

Travel Buddy

ALBATROSS

Final Report

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Abstract

Travel allows us to have new experiences, make new friends, and reconnect with old ones. It's not without its share of practical and logistical difficulties though. In this report, we describe our design process for ALBATROSS, a mobile app that aims to solve travel problems with an emphasis on safety and security.

We arrived at a mid-fidelity prototype after extensive ideation, design, and testing. We looked at existing travel solutions in the marketplace, interviewed travelers to learn about travel experience improvement areas, performed card sorting to develop our initial information architecture, and ran two rounds of usability testing to hone our designs.

Our first round of usability tests included a sub-group that we refer to as Linear Delphi. In her work supporting a modified approach to card sorting, Paul (2008) describes an iterative model for usability testing. In this model, participants iterate on previous participants' work. She refers to the model as a, "linear version of the Delphi moderating model ... for gathering feedback and insight" (p. 11). We used the data from these tests to improve our app design, resulting in a mid-fidelity prototype that we evaluated with another round of traditional usability testing. At the conclusion of each design sprint, we found ourselves with goals for future development as well as several ideas to consider adding to our app's core functionality.

Goals

Our team's original project goals were to:

- Evaluate the efficiency of the app
- Evaluate the app's learnability
- Evaluate the app's utility
- Evaluate the app's perceived usefulness
- Improve the effectiveness of the app's information architecture by identifying preliminary category labels

Overall, we successfully achieved these goals through various qualitative and quantitative metrics gathered during the usability test sessions and the card sort. In addition to the stated project goals, we also gathered qualitative information about user satisfaction both during and after usability testing sessions.

We made significant changes to our prototype after the first usability test. As a result, we adjusted some tasks between the first and second usability tests. These adjustments affected our evaluation of these metrics. Changing the metrics meant that the data may not be equivocal between the first and second testing rounds. To mitigate this issue, we tried to keep most tasks as close to the original task as possible.

Methods

Competitive Analysis

We started our project with a week of competitive analysis, during which we analyzed and compared twelve leading travel assistance services and apps (e.g., TripAdvisor, Triplt, and Yelp). We decided on five criteria to help us understand underserved niches in travel technology:

- Content and functionality
- Distinguishing features
- Strengths
- Weaknesses
- Appeal to our target demographic (travelers)

Each team member evaluated two to three of these services on their own and entered their findings into a spreadsheet (Appendix B). We then collectively reviewed our data to provide us with some direction as we generated ideas for our own app.

Interviews

Our Process

Based on our competitive analysis, we decided that we wanted to explore some of the nuts and bolts of traveling (e.g. budgeting, safety, and security) beyond sightseeing or booking flights.

We created a semi-structured interview script (Appendix C-2) to help us understand how our participants traveled and what sort of problems and anxieties they associated with travel. Because of our small participant pool, we chose a semi-structured format. We wanted to produce reasonably consistent data, but also have a degree of freedom to explore each interviewee's experiences.

We conducted four interviews, with the first acting as a pilot. Each lasted between thirty and sixty minutes. Because the pilot interview went smoothly, we reused our protocol for the other three. We recorded each interview.

Following the interviews, we transferred interview transcriptions and our notes onto an online affinity diagram app. Over several rounds of sorting, we arranged our data into several common groups, which we then used to identify recurring themes during our analysis (Appendix C-3).

Participants

We interviewed four participants (one per team member). The participants came from friends, family, and colleagues, and varied in age and gender. We screened participants (Appendix A) to ensure that they had traveled at least once in the past year, and that they regularly used some sort of mobile device. All participants signed a consent form for participation in this phase of the study (Appendix C-1).

Environment

We conducted two of the interviews in-person: one in Chicago, IL, and the other in San Diego, CA. We conducted the other two interviews remotely: one by phone in Chicago, IL, and the other by Skype in Newton, MA. We used the same protocol for all four interviews.

Moderator Role and Testing Materials

Each moderator had a copy of the test script, a consent form for their interviewee to sign physically or electronically, and an audio recorder.

Card Sort

We decided to conduct an online open card sort as a class activity in order to find out how people organize our content and help us to define our app's information architecture. We signed up for the trial version of Optimal Workshop, an online card sort tool, and set up a study with 25 cards (Appendix D-2). The trial version limits the similarity matrix and dendrogram results to 10 participants' data.

In the instructions (Appendix D-1), we asked participants to categorize items within each card. We further instructed our participants to email a screenshot of their completed and categorized cards. We received eleven screenshots with categorized content. We analyzed the results from participant-created categories in the screenshots as well as Optimal Workshop's similarity matrix and dendrograms.

Low-Fidelity Usability Test

Our Process

We agreed on the main features of the app that helped us to identify the screens that we needed to create. We all designed preliminary sketches based on insights from user interviews and then consolidated them into one design (Appendix E-2).

In order to save time, we decided to create a low-fidelity prototype using the Justinmind prototyping tool, then print out the screens and cut out sections to be used during testing.

After finishing the prototype, we wrote a six-task-long test script (Appendix E-3). We also created a pre-test questionnaire (demographic data) and post-task questionnaire (qualitative data). We created a post-task questionnaire using Google Forms to gauge the user's satisfaction with each task. We administered this questionnaire after participants completed each task.

We decided to use a paper prototype for the first round of testing and break this testing into two sub-groups: traditional and Linear Delphi. Since the Linear Delphi method requires a rapid return mocking up prototype iterations between participants, we thought that a low-fidelity prototype would be easier to work with than mid-fidelity. By contrast, the participants in the traditional user testing group only worked with our team's prototype.

The first Linear Delphi participant (LDp) began testing with our team's prototype. However, at the end of the test we asked the first LDp to comment about or sketch changes to our prototype design for the home page and navigation. We mocked up the suggested changes. We offered both versions to the second LDp for commentary. We asked the second LDp to select one of the two prototypes to use during testing. Again, at the end, the second LDp commented or sketched changes. We mocked up the suggestions. We presented all versions to the next LDp and offered the choice of prototype to use during the testing. This method allowed each subsequent participant to iterate on all of the previous work (Appendix E-4).

After testing, we completed data analysis (Appendix E-5) and generated recommendations for the next prototype iteration.

Participants

We each recruited and tested two participants each, making eight participants total. Participants consisted of friends, family, and colleagues varying in age and gender. We used the same screening criteria for this round as for the interviews. We recruited through emails, phone calls, conversations, and social media.

We asked all participants to sign a consent form (Appendix E-1) to participate in this testing.

Environment

We conducted all tests in person. They lasted 45-60 min for Linear Delphi and 30-45 min for traditional testing.

Moderator Role and Testing Materials

We expected moderators to prompt participants to complete a task without directing them as to how to do it. Each moderator had access to a script. The script consisted of a greeting, task instructions and post-task questionnaire instructions.

Mid-Fidelity Usability Test

Our Process

For the second round of usability testing we eliminated the Delphi sub-team component and each team member ran traditional user testing with one participant. We adjusted the test script and scenarios from the first test to match the modified prototype (Appendix F-1). We incorporated recommendations from the first round of testing, modified the prototype to make it mid-fidelity, and published it on the “Just In Mind” server to make it accessible through web browsers. Overall, we kept the tasks as similar as possible in order to compare results between the two rounds of testing and validate our changes.

We created a post-task questionnaire using Google Forms to gauge the user’s satisfaction with each task. We administered this questionnaire after participants completed each task.

Following the usability tests, we transferred our field notes onto an online affinity diagram app (Appendix F-2). Over several rounds of sorting, we arranged our data into common groups to inform future development requirements for our app. We were interested in how our participants felt about the app and we paid particular attention to things that would prevent people from using the app’s core functions. Our user tests also generated unplanned capabilities for our app that we might want to add. We aggregated all of this data for future use.

Participants

We each recruited and tested one participant, making four participants total. Participants consisted of friends, family and colleagues, varying in age and gender. We recruited through emails, phone calls, conversations, and social media. While we kept the same screening criteria, the participants chosen for this round differed from those in the first round. Participants were asked to sign a consent form (Appendix E-1) for agreeing to participate in this testing.

Test Environment

All tests were conducted in person and lasted 30-45 minutes.

Moderator Role and Testing Materials

Each moderator had access to a script. The script consisted of a greeting, task instructions and post-task questionnaire instructions.

Results and Findings

Competitive Analysis

We originally intended to design a general-purpose travel app that included some safety features. Our competitive analysis (Appendix B) revealed that many travel apps with features such as trip planning, booking flights/hotels, travel recommendations, and budgeting are already well supported (e.g., TripAdvisor, Triplt, and Gogo Bot). However, we also found that very few travel apps handle safety and emergency response well. Because of the gap within the travel app space, we chose to focus specifically on a safety-centric travel app.

Interviews

We found through our interviews that there were distinct opportunities and pain points throughout the travel process (Appendix C-4). Some of the major themes that arose from the analysis included:

1. General anxieties during travel planning and while traveling.
2. Desire to set a budget during travel planning and maintain that budget while traveling.
3. Desire to communicate with friends and family during travel planning and while traveling.
4. Desire to address safety concerns during travel planning
5. Desire to access helpful resources while traveling

We also found that overall, participants enjoy travel and do so for both business and pleasure. Several participants stated that “travel is fun” and they “enjoy seeing new places and cultures.” Additionally, participants also were able to identify popular existing travel apps that they currently use, including several that we identified in our competitive analysis (e.g., TripAdvisor, Kayak, Expedia).

Based on these results, we decided to focus our attention on the primary pain points identified including: travel budgeting, travel communication, safety, and access to resources. Since participants also had a positive association with travel, we wanted to incorporate some aspects of fun in our app. This contributed to the original app name of ‘Travel Buddy.’

Card Sort

We analyzed groupings using the similarity matrix (Appendix D-3). We focused on clusters where 50-100% of our participants agreed. We used these groupings to influence our feature development. We learned how our participants prioritize information when traveling by analyzing the rankings within the cards of their individual screenshots. We combined the matrix and ranking data to generate seven recommendations.

1. Put more emphasis on the map as a point of interaction.

In the matrix, 90% of respondents associated maps with destinations. Fifty percent associate weather with both maps and destinations. Six of eleven participants ranked “Map” as the most important item in the card where they placed it. Seven participants prioritized locations (e.g., hospitals, pharmacy, destinations).

2. Emphasize visibility of interactions for getting help.

The highest relationship correlation in the matrix for “Get Help” was 40% of participants agreeing with both “Contacts” and “‘I’m ok’ check-in.” However, half of the participants ranked “Get Help” as the most important item in the card in which they placed it. This suggests that we need to emphasize how getting help relates to the other content in our app.

3. Consider a way to communicate localized references or resources.

Sixty to eighty percent of participants agree that a relationship exists between visa requirements, currency, units of measurement, language, embassy information, and weather. These same categories were prioritized within individual cards nine times.

