HYPERMEDIA APPLICATION

Usability Evaluation

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Heroku

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TABLE OF CONTENTS:

1 - PREFACE

1.1 - Purpose of this document

This is the Usability Evaluation document for the Hypermedia project delivered the fifth of September by the group composed by Marco Furio Colombo, Andrea Finazzi and Pietro Forconi.

1.2 - Documentation Contents

The contents of this part of the relation include an analysis on the website of "Natural Park Adamello-Brenta" (https://www.pnab.it/en/) through heuristic inspection and empirical testing, and an overall evaluation of the product along with our conclusions.

1.3 - Website Contents

The analysed website provides extensive informations about the Natural Park of Adamello – Brenta including descriptions of local history and environment, activities and attractions available in the park paired with an interactive map of tracks, initiatives organized by the park authorities and much more.

2 - INSPECTION

2.1 - Overview

This chapter describes the inspection we performed on or website in order to recognise strengths and weaknesses our our work.

In order to perform a satisfactory inspection of our website we recognise that the most crucial point is to choice and understand carefully the heuristics, making sure they are significant and easy to give them an objective score. Jakob Nielsen's works on this topic also gave us ideas and ispiration in developing this part of the relation.

In this chapter of the relation is reported the evaluation agreed among all evaluators. The individual evaluation made by each evaluator is reported in the Annex at the end of the file. Numeric evaluation has aalso been paired with short notes, that describe the reason of that score, where we felt it was needed.

2.2 - Heuristics

The selected heuristics are dived in three groups: Navigation, Content and Layout. Navigation focuses on the possibility of finding with ease the content the user is looking for; Contents is about the quality of informations and data provided by the site regardless the way they are presented; Layout stresses the visual image of the website and its effectiveness in terms of expressivity and ergonomic functions. The following list was provided in the course's slides.

NAVIGATION:

- o **Interaction consistency:** do pages of the same type have the same links and interaction capability?
- o **Group navigation**: is it easy to navigate among group members and from an group introductory page to group members (and the other way around)?
- o **Structural Navigation**: is it easy to navigate among the semantic components of a Topic?
- o **Semantic Navigation:** is it easy to navigate from a Topic to a related one?
- o **Landmarks:** are landmarks useful to reach the key parts of the web site?

CONTENTS:

- o **Information Overload**: is the information in a page too much or too little and does it fit the page layout?
- o **Quality of Contents:** do the contents of the page include the informations that the user should expect there? In other words, is the content cconsisten

LAYOUT:

- o **Text Layout:** is the text readable? Is font size appropriate?
- o **Interaction Placeholder:** are textual or visual labels of interactive elements "expressive"? i.e., do they reflect the meaning of the interaction and its effects? Are they consistent?
- o **Spatial Allocation:** is the on-screen allocation of contents and visual appropriate for their relevance? Are "semantically related" elements close and "semantically distant" element far away?
- o **Consistency of Page Structure:** do pages of the same type have the same lay out (same visual properties of each component and similar lay-out organization of the various elements?)

2.3 - Scoring Method

The designed scoring provides a vote from 0 to 5 to each heuristic, meaning that an heuristic is fully satisfied if its score is 5 and is not satisfied at all in the case of a score of 0, with severe violations and issues detected.

The score assignment consists in responding to the questions reported in chapter 2.2 and filling the tables in the the chapters 2.4, 2.5, 2.6.

2.4 - Navigation

NAVIGATION

Heuristics	Score	Comment
Interaction Consitency	4	*The site provides is overall consistent in this aspect, with only few discrepancies between similar pages*
Group Navigation	5	*The group navigation is easy and intuitive enough for a new user to avoid confusion*
Structural Navigation	4	*Structural navigation is provided by simple tables of sontents paired with images*
Semantic Navigation	3	*Semantic navigation is treated with attention, but due to the big number of semantic correlations in a few cases it seems a bit incomplete*
Landmarks	4	*Landmarks are well tought and complete, but could use minor graphic improvements for a more intuitive user experience*

INTERACTION CONSISTENCY

The pages of the site of the same type offer a really consistent choice of interactions. First of all each page has a header (fig. 1), which provides a link for the most of the website pages through a dropoff menu with six main categories and a search tab. The header sticks to the black topbar (fig . 2) which is also a shared element between each page. The third common element is the footer, providing links for the social networks profiles of the Park(fig. 3).

