

# Usability and User Experience of [www.seniorenberatung-hannover.de](http://www.seniorenberatung-hannover.de) Case Study

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## Summary

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# 1 Executive Summary

Since two years the Municipal Service Senior Citizens of Hanover (KSH) operates an information and advice portal for senior citizens on the Internet ([www.seniorenberatung-hannover.de](http://www.seniorenberatung-hannover.de)). The main goal of the platform is to inform centrally regarding matters important to the target group of senior citizens.

In this case study we tested the website's applicability in the elderly by assessing its usability and user satisfaction. In a multi-method approach 30 subjects were examined in two age groups according to their user behavior and evaluations. On this basis, the problems of the users were identified and suggestions made for revision.



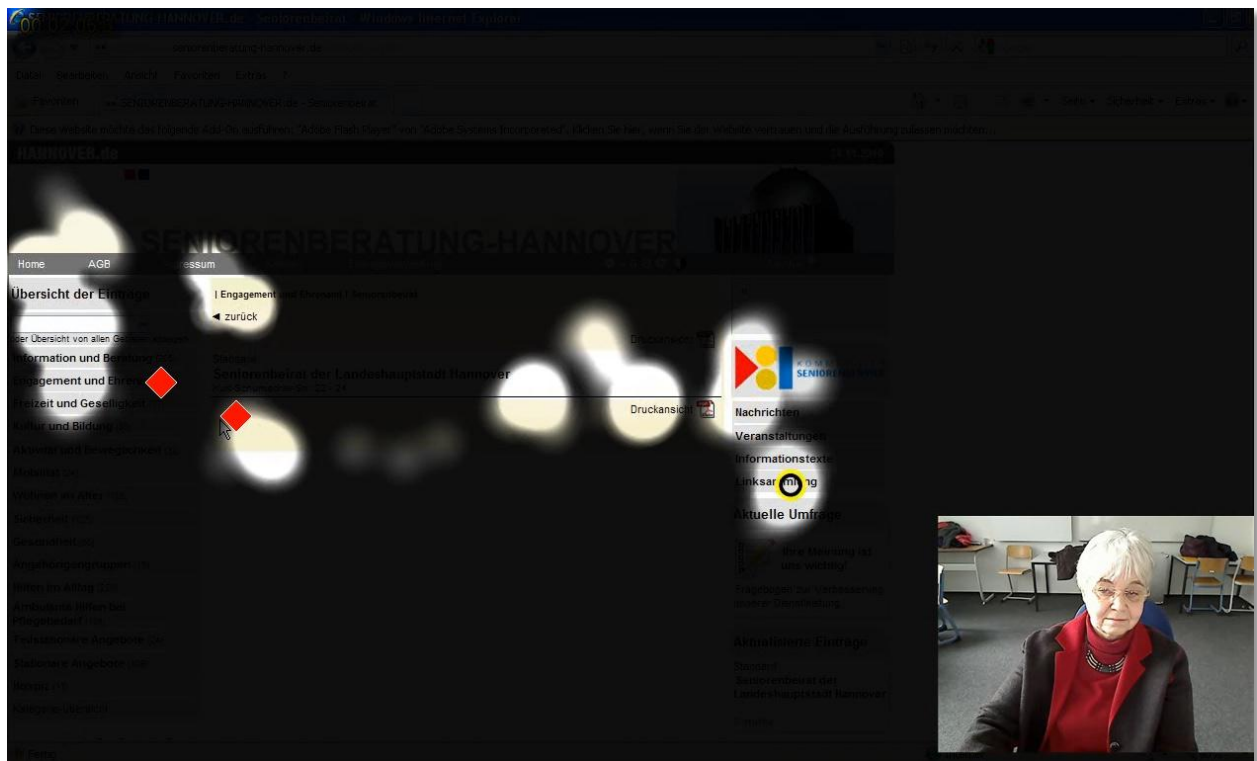
Based on the "Scan-path" fixations, retention time and eye movement can be read. The path will be another visualized by connected points. Bigger points mean longer retention time.

## 2 Problem Statement

The Internet use of the elderly has increased considerably in Germany during the recent years. This extension of the media repertoire, coupled with the necessary technical and substantive skills, is a key requirement for the use of the information platform. Additionally, the necessary awareness of the site is an important condition for its use. The focus of this study is not the assessment of the Internet use of the elderly or to measure the popularity of the site. Instead, the focus of our study remains on the actual situation of use, user behavior and the measurement of user satisfaction.

The usability of a website is the effectiveness, efficiency and degree of satisfaction with which specified users achieve specified goals in specified environments. The focus is on the general ease of use for "average" people who view the usability and user

friendliness in the sense of the end user. In addition to this, user experience includes the technical component, the entire user interaction with the website, including their perceptions, emotions and thoughts in terms of design, content and brand. This analysis takes both into account, the usability and the user experience of the Web site in the arrangement of the measurement.



