Project Analysis for GROUP 4

Project Title: ETA - Electronic Travel Assistance (Windows CE / PocketPC)

The Overview

The Internet has become a common resource for the budget-minded college student and young adult travelers. These resources present information to the traveler, but do not tailor that information to the specific interests of the traveler, nor do they provide the means that allow the traveler to stay within budget constraints. In other words, conventional resources provide information to the traveler, but do not provide a means for the traveler to manage that information. On the other hand, tour books provide an overwhelming amount of information that is not always tailored to the specific interests of the traveler, and this information is sometimes outdated. The goal of our project is to improve the experience of budget travelers visiting new cities by providing to users access to the type of information that is found in budget travel resources, such as dining, entertainments, accommodation, and public transportation information, but also provide tools for the user to efficiently manage those resources.

Our Contextual Inquiry

Three people were chosen for the contextual inquiry for the Electronic Travel Assistant tool. The three chosen represented the target group of users, namely budget travelers. In order to find people in the context of their "work," we needed to find people on vacation as budget travelers. Therefore, we went to San Francisco to a youth hostel (the Hostelling International youth hostel at 312 Mason Street, San Francisco) to interview budget travelers in their role of visiting a new city and trying to find their way around. Three young men and women were chosen, Jack (from London, England, aged 20), Hannah (from Leeds, England, aged 20), and Monica (from Australia, aged 21). They gave us feedback on the resources they use to plan and manage their trips.

All three of them used a tour book, namely a Let's Go guidebook or Lonely Planet guidebook as their primary resource, with limited use of the Internet, primarily for email purposes. One aspect they held in common was that they carried the guidebook with them as they toured the city, as opposed to leaving it in their living quarters. They also talked about the information they use most frequently from the guidebook. When touring a city, all three most frequently referenced the maps of the city, and all three felt that this was the most important information provided by the guidebooks. Jack commented that he was frustrated. The listings and locations provided in the guidebooks were not always shown on the maps. He also would like some sort of distance information on how far away places are. In addition, they all relied heavily on the listing for accommodations, as finding a place to sleep was the primary concern upon arrival into a new city. Upon arrival, the travelers first oriented themselves and found living accommodations before exploring sites, restaurants, or entertainment.

Another feeling shared the interviewees was that the guidebooks were frequently inaccurate and/or not up to date. They were frustrated by the lack of pricing information, and by the one sided point of view of only the authors of the book, especially regarding descriptions of nightclubs and bars. They rarely used the guidebooks as a resource for nightlife because it did not give enough insight into what actually is "cool," or what is popular in the local scene. Jack commented that, "you can tell that the authors were from Harvard, and they don't seem to be the type of people who go out to the places they list." Word of mouth was the most common resource they used for finding fun and popular places to spend the evenings. Jack and Hannah, who are 20 years old, expressed frustration of being under the drinking age, as it limits the places they could visit. None of the travelers used the SF Bay Guardian as a resource, a popular free newspaper among locals of culture and activities in San Francisco. Only Jack had ever heard of the paper. In addition, they all felt the shopping sections of the guidebooks were the least important to them. Finally, all three of them managed their budgets by...
simply taking out their money in blocks representing a period of time, but they did little else to manage their spending. They did, however, expresses frustrations on the difficulty of staying within budget.

Each of the three travelers provided additional insight into different things they personally found to be useful. Jack commented on how he likes the cultural segments provided in the guidebooks that tell a little about local societies. He also mentioned that he would like some brief local news information. Hannah, on the other hand, had needed to visit a doctor at a previous time during her trip. She expressed the usefulness of the hospital and emergency information provided in the guidebooks, and that even though it was not something she used very often, it was something that came in handy in the rare case when she needed it. She also commented that it would be useful to have information on what to do in case of an emergency, on what actions to take, especially if it is a health care problem. Monica brought up that she liked the reviews and hyperlinking model used by Amazon.com to give information about music. Amazon.com gives user ratings on music as well as links to records by similar artists.

Our Task Analysis Questions

Our system will be used primarily by budget travelers; we anticipate the typical profile of our user to be a college student or a young person who is traveling on a budget. The typical user has the general skills to use a PDA and will be able to use our system intuitively without any extensive training. Our system could later be expanded to a broader population of users, we chose to initially focus on the budget traveler.