4. Clarify contact integration.

The strongest correlation in the matrix for the item “Contacts” was 60% with “‘I’m ok’ check-in.” This suggests that the participants may not know why contacts would be included in a travel app. Only two participants prioritized “Contacts” in their individual cards.

5. Develop a component around travel risks and alerts.

The matrix revealed a 50-100% similarity among terror risk, crime risk, political situation in country, natural disasters, emergency alerts, and in-country alerts. The screenshot analysis supports this development; alerts were rated first in their categories six times.

6. Offer a way to navigate medical care and information.

The matrix revealed a 50-100% similarity among my prescriptions, my medical care, medical care, dental care, pharmacy, and hospitals. Combined, medical care and medical information were ranked the most important items in their categories seven times.

7. Avoid specialized or ambiguous language.

The card sort analysis revealed that participants were not familiar with the term “Dead Man’s Switch.” This indicates that the terminology is misleading. The screenshot analysis further supports this as one participant put this item in a card labeled “Destinations,” two put it in cards such as “Account” or “Settings,” and the rest relied on one-item cards titled, “I have no idea what this is?” “Why is this in here?” and “Eh...?”

The cards created and labeled by our participants (e.g., country information, things to do, medical information, places to see, etc.) seemed to draw from what they already knew about travel apps. We realized that we would need to rely heavily on interactions to teach participants that our travel app prioritizes safety over tourism.

Low-Fidelity Usability Test

Through our first usability testing round with a paper prototype, we identified many areas of improvement through both the traditional and linear Delphi model (Appendix C-3). Some key findings from this round included:

1. Participants had a positive reaction to the home screen overall.

Participants described it as “minimal” and “straightforward.” They thought that the application’s intended purpose was for travel-related activities, although they thought it was oriented to general travel rather than specifically focusing on safety.

2. Participants wanted navigational elements and the general flow of the app to be more streamlined and transparent.

This was particularly evident in the Linear Delphi model. One participant commented that going through specific steps seemed cumbersome. Another commented that they wanted to see larger menu items. Additionally, in task four (user initiated check-in), most participants were confused about why they had to add their emergency contacts twice to send a message.

3. Participants wanted more consistency in receiving confirmations and notifications.

In task one (set destination), multiple participants commented on how they weren’t sure if they had successfully added a destination and would have liked to see a confirmation screen. In task two (set-up emergency contacts), participants expressed satisfaction when they received a confirmation that their emergency contacts were set up.

Overall impressions of the paper prototype were mixed. While some participants said that they found the app to be easy to use and useful, others found it to be useless, with features that were redundant with existing apps. Some of the frustrations encountered also stemmed from lack of knowledge of the nature of a paper prototype. For example, one of the participants

mentioned that they were confused by lorem ipsum text and thought the visual design was ‘too plain.’

Based on these findings, our next higher-fidelity iteration focused on improving the primary pain points of this round of usability test. This included, but was not limited to:

1. Improving contextual interactions
2. Eliminating repetitive functionality
3. Changing the name to better reflect the intended functionality
4. Improving overall navigation and user flow

Mid-Fidelity Usability Test

We generated two themes from our inductive qualitative research: User Satisfaction and User Dissatisfaction (Appendix F-2). We were able to subdivide User Dissatisfaction into three sub-themes: Primary Considerations, Secondary Considerations, and Future Considerations. We had some difficulty with the functionality of our prototype during the tests (e.g., resetting the prototype in order to complete stages of entering a trip). This invalidated our timing data. Timings varied up to four additional minutes for three of the six tasks. Despite prototype errors, three participants agreed that completing the tasks was easy. One participant was neutral.

User Satisfaction

Participants commented positively on the second round of user testing with a clickable prototype and were able to identify the purpose of the app. When asked what is appealing about our app, Participant 4 explained, “I like that it’s a novel concept. It’s good for foreign travel, I think.” Participant 1 responded, “The way this is set up is helpful.” When asked to describe the app to a friend in one sentence, Participant 2 commented, “Emergency situations happen and this app is for those situations.” Participant 3 responded that our app is, “Required when traveling.” The participants described several of the functions positively as well (e.g., category choices when searching maps, getting help, sending alerts to pre-determined contact groups, etc.). All of our participants agreed or strongly agreed that the terms and words used in this app were easy to understand.

User Dissatisfaction

Primary Considerations are the items we identified as critical to the usability of the app. Our participants seemed to approach the app with a mental model of using travel apps as booking agents. We would like to communicate our conceptual model of safety and security more effectively. One way to do this is to refine the contact interactions (e.g., adding or editing contact lists as well as messaging contacts while traveling). Additionally, changing the name can further clarify the app’s functionality and purpose. When asked about the name, only one participant liked it. The other participants commented that, “It’s a super-long acronym,” “Name sucks! It

doesn't lead me to anything," and that it, "...doesn't make sense." We need to hire a marketing team to help with naming and branding. To increase usability, we also need to continue to iterate on the difference between the sliding navigation and the bottom navigation options.

Secondary Considerations relate to user customization (e.g., adding personal notes to trip information, editing pre-filled messages). Future Considerations are ideas generated from our participants for functions they might like to see added to the app as it develops over time. This included design items (e.g., icons and colors) that would not enter our design cycle until the high-fidelity prototyping stage.

Conclusion

We created a project plan (Appendix G) and followed through each stage of testing by iterating on the last. The competitive analysis shaped our initial vision. The interviews and card sort influenced that vision to focus on safety features instead of general travel. We built our low-fidelity prototype from requirements gathered in the interviews. The card sort informed us which terms and groupings worked well for our participants and which were confusing. We built out our mid-fidelity prototype from the results of our low-fidelity usability testing. The Linear Delphi model provided us with a blueprint for the next design iteration. Both methods yielded significant feedback about improvements to the content, navigation, and interactions of our app. We developed the mid-fidelity prototype out of these recommendations.

Positive feedback from our test participants confirmed the benefit of this app for travelers. In order to improve and build on this app, we recommend further research. A primary area that needs additional research and testing is the app name and overall branding. We struggled with the name; neither of the names that we tested resonated with participants. Additional areas for development include clarifying the sliding menu navigation versus the bottom navigation and building out the interactions for contact lists to eliminate ambiguity.

References

- Paul, C. L. (2008). A modified delphi approach to a new card sorting methodology. *Journal of Usability Studies*, 4(1), 7-30.
<http://uxpajournal.org/a-modified-delphi-approach-to-a-new-card-sorting-methodology/>

Assessment Documentations (Usability and Evaluation)

Team Member Name	Contributions to Usability and Evaluation
Eileen Tong	<ul style="list-style-type: none"> ● Created initial draft of interview script ● Reviewed interview script ● Conducted one user interview ● Contributed to analysis of interviews ● Created initial draft of competitive analysis ● Created a portion of the competitive website reviews ● Contributed in analysis of competitive analysis ● Reviewed usability test scripts ● Conducted three usability test sessions (one traditional usability test and 2 linear Delphi test) ● Contributed to analysis of usability tests ● Contributed to and reviewed final report ● Contributed to and reviewed final presentation
Erica Christian	<p>Competitive Analysis</p> <ul style="list-style-type: none"> ● Reviewed three competitors for the competitive analysis: Triplt (Tier 1, travel planning), TrailWallet (Niche, budget tracking while traveling), and TravelWisconsin (niche, region-specific travel guide) <p>Interviews</p> <ul style="list-style-type: none"> ● Reviewed informed consent/screener ● Reviewed interview script ● Conducted pilot interview ● Contributed to the affinity diagram <p>Card Sort</p> <ul style="list-style-type: none"> ● Wrote the instructions for the Card Sort ● Analyzed the screenshots and usability matrix card sort data <p>Formative Low-Fidelity Usability Test</p> <ul style="list-style-type: none"> ● Drafted seven tasks for low-fi usability test ● Drafted Linear Delphi instructions for low-fi protocol ● Co-edited low-fi user testing protocol ● Compiled screenshots for paper prototype usability test ● Performed pilot and final low-fi Linear Delphi usability test sessions ● Prototyped Linear Delphi pilot's iteration ● Contributed to data analysis

	<p>Formative Mid-Fidelity Usability Test</p> <ul style="list-style-type: none"> ● Drafted the mid-fi usability test script ● Conducted pilot test session ● Contributed to data analysis including qualitative Affinity Diagram <p>Final Report and Presentation</p> <ul style="list-style-type: none"> ● Contributed to and reviewed final report ● Contributed to and reviewed final presentation
Max Bridges	<ul style="list-style-type: none"> ● Reviewed IBM Travel Health Alerts, Google Maps, and Yelp in Competitive Analysis. ● Drafted portion of interview script ● Reviewed final interview script ● Reviewed user testing protocols ● Conducted one user interview ● Contributed to interview analysis ● Conducted two paper prototype usability test sessions (traditional) ● Conducted one mid-fidelity usability test session ● Contributed to usability test analysis ● Reviewed interview script and usability test scripts ● Contributed to and reviewed final report ● Contributed to and reviewed final presentation
Julie Khoper	<ul style="list-style-type: none"> ● Created pre-test questionnaire ● Created post-task questionnaire ● Reviewed moderator script and tasks for usability testing ● Reviewed interview script ● Conducted three usability sessions ● Conducted one interview ● Set up Card Sort activity in Optimal Workshop ● Contributed in analysis of competitive analysis ● Contributed to analysis of interviews ● Contributed to analysis of usability tests ● Contributed to and reviewed final report ● Contributed to and reviewed final presentation

Appendix

A. Screener

Screener

Thank you for taking this short screener to determine if you are eligible to participate in our study. We are a group of DePaul University Human-Computer Interaction students completing our Master's Capstone course. We need participants to help guide the design for our app during its development.

-If you meet the criteria, we will be in touch within the week. For the first stage, we are scheduling 30-60 minute interviews between April 14 and 19. However, we may contact you with opportunities to participate in later stages of our design cycle.

-All responses will be kept confidential among our team; anything we share with our professor or classmates will be kept anonymous.

* Required

1. If I am eligible to participate in your study, please contact me.

*

- No, thank you.
- Yes, please!

Mobile Usage

(e.g., Smartphones and tablet devices)

2. Do you currently own a smartphone or tablet device? *

- No
- Yes

3. On average, how often do you use apps on your smartphone or tablet device? *

- Once a week or less
- Several times a week
- Once a day
- More than once a day

4. What kind of smartphone or tablet device do you use most often?

- Android
- iOS (Apple)
- Windows Phone
- Other : _____

5. What are the main reasons you use apps on your smartphone or tablet device? (Select all that apply)

- Email
- Games
- Networking/keeping in touch with personal contacts
- Networking/keeping in touch with professional contacts (e.g., work/school)
- Reading
- Research information for personal use (e.g., news)
- Research information for professional use (e.g., work/school)
- Shopping
- Social Media
- Travel (e.g., use apps for planning or during travels)
- Weather
- Other: _____

Travel

6. In the past two years, how many times have you traveled domestically or internationally? *

- 0 times
- 1-2 times
- 3 or more times

7. When you travel, is it mostly for business or leisure?

Business

Leisure

8. When you travel, who usually plans/books the trip?

Myself

Somebody else

9. Have you ever had a smartphone or tablet device with you when traveling?

No

Yes

10. Which sites or apps have you used to help you travel (e.g., planning or during your trip)?

Airline's own sites (e.g. United, Southwest, etc.)

