Evaluation Report #1:

Stakeholders, Goals and Task Analysis

Evaluator: Mohammad Beheshti
(mbehesht@mtu.edu)

Development team: Stomp

Application: Ant Mound Mapper

Scientist: Andrew Storer
(storer@mtu.edu)

01/25/2016
App Design and Development team (Stomp)

<table>
<thead>
<tr>
<th>Name</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matthew Kersten</td>
<td><a href="mailto:mkersten@mtu.edu">mkersten@mtu.edu</a></td>
</tr>
<tr>
<td>Colin Hogue</td>
<td><a href="mailto:cmhogue@mtu.edu">cmhogue@mtu.edu</a></td>
</tr>
<tr>
<td>Evelyn Adler</td>
<td><a href="mailto:seadler@mtu.edu">seadler@mtu.edu</a></td>
</tr>
<tr>
<td>Joau Perez Guenero</td>
<td><a href="mailto:jnperezgu@mtu.edu">jnperezgu@mtu.edu</a></td>
</tr>
<tr>
<td>Tory Taggart</td>
<td><a href="mailto:tltaggar@mtu.edu">tltaggar@mtu.edu</a></td>
</tr>
<tr>
<td>Kate Van Susante</td>
<td><a href="mailto:kvansusa@mtu.edu">kvansusa@mtu.edu</a></td>
</tr>
</tbody>
</table>

App Idea:

There are 24 species/sub-species of red wood ant in North America. One of the characteristics of this group is building large mounds. But the number of species building large mounds, for unknown reasons, is less than the expected (only five). To discover the reasons for lack of organic mounds, scientists need to have a complete knowledge of locations of organic-origin and mineral-origin mounds as well as locations with no ant mound. This is the motivation of “Ant Mound Mapper” application, which aims to equip scientists with a complete picture of geographic distribution of ant mounds. Using this app, students can record the location of ant mounds as well as their photos, which helps scientists to determine are they organic or mineral in origin.

Scientist: Andrew Storer-Professor of Forestry
Email: storer@mtu.edu
Phone: 906-370-2847
School of Forest Resources and Environmental Science
Michigan Technological University
Stakeholder Analysis

a. Onion model of stakeholder
b. Description of each Stakeholder

Primary Stakeholders are middle school or high school students. They explore their school forests or other forested areas around their school and record the location and photos of every ant mound that they’ve found.

Secondary Stakeholders are forestry scientists. They use the submitted information by the students to make a complete picture of geographical distribution of ant mounds and the locations with no trace of mounds. Using the recorded photos, they can also detect the origin of the mound (either organic or mineral).

Tertiary Stakeholders are development team members; team #5 (Stomp). They are actively involved to professionally design, develop and test the application. They closely work with the scientists to better understand the specifications of the desired application. Also they work with the students to get feedback about usability of the application.

c. Stakeholders’ goal-influence table

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Goals</th>
<th>Influences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students</td>
<td>Record the location of ant mounds</td>
<td>Gathering useful data to be analyzed by the scientists</td>
</tr>
<tr>
<td></td>
<td></td>
<td>May they are not able to properly distinguish between ant mounds and other similar objects in the forestry areas</td>
</tr>
<tr>
<td></td>
<td>Take photos of ant mounds</td>
<td>May they cannot explore the forestry areas deeply and thoroughly</td>
</tr>
<tr>
<td><strong>Scientists</strong></td>
<td>Having proper data to conduct their research</td>
<td>Providing necessary specifications and expectations of the desired application for the development team</td>
</tr>
<tr>
<td>----------------</td>
<td>---------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Developer Team</strong></td>
<td>Deliver a practical application on time, with a satisfying quality</td>
<td>They are necessary for progress/success of the project</td>
</tr>
<tr>
<td></td>
<td></td>
<td>They design/develop/test the desired application</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Summary of the Stakeholders’ Goal Influence Table:

Students (primary stakeholders) are information gatherer. They explore the forestry area carefully to find ant mounds. Then they record the location of the mound and take its photo. This information is necessary for scientists’ researches. Because they are the primary users of the application, this app and its interface should be convenient for them. So, their point of view should be considered in all phases from design to development of the app, and they should attend in the test phase to demonstrate its functionality.

If the students cannot use the app properly, the other phase of the project, analyzing the data, would also fail. Also if they cannot provide the correct information, such as: properly distinguishing between mounds and other similar objects in the forestry area, it would negatively affect the rest of the project.

Scientists (secondary stakeholders) use the data provided by students to conduct their researches. They provide specifications and expectations from the application. Also whenever needed, they provide information related to their major (forestry and geology) for development team. Also they can attend in the test phase to give appropriate feedback to the application.

