages, the icons, all gave a clear picture of what the system was capable of performing?
- Did the flow of action from one application screen to another give a coherent picture of the system?
- Did you feel that you had to perform too many steps to complete the tasks? Do you think we could have made them simpler?
- Was there any feature that you had expected, and would have been useful to you, but it wasn't present in the prototype?
- If you were to travel in the future, and if this were a real app, would you carry it along with you and rely on the information that it would provide you

Figure 4. Interview questions

B. Summary of Product Assessment

This section summarizes all the results of the assessments, including questionnaires and interviews. We classified our findings into five aspects that we can work on in order to improve the application. After analyzing data, we discussed our recommendations to refine our designs.

1. Problems with the Product

Based on questionnaires and interviews, we can find there are five critical ways in which we can improve our products. They are listed below

- Confusions in the main screen

  As shown in Figure 5, options in circles did not give the user sufficient clue about this product. They did not know which one is the main function and where to start from. The other problem in the main screen is the labeling, such as 'My Trip' and 'Map'. Users were unable to figure out what they could do using these options.

Figure 5. The main screen of Roam with Me.

- Unclear meaning of 'My trip'

  My trip provides users with a means to organize their maps as shown in Figure 6. It can be a plan for a trip in the future and or a records of past

trips. However, the current layout does clearly highlight this feature. Users were unable to distinguish past records and future plans by simply viewing the list.

Figure 6. The main page for 'My Trip' function.

- Communicate with groups in Map
  Users said that it took them too many steps to share a map with friends. In map view as shown Figure 7, they chose a group with which they wanted to share first. Then, the system took them to contact list which should have then redirected them directly to the map sharing page. However, it again took them to manage maps page. This issue existed because of a bug that cropped up while integrating the different functions of the system.

The other problem is of switching between map and chat view. Users found this kind of switching troublesome and ineffective. They felt that they might miss group messages when they are in map view.

Figure 7. Sharing a map with friends in group

- Colors Contrast

  The back ground color and colors of labeling do not show enough contrast. Users commented that they felt the screen would be too blur and difficult to see if they were to take it outdoors.

- Icons & labeling

  The icons and labeling do not tell the user what they represent (Figure 8). These pin points were designed for tagged places. Round dots were designed for group members. But, numbers of members in a group is usually more than one. Users could not differentiate between people person by directly viewing the map.

  The other problem is about the bottom button. The 'Maps Around Me' did clearly describe its function for users to be able to search points of interest. They have tap it in order to figure it out.

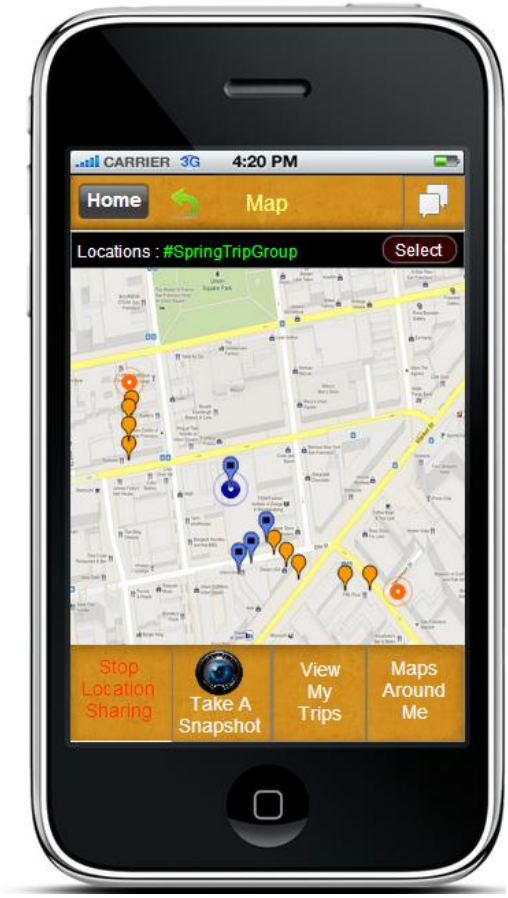


Figure 8. Icons and labeling on map-view

2. Recommendations for Future Development

- Resolve confusions in the main screen

  According to interviews, we would try to show the main function in the first page rather than giving user too many options to pick from. We plan to put the other functions in some sort of a side bar that does not distract the user.