Expedia

Kayak

Orbitz

Priceline

Travelocity

Travelzoo

TripAdvisor

I don't use websites or apps when planning trips or while traveling.

Other: _____

Demographics

What is your gender? *

- Female
- Male
- Transgender
- Prefer not to say

What is your age range? *

- Under 18
- 18-24
- 25-34
- 35-44
- 45-54
- 55+
- Prefer not to say

Contact Information

First Name Only *

Your answer _____

Please contact me here (e.g., email address): *

Your answer _____

How did you hear about our study? *

Eileen

Erica

Julie

Max

Other : _____

B. Competitive Analysis

Click to view [Competitive Analysis](#) (requires internet connection)

C. Interviews

1. Interview Consent Form

Informed Consent

Our team (DePaul HCI students) is conducting research to evaluate the usability of the Travel Buddy mobile app. We will use the results of these sessions to help improve the usability of the app.

If you agree to participate, you will be asked to answer some questions during an interview.

In this short session, you will:

- Be interviewed by the moderator about your travel experiences

Your participation will take approximately 30-60 minutes. There is no risk to you if you participate in this study. We will use the information that you provide, along with information from other people, to improve the design of the app.

Any information you share will be kept confidential; your name will not be associated with the data we collect from your session and the feedback will be reviewed only by our team. We will share summary results with our class.

Your participation is completely voluntary. You may choose not to participate at all; you may refuse to participate in certain procedures, decline to answer certain questions, or discontinue your participation at any time.

If you voluntarily agree to participate in this research, and have had all your questions answered, please sign below.

If you have questions after the study, please contact the team member who sent you the screener information.

*** Required**

Date *

Date

mm/dd/yyyy

Name *

Your answer

2. Interview Protocol

Objectives:

To gain a deeper understanding of how users find contextual information while travelling domestically and abroad.

Selection Criteria

- a) 18 +
- b) either male/female
- c) owns a mobile device and uses it at least several times a week
- d) has traveled at least once in the past two years (domestically or internationally)

Interview Script

Welcome and thank you for participating in this interview. My name is _____ and I will be the moderator for this interview. We are asking you to be in a research study because we are trying to learn more about how you find contextual information while travelling. This interview is not intended as a test of your personal ability.

You are invited to participate in this study because you met the criteria of our screener. Thank you for volunteering!

Before I begin, this study also involves being voice recorded, so the team can review what was said here. What is discussed here will not be shared outside our team. Do we have your permission to record your voice?

Must obtain YES or NO to continue.

This interview may take 30 - 60 minutes to complete. Your participation is voluntary, which means you can choose not to participate at any time. There will be no negative consequences, penalties, or loss of benefits if you decide not to participate at any time during the interview or change your mind later and request to withdraw from the research study.

Before we get started, I would like for you to sign our consent form. Let me know if you have any questions about it.

[Gives consent form]

Do you have any general questions before we begin?

Great! If you have any questions during the interview, please feel free to ask. Let's get started.

Interview Questions

Introduction Questions

- Do you enjoy traveling?
 - [if yes] What do you enjoy about traveling?

- [If no] Can I ask what you don't enjoy about it?
- How often do you travel?
 - For what purposes?
- Where have you traveled in the last two years?
- Do you consult any resources when planning your trip?
 - [If yes] Can you tell me about that process?
 - Expand y/n: What about while you are traveling?
 - [stuck?] Resources could be many things. Maybe think of them as tools--like if you were building a house, you might need wood and a saw and blueprints. What tools do you use when planning a trip or while traveling?

Deep Dive

Planning & Budget

- Think of a typical situation where you are traveling:
 - What factors are important to you when planning for a trip?
 - Do you typically have a budget when planning for a trip?
 - [If yes]
 - What is your process for determining your budget?
 - What types of factors do you account for in your budget? Which of these factors are more or less important to you?
 - Do you ever over spend your budget? If so, what have you done in those situations?
 - [If no]
 - Is there a reason you have not used a budget?
 - Have you used any resources such as apps, websites, books, guides, etc. to help you plan for your trip?
 - [If yes]
 - How did you use them?
 What has your experience been like with them?
 - [If no]
 - How do your trips get planned?

Contacts

- Do you let anyone know before you go on a trip?
- Do you contact anyone while you are traveling?
 - [If yes]
 - In what situations do you get in touch with them?
 - How often do you get in touch with them?
 - What sort of information do you share with them?

Safety

- Do you ever experience travel-related anxiety?

- [If yes]
 - What's your number one cause of anxiety while travelling?
 - While planning to travel?
 - Could you tell me why?
 - Is safety a concern while traveling?
 - Do you refer to any resources such as apps, web sites, books, guides, etc., to help you stay safe while traveling?
 - [If yes]
 - What do you use?
 - Could you tell me more about how you use them?
 - When do you refer to them?

Emergencies

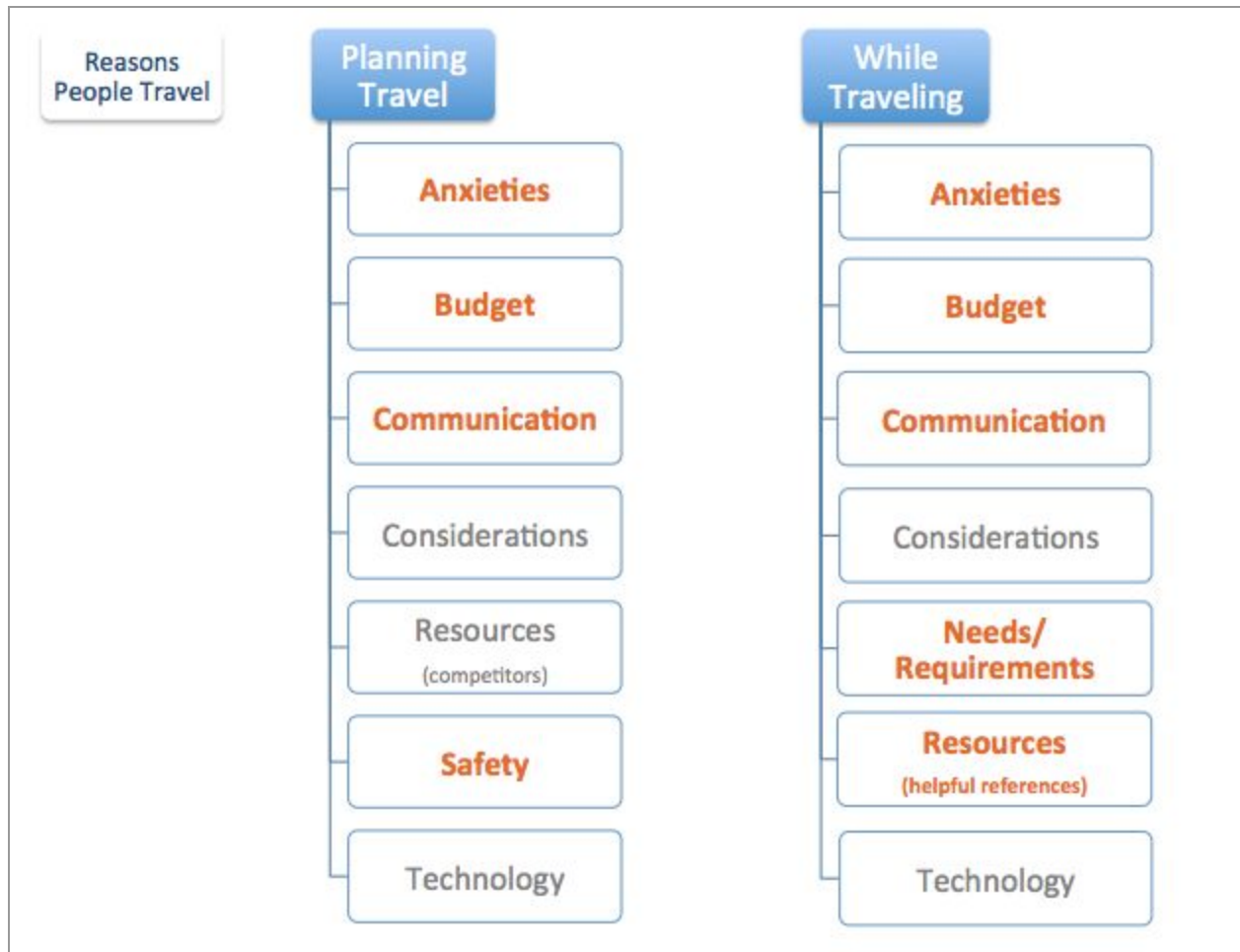
- Have you ever experienced a natural disaster while traveling?
 - [If yes]
 - What happened?
 - What did you do?
 - Did you get in touch with anyone?
 - [If yes]
 - Who did you contact?
 - How did you contact them?
 - What information did you share?
- Have you ever experienced an emergency situation while traveling?
 - [If yes]
 - What happened?
 - What did you do in that situation?
 - Did you get in touch with anyone?
 - [If yes]
 - Who did you contact?
 - How did you get in touch?
 - What information did you share?
- Do you plan for emergencies that might happen during trips?

Debriefing Questions

- Do you have any additional comments about your travel experience?
- Is there anything you would like to share with us about your travel experiences that we haven't asked about?

Thank you for your participation! We really appreciate the feedback. If you have questions or concerns about what we discussed here today, please feel free to contact us.

4. Emerging Themes



D. Card Sort

1. Card Sort Protocol

Travel Buddy: OPEN Card Sort

Research Summary:

We have completed requirements gathering interviews. The needs we identified in the interviews are supported by our findings as we complete the comparative analysis. As a result of this work, we are rerouting the focus of our travel app. At this stage, our prototype designs will benefit from an intensive focus on the Information Architecture.

Activity Objectives:

- 1) To identify natural groupings of our content items
 - What relationships do users see among our content items?
 - How do users prioritize content?

- 2) To gather data on the strength of relationships between content items
 - Which groupings have the strongest relationships across users?
 - Which items—if any—should we consider eliminating?

Activity Instructions:

1. Go to: <https://0n241t48.optimalworkshop.com/optimalsort/557cz3he>

2. Enter your email address to continue.

3. Follow these steps:
 - Step 1:
 - Take a quick look at the list of items to the left.
 - We'd like you to sort them into groups that make sense to you.
 - There is no right or wrong answer; please do what comes naturally.

 - Step 2:

Drag an item from the left into the space on the right to create a group.

Drop additional items into a group.

Step 3:

Click the title to rename your new group.

(You can rename groups at any time during your process.)

Step 4:

Start additional groups by dragging items into the empty space.

