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Usability of volunteer brokerage websites

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Usability of Volunteer Brokerage Websites: The Why and How of User Testing

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Abstract

Dutch volunteer centers offer online volunteer brokerage via their websites. Usability is a crucial factor for the success of this service. It determines whether or not visitors or potential volunteers stay on the website and a match can be made. In this article, user testing is applied to the websites of five volunteer centers. The results provide information on the usability of these specific websites. In addition, other volunteer centers are offered insight into the various problems of usability and a tool to test this.

Key Words: usability, website, volunteer brokerage, volunteer centers, the Netherlands

In 1988, the Netherlands gained access to the Internet for the first time and today access is common practice (Van Hoek, 2018; Olsthoorn, 2014). In 2017, almost all Dutch households (98%) had access to the Internet and 85% had a broadband connection. The comparable average figures for Europe are 87% and 85%. The Netherlands also scores high with 87% in terms of mobile internet use in 2017. The average for Europe is 65% (CBS, 2018). 86.1% of Dutch citizens aged 12 or older used internet almost every day in 2017. In 2012 this was only 76.2% (CBS Statline, 2018b).

The widespread availability and easy accessibility of the Internet has led to an increasing digitization of activities in various areas of society. This also applies to volunteer brokerage (Stubbe & van Dijk, 2006; Ploegmakers et al., 2011; Terpstra et al., 2008). Volunteer brokerage involves "bringing together supply and demand in volunteer work" (Stubbe & van Dijk, 2006, p. 11). The supply comes from volunteers and the demand from volunteer-involving organizations. The supply of volunteers in the Netherlands is considerably. According to national research data (CBS Statline, 2018a; Smeets & Arends, 2017), half of Dutch people over the age of 15 took part in volunteering in 2016. Men and women were equally represented. Men were particularly active in sports, youth, hobbies, trade unions, politics and district or neighborhood while women were more active in schools and care. The share of volunteers was highest among 35- to 45-year-olds (57%), followed by 15- to 25-year-olds (54%) and 45- to 55-year-olds (52%). The higher educated (bachelor/master, PhD) more often worked as a volunteer than the lower educated: 60-62% compared to 35%. The supply, however, lags behind demand. Many Dutch organizations that work (together) with volunteers are faced with a shortage or volunteers (Hustinx et al., 2015). The expectation is that this shortage will only increase in the coming years due to the introduction of the new Social Support Act in 2015. Pursuant to this law, Dutch citizens are expected (more than before) to care for family members, friends and neighbors who can no longer do so

themselves. This takes time and as a result people have less time to participate in volunteering (Movisie, 2017; de Wit & Bekkers, 2017).

Volunteer centers are important providers of volunteer brokerage in the Netherlands (van Gilst et al., 2015). In the period 2008-2010, research has been done to determine how the success rate of volunteer brokerage by volunteer centers in the Netherlands can be optimized. The results showed that motivation and feelings of pride and respect on the part of the volunteer can make an important contribution to the success of volunteer brokerage and should (more explicitly) be integrated into the volunteer brokerage process (van Gilst et al., 2011; 2015).

During this investigation a third factor emerged that is related to the increasing digitization of contemporary society. This factor concerns the usability of volunteer brokerage websites that volunteer centers are using more and more in addition to the traditional offline service they provide. When websites are not usable, there is a risk that users (potential volunteers) are discouraged and abandon the website (Gomez, 2010; Nielsen, 2012). This means that no match will be made. For this reason, an additional study has been conducted focusing on the usability of volunteer brokerage websites. The study aimed to answer three questions:

1. How can the usability of volunteer brokerage websites of volunteer centers be studied?

2. What kind of information does a usability study of the websites of volunteer centers provides?

3. How can other volunteer centers benefit from this information?

The present article reports on the outcomes of this study. Prior to this, the impact of digitization on volunteer brokerage is described.

Impact of Digitization on Volunteer Brokerage

There are around 240 volunteer centers in the Netherlands (Ploegmakers et al., 2011).

They offer various services of which volunteer brokerage is one of the most important ones.

The first (two) volunteer centers in the Netherlands were established in the first half of the

1970's. The establishment coincides with the beginning of the era of digitization. Many digital

developments have taken place since then (Table 1).