- Clarify the landing page for 'My trip'

  By organizing trips into categories, users would be able to have a clearer vision about this system function. We would provide them ways to differentiate between trip records, future plans and maps shared that have been shared with them. The "trip records" section would be a place in which they can keep records of their past trips. The "futures plans" can be used for planning future trips. "Shared maps" section would be for them keep track of maps that others had shared with them.

- Provide a more effective means of communication within groups while viewing a Map
  Fixing the bug while sharing the map would help resolve this issue. For chat view, we would put an indicator beside the group names so that users can know the number of unread messages.

- Improve the colors contrast
  We would change the color scheme so that interface elements can have a better contrast.

- Improving the icons & labeling
  We would have to use an improved coloring pattern for users to be able to identify people from different groups on the map. In order to solve the 'Maps Around Me' labeling problem, we are considering changing the label to 'what's around me' since it better suits that function that it indicates.

IV. Appendix

A. Paper Prototype

B. Task Errors Descriptions

Task Number	Page title/ function	Error Description	Error type
1	Main page	"Maps around me" does not hint that I need to click this option to find the closest restaurant. Maybe you have the options of this page on the map page.	confusion-labeling
1	Multiple push pins	A blue-colored push pin placed on the map differentiates from the existing orange colored ones. However it does not make sense since not much information about possible restaurants are provided. I understand that blue colored pin possibly indicates my current position. But there seems to be no option or information that will help me pick one over the other from the 2 sushi restaurants; unless I click on the push pins. Not sure if this affordance is conveyed by the pin itself.	confusion-icon
1	Left panel distracting	Clicking on any entry on left panel displays nothing and clears the existing home page.	unexpected result
1	Adding restaurant to map and reverting back to original list of sushi restaurants	I added one restaurant to the map and saw the other push pin was cleared from displayed. When I wanted to see both the pins again, I E1t back to the list and clicked on 'sushi', only to see three push pins now! Probably a bug.	unexpected results
2		I actually didn't understand what you exactly mean by "**itinerary**". I thought by this you mean for example all places that I have been together with my family in the whole trip. So that's why I didn't get exactly why I need to select holidays inn and what those marks on the map represent.	confusion-labeling
2	Redundacy in steps to share itenarary	When I initially click on "Share" and find "Family Friends", there is no option to share the itinerary directly. I have to click on "manage groups" and perform the same steps I did earlier to get to "Family Friends" groups before I can share! This is like redundant steps that I need to complete.	navigation
2	Lack of user control and feeling of lostness	Once a confirmation dialog box indicating I am sharing the itinerary is done, there is no change in the screen. Where does a user go from here?	unexpected results-system feedback
2	Multiple ways to get to Family Friends	There are two ways I can get to Family Friends. Either through contacts, or by directly clicking on Share and finding the group of interest. This might be confusing, especially when there is no direct way to share a itinerary directly when within the groups page.	navigation
2	Sharing itinerary	I guessed that I needed to follow the manage maps path to share the itinerary. Without prior knowledge for your product it is hard to make the conceptual connection that maps and itinerary are synonymous.	confusion-labeling
2	Task Completion	There is now real system feedback that I completed the task successfully. It would be nice if there was a receipt indicating that the itinerary had been sent	unexpected results-system feedback

Task Number	Page title/ function	Error Description	Error type
3		I see your point to share the picture, but as I take a snapshot and share it with my friends, I don't know exactly what happened to my picture and note and I don't know how to find what they are talking about that specific picture. I could understand the concept of location sharing on the map with different colors though.	unexpected result-system feedback
3	Left panel confusing	Not sure what's the purpose of the left panel. But clicking on camera tag seems to break the entire path that might be taken to share the picture and is very confusing.	confusion
3	What is the difference between orange push pin and orange circle?	What do the orange push pins mean? I am guessing other people from the Spring Trip group? Then what do the small orange circles mean?	confusion-icon
3	Location of Joe and Lisa	Doesn't the task indicate Joe and Lisa are with me? How can hover over the orange circles show their names? This would mean that Joe and Lisa are no longer with me. They are away from me while others from the group are closer to me.	confusion-icon
3	Who am I sharing the picture with?	With whom am I sharing the snapshot? There is no way for me to select the group before I share. There are buttons to Share Now or cancel, but is it also possible I might want to share the picture with maybe Family Friends? Of course, the task says Spring Trip group, but there has to be an option or some indication somewhere that shows with whom I am sharing a picture.	unexpected result-system feedback
3	Selecting a group	Clicking on "Ok" with all the check boxes checked under the "Select" list works! And the result is Spring Trip being selected.	Navigation
3	Extra push pin	Probably not an issue. But the way the task was worded, one might assume that I am with Doe and Lisa. So who is the extra push pin?	unexpected results
3	Behavior not as expected	When I look at chat after starting location sharing, and try to come back, everything is restored to original state before location sharing was started! I would expect everything to stay the same when I am switching back and forth between map-view and chat-view. Further, why would I want to go into a separate window under chat and switch back and forth betE1 map-view and chat-view? There has to be an easier way to receive notifications each time a message is being conveyed by people within the group. Possibly I might forget to check chat messages and be immersed in looking at the new city. In that case, I might miss out on some important conversations with others in the group.	unexpected results- switch between map & chat view