When you are satisfied with your groupings...

Step 5:

Order grouped items in a way that makes sense to you.

5.1:

Drag and drop to shift items.

You can group items thematically, alphabetically, or hierarchically.

If you choose a hierarchy, please put the ***most important*** item ***at the top*** of the list with the least important at the bottom.

5.2:

Take a screenshot.

Screenshots will be shared with the team to help us understand your thought process. No identifying information will be shared in reports or presentations.

5.3:

Please email your screenshot to [EMAIL_ADDRESS_HERE](#)

Feel free to include a note if you have any questions or comments.

You can also add comments directly to your card sort if you prefer.

STEP 6:

CLICK FINISHED

It is a green, rectangular button in the far upper right of your window.

THANK YOU!!!

2. List of Cards

Cards

1. *Get Help*

2. *Pharmacy*

3. *Destinations*

4. *Weather*

5. *Emergency Alerts*

6. *In-country alerts*

7. *"I'm ok" check-in*

8. *Hospitals*

9. *Contacts*

10. *Units of measurement*

11. *Currency*

12. *Medical Risk*

13. *Language*

14. *Dead man's switch*

15. *Map*

16. *Medical care*

17. *Terror Risk*

18. *Embassy Information*

19. *Political situation in country*

20. *Visa requirements*

21. *Natural disasters*

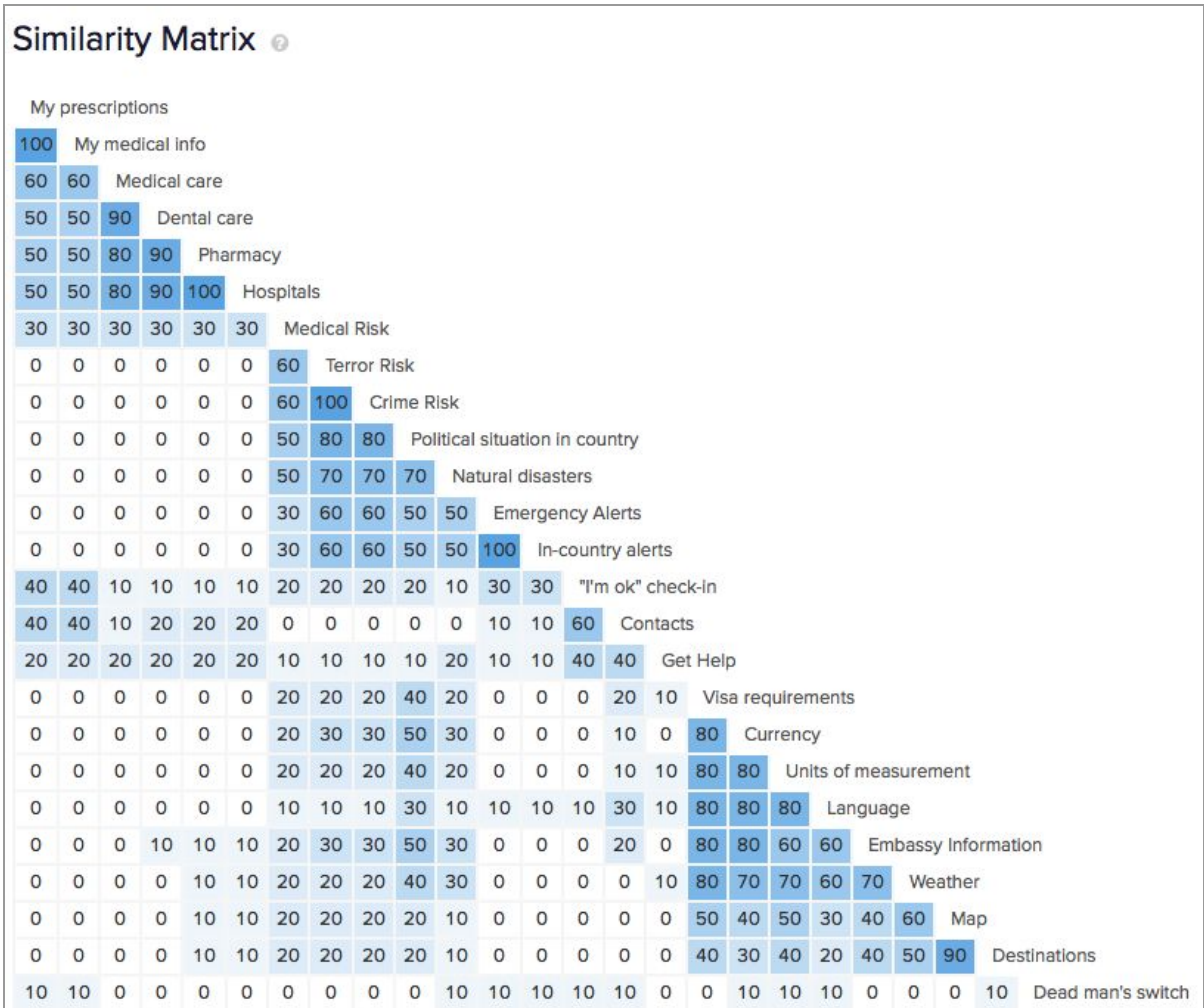
22. *Crime Risk*

23. *Dental care*

24. *My prescriptions*

25. *My medical info*

3. Card Sort Matrix: OptimalSort



E. Low-Fidelity Usability Test

1. Usability Test Consent Form

Informed Consent

Our team (DePaul HCI students) is conducting research to evaluate the usability of the Travel Buddy mobile app. We will use the results of these sessions to help improve the usability of the app.

If you agree to participate, you will be asked to complete a series of tasks on a prototype of the app.

Your participation will take approximately 30-60 minutes. There is no risk to you if you participate in this study. We will use the information that you provide, along with information from other people, to improve the design of the app.

Any information you share will be kept confidential; your name will not be associated with the data we collect from your session and the feedback will be reviewed only by our team. We will share summary results with our class.

Your participation is completely voluntary. You may choose not to participate at all; you may refuse to participate in certain procedures, decline to answer certain questions, or discontinue your participation at any time.

If you voluntarily agree to participate in this research, and have had all your questions answered, please sign below.

If you have questions after the study, please contact the team member who sent you the screener information.