The only interaction element that slightly changes between the pages is the one about related pages, which is present in different shapes (ex.: fig 4.a, fig 4.b); Although it could seems a little confusing, the pages of each group have almost always the same type of representation highlighting some attention to consistency.

GROUP NAVIGATION

The navigation between group members is made easy thanks to the use of tables of related contents (fig 4.a, fig. 4.b) and the use of the headbar, which grants immediate access to the desired contents. The topbar dropdown (fig. 5), which contains the links to the main components of each group, also helps the user to have a constant navigation tool in common to each page, avoiding the confusion brought by the large amount of informations provided in this website.

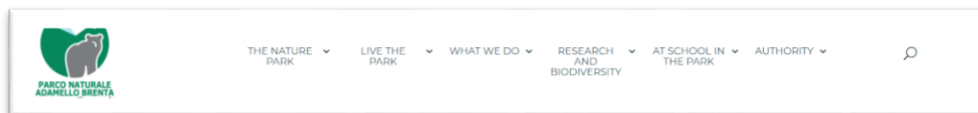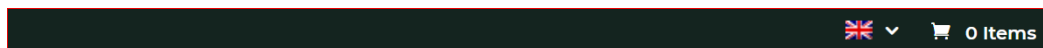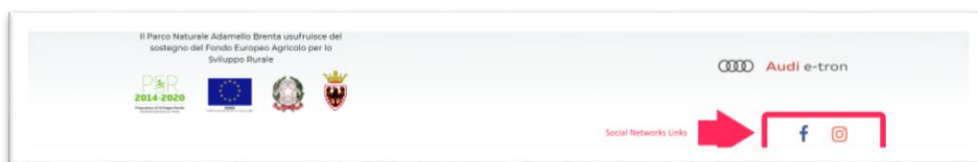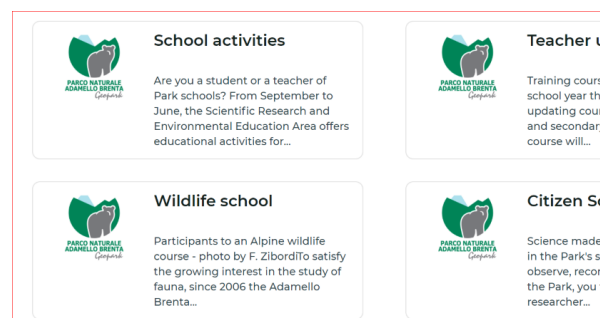*Fig. 1*

Fig. 2

Fig. 3

Fig. 4.1
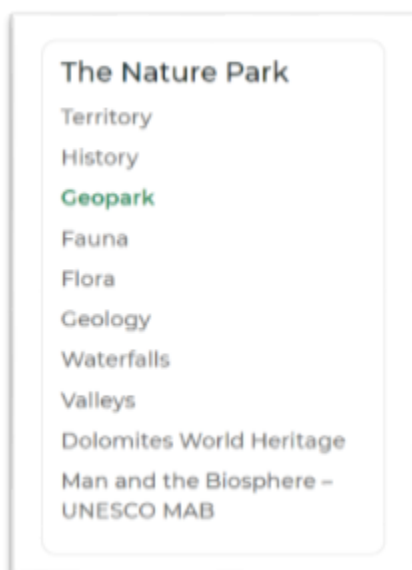
Fig. 4.b

STRUCTURAL NAVIGATION

The navigation between is provided by a table of images with a title, making possible to recognise quite clearly the diffferent components (like in fig. 6).

SEMANTIC NAVIGATION

Semantic navigation is provided with links to the related pages (as reported in fig.4.a and 4.b). The related contents seem always on point, but in some cases they could be a bit more complete. For example the page about maps and tracks (https://www.pnab.it/en/live-the-park/map-and-tracks/) provides a complete map with tracks and tracks descriptions, but due to the big number of tracks finding the description of the one the user is interested doesn't result easy and planning a path that includes more than one track can become even more difficult.

