

What are the challenges of implementing accessibility standards for technical writers?

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Living with a disability in our society doesn't necessarily mean needing constant care. However, it means having to adapt everyday: because the world we live in has not adapted to disabilities yet. This is a comment we can apply to technical communication, an activity in which the purpose is to make information accessible to an audience, but where accessibility guidelines are still rare to be found.

We attempted with this paper to inquire about the current situation of accessibility to people with disabilities, focusing on visual and hearing impairment. We conducted a survey on technical communication professionals with different experiences and contacted various technical writers with the objective of presenting the norms that already exist in terms of accessibility and showing what's still missing - with that, we tried to present an analysis of the reasons for the scarcity of norms in technical writing.

Keywords: technical communication, technical writing, technical writer, accessibility, wcag, accessibility standards, France, web accessibility

Introduction

While our society is constantly evolving, people with disabilities still encounter difficulties to access to the same resources as non-disabled people. Disabled people represent a minority that is not sufficiently considered and accessibility measures develop slowly.

One of the fundamental objectives of technical communication is to make information accessible to a non-expert audience. Reaching a maximum of profiles is important in this line of work. People with visual or hearing impairment need adapted methods of access to documentation in all forms that exist. Yet, they face the same difficulty to access technical documentation as in all aspects of their daily life.

Accessibility in technical communication refers to how users with disabilities have access to information and how technical writers and producers of online content produce accessible output that can function with assistive devices and be used by individuals with disabilities.

The objective of this research is to determine what measures are taken by technical writing professionals nowadays in terms of accessibility in the work they produce. Are the existing accessibility standards implemented in technical documentation? And what are the difficulties and challenges of implementing such accessibility guidelines?

First, we will explain our method of gathering resources and information about the existing accessibility guidelines. We will then analyze the information we collected from professionals and discuss what challenges and issues are at stake in setting up accessibility standards in technical communication.

Accessibility Standards

To get an idea of what goals should be attained in terms of accessibility for companies in their technical documentation, we looked for the standardized norms that already exist. Especially when it comes to web accessibility since technical documentation when not printed is generally presented in web based outputs.

We found that most companies rely on the WCAG (Web Content Accessibility Guidelines). The WCAG is part of the web accessibility guidelines published by the WAI (Web Accessibility Initiative) of the W3C (World Wide Web Consortium) which regroups all the standards for the internet. The most recent published guidelines are the WCAG 2.1 and they became a W3C Recommendation in June 2018.

This document is presented as a guide that gives a detailed list of accessibility criteria. It covers a very wide range of recommendations for making Web content more accessible.

The guide includes accommodations for blindness and low vision, deafness and hearing loss, limited movement, speech disabilities, photosensitivity, and combinations of these, and some accommodation for learning disabilities and cognitive limitations. The guidelines address accessibility of web content on desktops, laptops, tablets, and mobile devices.

We'll list some guidelines and dos and don'ts that are generally given to make web design and web content accessible. This is a non-exhaustive list:

- Designing web content so that it is accessible to screen readers by adding descriptive links and titles, describing images with alternative texts, correctly structuring content with HTML language and making the content entirely accessible with the use of a keyboard only.
- Privileging the use of subtitles for videos or audios.

- Using simple colors instead of bright ones, using plain English, opting for simple, consistent and intuitive layouts, descriptive buttons.
- Making large clickable buttons and actions, designing mobile and touch screen versions of web content.
- Using images to support text.
- Options to change screen brightness, contrast, color scheme.
- Using font sizes and colors that are easily readable.

These are only a few examples of the many requirements that should be respected to ensure that a web content is accessible.

We'll present next the methods we adopted to gather information on how technical writing professionals tackle the issue of accessibility on the content they write and design.

Methods

Inquiries and interview with accessibility experts

For a more qualitative approach, we first inquired in our company about implementing accessibility standards. Therefore, we investigated three highly experienced technical writers. To better understand what is already implemented in terms of accessibility, we assessed their experiences and collected their thoughts that would be very relevant for this matter. We inquired about how they implement accessibility solutions at work if available and about their interactions with developers to implement accessibility.