*** Required**

Date *

Date

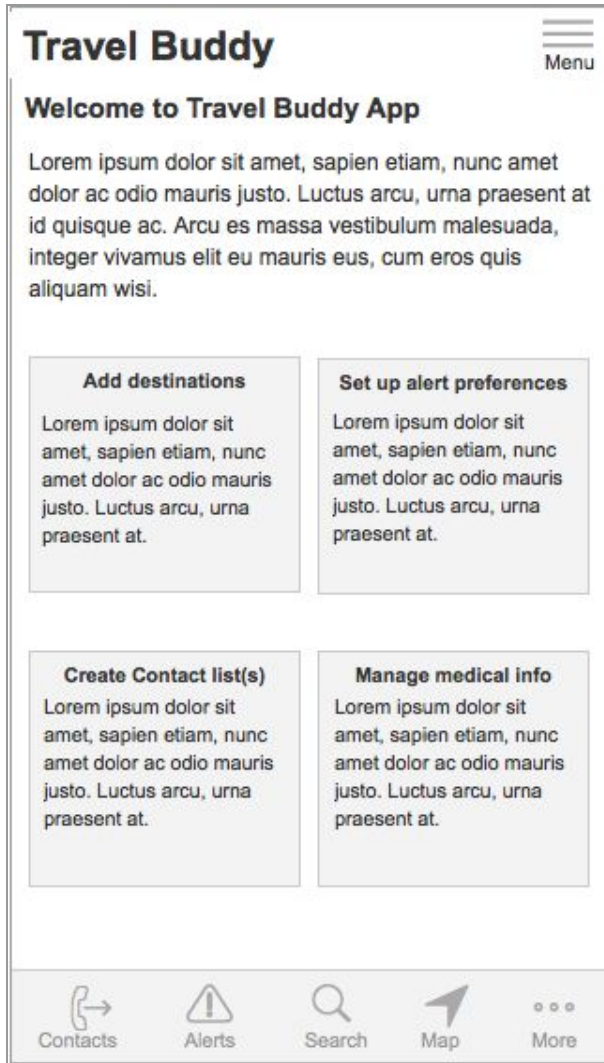
mm/dd/yyyy

Name *

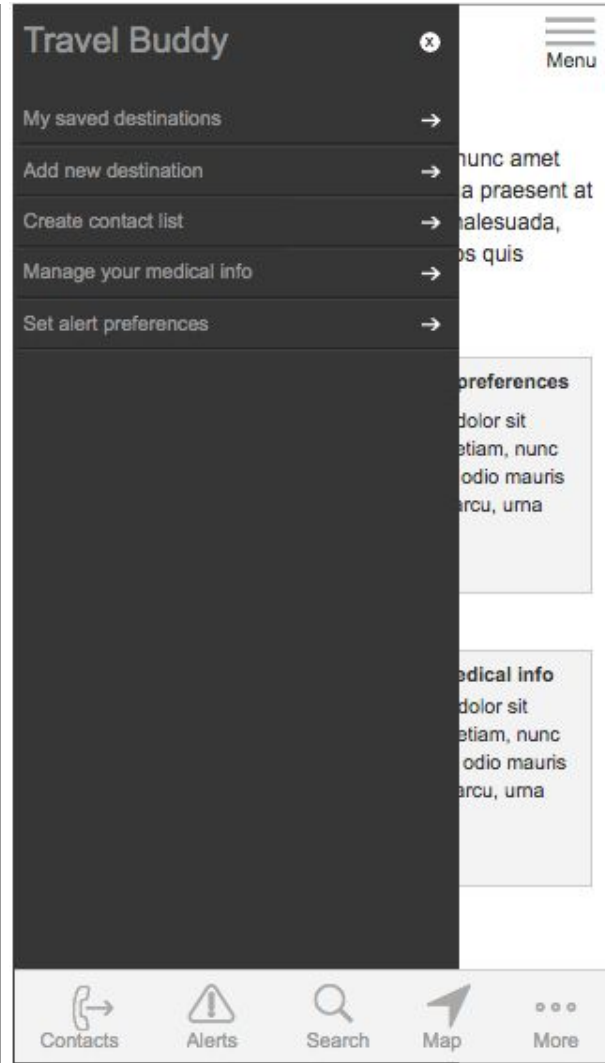
Your answer

2. Low-Fi Prototype Sample Screens

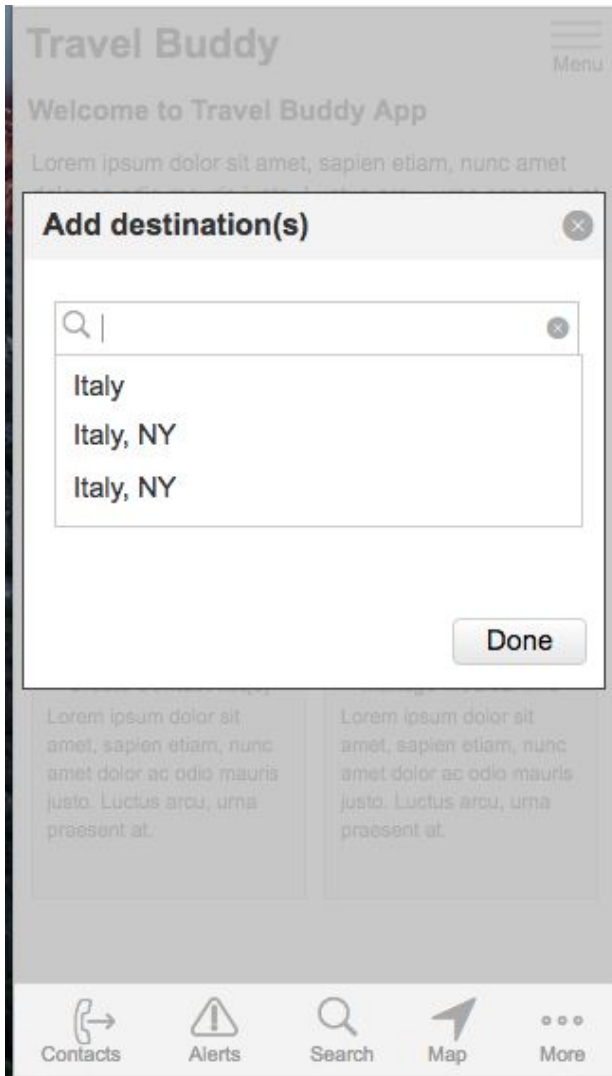
Welcome Page



Sliding Menu



Task 1: Set Your Destination

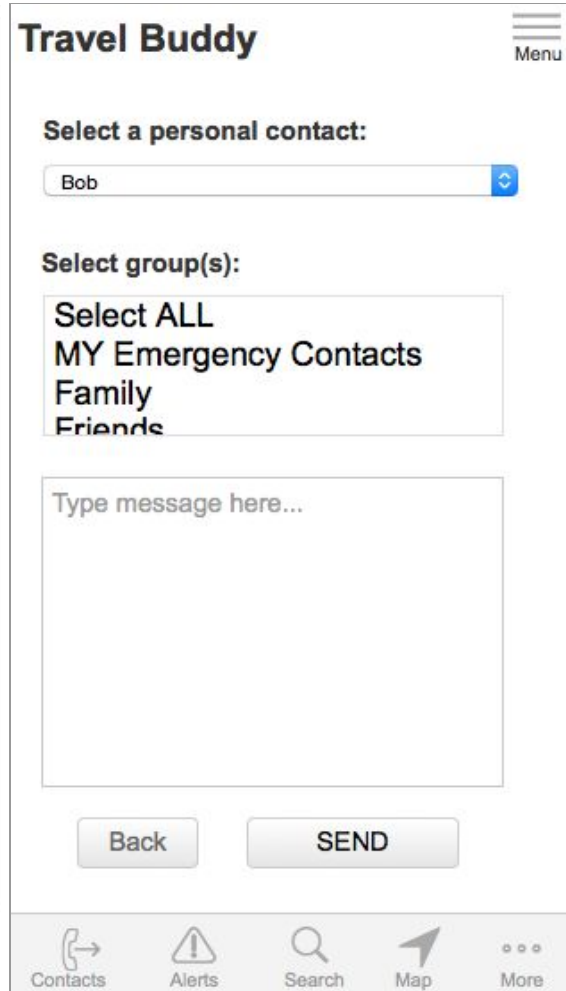
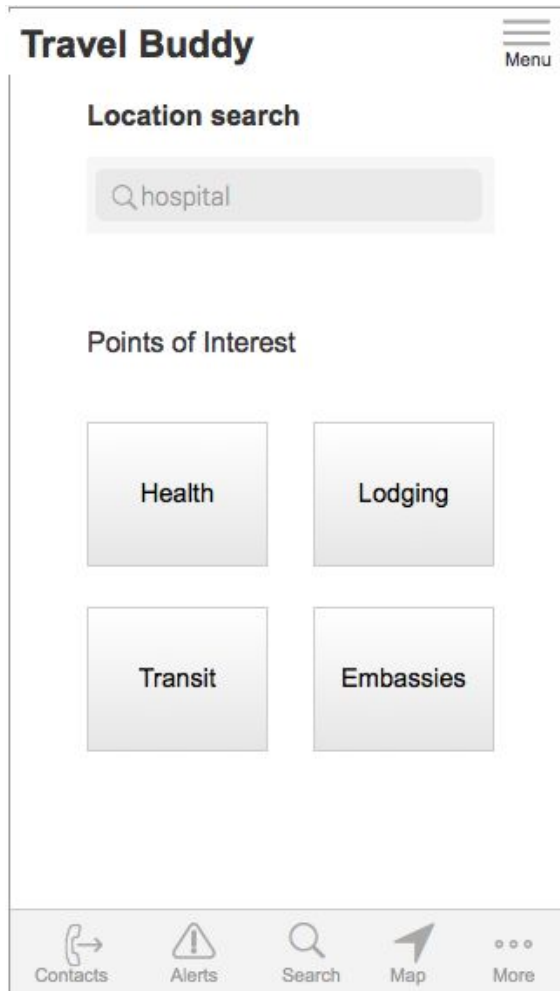


Task 2: Setup Emergency Contacts

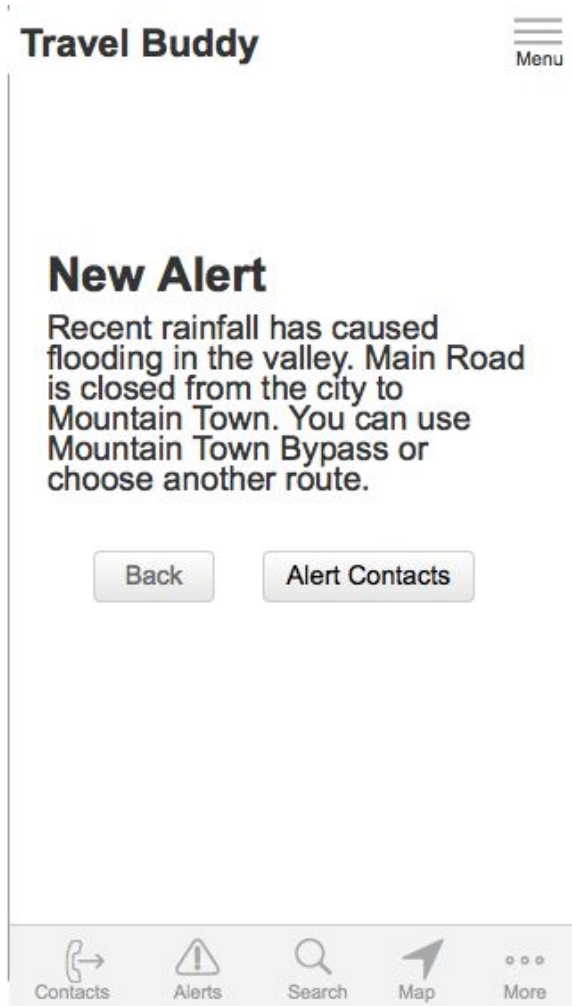


Task 3: Locate the Nearest Hospital

Task 4: User Initiated Check-In



Task 5: User responds to local alert



3. Low-Fi Usability Test Protocol: Traditional and Linear-Delphi models

Usability Test Script

Welcome and thank you for participating in this usability test. My name is ____ and I will be the moderator for this session. We are asking you to be in this study because we are trying to learn more about how people use Travel Buddy, a mobile application that helps travelers receive contextual information during their trip. Usability testing allows us to know if the product we designed works the way we intended it to work.

This study is being conducted by myself and a team of graduate students at DePaul University for our capstone project. Our goal is to test the functionality of the product; this usability test is not intended as a test of your personal ability. We want to understand what you think about the application and how the application can meet your personal travel needs.

You are invited to participate in this study because you meet the requirements of the screener for this project. You will be given 5 tasks to complete. We ask that throughout the process you think aloud and share your thoughts and opinions as they arise. Please say what you are doing as you are doing it.

Before I begin, this study also involves being recorded so the team can review what was said here. No personally identifying information will be shared outside of our team. We will share aggregated data from our participants with our class and professor. We will not use your name on any form. Instead, we will use an ID number.

This session will take up to 1 hour to complete. Your participation is voluntary, which means you can choose not to participate at any point. There will be no negative consequences, penalties, or loss of benefits if you decide not to participate or change your mind later and withdraw from the research after you begin participating. If at any time you are uncomfortable and wish to stop, please let me know.

Before we get started, I would like to verify if you have completed the consent form we provided.

[Gives consent form if participant has not filled it out yet]

Do you have any general questions before we begin?

Great! Let's get started then.

Usability Test Questions

[Present the main page of prototype to ALL participants.]

Effectiveness (*Introduction Questions*)

1. Please tell me what you think the purpose of this app is.

2. Walk me through what you see on the opening screen. What do you think you can do in each section?

*****Linear Delphi ONLY**

1. SUBSEQUENT (anyone after the seed) Linear Delphi participants ONLY...
 - a. What do you see as positive about this design?

 - b. What do you see as negative about this design?

 - c. [Present modifications generated from other Linear Delphi participants.]
 - d. [Ask participant to review the samples.]
 - i. Look at the designs. Please think aloud as you do. What do you see as positives and negatives with these designs? Feel free to make comparisons among all of the designs, including the first.

e. Does one of the designs appeal to you more than the others?

i. Can you tell me why?

ii. [Use that design to complete the usability test. If the participant expresses no preference, use the original prototype. Continue the usability test.]

Learnability (Tasks)

Task 1: Set your destination

Please set your destination. You are travelling to Italy. Please let me know when you think you are done with this task.

Moderator: Task is completed successfully when

- "Current destination" says Italy
- user dismisses the window.

<i>Time START:</i>	<i>Time END:</i>	<i>Time ON TASK:</i>
--------------------	------------------	----------------------

1. Was the participant successful the first try? Yes No

(Utility) If not, how many errors:

What kind of errors:

2. How did you know you were done with this task?

3. Do you think you completed this task successfully?

4. On a scale from 1 to 5, rate this task from very difficult to very easy to complete, with 1 being very difficult and 5 being very easy.

1 2 3 4 5

5. [If 1 or 2, then ask...] What difficulties did you encounter?

Task 2: Set up Emergency Contacts

Moderator: Direct participant to main screen.

You are traveling to a destination known for issues with weather. Please add Mary to your emergency contacts. She will receive notifications from this app when you change plans or encounter an emergency. Please let me know when you think you are done with this task.

