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# Multilingual Website Assessment for Accessibility: a Survey on Current Practices

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## ABSTRACT

The accessibility degree achieved in a monolingual website may vary throughout the localization process, when it is made multilingual. This paper overviews the results of a survey conducted with the aim of exploring current practices followed when specifically assessing multilingual websites for accessibility. Respondents ( $N=67$ ) were web accessibility experts with at least two years of experience in the field. While our work does not return conclusive results, findings suggest that multilingual website assessment practices, as they stand today, do not follow a standardized pattern, and time spent on textual and culture-related elements, which still remain key information assets within a webpage, is considerably low. The study also sheds light on the need of localization-related knowledge and know-how to successfully achieve accessible websites where more than one language version is available.

## Categories and Subject Descriptors

K.7.4 [The Computing profession]: Professional Ethics – *Codes of good practice*. J.5 [Arts and Humanities]: Language Translation.

## General Terms

Performance, Human Factors, Standardization, Languages.

## Keywords

Multilingual Web, Web Accessibility Assessment, Localization, Best Practices.

## 1. INTRODUCTION

The meaning of a website, as well as its degree of accessibility, is determined by a combination of interrelated social, technical, personal and contextual factors that need to be taken into account by all actors within the web development cycle [2]. When a website is made multilingual, this effort is increased due to the linguistic and cultural adaptation (localization) of the content to a specific target audience, where those factors may differ and have a direct implication on the communicative intention or function of the target web document [5]. During this content transfer, achievements made as regards accessibility can be altered, since

localization involves not only translation tasks, but also handling semiotic and non-textual web elements (e.g., colours, images, date formats, size of menus, page structure, etc.). Therefore, it would be of notable interest to examine if a particular pattern exists in the evaluation approach put in place to assess localized websites for accessibility. In this paper, we show (1) that current procedures on multilingual website assessment for accessibility do pay special attention to web elements that fall within the localizers' area of expertise, but (2) no well-defined pattern is depicted from gathered evidence on how to assure that the degree of accessibility achieved in the original website is maintained in the localized version(s) during the assessment process.

## 2. RELATED WORK

Up to present, research on web accessibility evaluation practices have particularly focused on methods applied [1], professionals' performance and their attitude towards accessibility [3,4], as well as the use and effectiveness of evaluation tools [6]. However, to the best of our knowledge, no direct path has been drawn towards the analysis of the particularities of multilingual websites and their potential implication on web accessibility achievement and assessment procedures. This study provides an insightful snapshot of the evaluators' behaviour while performing an accessibility assessment job on websites with content in at least two languages.

## 3. SURVEY

In this section we describe the survey methods and how data was analysed, and we report the main findings on questions directly related to multilingual web assessment for accessibility.

### 3.1 Design Methodology and Goals

The goal of this study was to gather knowledge about specific procedures applied during accessibility evaluation tasks of multilingual websites. The survey addressed web accessibility professionals with at least two years of experience in the field, a profile indicator selected as a baseline for the relevance of responses. A 'snowball' sampling method was used to recruit targeted respondents online. The survey information and URL was distributed to relevant mailing list servers, such as the WebAIM discussion list, as well as via Twitter and LinkedIn. Before distribution, the survey was checked for content validity. Potential respondents were given six weeks time to complete the online survey. It included a set of screening questions about demographics and expertise, and two sections aiming at exploring: (1) procedures followed in multilingual web accessibility assessment tasks and (2) perceptions on localization professionals' potential contribution to the achievement of a higher degree of accessibility in multilingual websites. This paper focuses on evidence found from responses related to area (1).

## 3.2 Data Analysis and Summary of Results

The survey consisted of both closed-ended and open-ended questions, some of which were grounded on conversations with experts and users at earlier stages of this research.

