Voice

Project Management Report Highlights

Organizers:

Shila, Eduart, Fabio

Great Design is a brilliant collection of beautiful ideas.

M. Cobanli

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Introduction

Hereby a review of the usability and user experience study regarding a website for hearing aids is presented.

As it is described in the following the main factor which increase the probability of hearing loss is age and this has been considered at every step of our design to service the consumers.

There was not seen any considerable difference in gender based statistics in terms of probable presence of hearing deficiencies.

Some other factors such as smoking, diabetes, blood pressure or other cardiovascular diseases have been mentioned as a drive for hearing problem causes in statistics.

Ref: Sources: WHO (World Health Organization):

http://www.who.int/pbd/deafness/news/Millionslivewithhearingloss.pdf?ua=1

1. Ethnographic Analysis

1.1) Segmentation:

Our demographic segmentation is based on the age criteria. This decision is justified by statistical research and medical data.

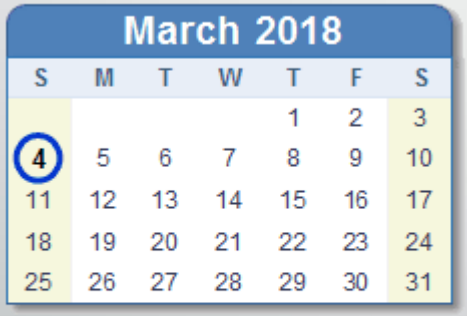
Almost 74.4 % of Italian who are older than 65 and 25.3% of those who are under 65 have hearing problems.

Target users are considered in two main age ranges:

1. From 19 to 44
2. From 45 to 64

1.2) User Research – Market Research

Survey: Google Form (https://goo.gl/forms/6MIIVKuSJOkNskqa2)



"58 Records "

1.2) User Research – Contextual Inquiry

- As Garrett highlights Contextual Inquiries are a first order methods to acquire information by direct interaction with the users in their "habitat".
- 10 peoples all from the region of Emilia- Romagna, 4 of them from the first segment (age 19 – 44 years old) and 6 from the second segment (age 45 – 64 years old).

Question 1:	Are you connected to the Internet in your work space?
Question 2:	Do you have an Internet connection and Internet enabled device/s at home?
Question 3:	How much time you spend on-line usually?
Question 4:	Which is/are the website/s you use most?
Question 5:	What you dislike in your favorite website/s?
Question 6:	Usually you use a Computer or a mobile device for your on-line searches?
Question 7:	Your working place is a quite or a noisy place?
Question 8:	Are you married and have children's?
Question 9:	You use the Internet mainly at work or at home?
Question 10:	What kind of music do you listen?
Question 11:	Do you use headphones when you listen to your favorite music?
Question 12:	Do you shop at Internet?
Question 13:	Do you use your Computer to stream on-line movies?

1.2) User Research –Task analysis

"Direct observation of the users in their habitat"

- Eight people that are representatives of our two main segments, four from the first segment and four from the second segment.
- The analysis was done on existing resources, "concurrent websites". We have chosen vocechiara.com, lineargenova.com and amplifon.com as testing websites.

2. Assessment of existing resources

2.1) Expert Usability Review:

We have chosen some of the most important and widely employed guidelines in the software design industry. These guidelines are taken from three main sources:

1. the heuristics of Nielsen and Molich [NM]
2. the heuristics of Weinshenk and Barker [WB]
3. the heuristics listed in UserFocus (https://www.userfocus.co.uk)

The main goal in the process of choosing the guidelines is to reduce the overall user cognitive load and to concentrate on the visibility and the conciseness of the exposed material.

Direct Analysis

System vs. Guidelines

- we chose to work with the website vocechiara.com and audiofonsns.com.
- For both websites a list of problems and also violated rules are demonstrated in tables.

Reverse Analysis

Guidelines vs. System

- we chose to work with the www. vocechiara.com and www.audiofonsns.com.
- We applied the 247 guidelines provided by userfocus.co.uk. The excel document filled with our evaluation will be provided in the documentation folder.

Error Discovery and Classification

www.audiofonsns.com

Error Classification	Number of Errors
Implementation Errors	8
Catastrophic Failures	2
Major Errors	3
Minor Errors	8
Cosmetic Errors	5

2.2) User Testing

- ✓ We chose 3 participant, one in the first segment, age 18 to 44 and 2 from the second segment, age 45 to 65.
- ✓ For the evaluation process we considered the standard triple E metrics.
- ✓ Regarding the first "E" of EEE – Effectiveness, we evaluated the accuracy and the completeness with which the users executed the tasks. The second "E" of EEE – Efficiency, was the amount of effort the users spent to complete the task.
- ✓ Second we evaluated the Satisfaction. We applied the System Usability Scale (SUS) to get concrete values of approval of the system.
- ✓ It was done on www.audiofonsns.com

Subjects:

1. Mariagrazia, 25, student (1st Segment)
2. Maria, 61, homemaker (2nd Segment)
3. Carmelo, 58, freelancer (2nd Segment)

Subjective Analysis (User Comments)
Objective Analysis (error representation)
Urgency Curve

3. Feasibility Study

3.1) Context of Use:

Task, Technical Constraints, Cultural and Environmental constrains

3.2) Scenarios

Five scenarios are provided in the document.

