

CS5760

Graduate Human-Computer Interactions & Usability

Evaluation Assignment 1

Website and Stakeholders, Goals and Task Analysis

Jiban Adhikary (Grad 9)

Team 2 (Blu Team)

February 1, 2018

1 Introduction

This documentation provides a detailed description about the stakeholders of a software application being developed. First, it provides a summary of the software that is being developed by a team of undergraduate students, the **Blu Team**. Then it illustrates the Onion Model for stakeholders to show the relationship between the stakeholders and the system that we are concerned about. It also categorizes stakeholders according to their interaction with the application and analyzes their goals and tasks toward the overall system.

2 Undergraduate System

Blu Team will be working on an app which is basically a Volunteer Monitoring app. Volunteers are the backbone of Oklahoma Blue Thumb program, the eyes and ears of creeks and streams across the state. By using the app the volunteers will monitor the creeks monthly. They will assess the physical habitat and test sample of the creek's water. The monitoring will take place at the creek, and all the data related to environmental or physical factors affecting the creeks will be collected. The collected sample of water will later be chemically tested in the lab. The chemical tests are supposed to be held on a comfortable time the volunteer prefers to do. Previously all these data were sent out to Blue Thumb using traditional media like fax, email or snail mail. This app will ease the monitoring process by facilitating volunteers to submit data using their smartphones and email them to the quality assurance officer.

3 Stakeholder Onion Model

The diagram of an Onion Model of Stakeholder relationships is shown in Figure 1.

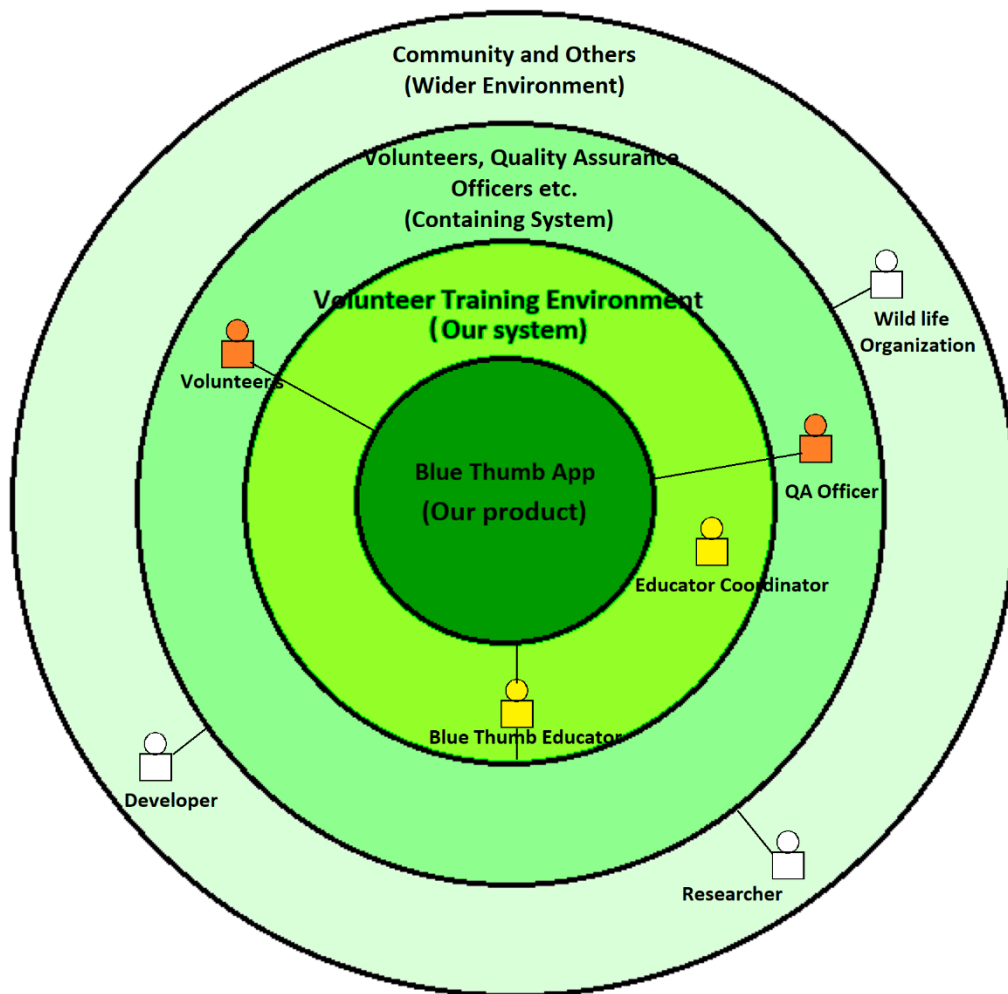


Figure 1: Stakeholder Onion Model

4 Description of Stakeholders

We illustrated the stakeholders and their circles of influence in the above Onion Model diagram. The innermost circle represents the product that the undergrad team (Blu Team) is developing. Then the next circle illustrates the system. This system includes Volunteer Training Environment and the staffs of Oklahoma Blue Thumb Project will play role in this system. The staffs include the state coordinator, Quality Assurance Officer, Education Coordinator and Blue Thumb Educator. They will be the first who interact with the app and teach volunteers to make the best