C. Dynamic Prototype


CARRIER 3G 4:20 PM
Options
CARRIER 3G 4:20 PM
Home
Map
Group
MUST see building!!
It is so Magnificent.
Share Now
Cancel
Share Location
My Itinerary
Tag
Feeds
CARRIER 3G 4:20 PM
Home
Map
Choose Group To View Activities
Select
Ok
Cancel
Spring Trip Group
Family
Friends
Wine Club
Yoga Classmates
Start Location Sharing
Take A Snapshot
View My Trips
Maps Around Me
CARRIER 3G 4:20 PM
Home
Map
Choose Group To View Activities
Select
Message
To start sharing your location, first choose a group.
OK
Start Location Sharing
Take A Snapshot
View My Trips
Maps Around Me
CARRIER 3G 4:20 PM
Home
Map
Locations : #SpringTripGroup
Select
Joe
Start Location Sharing
Take A Snapshot
View My Trips
Maps Around Me
CARRIER 3G 4:20 PM
Home
Contacts
Chat
Manage Maps
John Doe
Edit/Delete
Manage Groups


CARRIER 3G 4:20 PM
Home
Around Me
A1 Sushi
Sushi
Add to Map
Great sushi and great lunch deals, $5.99 for 3 rolls.
7201 North Keystone
Cancel
Save
Share
My Trips
Most Resent
Save to Existing Trip
Create New Trip
Cancel
Restaurants
Italian
Mexican
Sushi
Indian
Museums
Map
Choose Group To View Activities
Select
Ok
Cancel
Spring Trip Group
Lisa
Joe
Family
Friends
Wine Club
Start Location Sharing
Take A Snapshot
View My Trips
Maps Around Me
My Trip
Spring Trip
Family Trip
Shopping Places
Europe Trips
Travel Club Trips
Japan Travel

D. Post Task Questionnaire

No.	Question
Q1	I think that I would like to use this application frequently.
Q2	I found this application unnecessarily complex.
Q3	I thought the system was easy to use.
Q4	I think that I would need the support of a technical person to be able to use this system.
Q5	I found the various functions in this application were well integrated.
Q6	I thought there was too much inconsistency in this application.
Q7	I would imagine that most people would learn to use this application very quickly.
Q8	I found this application very complicated to use.
Q9	I felt very confident using this application.
Q10	I needed to learn a lot of things before I could get going with this application.
Q11	Which part of application did you find to be the most confusing?
Q12	Based on your experiences, what are your recommendations to improve the design issue in question 11?
Q13	Which feature of the application did you like the most?
Q14	Do you have any other comments/suggestions?

E. Interview Questions

No.	Question
Q1	When using the application, did you feel that the context in which the actions and information was displayed was appropriate to the tasks?
Q2	Did you find it easy to use and access the different parts of the system?
Q3	When browsing through the system, did you feel that the menus, the pages, the icons, all gave a clear picture of what the system was capable of performing?
Q4	Did the flow of action from one application screen to another give a coherent picture of the system?
Q5	Did you feel that you had to perform too many steps to complete the tasks? Do you think we could have made them simpler?
Q6	Was there any feature that you had expected, and would have been useful to you, but it wasn't present in the prototype?
Q7	If you were to travel in the future, and if this were a real app, would you carry it along with you and rely on the information that it would provide you?