Surveys

To broaden our investigation, we prepared a questionnaire that we sent out into our work and school network. This questionnaire was mainly aimed to professionals working in the fields of technical writing but also UX design and more generally web publication because we considered that those activity fields are linked. The objective of this questionnaire was to know what was concretely done and what was planned in terms of accessibility in the company of those questioned. We have also asked about their personal views on implementing or improving accessibility standards.

The questionnaire was sent to former and current students of our master's degree, colleagues from our respective companies, and other technical writers or communication professionals that can be concerned with the issue of accessibility standards.

Our questionnaire focuses on the respondents' knowledge of accessibility standards in general and in their company. In addition to essential information like their company name, job title and years in business, our questionnaire collects information on the presence of accessibility standards in company, the budget allocated to implement accessibility standards, the company will to improve the application of this type of standards and finally their opinion on their qualification on the subject and on the challenges that it takes to set up accessibility standards.

Results

Interview Results

Today, accessibility has become a more important issue, stated two technical writers as user assistance developers we interviewed. It is one of the criteria that will enable everyone to easily find and read a technical document. They thought that it was important to make

user's manuals accessible to as many people as possible. According to these user assistance developers, technical writers should play a role to implement accessibility standards. However, accessibility is expensive. To make a document or a form fully accessible can cost money. Some companies prefer to focus on innovation over accessibility. They mentioned that making a document accessible takes time.

We contacted a senior technical writer who is visually impaired. We thought his point of view would be very relevant for this matter. We asked him to precise what disability he was suffering from and how he dealt with his work as a technical writer.

He is legally blind and suffers from a condition called Retinitis pigmentosa. He has a very limited visual field. His main difficulties when it comes to working and using a computer are the following:

- He cannot see the screen edges and spends time looking for the cursor or buttons and bullets.
- He cannot use a standard black on white screen setup.

To be able to work he must use some accessibility settings included in Windows like High contrast theme, an enlarged cursor, the screen magnifier, screen color inversion. Those kinds of settings may not completely make someone with a visual disability comfortable with using a software, website or reading a guide, but they are proven to be part of some improvements that could very much benefit visually impaired people.

He has found that some technical writing software that he came to use like Robohelp, Madcap Flare and some Adobe tools don't offer solutions that are accessible to their users with disabilities like for example a magnified cursor or dark themed skins.

Not having those types of accessible solutions in technical writing software may be an indication of the lack of accessibility that we can find in the work produced with those software (sites, documents, pdfs, help pages etc.).

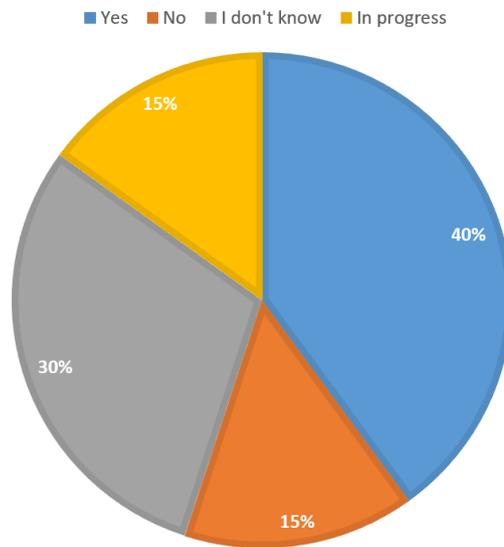
We had the opportunity to look at the current strategy that one of our company has adopted to attain a certain level of accessibility standards in their documentation and UX designer teams.

The plan consists in creating an excel table that lists the entire WCAG 2.1 criteria and checking if they are respected or not and if they are in progress of being implemented or not. The objective would be to meet a maximum of the WCAG 2.1 requirements. Managers of each team had to estimate what the time cost in implementing each criterion would be for their respective team.