LANDMARKS

Landmarks are provided in headbar (fig. 1, fig.5), topbar (fig. 2) and footer (fig. 3) of each page of the website. They are static, meaning they does not change between pages (like in almost every website except the ones of biggest dimensions), which is fine, but could use a little graphic costumization in order to give a more intuitive experience for the user, such as highlighting the group currently being visited by the user.
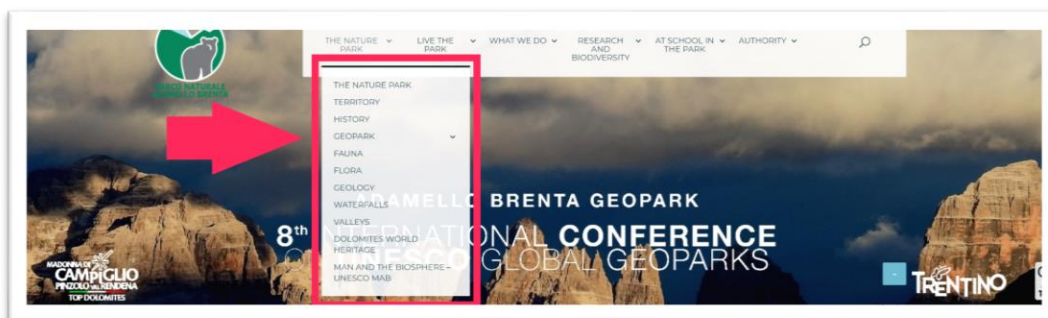
Fig. 5
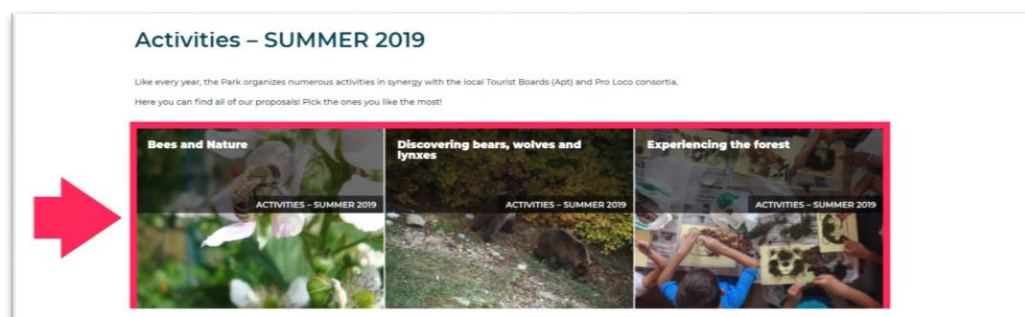
Fig. 6

2.5 - Contents

CONTENTS

Heuristics	Score	Comment
Information Overload	5	*The website organises the informations in a consistent and clear way with little to none exceptions*
Quality of Contents	4	*The quality of informations is fine, the only little downside is that it is not always paired with graphical contents*

INFORMATIONS OVERLOAD

Even though the site has the need to present a lot of contents about various different topics, in any page the informations seem to be excessive for the user's needs.

QUALITY OF CONTENTS

Despite the big amount of informations this site needs to provide to the user, the quality of the the contents is good, well written and complete, with some nice features like the interactive map of tracks (https://www.pnab.it/en/live-the-park/map-and-tracks/) . The only little downside is that some graphical contents are missing, such as some images in the tables of the components of a topic (fig. 7).
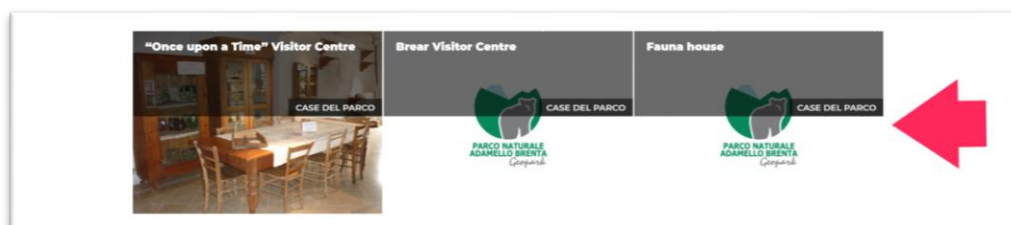
Fig. 7