Any misrepresentation of requirements or changes in the original requirements may affect the progress of the project negatively. Also Scientists should give their feedback/consults as soon as possible.

Development team (tertiary stakeholders) is responsible to deliver a practical and easy to use application on-time. This application should satisfy the requirements as well as usability tests. Development team makes progress in the project. They design, write the code and test the deliverable application.
The final quality of the application relies on the technical expertise of the members and cooperative and supportive structure of the team. If they do not understand the requirements correctly or fail to accomplish their individual tasks, the final application's quality would not be satisfying.

**Personas**

**Primary Users**

**Name: Jeremy**

Gender: Male  
Age: 22  
Height: 6’  
Wight: 150 lbs  
Location: Houghton, MI

He is first year Master student in Electrical Engineering at MTU. He is smart and very social. He can make new friends in a moment! He has a lust to experience new things. He can provide different perspectives to a problem. He likes to attend in a testing project to get more familiar with life-cycle of mobile applications. He looks to develop his own application very soon.

**Name: Joe**

Gender: Male  
Age: 31  
Height: 6’  
Wight: 200 lbs  
Location: Houghton, MI

He is graduated student in Electrical Engineering at MTU. He is creative and he can conduct a project individually. He is always first one in the volunteer activities. He always provides comments and feedbacks to make current situations better. He is fan of nature and he always looks for
hiking/biking programs in the nature. He has good relation with kids and enjoys spending time with
them.

Secondary Users

Name: Nicolas
Gender: Male
Age: 27
Height: 5'5"
Wight: 145 lbs
Location: Houghton, MI

He is a PHD student and he works on Natural resources. Also he works with some other scientists
and he is conducting some researches in this area. He has good information about the current
issues affecting our habitat and he has a broad knowledge about forestry. His feedback to this
application can verify if it is practical from a scientist point of view or not.

Name: Matt
Gender: Male
Age: 27
Height: 6'1"
Wight: 189 lbs
Location: Houghton, MI

He is a PHD student and he works with GIS systems. He works with geographical data, analyzes
them and extracts meaningful patterns from them. His experience with database is valuable for this
project. He can provide feedback on the data gathered by the application users and determine if
they are meaningful for the research purposes or not.
Simplified Hierarchical Task Analysis

Start the app

Location

Turn the location service on
Check for the signal
If signal is available:
  Communicate with GPS and receive the location info
If signal is not available:
  User enters location in the text box
Store the location info in a predefined directory

Receive data from user

Name of the forestry area
  Choose from dropdown menu, or
  Enter in the text box
  Store the name in a predefined directory

Take photo
  Call the camera service
  Name and store the taken photo in a predefined directory

Receive mound info
  Choose mound info (size, origin) from menu, or
  Enter mound info in the text box
  Store this info in a predefined directory

Storage

Store the entered data in a temporary directory until they are submitted to the database

Submission

Turn Internet service on
Check for Internet signal
If signal is available:
Send the collected data to the predefined database address
Flush the temporary files
If signal is not available:
Check for signal every 1 minutes until the submission is done

Summary of the simplified HTA
When the application is started, it receives the current location from the GPS or manually from the user (in the case of no signal, which is common in the forestry area). Then user should be able to enter/select name of the forestry area, take photos and enter mound info. Application should store all these information in a temporary directory until submitting them to the database. Also application should be able to establish a connection to the database server and submit the data, or in the case of failure re-attempt in a loop.
Meeting was going on in an intimate and friendly atmosphere. First, interviewee and interviewers get familiar with each other. Then the scientist talked about necessity of his research and the importance of ants in the wildlife and their effects on our habitat. Then he followed by expressing the different behaviors of ants in the Europe and North America. He also demonstrated some photos of ant mounds and described the differences between mineral and organic mounds. Then he answered to the questions about this project and his expectations from the app, which is summarized below:

1. Users of this app are considered to be middle/high school students to encourage/introduce them to some important issues in the geology and forestry.

2. When user runs the app, explores the area (20 meters distance) for ant mounds. If he/she couldn’t find any traces of ant mounds, simply takes a photo from the area with no ant mounds, tag it with “no mound is found” and submits it.
   But if an ant mound is found, its photo, its size and another photo from its environment should be submitted.
   In either of the cases, the location of the area (received from the GPS) would be sent along with the data.
   After the submission, application would ask the user that if he/she wants to continue (explore another 20 meters) or not.

3. The interface of this application should be simple on smartphones.

4. A combination of dropdown and text box menu is desired.