We have identified a group of tasks that are performed by travelers. The most important task is looking up and booking accommodations. Currently, travelers spend a considerable amount of time flipping through pages of hotel and hostel listings in travel guides. They call by phone and get only the basic information about their destinations, only to be surprised when they get there. Users expressed the desire to have listings that correspond to their profile, with more in-depth information such as how loud the environment is and if the accommodation is a single room or a dorm, coed or not. Our UI will give them the opportunity to include more constraints to make sure they have a listing that matches their criteria.

Another major task that users perform is finding restaurants and culinary reviews. Users currently rely mainly on travel guides to look up restaurants and their reviews. The users are exposed to generic reviews by culinary experts that do not necessarily share their taste in food; users expressed interest in ratings from their peers who have a similar profile as themselves, which will be available in our product.

Finding out about entertainment and nightlife is also important to travelers. Currently users rely on word of mouth to locate the most popular places, which do not necessarily match their interests. Users want a more adaptive listing that suggests activities while taking into consideration their budget and personal interests such as the scene and music they prefer.

Landmarks and cultural hotspots rate highly on the list of travelers. However, once again they rely on the guidebooks to discover the must-see spots. The guides, however, fail to evaluate the distance to the landmarks and sometimes fail to map them accurately. Users requested these failures to be fixed, and our UI will provide an approximation of the distance between travels as well as accurate maps.

Public transportation and mapping information is simply a must for travelers. The guidebooks, which so far have been the main source for information, are sometimes outdated as far as bus routes are concerned. The guidebooks also do not map all the location they recommend, highlighting only the landmarks. Our UI will provide updated information and will map all the locations recommended including restaurants, accommodations, and landmarks.

Planning an itinerary is also a challenging task for travelers. It usually involves looking up and identifying several activities that appeal to them and then coming up with a schedule that includes a maximum number of those activities. Users face several problems that combine many of these shortcomings already mentioned, and finding out about establishments that match their interests and
locating places with distance mapping is still hard. Our UI will have a special feature that generates a complete itinerary based on the user's profile, suggestions, and the opinions and recommendation of other travelers with a similar profile.

Another major task for travelers is budget monitoring. Users currently rely on withdrawing money in blocks because they do not know how much money they will spend. This leaves the door open to overspending, which is definitely detrimental to a budget traveler. Our UI will monitor their spending and will adjust everything accordingly.

A task that travelers perform less frequently but that is very important to their well being is looking up numbers to call in case of emergencies. They usually rely on guidebooks to find this kind of information, but it tends to be buried under the more popular sections and is hard to find. Users also tend to ask locals for advice in case of emergencies, our UI will provide accurate information in a very accessible fashion as to minimize the time required to look it up.

**Our Analysis of New and Existing Tasks**

**Task 1: Looking Up and Booking Accommodations (easy)**

Travelers currently find accommodation by consulting listings from guidebooks and calling the establishments that match their budget. The user makes a decision based on a limited knowledge of the hotel or hostel, which can cause problems once he/she checks in. Our system will not only provide listings of accommodation, but those listings will be adapted to the profile of the user, taking into consideration his/her budget, the setting, the privacy (dorm vs. single), the quietness etc. The user will be given the option to book online if he/she has Internet access.

**Task 2: Mapping a Location (easy)**

Currently, a traveler uses guidebooks to map a location he wants to visit. The problem with this approach is that those maps do not map all the possible locations, usually only highlight the landmarks, and do not give an estimate of the distances between locations. Our system will provide maps to all the recommended sites including restaurants, bars, accommodations, etc. It will also provide an approximation of the distance to the location. Whenever a location is recommended or included in the itinerary, the user will be given the option to map it.

**Task 3: Generating a User Profile (medium)**

This task is specific to our system in that the user initially fills out his preferences and interests, and the program will generate a profile that will be used when advising the user about activities. The user can update his profile anytime to allow for a more flexible travel experience. Currently, the traveler uses his own preferences and sentiments to choose his activities; our system will structure his input into a working profile that will be applied to a database to generate activities that closely match his interest. The profile will include the user's preferences for activities such as food, music, bars, and cultural landmarks as well as health issues such as allergies.

**Task 4: Generating Itinerary (medium)**

Currently, to generate an itinerary, a user will have to first figure out the activities and locations he/she is interested in by flipping through guide books and, to a lesser extent, local newspapers. Then he will have to generate a schedule that will allow him to do as much as possible in the available time. Our tool will simplify this task greatly by automatically generating an itinerary composed of restaurants, nightlife spots, and landmarks that closely match his profile including his budget. The generated itinerary will be adaptive to any changes the user makes to his profile.