### 3.2.1 Respondents' Profiles

Approximately 100 respondents accessed the survey, 79 completed it, and 67 usable responses were collected, being coherent and comprehensible. Fifty-eight respondents were employed and 9 were students ( $N=67$ , aged between 66 and 22,  $\bar{x} = 44$ ,  $sd = 10$ ; 33 male, 34 female). Most professionals had simultaneous jobs, with categories including web consultants (57%), researchers in the web accessibility field (32%), web developers (28%), web designers (23%) and others (12%, mainly project leaders and technologists). Around 90% of respondents stated to have a high degree of expertise in the domain and assessed more than 10 websites in the past year. About 68% of the respondents ( $N=46$  of 67) were fluent in at least one language different from their mother tongue (with English being the most popular both as first and second language, followed by French, Spanish and German). Among respondents, there were 9 screen reader users and 2 people daily using speech recognition software.

### 3.2.2 Key Findings

Respondents indicated that, when performing website assessments for accessibility, they often (69%) combine two or more of the main methods listed, according to previous research [1]: inspection method, automated testing, screening techniques, subjective assessment and user testing. Data from the question 'How much time do you spend on textual accessibility-related issues?' suggests that the tendency is to not spend more than 25% of the time available for the task on text content (see Figure 1a). When asked about consideration given to culture-related elements that should be adapted from one version to another (e.g., symbols, shapes, colours, signs), only 21% of respondents answered that they always verify them (21% never, 45% sometimes, 7% often, 6% n/a). Paradoxically, most respondents preferred to check all language versions available in the website (67%). Those who assessed just one version (33%) gave the following reasons: 'I only speak one language' (23%), 'Although I speak other languages, I do not feel comfortable assessing websites that are not in my mother tongue' (18%), 'I do not have time' (18%), 'It is not necessary' (6%). The remaining respondents (35%) gave reasons such as 'technical difficulties: we do not have screen readers handling non-latin languages' or 'while doing user testing, we can only assess the version of the user's mother tongue.'

Participants were also asked to estimate how often the following statements described their web accessibility assessment procedure on multilingual websites: (1) As I check a web element or functionality, I recheck it in the other language versions; (2) I first check one language version, and then I check the others; (3) I just check my native language version, and if I find a major accessibility problem, I check if it is present in the other versions too; (4) I just check my native language version and I assume that the others have the same degree of accessibility as the one I checked. Around half of the respondents (52%) concluded that procedure (4) was not appropriate, but no significant agreement was found regarding the other three (see Figure 1b). Overall, 57% of respondents considered that multilingual and monolingual websites should not be tested for accessibility differently, 37% stated the contrary, and 6% did not answer the question. Those who would apply a different approach ( $N=25$  out of 67) suggested

they would look at the following elements separately (they could select more than one option): textual content (80%), multimedia content (72%), graphic content (56%), navigation and hyperlinks (44%), semantic structure (40%) and presentation layout (36%).

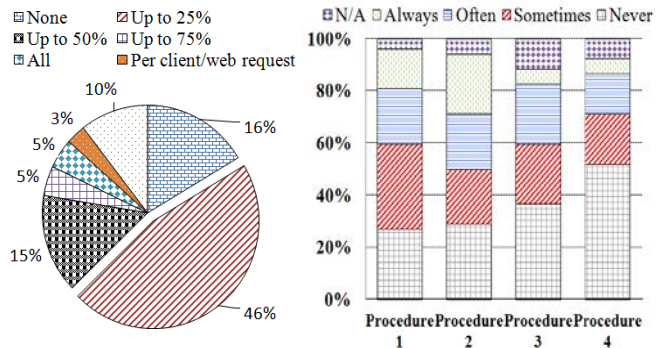


Figure 1. (a, pie chart) Time spent (%) on textual accessibility issues; and (b, stacked chart) Preferred procedures during accessibility assessment of multilingual websites

## 4. CONCLUSIONS AND FUTURE WORK

Evidence found suggests that no standardised assessment procedure exist when checking multilingual web accessibility. Despite limitations of the study, data gathered seems to indicate that little consideration is given to culture-embedded elements and textual content. Interestingly, elements selected as worth looking at separately represent the pillars of any multilingual website, where localizers play a critical role. In the light of answers to this survey, it would be appropriate to contrast data obtained with observations of real-case scenarios and suggest a set of specific guidelines for multilingual web assessment. Similarly, it would be worth exploring if a change in mindset is needed among web accessibility experts regarding localization issues or if it would be more appropriate to boost awareness on web accessibility requirements within the localization community.

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