2.6 - Layout

LAYOUT

Heuristics	Score	Comment
Text Layout	2	*Although the text layout doesn't make reading difficult, it feels that with a little more attention to details it could be improved.*
Interaction Placeholder	4	*The display of contents is generally consistent with the relevance they have in a page*
Spatial Allocation	4	*The spatial allocation of text and contents reflects their relevance, but the graphic result could use minor improvements*
Consistency of Page Structure	5	*The page structure is well handled, with attention to consistency between pages of the same topic or group*

TEXT LAYOUT

The text layout doesn't make the reading of text difficult, but there different details easy to change that could help the pages to look tidier. Two possible improvements could be justifying the text and raising the margin given to images inserted in the text (ex.: fig. 8).

Fig. 8

INTERACTION PLACEHOLDER

The display of contents is generally consistent with the relevance they have in a page and the related ones are usually displaed one near to each other.

SPATIAL ALLOCATION

The spatial allocation of text and contents reflects their relevance, but the graphic result could use minor improvements such as resizing images or inagrating them better in the text layout.

CONSISTENCY OF PAGE STRUCTURE

Pages belonging to the same groups or topics have simililar layouts, with attention to integrity and consistency.

2.7 - Results and Conclusions

Navigation

The navigation analysis is composed of evaluating five elements, which one had assigned a numeric score and the average vote of the 5 questions represent our overall analysis about how this topic is handled.

Average: $(4 + 5 + 4 + 3 + 5) / 5 = 4$

The mathematical average gives a four out of five as a result, meaning that overall the navigation in the site is well handled, but there is still room for improving it, as reported in the comments in the section 2.4.

Contents

The contents analysis is composed of two evaluation elements, that represent the quality and quantity of the presented informations.

Average: $(4 + 5) / 2 = 4.5$

The mathematical average is really near the top of the scale, meaning that the contents are almost fully satisfying for the user. In fact the site offers a vast amount of informations about a various range of topics, taking of avoiding information overload.

Layout

The layout analysis is granted thanks to four elements of evaluation, about the graphical and spatial quality of the webpages.

Average: (2 + 4 + 4 + 5) / 4 = 3.75

The mathematical average is the lowest in the three considered, meaning that this is the aspect in which the website should be improved the most, even thoght it isn't low enough to compromise the overall quality ofthe website.

3 – USER TESTING

3.1 - Overview

This chapter describes our test plan for conducting the User Testing for our website. The goal of user testing is to find the traits and issues we didn't already recognise through the help of people that didn't work to this project and therefore have a different vision of the product. Having people using the website grants us the chance to see things in the user perspective and also realize how the overall experience feels like for someone that is not involved in the project.

3.2 - Users recruiting

We recognize that in order to get relevant data out of the user testing it's crucial to choose a pool of testers that represent well the people that will actually visit the website and needs the informations it provides. The website we are analysing gives informations about a natural park, therefore it has a very large user target so we decided that the age and experience of the selected users should be as various as possible.

3.3 - Selected Users

USER 1 - Andrea:

Profile

Young student of computer engineering that uses the web daily and extensively.

Goal

Andrea is the the tipical skilled internet user, therefore he will be able to represent the younger portion of people who will use this website. He will intentionally be given a harder personal task, in order to test the difficulties of reaching contents that only few people will look for.

USER 2 - Franca:

Profile

Married woman that uses internet almost daily at work, whose hobby is trekking.

Goal

Franca is a middle age woman capable of using the internet, but expected to be a bit less intuitive and fast than Andrea; luckily she has a real passion for trekking, so we will assign her a personal task related to that topic. She should be able to represent a large slice of the users which will really visit the website looking for their personal hobbies.

USER 3 - Giancarlo:

Profile

A school pressor in his sixties that only uses the web occasionally.

Goal

Giancarlo is a tipical occasional internet user and we have expectations that he will have a few more troubles finding the contents he is looking for than the other testers. We took inspiration from his real job and gave him a realistic personal task that could easily be a needed. He should represent the occasional internet user that has a site for their needs.