Surveys Results

Here are the data collected from the questionnaire.

ARE THERE ANY ACCESSIBILITY STANDARDS IN YOUR COMPANY/TEAM?



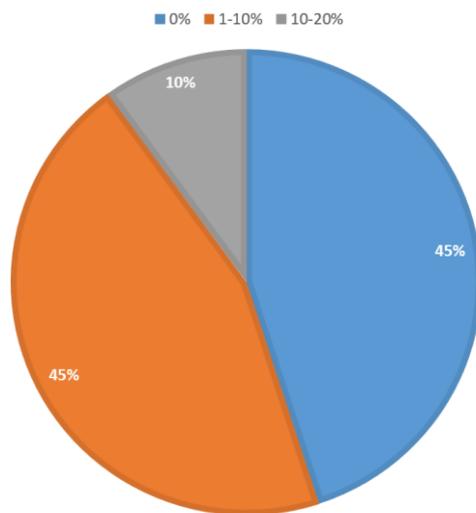
We decided, in the first place, to ask the respondents if they knew or heard about accessibility standards in their workplace, and if yes, what were these standards.

The majority of them (40%) answered yes. They all mentioned different kinds of norms and solutions used in their service: subtitles and voice in videos, style guide, UA Accessibility Committee, WCAG Checklist 2.0, W3C and other norms specific to their companies. 30% of them said that they don't know. 15% of them said that the implementation of accessibility standards was still in progress but amongst those who answered negatively, some added that it was also in progress.

More than half of them (55+%) answered with a positive answer (yes or in progress), which is already a sign that technical writers don't really ignore the accessibility issue, even though it represents for some a work that is not completely finished.

However, only 15% of the respondents replied negatively while 1 out of 3 replied "I don't know". Not knowing the presence or absence of accessibility standards in their company is a part of the issue. This ignorance means that the subject may never have been mentioned during the various training courses the respondents took, or in their professional backgrounds.

WHAT IS THE BUDGET ALLOCATED FOR ACCESSIBILITY? (TRAINING COST, APPLICATION COST...)



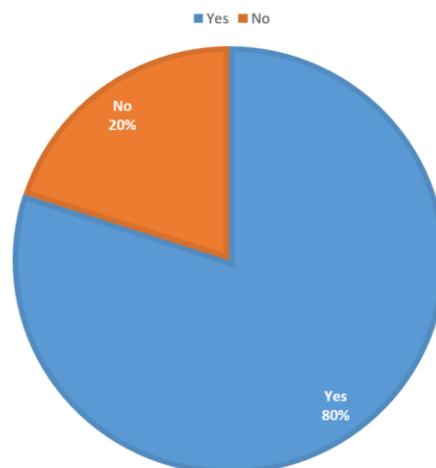
We asked our respondents how much of the budget is allocated for accessibility.

An equal number of the respondents answered that between 0% and 1-10% of the budget is allocated for accessibility. We can see that there are many companies that do not dedicate any part of their budget to implement accessibility norms to their work. From those answers we understand that the question eventually wasn't really about the amount of the budget but more about whether there is a budget for accessibility or not.

Our next question focuses on the will of the respondents' companies to implement more accessibility standards in their work processes.

The majority of them answered positively, which means that despite the lack of budget dedicated to accessibility, we can see that the companies show an interest in accessibility and are keen to improve their activity and their user experience.

IS YOUR COMPANY/TEAM IN FAVOUR OF APPLYING ACCESSIBILITY STANDARDS?