In the "Focus-Map" the object of observation is visualized completely in black. Fixations and eye movements are represented by the detection of the black areas. With this method a very accurate recording and optical surfaces can be achieved.

### 3 Method

In the present study both approaches were applied to measure the ease of use (usability and user experience). The study was designed as a three-step test:

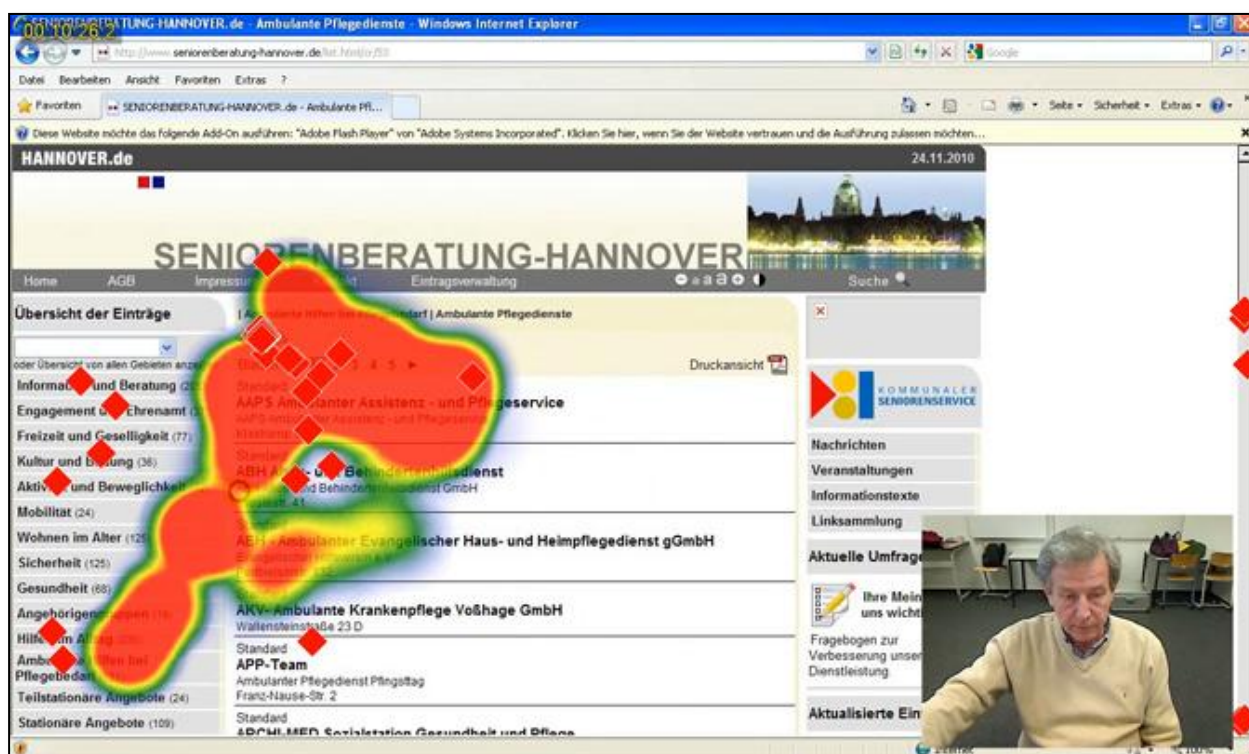
1. First step: Brief questionnaire to measure relevant factors of use and knowledge (e.g. own confidence in using the Internet, personal involvement, awareness of the page).
2. Second step: The web page of the test analyzes the overall performance, including the resolution of different tasks. This part was technically supported by

an eye-tracking system. While the subjects were resolving their tasks, the method of thinking aloud and observation were used at the same time.