Moderator: Task is completed successfully when

- "Mary" is highlighted
- Emergency Contact number increases to "1"

<i>Time START:</i>	<i>Time END:</i>	<i>Time ON TASK:</i>
--------------------	------------------	----------------------

1. Was the participant successful the first try? Yes No

(Utility) If not, how many errors:

What kind of errors:

2. How did you know you were done with this task?

3. Do you think you completed this task successfully?

4. On a scale from 1 to 5, rate this task from very difficult to very easy to complete, with 1 being very difficult and 5 being very easy.

1 2 3 4 5

5. [If 1 or 2, then ask...] What difficulties did you encounter?

Task 3: Locate the nearest hospital

Moderator: Direct participant to main screen.

Your travelling companion tripped on a large seashell and is having difficulty walking. Please locate the nearest hospital. Please let me know when you think you are done with this task.

Moderator: Task is completed successfully when

- User clicks on public or private hospital
- -or- clicks navigate

<i>Time START:</i>	<i>Time END:</i>	<i>Time ON TASK:</i>
--------------------	------------------	----------------------

1. Was the participant successful the first try? Yes No

(Utility) If not, how many errors:

What kind of errors:

2. How did you know you were done with this task?

3. Do you think you completed this task successfully?

4. On a scale from 1 to 5, rate this task from very difficult to very easy to complete, with 1 being very difficult and 5 being very easy.

1 2 3 4 5

5. [If 1 or 2, then ask...] What difficulties did you encounter?

Task 4: User initiated check-in

Moderator: Direct participant to main screen.

You are at the hospital with your companion and want to let your emergency contacts know what happened and that you are okay. Please check in with your emergency contacts. Please let me know when you think you are done with this task.

Moderator: Task is completed successfully when

- User selects contacts
- User types message
- User clicks "send"

<i>Time START:</i>	<i>Time END:</i>	<i>Time ON TASK:</i>
--------------------	------------------	----------------------

1. Was the participant successful the first try? Yes No

(Utility) If not, how many errors:

What kind of errors:

2. How did you know you were done with this task?

3. Do you think you completed this task successfully?

4. On a scale from 1 to 5, rate this task from very difficult to very easy to complete, with 1 being very difficult and 5 being very easy.

1 2 3 4 5

5. [If 1 or 2, then ask...] What difficulties did you encounter?

Task 5: User responds to local alert

Moderator: Direct participant to main screen.

You have a new notification. Please access the notification and make decisions based on the information presented. Please let me know when you think you are done with this task.

Moderator: Task is completed successfully when

- User reads and dismisses notification

OR

- User selects contacts
- Makes a decision about the message content
- User clicks "send"

<i>Time START:</i>	<i>Time END:</i>	<i>Time ON TASK:</i>
--------------------	------------------	----------------------

1. Was the participant successful the first try? Yes No

(Utility) If not, how many errors:

What kind of errors:

2. How did you know you were done with this task?

3. Do you think you completed this task successfully?

4. On a scale from 1 to 5, rate this task from very difficult to very easy to complete, with 1 being very difficult and 5 being very easy.

1 2 3 4 5

5. [If 1 or 2, then ask...] What difficulties did you encounter?

User Satisfaction (Debriefing Questions)

1. |
1. What did you like about our app? (user satisfaction)

a. Are there any components that stood out to you that we should absolutely keep?

2. Did you find anything particularly confusing or frustrating? (user dissatisfaction)

a. Is there anything you would like to change?

3. Is there anything you would like in our app that you did not see here? (user suggestions)

4. How would you describe this app to a friend in one sentence? (overall impression)

5. Now that you've tried Travel Buddy, what are your thoughts on the name?

6. Is there anything else you would like me to share with the team? (overall impression)

Survey

1. The terms and words used in this app were easy to understand.

Strongly Disagree Disagree Neutral Agree Strongly Agree

Not Sure

2. I found completing the tasks to be easy.

Strongly Disagree Disagree Neutral Agree Strongly Agree

Not Sure

3. This travel app was easier to use than other apps I have used.

Strongly Disagree Disagree Neutral Agree Strongly Agree

Not Sure

Linear Delphi ONLY: modifications feedback from all Linear Delphi participants

2. [Have all iterations of design available in case participant wishes to see them again.]
3. [Here, *prototype* = whichever one was used during the study] Now that the test is over, what modifications (if any) would you make to the *prototype*? Modifications can be small, large--whatever changes you would make in any way.

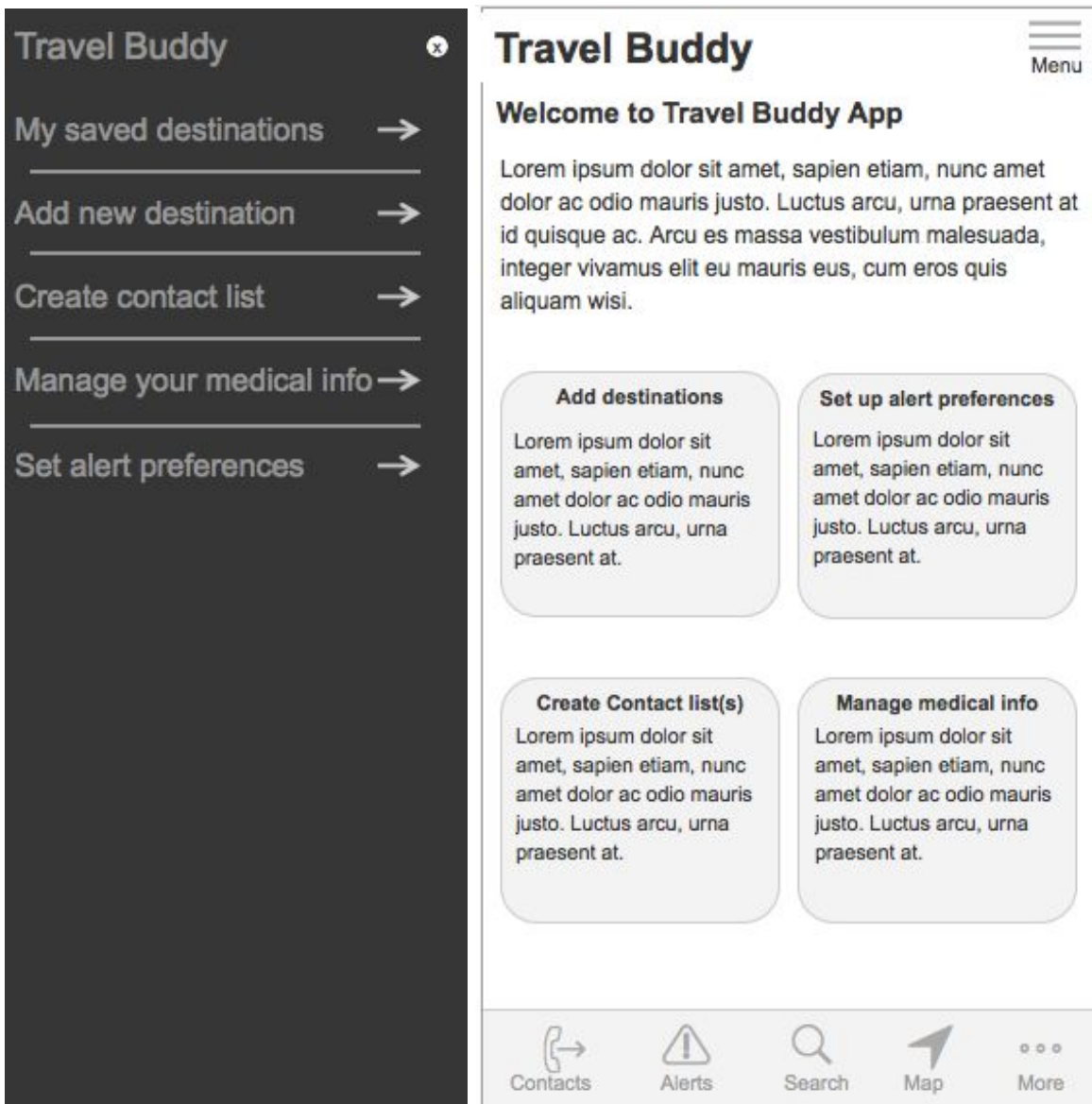
[Participant can narrate or sketch--whichever is more comfortable]

ALL: Thank you for your participation! We really appreciate the feedback.

4. Linear Delphi Sketch Sequence

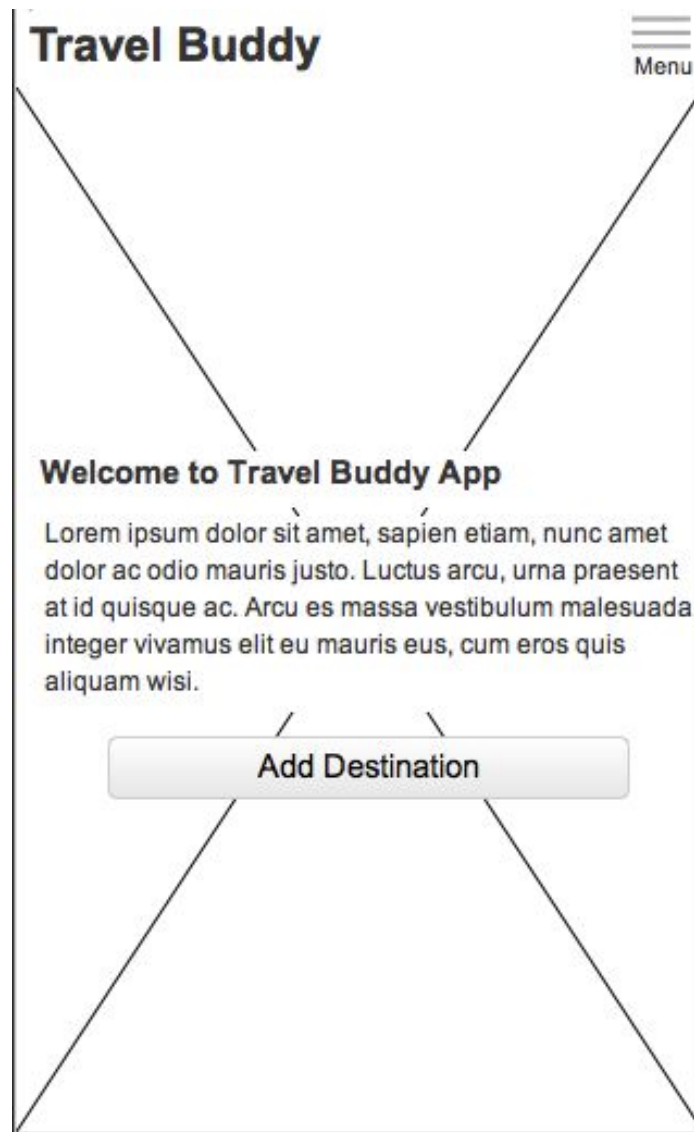
Linear Delphi Participant 1 (LDP1) Notes and Sketches:

- wants rounded buttons on the home screen
- wants larger list items in the pop-up menu
- fine with the design
- wants a new interaction for the "select contacts" UX