Table 1

Digital Developments

Year	Digital developments	Year	Digital Developments
1971	first e-mail over a computer network	2005	YouTube (video sharing website)
1975	personal computer	2006	Facebook (social networking website) public; Twitter (news and social networking website)
1981	introduction IBM-PC for home and office use	2008	4G for mobile data traffic; breakthrough Facebook
1986	CD-ROM (data storage)	2009	breakthrough Smartphone's; WhatsApp (messaging app)
1988	CD-recordable (write once and read many times)	2010	iPad; cloud computing made public, Instagram (photo and video sharing app) public
1993	www open to companies and individuals	2011	introduction speech technology (Apple's Siri) for consumers
1995	internet explorer; e-mail becomes popular with a larger audience	2014	breakthrough VR and AR (which simulate reality or add information to reality)
1997	launch search engine Google; Wi-Fi world standard	2016	network deployment in the Netherlands for Internet of Things (network of devices connected to the internet for exchanging / collecting data)
2000	Bluetooth; digital photography	2018	handling personal data regulated by European General Data Protection Regulation
2001	BitTorrent (file sharing system); Wikipedia	2019	strong increase in use of artificial intelligence in companies; rise blockchain technology (database for transactions that is exchanged between 2 parties)
2003	Skype (voice /video calls via the Internet); LinkedIn (social networking website for professionals)	2020	test with 5G network in Europe
Source: Burgering, 2018; Gijzemijter, 2019; Sociaal-Economische Raad, 2016; KPN, 2019; Veraart, 2008			

As can be derived from Table 1, hardly any digital tools were available during the

early days of volunteer centers. A quality management manual published in the nineties

(Heinsius, 1998), indicated that computers were at that time standard equipment of local

volunteers centers. The deployment of an automated system for the registration and reporting

of data was promoted in the manual. Written descriptions or computer prints of volunteer

vacancies were kept in binders and could be viewed by potential volunteers. Communication

was done in writing, verbally and visually. E-mail and internet were not used.

In 2000 this had already changed. Most volunteer centers made use of automated systems. In addition to the binders, computers were (sometimes) used to search for volunteer vacancies. Furthermore, the use of e-mail and brokerage via the Internet were increasing (Heinsius, 2000).

Around 2003, there were several digital systems on the market that supported the process of volunteer brokerage. Some of these systems made it possible to enter, manage and view information about volunteers, organizations and volunteer vacancies via the internet. Other systems were minimally or inaccessible via the Internet (van Hal & Wams, 2003). Digitization of the volunteer brokerage process continued in the years thereafter. Volunteers were enabled to search for and react to volunteer vacancies directly via websites of volunteer centers. Digital (online) volunteer brokerage became more and more popular. Surveys (Stubbe & van Dijk, 2006; Ploegmakers et al., 2011; Terpstra et al., 2008) carried out in 2005, 2007 and 2010 among Dutch volunteer centers showed a shift from personal (offline) volunteer brokerage to digital brokerage. The average numbers of digital matchings per month per volunteer center in those years were respectively 21.7, 33.3 and 86. The comparable average numbers of personal matchings per month were: 17.1, 32.9 and 45.0.

Despite the growing popularity of digital brokerage, volunteer centers continue to offer personal brokerage. The results of an online survey (van Gilst et al., 2011) among volunteer centers in the Dutch province South Holland revealed that 86% of volunteer centers offered personal brokerage as well as digital brokerage. Only one volunteer center operated exclusively online as a broker and another one exclusively offline.

From the beginning of 2000 social media became increasingly important. Not only individuals, but also companies became more active on social media. Frequently used social media in the Netherlands are Facebook, Twitter, Hyves, YouTube and LinkedIn (Heerschap & Ortega, 2013). An inventory of the websites of the 28 volunteer centers that participated in

the aforementioned online survey in South Holland (van Gilst et al., 2011), shows that especially Facebook (100%) and Twitter (75%) are often used. LinkedIn (36%) YouTube (29%) and Instagram (29%) are much less used.

It is clear that digitization has led to many changes in the daily practice of volunteer brokerage, with the biggest change being a shift in focus from offline to online volunteer brokerage.

Studying the Usability of Volunteer Brokerage Websites

The International Organization for Standardization (ISO, 2018, 9241-11) defines usability as "the extent to which a system, product or service can be used by specified users to achieve specified goals with effectiveness, efficiency, and satisfaction in a specified context of use". Usability relates to the outcome of interacting with the system. In case of a website, it reflects the ease of using the website. Usability is an important attribute of a website. When a website is difficult to use, people will abandon the website and may never return (Nielsen, 2012). Gomez (2010) showed that 88% of online consumers are less likely to return to a website after a bad experience.