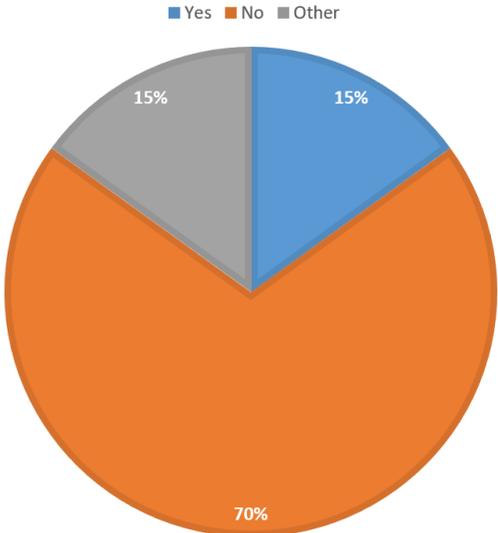
Added to this question, we wanted to know what kind of improvement they wanted to make, and for the 20% who replied negatively, what was the reason of their disinterest.

Even if some of them said that they don't know about it, many mentioned visual and auditory accessibility improvement for documentation (audio description, color adaptation...). Somebody even mentioned the GUI (Graphical User Interface) Accessibility mode, which is a norm, and user assistance. The other answers said that they are just collecting ideas of norms they would like to implement with the cost and the time needed to make it possible, or that they are participating to committees about accessibility to get more information about it.

For those who replied negatively, we asked them if the reason was a lack of time, money or interest. For 50% of them, their company shows a lack of interest, somebody wanted to

clarify by saying that it was more a lack of awareness than interest. For the others, it was a lack of time, but nobody said that it was a lack of money, which shows that the absence of accessibility standards may not be a financial problem.

DO YOU THINK YOU ARE SUFFICIENTLY TRAINED ON ACCESSIBILITY IN YOUR FIELD?



We asked the respondents if they reckoned they had sufficient training on accessibility.

A large majority of them (70%) answered that they considered that they didn't. Some explained that they were only partly trained through HTML, XML and technical writing classes. One testimony specified that information was "hard to find" which is an interesting opinion. The lack of accessibility training courses for future technical writers can be part of why accessibility may become complicated to apply once junior tech writers or UX designers are in the professional world. Would a thorough training and awareness from the early stage of education change the state of accessibility in today's productions from confirmed professionals in technical communication?

We also asked in addition to this question, if they would like to see more training on accessibility and vast majority answered yes. To make a synthesis of the general explanation, the reason why they answered positively for most was that it was important that everyone was treated the same way and that accessibility was an important issue. This shows that people are more and more aware and conscious that accessibility should not be overlooked.

The challenges of setting up accessibility standards

To end this questionnaire, we asked in an open question the opinion of the respondents on the challenges of setting up accessibility standards for professionals in their field of activity. Time has really been described as a lacking resource for many technical writers: they are all so busy that adding anything, even with a small impact is a shortfall.

The second challenge for the respondents is a real lack of awareness. Accessibility as a concept seems to be known by a lot, however many of them are very conscious that they don't have much information about what it means to live with visual or hearing impairment, and in the technical writing area, about the accessibility solutions they can provide them. One respondent also adds that in the awareness they need, they must know the types of disabilities

their users have, which is an interesting point. Identifying the types of users is a crucial step to provide them with a solution to their needs.

According to one respondent, accessibility standards are treated as a “nice-to-have luxury” instead of a “must-have necessity”, which is an interesting thought that conveys the feeling to lack time or money. Maybe technical writers (and others) think they don’t have the time or the money while it may just be a lack of awareness or interest, which can explain that many initiatives evaporate quite quickly.

Some of the respondents think we either need disability professionals to offer us their knowledge on visual and hearing impairment to create solutions, or technical writers / designers have to be trained on the subject.

Overall, the respondents think time is the most valuable resource to possess in order to improve the accessibility to their documentation. It seems though that a large amount of them would like to make this improvement, so what’s preventing professionals from applying standards? We think the main and most important reason is the absence of awareness on disabilities in communication trainings, if accessibility was part of these trainings, it would raise awareness among trainees and normalize the application of this sort of standards. Nowadays, an individual who wants to improve these standards must do the research by themselves.