use of the app to achieve Blue Thumb's intended goal to empower people to protect water resources from nonpoint source pollution. The circle beyond the Training Environment represents the containing system where Blue Thumb volunteers will interact. The volunteers will take training and will be responsible for investigating the water resources and uploading data. The outermost circle represents the other related environment conditions that do not directly influence the basic system. Based on the roles and interaction with the system we classified the persons as primary, secondary and tertiary users. The primary users are marked with color orange, secondary users with yellow and all others with white.

4.1 Primary Users: We categorized the volunteers and Quality Assurance Officers as the primary users.

Volunteers: Volunteers are basically the persons who will interact mostly with the app. The existence of the app is meaningless without the volunteers. Volunteers will work voluntarily and monitor the water resources as well as provide feedback based on the monitoring. The success of the app being developed will entirely depend on how usable the app is in volunteers' perspective. Does it provide a user-friendly interface to collect data? Does it provide all the information or form?

Quality Assurance Officer: On a Blue Thumb app volunteers will enter data based on the monitoring they do. The quality assurance officer will check the data and validate so that the data can be added to the main database. The reason for validating is, sometimes it may happen that volunteers put irrelevant data during the primary phase.

4.2 Secondary Users:

Educator: Blue Thumb educates citizens how to protect water quality and what kind of species live in the water resources. The volunteers are actually trained by Blue Thumb Educators. The educators help volunteers learn to use different tools so that the volunteers can help other citizens. The educators will get themselves familiar with the app and also help volunteers to get familiarize with the app and its different contents.

State Coordinator: State coordinator is the main executive person of the whole Blue Thumb Project. He interacts with the staffs and consults with them on different responsibilities.

4.3 Tertiary Users:

Development Team: The development team will have interests on how the app comes into action. They have the responsibility to design the app according to the suggestion of Blue Thumb Project's State Coordinator and Quality Assurance Officer. Other than developing the app they

will not be interacting with the app i.e, they will not have any direct relationship with the running app.

Researchers: A researcher can use the Blue Thumb Projects’s database to research on the water resources around Oklahoma. He will not have direct interaction with the app but he will use the results which was achieved through the app.

5 Stakeholder Goal Influence Table

The goals and influences of the stakeholders are described in Table 1

Stakeholders	Goals	Influence
Volunteers	<ul style="list-style-type: none"> ❖ Get training ❖ Monitor creek and streams ❖ Capture photos ❖ Enrich Blue Thumb database ❖ Educate other citizens 	<ul style="list-style-type: none"> ❖ Lose patience ❖ Not knowledgeable ❖ Make mistakes ❖ Inexperience
Quality Assurance Officer	<ul style="list-style-type: none"> ❖ Access database ❖ Validate data ❖ Consult with state coordinator for dynamic improvement of the app 	<ul style="list-style-type: none"> ❖ Limited knowledge of structured database languages ❖ Validating each user’s data is difficult
Educator	<ul style="list-style-type: none"> ❖ Train citizens ❖ Learn geographic information as well as be aware of the biodiversity around Oklahoma 	<ul style="list-style-type: none"> ❖ Inexperienced ❖ Limited knowledge about geographic location
State Coordinator	<ul style="list-style-type: none"> ❖ Consult with the educators for better training ❖ Consult with the quality assurance officer to improve training tools, application, database etc. 	<ul style="list-style-type: none"> ❖ Not being a team person ❖ Not being visionary ❖ Lack of problem solving skills ❖ Lack of managerial abilities
Development Team	<ul style="list-style-type: none"> ❖ Consults with the state coordinator and the quality assurance officer with the 	<ul style="list-style-type: none"> ❖ Unorganized ❖ Lack of communication with the client during development

	<p>design and implementation of the app</p> <ul style="list-style-type: none"> ❖ Communicate with the client periodically to resolve issues ❖ Provide on time feedback on client's queries 	<p>process</p> <ul style="list-style-type: none"> ❖ Not ensuring fail-safe mechanism ❖ Error in design plan ❖ Not following up with the client after app is in practice
Researchers	<ul style="list-style-type: none"> ❖ Collect Blue Thumb database ❖ Convey statistical analysis on data 	<ul style="list-style-type: none"> ❖ Misuse of Blue Thumb database ❖

Table 1: Stakeholder goal influence table.