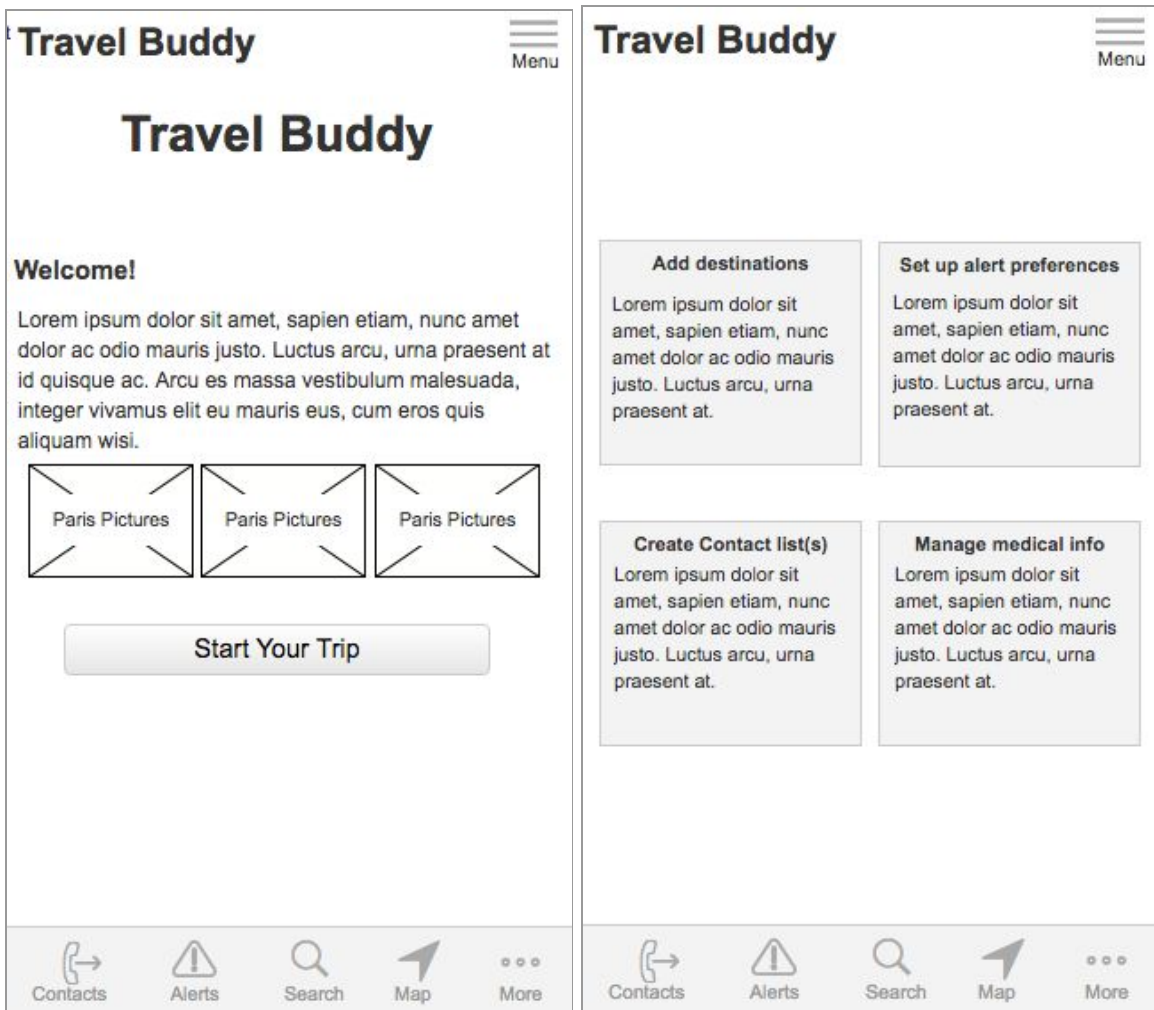
Linear Delphi Participant 2 (LDP2) Notes and Sketches:

- Wants image in the background
- Wants reminder to add contacts within the destination screen
- Wants all other info in the [top right] menu- does not see purpose of contact alerts since everyone would do this through other means
- Having contacts in the app is OK, so that someone could check your contacts in an emergency



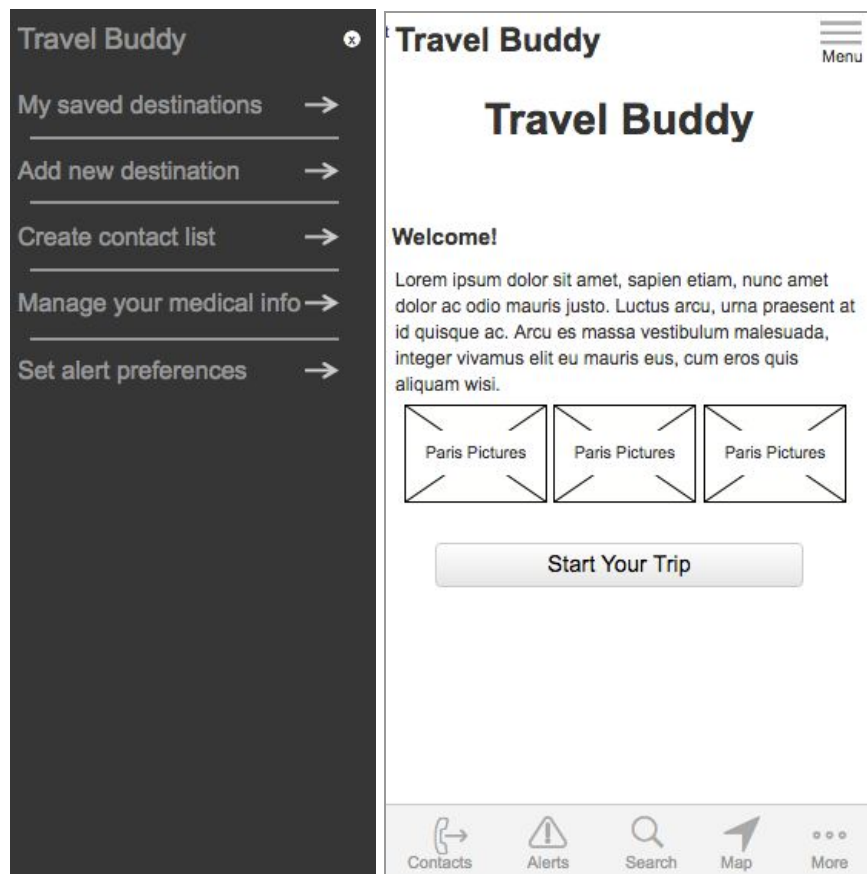
Linear Delphi Participant 3 (LDP3) Notes and Sketches:

- Split main page into 2 pages - 1st for contextual info about the location and 2nd with the main nav sections
- Main page 1: Top section will include intro info for Travel Buddy on top, pictures of the location (maybe also top attraction options) in center, and menu or a button for 'Start your trip' on bottom
- Main page 2: same as current main page, except without intro info
- Likes the layout of Google flights and how it includes pictures as well as quick descriptions of main attractions for each block: <https://www.google.com/flights/>



Linear Delphi Participant 4 (LDP4) Notes and Sketches:

- Main Page
 - Just one main page
 - Prefers LDP3's contextual screen
 - Thinks two screens is confusing
 - Wants rounded buttons (LDP1) where there are buttons
 - If a series of images, then she prefers contextual images (LDP3) that can function like a guidebook to eliminate her carrying a guidebook.
 - If no series, then a single image (LDP2) as the background
 - Contents
 - Header (Title and Sliding Menu)
 - Introductory paragraph to the app
 - Series of contextual Images
 - "Add trip" button
 - Bottom nav buttons
 - Sliding Menu
- Sliding Menu
 - Prefers the larger list items in the pop-up menu (LDP1)
- Contacts
 - Wants a new interaction for selecting contacts



5. Low-Fi Usability Test Protocol: Qualitative Data Analysis

Low-Fidelity Usability Test Results

Paper Prototype Recommendations

Focus for recommendations

- Contextual interactions
- Eliminate repetitive functionality
- Change the name to better reflect functionality
- Improve navigation and flow

	To Develop	Phase III	Future
Sliding Menu			
	-Finalize Contents (e.g. Contacts, Information, Maps, Alerts, Search, Itineraries, Medical Care/Info, Getting Help, Local Resources)	X	
	-Increase font size (min. 12 pt.)	X	
Bottom Nav			
	-Finalize Options (e.g. curated selection from sliding menu: Contacts, Information, Maps, Alerts, Search, Itineraries, Medical Care/Info, Getting Help, Local Resources, More)	X	
All Processes			
	-Consistent confirmation messaging	X	
All Screens			
	-Add Screen Titles	X	
Map	Search by typing, current location (contextual map search) or tiles (change to buttons)		

	-Filters for		
	<ul style="list-style-type: none"> • Hospitals, embassies, police station, etc. 	X	
	<ul style="list-style-type: none"> • Past trips 		Low
	<ul style="list-style-type: none"> • Current trips 		Low
	<ul style="list-style-type: none"> • Current location 	X	
	<ul style="list-style-type: none"> • Safety/travel risk indications 	If we can	High
Trips			
	-Organize by trip and include related information (e.g., contacts, preferences, hotels)	X	
	-Include saved destinations	X	
	-Trips to include		
	<ul style="list-style-type: none"> • Destination(s) 	X	
	<ul style="list-style-type: none"> • Hotel Contact Information 	X	
	<ul style="list-style-type: none"> • Transportation (flights) 	X	
	<ul style="list-style-type: none"> • (Links to local information...e.g., embassy, currency, etc.) 		Medium to High
Header			
	-Rename the app	X	
	-Add a tagline	X	
Home Screen			
	-Write description of the app; replaces Lorem Ipsum	X	

	-Include "Start Your Trip" button	X	
	-Contextual image tiles for interactions	X	
	-Remove buttons (functions accessible via menu and/or bottom nav)	X	
	-First time home screen and subsequent use home screens	X	
Trip Wizard			
	-Flow for selecting a destination and creating group contacts	X	
	-Conversational flow (includes context to why)	X	
	-Interaction for adding a trip <ul style="list-style-type: none"> ● Allow adding multiple destinations 	X	
Guidebook			
	-Contextual information about current location		High
Getting Help			
	-Mock-up interaction	X	
	-Calling local 9-1-1 emergency number		High
Alerts			
	-Add number icon notification	X	
	-Redesign the process flow for sending an alert <ul style="list-style-type: none"> ● All lists display on screen ● Replace "Back" button with "Cancel" ● Put message box and option to contact individual contact on the same screen with group selection 	X X X X	
	-Limit pre-populated message to alert text	X	

	-Add pre-defined messages (e.g. "I'm Okay.") that the user can initiate		High
	-Link alert to map that displays an overlay of the location of the issue		Medium
	-History of alerts		Low
	-Change alert from weather to tornado	X	
Contacts			
	-Redesign the process flow for creating groups		
	<ul style="list-style-type: none"> • More descriptive label 	X	
	<ul style="list-style-type: none"> • Add "Create New Contact List" button 	X	
	<ul style="list-style-type: none"> • Clicking a list opens a screen with search phone contact fx and option to add/remove contacts 		High
	-Show complete list to select multiple names	X	
	-History of messages sent		Medium
	-Allow for multiple contacts to be selected at once	X	
Medical Care			
	-More descriptive label		High
	-Interaction for a task		High
	-Flow for adding medical histories and prescriptions for each member of the traveling party		Medium
Information			
	-Flow for looking up local resources (e.g., embassy, tourist office, currency, "Hey, buddy...", reasonable prices, travel risks, etc.)		High

OS			
	-iOS	X	
	-Android platform		High
	-Follow style guides of chosen OS	X	

F. Mid-Fidelity Usability Test

1. Mid-Fi Usability Test Protocol

Usability Test Script

Welcome and thank you for participating in this usability test. My name is ____ and I will be the moderator for this session. We are asking you to be in this study because we are trying to learn more about how people use A.L.B.A.T.R.O.S.S., a mobile application that helps travelers receive contextual information during their trip.