Furthermore, in addition to giving equal access to information, our respondents all agree that the improvement of accessibility standards could give credibility and visibility to the job.

Discussion

Our research and these results help to understand that accessibility was not really considered at the beginning by the company. Technical writers were just writing based on a style guide they had put in place to ensure compliance in their document, but they didn't necessarily focus on the fact that their document should be accessible to everyone.

Later, with the creation of international accessibility standards, and with the fact that web access is now defined as a fundamental human right by the UN (UN CRPD) and often required by law, technical writers began to position themselves and raise questions about the implementation of accessibility standards in their documentation. Unfortunately, many factors come into play, even if they want to implement it throughout their documentation and provide a better experience for all users.

One of the factors cited is the fact that they are not trained in accessibility and that the company where they are does not offer training on accessibility. Trying to include an accessibility approach in the documentation without knowing the basics can be tedious. Technical writers often end up training themselves. The costs associated with accessibility in the documentation could also prove to be a barrier to accessibility; especially for smaller companies; because for larger companies, these costs can still be covered. To improve accessibility, for example, for each image, technical writers must fill in an ALT TEXT attribute ("alt" tag is a textual description that is assigned to an image in HTML. It literally means "alternative text", but each ALT TEXT is composed of one or more sentences that must be sent for translation. With each delivery of the documentation, the translation agency charges according to the volume of new text.

If technical writers deliver alt texts in a single delivery, this will result in a large volume of new text and a translation budget well above normal. The same question also applies to the subtitles of the videos, which they must translate. For this reason, it was decided that they would spread the translation costs over several delivery cycles, and therefore, several years...

Moreover, as technical writers work closely with developers; one of the factors that can also hinder the implementation of the accessibility standards is time. This implementation is based on the collaboration between technical writers and developers. According to WCAG, all web content must be perceptible, usable, robust, and understandable. When technical writers first test software, they can easily alert developers to interface accessibility issues; but unfortunately, it is not an easy thing and often takes a long time for developers to solve the problem, especially if they decide to update their old documentation and make everything accessible to users.

Technical writers: taking heed of implementing accessibility standards

Faced with these factors, some technical writers have nevertheless taken the initiative to implement an accessibility approach in the company. Although at first, they did not realize that they started to participate on it when they wrote the style guide because it already contained some guidelines on accessibility standards; for example, on color.

Some companies created a committee that is responsible for implementing accessibility. The purpose of this committee is to train technical writers on accessibility and to implement accessibility guidelines in their documentation. In this context, they focused on videos, icons and images, compatibility with assistive technology tools and miscellaneous. For example, for videos, adding subtitles and using an accessible media player are important for accessibility. For images, adding ALT text, images contrast and visibility tips to the web technology, zooms for inline icons is part of this accessibility approach. The committee aims to improve online help compatibility with screen readers and keyboard navigation. For visibility, blocks (TOC, header and footer) can be easily hidden.

Conclusion

There are several findings that can be drawn from this research on accessibility in technical writing. First, we have seen that there are many criteria and requirements for web accessibility that can also be applied for technical writing. Despite these many existing standards, we have been able to see from the results of our surveys that many professionals in the field, although aware of the importance of accessibility, do not necessarily adopt good practices to make their content accessible. We have seen that the most common reasons for this were lack of time and sometimes also lack of awareness.

With our interviews, we were able to understand that some companies could see the implementation of accessibility in technical documents as having a large cost in time and that some prefer to focus on time for innovation, for example. We were even able to get the opinion of a technical writer himself who was visually impaired and for whom the technical writing software he used offered very few facilities for people with visual and other disabilities.

It can be concluded that to improve the current situation of accessibility in technical writing, companies should invest more time, money but also raise awareness among their workers of the importance of making their content accessible. Technical writing software could also be developed in such a way that it is accessible and easier to create accessible content.

The path to achieving full accessibility in technical documents is still long, but some companies are already working on it and it could become a trend in the industry in the future.

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