3.3) Persona

- Alberto Rossi, 56, Dentists
- Fabio Ferrara, 45, Bartender
- Domenico Maldini, 23, Jobless
- Laura Martelli, 52, Teacher
- Gianluca Cavallo, 55, Audiologist
- Valentino Resta, 60, Truckdriver

3. Feasibility Study: Scenarios Examples

"...searching for on-line information about the hearing loss".

Anna is siting in the sofa at her parents house and watching the television. There is an advertisement about a company that provides solutions and information to people with hearing loss. Suddenly Anna realized that she might have a hearing problem and googles the link in her smartphone.

She saw the button on the main menu about how to know and to prevent hearing loss. Anna read the information provided and was happy to realize that she has no symptoms of hearing loss, but to better convince herself she decided to do an on-line hearing test. Anna found the section on the site relative to the hearing test and performed the test. At the end of the test she obtained the result and was happy to see that there was no problems with her hearing.

She closed to website and continued to watch cheerfully the television.

"…ENT doctors have to be updated about the new devices".

Alessia is ENT doctor and in her everyday professional life she deals with patients with different hearing problems and disabilities.

Usually her job concerns with the different kinds of exams and hearing tests but in some cases she has to prescribe to the patients a hearing device. In order to be updated with the new devices and technologies she frequently searches on the web for information.

She is interested in the shapes and the technical characteristics of the devices, so the first thing she does after opening the site is to looking for the gallery of the products where the images and the technical descriptions are provided.

Alessia searches for information in different sites and in case a patient asks her for a reference about companies that provide hearing solutions she lists a few of them.

4. Design Proposal

4.1) information Architecture

A Top-Down approach at the system design. The information is specified at the top layer and is further extended and explored as needed.

This design system is based on four aspects: Browsing Aids, Search Aids, Contents and Tasks and Invisible Components.

4.2) CAO-S Model

This model is based on the study of the information types (concepts) that the application must manipulate on behalf of the user types (actors) by providing commands (operations). A correct analysis of these allow to generate the three types of structures managed by the model, views, data structures and navigation.

Concepts at homepage: The logo, The basket, Online Hearing Test, Contact us.

Direct Actors: In-need, Potentially in-need, Approached Users, Advisors

Indirect Actors: are those individuals that have a role in the design or the specification of the system but are not going to use it directly

Operations: are the actions that the actors can do to the concepts.

5. Evaluation of the Design (Internal Evaluation: Inspection)

1. Cognitive Walk Through:

   fictional step by step execution of a task done by a team member:

   - A description or a prototype of the interface
   - Description of a task
   - (Happy Path) A complete and written list of actions necessary to complete the task
   - A clear description of the User and his/her skills and expectations

2. Action Analysis

   a quantitative analysis of each specific action: Four main tasks were studied and evaluated based on responding the benchmark questions.

   - Formal action analysis: GOMS
   - Informal action analysis: "back-of-the envelope action analysis" (Chosen Method)

3. Heuristic Analysis

   use of well-known heuristics : Overall Score = 92%

Summary of results

	Raw score	# Questions	# Answers	Score
Home Page	18	20	20	95%
Task Orientation	36	44	44	91%
Navigation & IA	26	29	29	95%
Forms & Data Entry	19	23	23	91%
Trust & Credibility	12	13	13	96%
Writing & Content Quality	21	23	23	96%
Page Layout & Visual Design	34	38	38	95%
Search	13	20	20	83%
Help, Feedback & Error Tolerance	27	37	37	86%
Overall score		247	247	92%

5. Evaluation of the Design (External Evaluation: User Testing)

- ✓ We tested our design (using the wireframes) with real users and studied their behavior and listed their opinions and ideas.
- ✓ With the feedback form the users (subjective analysis) we redesigned the website to suit better the needs of the users.
- ✓ we are going to focus on the "Discount Usability Testing", known as the Guerilla testing. The applied method is called "Google Usability Cafe" and the methodology was "Thinking Aloud".
- ✓ In addition EEE metrics was applied to create related tables as well as SUS method to evaluate Satisfaction (Emotion).
- ✓ Medium Obtained Value of SUS: 76.7
- ✓ Finally the Objective Analysis (error representation) was done by creating error summarization table and their Impact and Frequency of occurrence then Urgency Curve was created.

#	Subjects' Name	Age	Time Employed	Occupation	Place and Date	SUS Evaluation
1	Frencesco	37	15 Minutes	Security Guard	Bologna (Lab. Ercolani), 7 June 2018	80
2	Fracensco	30	20 Minutes	Porter	Bologna (Letters Faculty), 7 June 2018	72.5
3	Caterina	26	20 Minutes	Student	Bologna (Letters Faculty), 7 June 2018	82.5
4	Sebastian	26	25 Minutes	Student	Bologna (Letters Faculty), 7 June 2018	87.5
5	Maurizio	54	10 Minutes	Bartender	Bologna (Bar Aristo), 8 June 2018	75
6	Valentina	46	10 Minutes	Engineer	Bologna (Cafe sette chiese), 8 June 2018	62.5

6. Final Consideration

- ✓ Future work on this system can be focused on the fact that it would be possible to access the system via mobile application. In this way the users have a wider option to go for our product.

- ✓ Further work can also be done on the technical part of the SEO in order to prepare a higher page-rank in search engines such ns Google.


Thank you