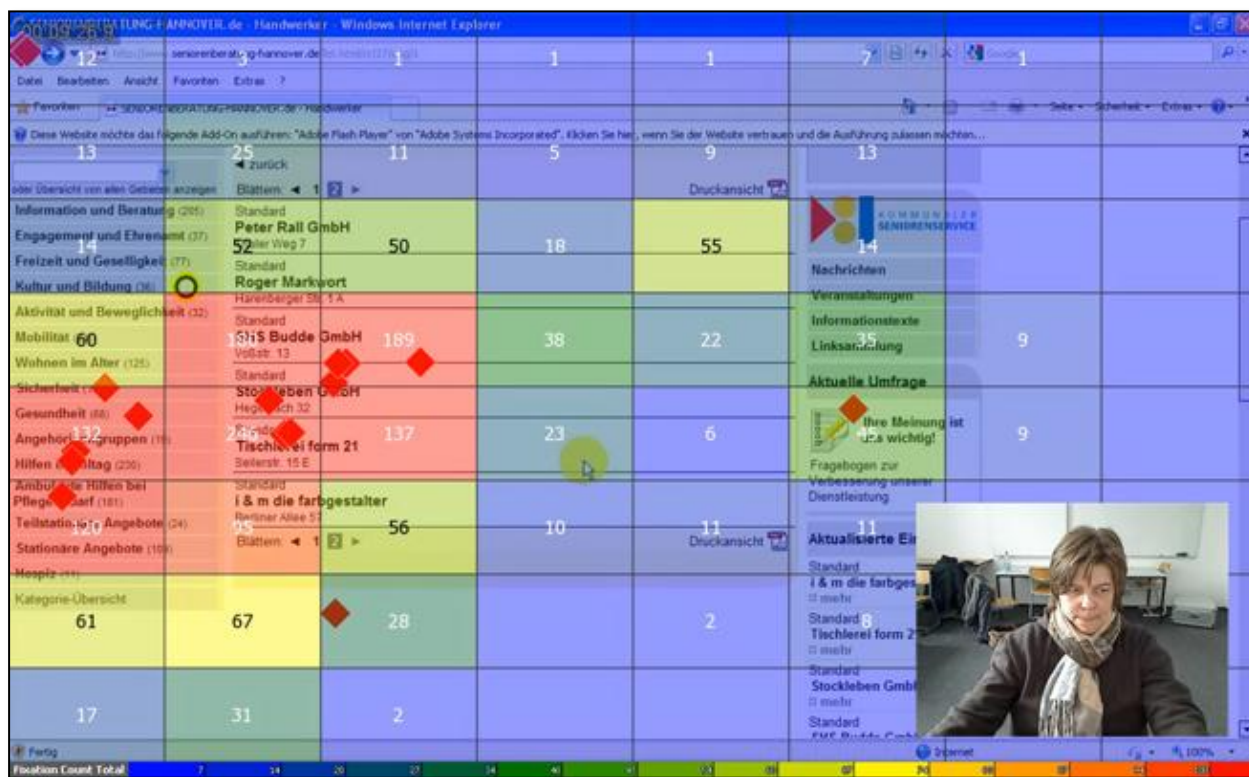
3. Third step: Questionnaire to evaluate different criteria for performance and satisfaction.

As the Internet platform aims at three different target groups, we selected the two most relevant for further analyses in consultation with the client. The first group were senior citizens of Hanover (group 1, age 60 years and older), the second were citizens of Hanover, who were using the website in order to provide information to their relatives (group 2, age 40 to 60 years). From both groups 30 subjects are recruited non-representative. Conditions to be recruited were to have first Internet skills, to feel confident in using the Internet and to have already experience to retrieve information from the Internet. The studied website must not have been known previously by the participants.

In step 2 the non-contact eye-tracking SensoMotoric Instruments (SMI) were used. The data from the surveys are analyzed with the statistic software SPSS as well as the observation and the results from thinking aloud. For the last two methods, Excel was used in the analysis as well.



The "heat map" provides fixations and duration in the style of the inclusion of a thermal vision camera. During the long looked fixation areas are shown in red, short blue to green.



The view "Gridded AOIs" allows the individual dividing the observation object in a grid. The parameters can be determined freely. Numbers of fixations per area, but also the sum of time spent in, can be visualized. In addition, the values are displayed by coloring.

## 4 Conclusion

In total 30 subjects were enclosed in the study, 18 were 60 years and older (up to 84 years) (= group 1) and 12 of them were between 40 and 59 years (= group 2), female and male subjects were equal in both groups. Group 1 felt in both the computer and Internet use less comfortable than group 2. This was expected, although the gap is not that serious. It turns out that older people also have growing media literacy in computer and Internet. Most participants use the Internet at least several times a week, which shows a tight integration in the relevant media set.

Although only very few subjects knew the tested website, almost everyone had relative detailed expectations (questionnaire 1). The claims can be divided into two areas: First content and themes, second the structure and layout of the page. Overall, the website meets the expectations of the participants quite often (questionnaire 2).