**Task 5: Budget Monitoring (hard)**

Travelers currently monitor their spending by withdrawing money in blocks so they could precisely estimate the average spending rate over a few days' period and balance days when they overspend with days where they cut on their spending. Our tool will allow them to monitor their spending by
letting them input the amount of money they spent each day. Our system will then automatically help them monitor their spending by adapting their itinerary to their new financial constraints; this may include recommending cheaper restaurants and free entertainment.

Task 6: Looking Up Nightlife Spots (hard)

In interviews, travelers mentioned that word of mouth was the main source of information when it comes to nightlife, so they tend to go to the most popular places while missing out on some spots that are more suited for them and where they would have a better time. Our tool will provide suggestions for nightlife entertainment that matches the traveler's desires as expressed through his profile. It will also supply additional information such as the age limit and the rating of the spot by other travelers of similar profile. The system will also provide the options of mapping the location and approximating the distance to get there. Our UI will also allow looking up spots by entering constraints such as distance, genre of music, etc.

The Interface Design

Accommodations Feature:

ETA Accommodations allows you to book rooms in hotels and inns anywhere in the world. The interface consists of three parts: the first section allows you to browse the popular city destinations as well as enter a specific one; the second section prompts you to enter the number of days he will be staying at that place, and the last one asks for the number of people going. The rationale for this particular interface is the simplicity. These three sections constitute the minimum amount of information necessary to look up reservations in any location, for any time, and for any number of occupants.

Landmarks and Cultures Feature:

When you are at a new place, you want to know "what's hot and what's not" - quickly, and that is exactly what ETA Landmarks and Cultures enables you to do. The upper portion of the screen presents you with featured cities that has been given high marks along with a reviews and photo. If you choose one of the featured cities, ETA will bring up additional information on that location. The bottom half of the screen allows you to pick and choose your own destination. Again, these two sections provide ETA with sufficient information to begin your search for your destination. Categories, such as parks, major civic centers, and shopping malls will be presented to you after you have chosen your destination.

Transportation and Mapping Feature:

You can find your way in and around any city by choosing the ETA Transportation and Mapping feature. At first screen, you can enter your starting point and destination to get detailed driving or bus instructions. These instructions will be displayed on the left of screen and a zoomable map will appear on the right to visually guide you to your desired destination. You may enter just your starting point to find out where you are in the city. The rationale is: with just these two pieces of information, ETA can map out your route and provide directions on how to get there.

Emergency and Regional Offices Feature:

When you're abroad, you want to have access to crucial information quickly. With ETA Emergency and Regional Offices, now you can. Enter your location and you can find nearby hospitals, foreign exchanges, post offices, and even US Embassies. You can also browse popular destinations for your location. It is important to have vital information like hospitals and foreign exchanges handy, so the interface presents this selection upfront. All you have to do is provide the necessary location information and ETA gathers up the information for you.

Restaurant Listing Feature:

From our discussions of written and verbal contextual Inquiries and from our personal experiences, we thought that it would be necessary for a Travel Planner to have restaurant listings. Our restaurant
listing incorporates Mapping Ability as well as Integrated Budget Advisor that helps you to stay within your budget before making restaurant decisions. It considers the location of the restaurant and tells you the distance to the other cities like shown (in miles as well as KM), type of food, and settings of restaurant. It would be very convenient if the traveler could read the restaurant reviews of others who have similar backgrounds such as age group, nationality (American) and see the specialty menu of the house before driving over to restaurant and opening up the menu.

Entertainment Listing Feature:

When my friends who have similar backgrounds as of our target users visit San Francisco, they most likely ask me, "What's there to do here tonight? I have seen too many of those bridges already" In cases like this, ETA Entertainment center could rescue these travelers from wasting their night watching ESPN in their hotel rooms. This feature can observe the traveler's current location and calculate the distance to the nearby cities with an active nightlife. It conveniently integrates map and driving directions with a simple click. Most of the travelers are reluctant to use the guidebooks to find clubs and bars because they simply cannot anticipate the scene just by reading articles. For example, they would not go into a bar where the average age is 50. In order to better aid the travelers' research, ETA will provide pictures of the clubs and bars. In addition, the travelers can read reviews written by other travelers with a similar background. The travelers can also find other entertainments such as movie listings and theatre information.