3.4 - Task Design

In order to obtain objective data about the users' experience each tester has to go through four tasks equals for each candidate and one personal task based on his figure and experience. The first one is a warm-up test that aims to get the user familiar with the application, the second, third and fourth test the usability of generic functions and the last one aims to stress a parcticular possible need based on user's profile.

3.5 - Evaluation Methods and Sheet

The assignment of score for tasks successes is based on three levels:

- Complete success (without assistance) has the score of 1 point.
- Partial success, or if assistance has the score of 0,5 points.
- Gives up or wrong answer has the score of 0,0 points.

After that we calculate the success rate's percentage (in the last paragraph about analysis and interpretation   of   collected   data). If the user reach the point at which gives up or say a wrong answer, it is considered as unsuccessful.

TASK 1 – Warm-up

Starting form the homepage of the website (https://www.pnab.it/en/), first find informations about where the park is located and then about his territory.

TASK 2 – Camping near a lake

Imagine that you want to spend some relaxing days in the nature. Starting form the homepage of the website (https://www.pnab.it/en/), find a camping accomodation near a lake.

TASK 3 – Municipalities

Starting form the homepage of the website (https://www.pnab.it/en/), find the name of the municipalities which are not part of the Trentino Alto adige Italian Region.

TASK 4 – Instagram

Starting form the page about special projects (https://www.pnab.it/en/what-we-do/special-projects/), find the link to the Instagram page related to this website.

5 - PERSONALIZED TASKS

Andrea – *Primo Piano Faunistico del Parco*

Imagine that you are interested about the environmental biodiversity of the park, starting from the homepage of the website (https://www.pnab.it/en/), you have to find the year in which the document: "Primo Piano Faunistico del Parco" was published.

Franca – *Track number 7*

Imagine you want to spend a good time trekking in the nature. Starting form the homepage of the website (https://www.pnab.it/en/), look for informations about the track number 7.

Giancarlo – *School activity*

Imagine you want to bring your class of students in a school trip inside nature. Starting from the homepage of the website (https://www.pnab.it/), find and download the "modulo di adesione" about the school's activity "Percorso di educazione ambientale"

3.6 - Task Results

ANDREA

Task	Start task	End task	Task Completion	Elapsed Time	Comments/ Observations
1- Warm-up	*03-09-2019 19:03:03*	*03-09-2019 19:03:29*	*Success*	*26 seconds*	
2- Camping	*03-09-2019 19:05:34*	*03-09-2019 19:06:44*	*Success*	*1 minute, 10 seconds*	
3- Municipalities	*03-09-2019 19:12:21*	*03-09-2019 19:13:16*	*Success*	*55 seconds*	
4- Instagram	*03-09-2019 19:19:09*	*03-09-2019 19:19:32*	*Success*	*23 seconds*	
5- *Personalized*	*03-09-2019 19:28:14*	*03-09-2019 19:36:03*	*Success*	*7 minute, 49 seconds*	*He spend time looking on "Research and Biodiversity" group, but the document was located inside "Planning" group.*

FRANCA

Task	Start task	End task	Task completion	Elapsed Time	Comments/ Observations
1 - Warm Up	*02-03-2019* *21:37:15*	*02-03-2019* *21:38:09*	*Success*	*54 seconds*	
2 - Camping	*02-03-2019* *21:44:15*	*02-03-2019* *21:45:44*	*Success*	*1 minutes, 29 seconds*	
3 - Municipalities	*02-03-2019* *21:49:15*	*02-03-2019* *21:54:15*	*Success*	*5 minutes*	
4 - Instagram	*02-03-2019* *21:55:15*	*02-03-2019* *22:03:45*	*Unsuccess*	*Not finished (gave up)*	*She didn't notice that the button was in the lateral bar*
5 -Personalized	*02-03-2019* *22:05:12*	*02-03-2019* *22:09:09*	*Unsuccess*	*Not finished (gave up)*	*Troubles to find the track after zoom on the map.*