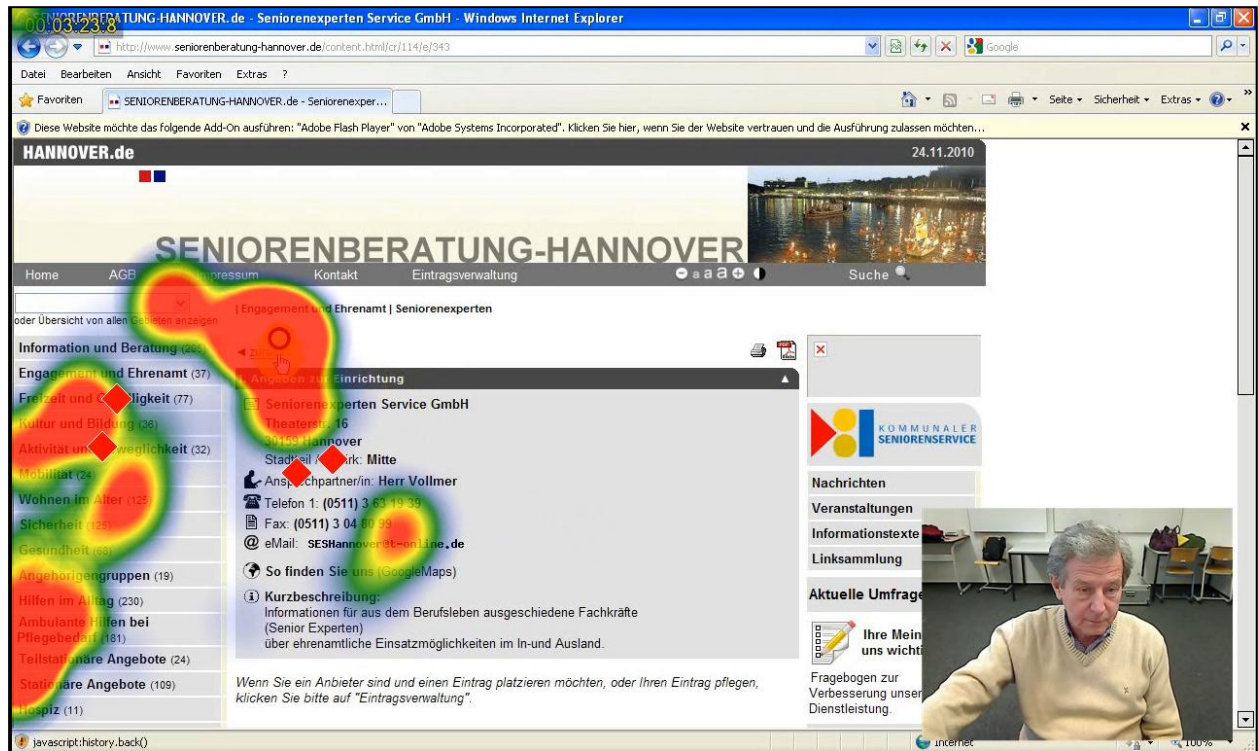
The perception of the website is positive in general. Ten different items of interest were defined at the website (e.g. search button, theme categories, news, documents). It is

noteworthy that elements in the bottom of the page are often perceived below average, which was also due to a lack to scroll down. In addition, the differences in the instant of time for the first eye-contact with some items were large between the users. Some elements were thus not seen by all users at first glance. Overall, group 1 needs more time to detect the defined items and saw less of them.

To tackle the tasks two main strategies were discerned: First, the so-called “trial-and-error-strategy“, which means targeted or untargeted clicks through the categories and subcategories of the website. The second strategy is to use the search function. The click option has been applied across all tasks from all the subjects together 115 times and led to their destination in 79 cases – two out of three clicks are purposeful to get the demanded information. However, the observation protocols shows, that the subjects had sometimes trouble to understand what the title of categories mean and what they could stand for. The search function as a second strategy was even more difficult. 20 subjects used in 51 cases the search box, only in ten cases they get the needed results they looked for. Often the subjects were really lost in the data and in the structure of the search. Furthermore, entering relevant keywords did not get the wished results, which were rated by many users as disappointing oder insufficient.

Group 1 and 2 showed differences in the performance to resolve the tasks. Group 2 succeeded more to locate the requested information. This may be due to the confidence in using the Internet.

The website is evaluated positive with an average rating of 3.5 (1 to 5, 5 is best) over all requested categories. This is reflected in a high recommendation: 24 of 30 subjects would report friends and family about the website. 21 would use the website in the future. Group 2 evaluates more critical than group 1. That shows that the elderly like the website even they had more trouble during the tasks and needed more time to find what they looked for. Apart from the design group 1 had more fun than the younger ones, they liked to discover the website, which has had a positive effect on the overall assessment of trend.



## 5 Implementation

The study showed that the overall concept of the site is assessed positive and the amount of given information on the site is remarkable. During the resolution of the tasks a number of problems have been found. The Municipal Service Senior Citizens of Hanover (KSH) can now optimize the homepage to increase usability and user experience.