A commonly used method to study usability is user testing. According to this method, users are asked to perform a series of representative tasks on a website without any help. The researcher only observes what happens. The users are asked to think aloud (Loranger, 2016; Nielsen, 2012). According to Nielsen (2012), an authority in the field of user testing, five users provide the best test results.

In 2016, user testing was applied to study the usability of five volunteer brokerage websites of volunteer centers. The five volunteer centers, whose websites were included in the study (Table 2), had previously participated in an online survey in the Dutch province South Holland (Van Gilst et al., 2015). They are selected on the basis of three variables (Table 2).

These variables are related to the size and working area of the volunteer center and determine

the supply and demand of organizations and volunteers (Ploegmakers et al., 2011).

Table 2

Characteristics of Selected Volunteer Centers

Characteristics / Volunteer center	Number of paid employees	Self-dependent	Number of inhabitants municipality of establishment
VC1	> 5	yes	> 250,000
VC2	3 - 5	no	100,000 - 250,000
VC3	3 - 5	no	100,000 - 250,000
VC4	0 - 2	yes	20,000 - 50,000
VC5	0 - 2	no	< 20,000

Each website was tested one by five different test users. The recruitment of test users

started in the researchers' own network. Recruited test users were asked to identify other

potential test users in their social networks. This is referred to as snowball sampling (Baarda

et al., 2009). Hinderer Sova and Nielsen (2003) emphasize the importance of using

representative test users, in this case potential volunteers. However, no (generalizable)

information was available on this group. Therefore, gender and age of active volunteers (see

Introduction) were taken into account when selecting. The recruitment of 35- to 45-year-old

respondents in particular was difficult. Among the test users were 13 women and 12 men,

ranging in age from 21 to 75 years. The 55- to 65-year-olds (36%) were overrepresented in

the group of test users and the 35- to 45-year-olds (4%) were underrepresented in comparison

with the national figures. Almost half (48%) of the test users did already volunteer.

The composition of relevant tasks (Table 3) was based on research information (van Gilst et

al., 2015) about volunteer brokerage and a quick scan of the selected websites by two

researchers. The tasks were presented one by one on cards.

Table 3

Test User Tasks

No.	Test user tasks
1.	You have decided to start volunteering in X (= municipality where central office volunteer center resides). Use your own research engine to find a website that makes this possible.
2.	You have arrived on the right website. You want to read more information about the organization.
3.	You have scanned the website, but still have some questions. Find a way to contact the organization.
4.	You are satisfied with the information and decide to search for an interesting volunteer job. Find a suitable job for you. Please explain why this job is suitable. What do you look for?
4a.	You do not exactly know what kind of job is suitable for you. Find a way to determine what suits you. (Only for websites that provides tests.)
5.	You found a volunteer job that interests you. Apply for this job.
5a.	To complete the application, you need to be logged in. Log in. It is a test. You do not have to send anything. (Only for websites with login procedure.)

After performing the tasks, test users were asked to specify their opinions on certain elements of the website on a Likert(type)-scale of 1-5. They were also asked to explain their scores. The scoring list consisted of 13 items (Table 4). The items were based on the general principles of interaction design of Nielsen (1995) and the dimensions of usability of Quesenbery (2004).

Verbal comments of the test users were taped and notes were made during the tests. Comments and notes were transcribed and coded. The coding system was based on the tasks and scoring list. Coding was done by two independent researchers using Atlas.ti software (Evers, 2004). The coding results were compared and overall, most codes agreed with each other. When there were differences, they were discussed until agreement was reached. In case no consensus was reached, a third researcher would make the final decision. However, this did not occur.

Before describing the outcomes of the user tests, some limitations of the study should be noted. The generalizability of the outcomes is limited because only five volunteer brokerage websites were tested. However, the greatest value of the study lies in its exemplary function for other volunteer centers that maintain similar volunteer brokerage websites. Secondly, data were lacking on the target group, that is, potential volunteers. The composition

of the test panels was therefore based on data on active volunteers. The last limitation has to do with the testers. Because this was testing and not normal circumstances, people may have acted differently or socially desirable.