Personal Profile Feature:

Personal Profile helps the integration and personalization of various features in ETA. For instance, instead of asking what kind of music or age group scene they enjoy the most every time ETA needs, it could store this information and use it without prompting users. It also considers personal profile information when fetching the recommendations for various places such as restaurants, bars or clubs. That way, more appropriate reviews from people from similar backgrounds and common interests would be displayed. For example, the review of a bar by 60-year-old man from France would be very different from the review of a UC Berkeley student. The idea is to provide your information once, and use it continuously throughout the trip.

Budget Advisor Feature:

From the contextual Inquires of the foreign travelers, it was obvious that they get frustrated when they do not know where they had spent $100 the day before. They want to keep track of where they spend money as well as plan ahead how much budget they should allocate for an event such as dinner. Once the Budget Advisor is set up before the trip, it will always tell the users how they are doing in keeping with their budgets. In case the traveler goes over/under the budget, it will readjust future budgets.

Itinerary Planner Feature:

It is a one-time process that the users need to set up to organize a trip. It allows you to enter destinations, transportation, and accommodation information. In order to further help the travelers from making easy travel plans, the Accommodation feature could be directly opened from this program. By setting up this information once, he or she could benefit from it while traveling because he or she would have all of his travel information summarized in this feature. It connects with a personal profile and budget information to suggest the best itinerary and plans for the traveler.

The Three Scenarios

Scenario I - Looking For a Place to Stay:

I am looking for a place to stay in Seattle, Washington because I am visiting on vacation from the East Coast. I want nice but not too pricey accommodations at a good hotel nearby.

1. On the first screen, I enter in the location "Seattle," the dates I will be there, and the number of people staying. At this point, I have not chosen which hotel I will be staying under.
2. ETA gathers a list of available hotels and inns according to my budget and preferences, and gives their possible booking schedule. Since the Red Lion Hotel is not that expensive and available, I select it. I could have sorted by location and price.

3. ETA then gives me a list of available rooms and their respective rates. I select the non-smoking deluxe with two double beds, since I have a companion.

4. ETA then gives me a confirmation screen that serves to close the deal. I look over the information and see that it is correct. I choose "submit" and ETA processes the order.

Scenario II - Finding Location on Map:

It is summer time and I have just come to San Francisco on a vacation. Being a tourist, I would like to see the glitter of cultural diversity in the city and plan a visit to Downtown and Chinatown. However, I have no car and I need bus directions from my apartment to the San Francisco’s cultural hub.

1. I pull up ETA Transportation and Mapping, enter in my address, and my destination.

2. ETA brings up a map of my quickest route and also displays driving and bus directions. From here, I can zoom in or out of the map, and I can choose another starting point or destination point.

Scenario III - Finding Restaurant Listings:

I am out in San Francisco with my friends and we do not know anything about San Francisco. After shopping around, we are back in our hotel room deciding where they want to go eat. My friend wants to flip through the Yellow Pages and start dialing number asking for menu and driving directions. However, that conventional method is likely to be very limited. Therefore, I pull out the Windows CE device and launch ETA Restaurant Listings.

1. ETA already knows which hotel I am staying at and it tells me how far nearby cities are. Then, I have an option of selecting what type of food you want. I could pick multiple instances in this case. For example, I could pick Chinese and French to search for both. In addition, I specify another attribute for a setting of restaurants with a good view. Lastly, Budget Advisor suggests the price that I should be making your choices in to be around $17. I override this suggestion and make it search for restaurant that has menu priced around $25. Then, I submit the query.

2. It searches for restaurants that match my preferences. On the second screen, it lists names of the restaurants, its phone numbers, distances, and short description of the restaurants. In this view, I have an option of again sorting the list by distance, price, or availability. I find a restaurant that is about 5 miles away. And, I click on the name of the restaurant.

3. The third screen gives me information that is more detailed about the restaurants such as exact address, business hours, specialty menus, and their prices. In addition, it also gives me the ability to read reviews from other customers. I could also inspect the settings of the restaurant from the pictures. Also, I see the picture of the specialty menus and they look impressive. From here, I can call the reservation number and call them to make a reservation.

4. In case I am driving in my rental car, which information is already known by ETA, it displays the driving direction to the restaurant.*

5. When I finish eating at the restaurant, it prompts me how much the check was and I also get an option of writing a review.*

*Are distinct independent of restaurant search feature.