GIANCARLO

Task	Start task	End task	Task completion	Elapsed Time	Comments/ Observations
1 - Warm Up	*03-03-2019 22:03:15*	*03-03-2019 22:04:55*	*Success*	*1 minute, 40 seconds*	
2 - Camping	*03-03-2019 22:05:49*	*03-03-2019 22:08:12*	*Success*	*2 minutes, 23 seconds*	
3 - Municipalities	*03-03-2019 22:12:32*	*03-03-2019 22:15:53*	*Partial Success*	*3 minutes, 21 seconds*	*We suggested to take a look to the "Authority" group*
4 - Instagram	*03-03-2019 22:19:24*	*03-03-2019 22:29:58*	*Unsuccess*	*Not finished (gave up)*	*He didn't notice the lateral bar like Franca.*
5- *Personalized*	*03-03-2019 22:33:50*	*03-03-2019 22:39:02*	*Partial success*	*8 minutes, 12 seconds*	*We suggested him to take look not to "Attività per le scuole" section, but another one related.*

3.7 - Post Task Questionary

Andrea

Please answer the following questions based on your experience using the Adamello Park website (https://www.pnab.it/en/)

1. Were the task's language and requests easy to understand?	*1* *2* *3* ***4*** *5*
2. Was the amount of information provided from the homepage adequate?	*1* ***2*** *3* *4* *5*
3. Was the informations grouped with consistency?	*1* *2* ***3*** *4* *5*
4. Was the amount of information provided adequate to your needs?	*1* *2* *3* *4* ***5***
5. Was the "Search" fuction helpful and reliable?	***1*** *2* *3* *4* *5*
6. Were the headings of groups intuitive and self-explanatories?	*1* *2* *3* ***4*** *5*
7. Do the graphics help the contents understanding?	*1* ***2*** *3* *4* *5*
8. Were the pages overall quick to load?	*1* *2* *3* ***4*** *5*
9. Were the text and graphics presented in a visually aesthetic manner?	*1* ***2*** *3* *4* *5*

Franca

Please answer the following questions based on your experience using the Adamello Park website (https://www.pnab.it/en/)

1. Were the task's language and requests easy to understand?	*1*	*2*	*3*	*__4__*	*5*
2. Was the amount of information provided from the homepage adequate?	*1*	*2*	*3*	*__4__*	*5*
3. Was the informations grouped with consistency?	*1*	*2*	*3*	*__4__*	*5*
4. Was the amount of information provided adequate to your needs?	*1*	*2*	*__3__*	*4*	*5*
5. Was the "Search" fuction helpful and reliable?	*__1__*	*2*	*3*	*4*	*5*
6. Were the headings of groups intuitive and self-explanatories?	*1*	*2*	*__3__*	*4*	*5*
7. Do the graphics help the contents understanding?	*1*	*2*	*__3__*	*4*	*5*
8. Were the pages overall quick to load?	*1*	*2*	*3*	*__4__*	*5*
9. Were the text and graphics presented in a visually aesthetic manner?	*1*	*2*	*__3__*	*4*	*5*

Giancarlo

Please answer the following questions based on your experience using the Adamello Park website (https://www.pnab.it/en/)

1. Were the task's language and requests easy to understand?	*1*	***2***	*3*	*4*	*5*
2. Was the amount of information provided from the homepage adequate?	*1*	***2***	*3*	*4*	*5*
3. Was the informations grouped with consistency?	*1*	***2***	*3*	*4*	*5*
4. Was the amount of information provided adequate to your needs?	*1*	*2*	*3*	***4***	*5*
5. Was the "Search" fuction helpful and reliable?	*1*	***2***	*3*	*4*	*5*
6. Were the headings of groups intuitive and self-explanatories?	***1***	*2*	*3*	*4*	*5*
7. Do the graphics help the contents understanding?	*1*	*2*	*3*	***4***	*5*
8. Were the pages overall quick to load?	*1*	*2*	*3*	***4***	*5*
9. Were the text and graphics presented in a visually aesthetic manner?	*1*	*2*	*3*	***4***	*5*

4 – EVALUATIONS AND CONCLUSIONS

4.1 - Task Results' and Success Rate:

The **task's results** show a total of 10 task that successes, and 2 partial success, in a total of 15 tasks (5 for each user), so the Success Rate is:

Success Rate = (10 + 0,5*2) / 15 = **73,3 %**

The success rate for each user is:

- o Andrea: **100 %**
- o Franca: **60 %**
- o Giancarlo: **60 %**

4.2 - Post Questionary Average Results:

The **Post Questionary's results** with answers that come from '1' which means "Strongly disagree" to '5' which means "Strongly agree" show this medium results:

1. Were the task's language and requests easy to understand? **3,3**
2. Was the amount of information provided from the homepage adequate? **2,6**
3. Was the informations grouped with consistency? **3**
4. Was the amount of information provided adequate to your needs? **4**
5. Was the "Search" fuction helpful and reliable? **1,3**
6. Were the headings of groups intuitive and self-explanatories? **2,6**
7. Do the graphics help the contents understanding? **3**
8. Were the pages overall quick to load? **4**
9. Were the text and graphics presented in a visually aesthetic manner? **3**

Medium Final Results: **2,97**

4.3 - Data Analysis

The **datas** about the task results are **overall satisfying**, the success rate is 73,3%, but at the same time the medium result about post questionary show some dissatisfactions from the users, in particular the answers number 5, number 6 and number 2.

In fact our user Andrea, in order to complete his personalized task, which was about finding the year in which the document: "Primo Piano Faunistico del Parco" was published, tried to find the document using the **"Search" button** but the research happened to be unsuccessful. Moreover the result of answer number 6 show the troubles that the user Andrea (because of the long time spent) and Giancarlo (because he needed our help) had during their personalized task (Giancarlo also during the task number 3) was due to the confusion of getting **"lost"** inside pages which didn't provide the information they were looking for.

4.4 - Problem Reporting and Final Recommendations

After the experiences of our users we think that there are problems that need to be fixed, with different priorities:

Priority A: It need to be solved as soon as possible because this problem compromise a clean usability for most users.

Priority B : This problem doesn't compromise the usability for lots of users, but need to be fixed.

Priority C: It isn't a fundamental problem, it will not affect most of users.

- **The english version of Website in some pages show contents in Italian language (*Priority A*):** we found this trouble in the footer short text and also our user Andrea found this issue when he was completing his peronalized task, inside "Planning" topic, after click to "Fauna Plan" link he was redirected to an italian page.
- **The heading of groups and topics have to be more intuitive (*Priority B*):** this is to avoid for users like Giancarlo or Franca which aren't usually web surfers to lose inside the pages finding what they need to.
- **Search Button (*Priority C*)**: it has to be better implemented this service, some contents avaliable in the website even with a correct typing couldn't be find.

Another issue not directly related to our user experience:

- **Contents of pages sometimes are not loaded (*Priority A*):** even if our user in answer number 8 were satisfied, because the users didn't go to the pages affected by this issue, we found however this trouble in pages related to the topic "Where to Stay", after clicking on a particular accomodation place like – for example - "Camping Spiaggia", doesn't load the gallery

5 – ANNEX

5.1 - Overview

The fifth and last chapter of the usability documentation provides further informations that have been left out in the previous section for tidiness reasons or to avoid information overloads.

5.2 - More Informations about Inspectors Evaluations

This section is intended to complete and give an insight view of how the evaluations for the Inspection section (chapter 2) were done.

The following tables are the ones upon which the tables from chapter 2 are based.

NAVIGATION

Heuristics	Score		
	Colombo	Finazzi	Forconi
Interaction Consitency	4	3	4
Group Navigation	5	4	5
Structural Navigation	4	3	5
Semantic Navigation	3	2	3
Landmarks	4	4	4

CONTENTS

Heuristics	Score		
	Colombo	**Finazzi**	**Forconi**
Information Overload	*5*	*5*	*4*
Quality of Contents	*4*	*4*	*5*

LAYOUT

Heuristics	Score		
	Colombo	**Finazzi**	**Forconi**
Text Layout	*2*	*2*	*2*
Interaction Placeholder	*4*	*3*	*4*
Spatial Allocation	*4*	*4*	*4*
Consistency of Page Structure	*5*	*4*	*5*

One consideration we feel it is important to take care of is that the votes reported in the tables of the Inspection section does not report the exact average of the votes given by each one of the inspectors, but instead the rounded result; this is not an oversight, but is indeed an intended choice. We felt that reporting integers votes instead of decimals would make that part of the relation lighter to read and maybe clearer and also because each evaluation was also commented in order to give precise idea of our considerations.