Results User Testing

On all websites, test users encountered problems when performing the tasks. The most common problems per task are described. It is also indicated on which website(s) these problems occurred.

Almost all test users (88%) used similar word combinations when searching for the right website (task 1): "name of municipality" combined with "volunteer work" or "volunteer". Especially with one website this did not lead to the intended result. This website (VC2) belonged to a volunteer center which was part of an umbrella organization and the volunteer brokerage website was part of the website of the umbrella organization. When looking for information about the volunteer center (task 2) test users were especially interested in information about confidentiality, the history of the volunteer center, what it does, and who runs it. Many test users (48%) indicated that under normal circumstances they would look immediately for volunteer vacancies and skip or postpone the search for general information. At the websites of VC1 and VC4 information on the volunteer center was untraceable. At the other three websites, the information was limited and generally insufficient for test users.

Every website offered two or more (traditional) contact options via the main menu. All users found at least one of these options (task 3). At one website (VC1) this caused some problems, because the contact information was not in the main menu but was somewhat hidden in the footer. Calling and emailing were by far the most preferred ways for test users to get in touch. Social media like Facebook (4) and Twitter (3), which were linked to four of the five websites, were not used.

The task of finding a suitable volunteer job (task 4) revealed various problems. The first problem was finding an overview of available volunteer vacancies. This was the case with two out of five test users of the websites VC1, VC2 and VC5. Secondly, the search process at one website (VC5) was complicated by the lack of tools to search the list of available volunteer vacancies. Test users had to scroll the whole list ($\pm$ 75) to find a vacancy of their choice. Users of the other four websites could search using category/keyword functionalities. At another website (VC4) the search process was complicated by a lack of volunteer vacancies. At one point in time only two vacancies were available. Finally, some test users had problems with the description of the vacancies. Information on the target group/person and time investment was missed at three (VC1, VC3, VC4) and one website (VC5) respectively.

Two of the five websites (VC1, VC5) provided one or more tests to help people determine which volunteer job suits them. Users had difficulty finding these tests (task 4a). The tests offered were: a talent scan, a test for young people, and a test for activities in the care sector. A criticism with regard to the talent scan on website VC5 was that the test results were not directly linked to the available volunteer job opportunities.

Problems that arose during the application (task 5) at two websites (VC1, VC3) could be traced back to an unclear or confusing explanation of the procedure. Nevertheless, all users were able to complete the application process.

The Likert(type)-scale scores of elements of the website were generally high (Table 4). At least 60% of the test users gave a score of 4 or 5. This percentage was even higher, 80% or more, at elements such as colors, contrast, feasibility of interaction, appropriateness and engagement. Score 1 was not given at all. Score 2 was given occasionally for ease of use (VC2), terms and grouping (VC3, VC4, VC5), contrast (VC2), layout (VC2), readability (VC2), appropriateness (VC5), ease of learning (VC3, VC4), engagement (VC2, VC4), and

efficiency (VC1, VC3). In their comments, test users regularly (36%) attributed their low

scores to the comprehensibility of words in navigation menus and on pages.

Error tolerance was not taken into account in the overall consideration of the scores

because only test users (6) who had an error message were asked to give a score for error

tolerance. Error messages occurred on three websites (VC1, VC2, VC4). Half of the error

tolerance scores were low. This had to do with the fact that no solutions were offered to

correct the error.