This study is being conducted by myself and a team of graduate students at DePaul University for our capstone project. Our goal is to test the functionality of the product. This usability test is not intended as a test of your personal ability. We want to understand what you think about the application. This testing allows us to know if the product works the way it is intended to work.

You are invited to participate in this study because you meet the requirements of the screener for this project. You will be given 6 tasks to complete. We ask that throughout the process you think aloud and share your thoughts and opinions as they arise. Please tell me what you are doing as you are doing it.

Before I begin, this study also involves being recorded so the team can review what was said here. No personally identifying information will be shared outside of our team. We will share aggregated data from our participants with our class and professor. We will not use your name on any form. Instead, we will use an ID number.

This session will take up to 1 hour to complete. Your participation is voluntary, which means you can choose not to participate at any point. There will be no negative consequences, penalties, or loss of benefits if you decide not to participate or change your mind later and withdraw from the research.

If at any time you are uncomfortable and wish to stop, please let me know.

Before we get started, I would like to verify if you have completed the consent form we provided.

[Gives consent form if participant has not filled it out yet]

Do you have any general questions before we begin?

Great! Let's get started.

Usability Test Questions

[Present the main page of prototype.]

Effectiveness (Introduction Questions)

1. Tell me about what you see on this screen. What is your first impression?
2. Please tell me what you think the purpose of this app is.

Learnability (Tasks)

Task 1: Create a trip

You are travelling to Europe: Rome, Italy and Paris, France on June 12-21, 2016.

Please create a trip with both destinations and add flights and hotel details for Rome, Italy.

Trip Name: Europe

Hotel: "Spalletti"

Arriving flight: BA 1568

Departing flight: AF 1005

Please let me know when you think you are done with this task.

Moderator: Task is completed successfully when

- User goes through the wizard
- Europe trip is set up
- [If participant chooses to add hotel: "spa" for Spalletti]
 - "Villa Spalletti Trivelli" is added to Europe trip.
- [If participant chooses to add flights: BA 1568, AF 1005]
 - Flights BA 1568 and AF 1005 are added to Europe trip.

Time START:	Time END:	Time ON TASK:
--------------------	------------------	----------------------

1. Was the participant successful the first try? Yes No

(Utility) If not, how many errors:

What kind of errors:

2. How did you know you were done with this task?
3. Do you think you completed this task successfully?
4. On a scale from 1 to 5, rate this task from very difficult to very easy to complete, with 1 being very difficult and 5 being very easy.

1 2 3 4 5

5. [If 1 or 2, then ask...] What difficulties did you encounter?

Task 2: Set up Emergency Contacts

Please create an emergency contacts list. Add three contacts to that list. Please let me know when you think you are done with this task.

Moderator: Task is completed successfully when

- “Mary” is highlighted
- Emergency Contact number increases to “1”

Time START:	Time END:	Time ON TASK:
--------------------	------------------	----------------------

1. Was the participant successful the first try? Yes No

(Utility) If not, how many errors:

What kind of errors:

2. How did you know you were done with this task?
3. Do you think you completed this task successfully?

4. On a scale from 1 to 5, rate this task from very difficult to very easy to complete, with 1 being very difficult and 5 being very easy.

1 2 3 4 5

5. [If 1 or 2, then ask...] What difficulties did you encounter?

Task 3: Locate the nearest hospital

Moderator: Direct participant to main screen.

Your travelling companion tripped on a large seashell and is having difficulty walking. Please locate the nearest hospital. Please let me know when you think you are done with this task.

Moderator: Task is completed successfully when

- User clicks on public or private hospital
- -or- clicks navigate

<i>Time START:</i>	<i>Time END:</i>	<i>Time ON TASK:</i>
--------------------	------------------	----------------------

1. Was the participant successful the first try? Yes No

(Utility) *If not, how many errors:*

What kind of errors:

2. How did you know you were done with this task?

3. Do you think you completed this task successfully?

4. On a scale from 1 to 5, rate this task from very difficult to very easy to complete, with 1 being very difficult and 5 being very easy.

1 2 3 4 5

5. [If 1 or 2, then ask...] What difficulties did you encounter?

Task 4: User initiated check-in

Moderator: Direct participant to main screen.

You are at the hospital with your companion and want to let all of your emergency contacts know what happened and that you are okay. Please check in with all of your emergency contacts. Please let me know when you think you are done with this task.

Moderator: Task is completed successfully when

- User selects all contacts
- User types message
- User clicks “send”

<i>Time START:</i>	<i>Time END:</i>	<i>Time ON TASK:</i>
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1. Was the participant successful the first try? Yes No

(Utility) If not, how many errors:

What kind of errors:

2. How did you know you were done with this task?

3. Do you think you completed this task successfully?

4. On a scale from 1 to 5, rate this task from very difficult to very easy to complete, with 1 being very difficult and 5 being very easy.

1 2 3 4 5

5. [If 1 or 2, then ask...] What difficulties did you encounter?

Task 5: User responds to local alert

Moderator: Direct participant to main screen.

You have a new notification. Please access the notification, and then send a message to Mary from your emergency contacts to let her know your status. Please let me know when you think you are done with this task.

Moderator: Task is completed successfully when:

- User selects contacts
- Makes a decision about the message content
- User clicks “send”

Time START:	Time END:	Time ON TASK:
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1. Was the participant successful the first try? Yes No

(Utility) If not, how many errors:

What kind of errors:

2. How did you know you were done with this task?

3. Do you think you completed this task successfully?

4. On a scale from 1 to 5, rate this task from very difficult to very easy to complete, with 1 being very difficult and 5 being very easy.

1 2 3 4 5

5. [If 1 or 2, then ask...] What difficulties did you encounter?

Task 6: User contacts local 9-1-1

Moderator: Direct participant to main screen.

You woke up early and went for a walk alone. You are having chest pains. Using this app, call the equivalent of 9-1-1 for assistance. Please let me know when you think you are done with this task.

Moderator: Task is completed successfully when

- Menu > Get Help > Emergency Services > Green Call Button
- OR
- Get Help > Green Call Button

<i>Time START:</i>	<i>Time END:</i>	<i>Time ON TASK:</i>
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1. Was the participant successful the first try? Yes No

(Utility) If not, how many errors:

What kind of errors:

2. How did you know you were done with this task?

3. Do you think you completed this task successfully?

4. On a scale from 1 to 5, rate this task from very difficult to very easy to complete, with 1 being very difficult and 5 being very easy.

1 2 3 4 5

5. [If 1 or 2, then ask...] What difficulties did you encounter?

User Satisfaction (Debriefing Questions)

1. What appeals to you about our app? (user satisfaction)

a. Are there any components that stood out to you that we should absolutely keep?

2. Did you find anything particularly confusing or frustrating? (user dissatisfaction)

a. Is there anything you would like to change?

3. Is there anything you would like in our app that you did not see here? (user suggestions)

4. How would you describe this app to a friend in one sentence? (overall impression)

5. Now that you've tried Travel Buddy, what are your thoughts on the name?

6. Is there anything else you would like me to share with the team? (overall impression)

Survey

1. The terms and words used in this app were easy to understand.

Strongly Disagree Disagree Neutral Agree Strongly Agree

Not Sure

2. I found completing the tasks to be easy.

Strongly Disagree Disagree Neutral Agree Strongly Agree

Not Sure

3. This travel app was easier to use than other apps I have used.

Strongly Disagree Disagree Neutral Agree Strongly Agree

Not Sure

Thank you for your participation! We really appreciate the feedback.

2. Qualitative Data Analysis

ALBATROSS: Affinity Diagram

The screenshot displays the ALBATROSS Affinity Diagram software interface, which is used for organizing qualitative data into affinity diagrams. The interface is divided into two main columns: "User Satisfaction" and "User Dissatisfaction".

User Satisfaction

- #1 - I like the intent and purpose of the app, emergency stuff when you ...
- #1a - Being able to select specific emergency contact and also show me ...
- can have travel info together
- won't accidentally send alert to wrong group
- keep: date pickers, look aheads/auto-fill options, adding trips, maps
- There were no colors, the app looks straight to the point, nothing additi...
- Liked map, liked how easy get help was, like on first task, wishes there ...
- QUOTES (user satisfaction)

User Dissatisfaction

- Primary Considerations
 - That Name...
 - #2a - Change Contacts
 - #2 - I was looking for contacts associated with that trip, so I expected to find more obvious icon/word "Here i...
 - Navigation
- Secondary Considerations
 - "I need to be able to edit the message and tell her that I'm safe. I don't necessarily want to send the message..."
 - "I didn't know how to embellish the information I input for my trip."
- Future Considerations
 - MDB: So, [you'd like] something akin to the disaster alerting thing, but for day-to-day stuff? P4: "Yeah, exactl..."
 - #3 - Where is my embassy info? It should automatically default to the location of those facilities, I shouldn't s...
 - Regarding the images for "local sites": I would like to see hospital, embassy, bank, police station--pre-loaded...
 - I would like an alert where I could get a notification about my trip with reminders about flight departures or h...
 - I would like a more robust alert section -> what is the scope of this? (terrorist attack? Diseases? etc.)
 - I would like a weather section
 - I would like to see a logo for the name.
 - P4: "Also, when you're sending messages, I don't know, maybe there should be something that tells you that ..."
 - Customize message delivery options. P4: "I'd expect them to get a text message and an email."
 - Icons and labels

At the bottom of the interface, there is a toolbar with icons for "Share", "Setup", "Reports", and "Import". To the right of the toolbar, there is a red circle with a person icon and the text "4 of 5", and a blue circle with the text "10". Above the "4 of 5" text, there are four circular icons labeled "JK", "EC", "MB", and "ET".

G. Project Plan

Click to [view project plan](#) (requires internet connection).