6 Personas

6.1 Volunteer persona:

Persona	Oklahoma Blue Thumb Volunteer
Photo	
Fictional Name	Rudy Davidson
Job/ Responsibilities	College student
Demographics	<ul style="list-style-type: none"> ❖ Single ❖ Age – 20 ❖ Education – Biology Major
Goals and Tasks	She is an enthusiastic young woman and cares for the


	<p>environment. She wants to be a biologist. She spends her time –</p> <ul style="list-style-type: none"> ❖ In the lab to study different aquatic animals ❖ Exploring different water resources with diverse animals
Environment	Rudy carries a digital camera with her all the time and loves to take pictures of species she finds during her exploration. She is comfortable using a computer and often uses internet to study different water reservations and the fauna.
Quote	“If I was not born as a human, I would have been an amphibian”

6.2 Quality Assurance Officer persona:

Persona	Oklahoma Blue Thumb Quality Assurance Officer
Photo	
Fictional Name	Tim Bernard
Responsibilities	Former banker
Demographics	<ul style="list-style-type: none"> ❖ Married ❖ Age – 46 ❖ Education – BBA degree
Goals and Tasks	Before coming to Blue Thumb Tim worked in a bank and he used to update daily transactions of users in the bank

	<p>database. He has always been passionate about preserving nature and when he got a chance he took the offer from Blue Thumb. Before coming to Blue Thumb his activities include:</p> <ul style="list-style-type: none"> ❖ Validating database and look for outliers ❖ Explore countryside on weekends
Environment	Tim has a well-informed knowledge about various database languages. He is an expert in MySQL, Microsoft Access and Oracle.
Quote	“To commit or not to commit, that’s the question”

6.3 Researcher persona:

Persona	Researcher
Photo	
Fictional Name	David Copperfield
Responsibilities	University Professor
Demographics	<ul style="list-style-type: none"> ❖ Married ❖ Age – 60 ❖ Education – PhD in Environmental Science
Goals and Tasks	David is a university professor and he is working on a NSF project to study how different aquatic animals and water

Environment	borne microbes affect the overall ecosystem of a particular area. He is relying on Blue Thumb Database for his studies.
Quote	Uses emails extensively for communication “All we need is data”

7 Simplified Hierarchical Task Analysis (HTA)

A simplified HTA has been illustrated in Table 2. This table is very basic and is subject to change as the development process advances forward. I have consulted with the undergraduate team and they will stick to just working on the Volunteer accessibility in the beginning.

Log In
a. Volunteer
(i) Enter New Data
- Site Conditions
- Stream Site Observations
- Bacteria Worksheet
(ii) Upload Data
b. Quality Assurance Officer
(i) View New Entries
(ii) Validate New Entries
(iii) Analysis Data
Forgot/Recover Password
Support

Table 2: Simplified HTA

8 Summary of the Simplified HTA

8.1 Log In: The app will provide log in interface as soon as the app is launched. The app provides two types of access. One type of access is for the volunteers and another type is for the quality assurance officer.

8.2 Volunteer account: This mode of accessibility provides an interface for the volunteers. After logging into a volunteer account a volunteer will see two options: (a) Enter new data and (b) Upload data.

8.2.a Enter new data: This item will open up three options for the volunteer to enter new data. The options will be in a sequential order. The options are as follows.

8.2.a.i Site conditions: This option will open up a log file where different type of weather conditions, wind speed, wind direction, stream stage, stage qualifier water clarity etc. will be put.

8.2.a.ii Stream site observations: This option will open up a form with multiple check boxes. The form requires to put a check mark in the boxes which suit best with the stream being monitored. Some of the check box options include whether the stream is clean, if there is manure in stream, color of the water, is there any foam or floating detritus or algae, dead animals, siltation etc.

8.2.a.iii Bacteria worksheet: This worksheet will be filled by the volunteer after they brought

8.2.b Upload Data: Once all the three forms are filled up they will be stored in the local directory of the app. When a user is online he can browse the filled in form using this option to upload data in the main Blue Thumb database.

8.3 QA account: This mode of accessibility provides an interface so that the quality assurance officer can supervise over the monitored data.

8.3.a View New Entries: Using this option a quality assurance officer can view the recent data which have been entered.

8.3.b Validate New Entries: Using this option a quality assurance officer can validate new entries which have been entered by the volunteers.

8.4 Forgot Password: This provides the functionality to recover a password in the case the user has forgotten his password.

8.5 Support: This option will provide a detailed information about the app and information of the contact personnel. It also will document the frequently asked questions (FAQs).

Appendix

All the notes on meeting with the scientist will be found in the [undergraduate team website](#).

Information about Blue Thumb Project can be found in <http://www.bluthumbok.com/>.