Table 4

Scoring List and Test Users' Scores

Scoring list	Questions	VC1 scores	VC2 scores	VC3 scores	VC4 scores	VC5 scores
Based on general principles of interaction design of Nielsen (1995)						
Ease of use	Do you find the navigation of the website easy to use?	4, 4, 5, 4, 5	5, 3, 2, 5, 5	4, 3, 3, 5, 4	4, 4, 4, 3, 4	5, 4, 3, 4, 3
Terms & grouping	Do you find the terms and groups on the website clear?	4, 4, 4, 5, 3	4, 5, 3, 3, 5	4, 3, 2, 5, 3	3, 5, 4, 2, 4	4, 5, 5, 5, 2
Colors	What do you think of the colors used on the website?	4, 5, 4, 5, 5	5, 4, 4, 3, 5	4, 4, 5, 4, 5	4, -, 4, 4, 4	4, 4, 4, 5, 3
Contrast	What do you think of the contrast on the website?	4, 5, 4, 5, 5	5, 2, 3, 4, 4	5, 4, 4, 5, 4	4, 5, 3, 4, 4	4, 5, 4, 5, 3
Layout	What do you think of the layout of the website?	4, 5, 5, 3, 3	4, 3, 2, 4, 5	4, 3, 3, 5, 4	4, 4, 4, 3, 4	5, 4, 3, 5, 4
Visibility interactions	Are the website's interactions (buttons, URL-links, texts, and such) clearly visible?	4, 3, 5, 5, 3	4, 3, 5, 5, 5	4, 4, 4, 5, 4	4, 5, 4, 4, 3	3, 3, 4, 5, 4
Feasibility interactions	Is it clear what is interactive, how to do the action and when it is completed?	-, 5, 5, 5, 4	4, 5, 5, 5, -	5, 3, 5, 5, 4	3, -, 3, 5, 4	4, 5, 5, 5, 4
Readability	Do you find the website readable?	4, 5, 3, 5, 4	5, 2, 4, 4, 5	3, 3, 3, 5, 4	3, 5, 3, 4, 3	5, 5, 5, 5, 4
Appropriateness	Do you find the texts appropriate for the website?	4, 4, 5, 5, 5	-, 5, 4, 5, 3	5, 4, 3, 5, 4	3, 5, 4, 4, 4	2, 4, 4, 5, 3
Based on usability dimensions of Quesenbery (2004)						
Ease of learning	Did you need to learn new things to understand the website? With other words: Can you use the website better on a second visit?	4, 4, 5, 4, 4	4, 5, 3, 3, 4	4, 2, 4, 5, 3	4, -, 2, 3, 4	5, 4, 4, 4, 3
Engagement	Do you like to use the website?	4, 4, 4, 5, 4	5, 3, 4, 2, 5	4, 4, 4, 5, 4	4, 4, 3, 2, 4	5, 4, 4, 5, 4
Efficiency	Does the website contribute to the efficient completion of the tasks?	2, 5, 5, 5, 3	5, 5, 4, 3, 5	5, 4, 2, 5, 3	4, -, 3, 3, 4	5, 4, 4, 4, 3
Error tolerance	Does the website help to resolve or prevent errors?	-, -, -, 3, -	-, -, -, 2, 4	-, -, -, -, -	1, -, -, 2, 4	-, -, -, -, - , -

Conclusions and Recommendations

For more than four decades, volunteer centers in the Netherlands offer the service of volunteer brokerage. During this period digitization developed. This has resulted in the expansion of brokerage opportunities and a shift from offline (personal) to online volunteer brokerage via a website.

Usability is important for the success of a website and it can be evaluated through user testing. User testing was applied to measure the usability of five volunteer brokerage websites of volunteer centers. These websites were each subjected to a test by five users. The results showed that test users of these websites encountered various problems while performing the user tasks. There were problems on every website. The problems that were mentioned by test users had to do with either the structure or the content of the website. General structural problems included poor findability of items and lack of appropriate tools, among other things. No/insufficient information and inadequate supply of volunteer vacancies are examples of content problems that test users often encountered. In addition to the general problems, there were also many specific problems that were related to one specific website or test user. By tackling the problems, the websites will become considerably more usable for users in general. This will reduces the chance of users leaving the website and being lost as volunteers. For other volunteer centers the results of the user tests imply that usability is not a matter of course and that it is worthwhile to test their own websites. By means of the user tests insight is provided into the kind of problems users of similar websites encountered while looking for volunteer opportunities. Other volunteer centers can use this insight to critically consider their own websites and (possibly) make adaptations. The test results can also be an incentive for other volunteer centers to study the usability of their own websites. With user testing, a method is provided to do so.

It is recommended to perform user tests regularly because a website is constantly changing. The structure and in particular its content are constantly changing. Most volunteer centers probably will not have the knowledge and experience to carry out user tests themselves. They can outsource it to a professional company. However, this is a costly affair. An alternative is to recruit an expert volunteer for testing. Collaboration can also be sought with a technical college/university and let students carry out user tests.

A somewhat remarkable result of the tests was that users did not use the social media available on four websites when searching for contact options. Users preferred traditional contact options. It is interesting to do further research on this, in order to make optimal use of these media. In addition, it is also interesting to investigate to what extent improvement of usability leads to an increase of matches.

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